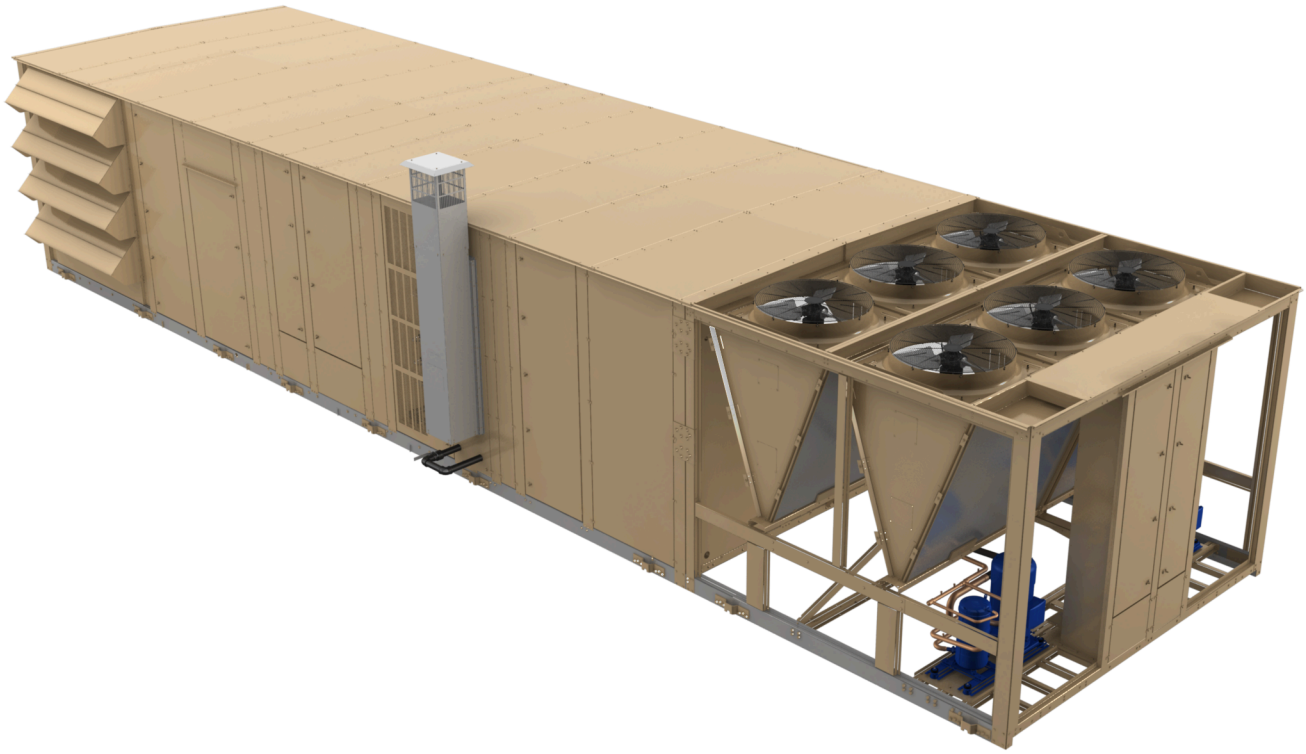
YORK Premier Rooftop Units 90 Ton to 150 Ton Technical Guide R-454B



Technical Guide

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Product highlights and options

Efficiency

- Optional variable speed drive (VSD) compressors
- Standard direct drive plenum (DDP) supply fans
- Optional integral energy recover wheel (ERW)

Flexibility

- R-454B refrigerant
- 460 VAC, or 575 VAC, 3 phase, 60 Hz
- Cooling only units with heating options including gas, electric, and hydronic
- Exhaust or return fan options
- Various airflow path configurations for discharge return and exhaust air
- Optional low ambient temperature operation
- Variable frequency drive (VFD) options on all fans, see Figure 1.
- Optional humidifier, sound attenuator, or air blender

Figure 1: VFD displays

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Reliability and serviceability

- Multiple refrigeration circuits
- Refrigerant detection system
- Unit powered convenience outlet
- Replaceable core filter drier
- Suction, liquid, and discharge line shutoff valves
- Refrigeration pressure transducer option
- Start-up wizard
- Coil corrosion protection option
- Optional door viewports
- Single point latching door option
- Internal air handler light option

Indoor environmental quality

- Double wall construction with foam insulation
- Modulating hot gas reheat (HGRH) option
- Final filtration options, including high efficiency particulate air (HEPA) filters
- Stainless steel drain pan
- Ultraviolet (UV) lights option
- Condensate overflow switch option
- Airflow measurement options for outside air, supply fan, and return fan

Controls

- 5.5 in., 5 row × 35 character (256 × 64 dot matrix) organic light-emitting diode (OLED) display with full numeric keypad and navigation buttons as standard
- 10 in., 1280 × 800 resolution, multi-touch capacitive, color touchscreen display available as a factory installed or field installed option
- Bluetooth capability using the Connected Workflow Converter (CWCVT) or Wi-Fi capability using the Connected Equipment Gateway (CEG, advanced display option only) provides additional unit control when it is not always possible to physically access the unit
- Smart Equipment technology enabling self-discovery on Verasys™ Building Automation Systems (BAS)
- The controller supports the BACnet® communication protocol and is designed and certified by BACnet Testing Laboratory (BTL) to meet the requirements of the advanced application control profile
- Twinning algorithms to allow multiple units to function as one on common supply and return duct shafts
- Variable air volume (VAV) and single zone VAV (SZVAV) control
- Building pressurization controls

Patents

For access to Premier™ related patents, visit: https://jcipat.com.

Certifications

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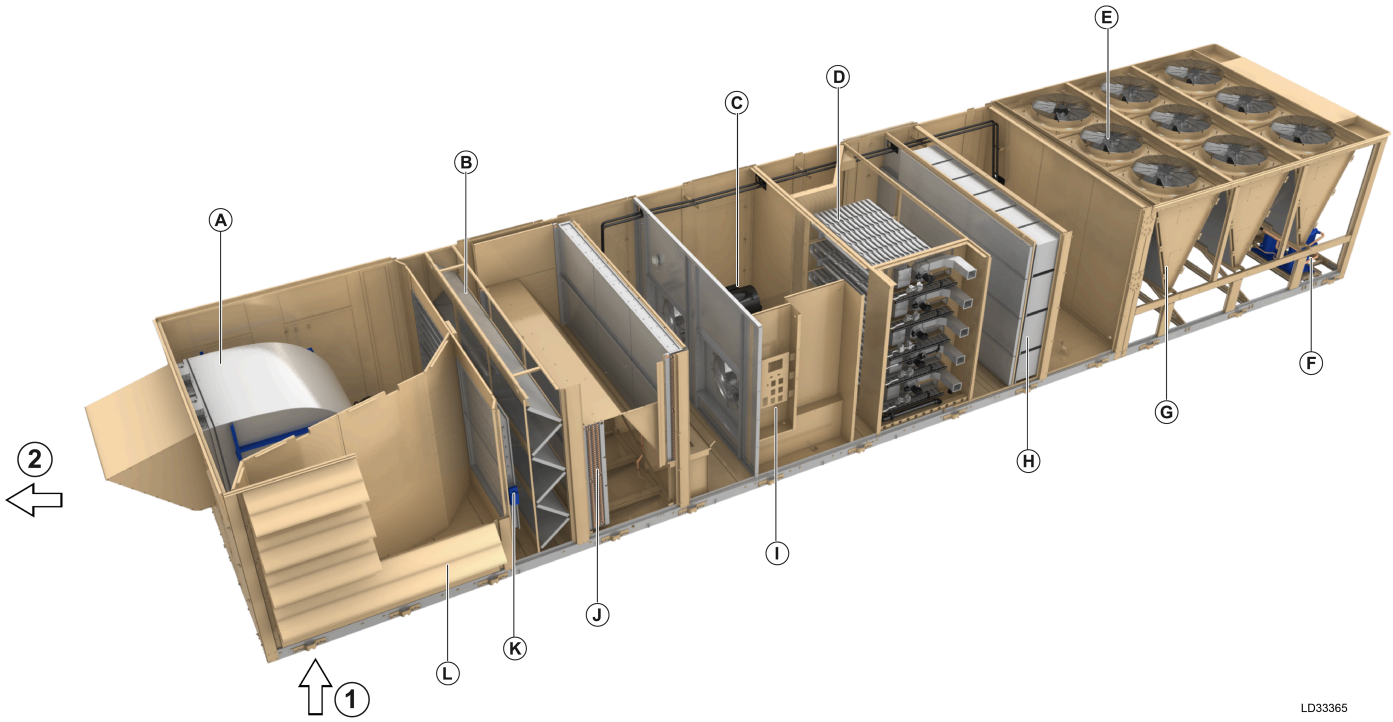
Component location

Figure 2: Packaged rooftop unit cabinet assembly



Note: Some components listed are optional.

Callout	Component	Callout	Component
A	Exhaust and return fan	G	Condenser coil cleaning hatch - not shown
B	Filter section	H	Final filter
C	Direct drive plenum (DDP) supply fans	I	Unit controller
D	Modulating or staged gas heat	J	Evaporator coil
E	Condensor fans	K	Economizer
F	Scroll compressors	L	Collapsible rain hoods
1	Outside air entering (right side)	2	Exhaust air leaving (front)

Features and benefits

General

The 90 ton to 150 ton packaged rooftop platform is designed with all the flexibility needed for today's applications but with tomorrow's requirements in mind. Realizing that efficiency requirements are continuously pushing the envelope of technology, the YORK® Sun™ Premier delivers efficiency surpassing the 2024 Consortium of Energy Efficiency (CEE) highest tier for this size of equipment.

The Premier units are also designed for serviceability, with options such as a single handle latching mechanism for doors; a convenience outlet to power lights and tools; internal lights in the air handler section; viewports in doors of serviceable compartments to enable easier unit inspection; and extended grease lines to simplify fan bearing lubrication for belt driven fans. Standard direct drive supply fans, see Figure 3, do not require lubricating fan bearings or changing belts. Numerous refrigeration options such as high and low pressure transducers in each circuit enable easier sub-cooling and superheat measurements.

Besides options, there are also standard features to ensure straightforward and safe servicing of the units, including coil cleaning hatches in the condenser section to make cleaning condenser coils effortless, and door safety latches to keep doors safe when opened in a pressurized compartment. A discrete high and low voltage compartment minimizes the amount of safety equipment required when only the low voltage compartment is accessed.

Selection Navigator is an online program available to assist in providing unit selections, performance reports, unit drawings, lifting lug and connection drawings, BAS controls points list, controls sequence of operation, guide specification, and outputs to assist in design of the unit. Certain options may require the assistance of the local sales office.

In order to facilitate its application, Selection Navigator also provides building information modeling (BIM) files of the specific unit selected. This aids in modeling placement and integration of the rooftop unit into the overall building design.

This packaged rooftop product is a sophisticated, highly configurable rooftop unit. A controller is standard on each unit with specific sequences of operation correlated to the options selected. Selection Navigator provides the specific sequences of operation for the unit options selected, eliminating confusion of the unit's capability.

Although the many options make customizing unlikely, it is possible to have custom mechanical and sequences of operations designed into the unit from the factory for ultimate convenience and reliability.

1. Economizer

See item K in Figure 2. In order to deliver maximum efficiency, rooftop units need an efficient economizer. The rooftop unit offers various options for economizer control and fault detection to meet different regulatory requirements.

The amount of fresh air can also be optionally measured to ensure and record appropriate fresh air to the conditioned space.

2. Refrigeration System

See items E, F, and J in Figure 2. The refrigeration system is built to reliably deliver cooling through a variety of loads. Two independent refrigeration circuits ensure that in the unlikely event of a compressor failure, the second circuit can still deliver cooling to the space. An interlaced tube and fin evaporator provide maximum cooling performance even at part loads. The microchannel condenser reduces the risk of refrigerant leaks and minimizes the amount of refrigerant in the unit.

Standard fixed speed scroll compressors of different sizes deliver excellent part-load efficiency and control, which eliminates the need for inefficient hot gas bypass valves at low load conditions. Optional variable speed drive scroll compressor configurations are available for stable and efficient discharge air temperature (DAT) control regardless of the load.

Realizing that the refrigeration system is the heart of the rooftop, when optionally equipped with transducers, the unit controller can display sub-cooling or superheat. Additionally, low ambient operation is an available option with a variable speed condenser fan.

In order to maximize serviceability the standard unit is equipped with discharge, liquid, and suction isolation valves; replaceable core filter driers, accessible liquid site glasses, and conveniently located condenser coil cleaning hatches.

3. Direct drive plenum (DDP) supply fan

Multiple DDP supply fans, see Figure 3, are used on 90 ton to 150 ton cabinets for an increased level of reliability and efficiency. Problems such as the interruption of conditioned air supply because of a broken belt, or the pollution of conditoned air with belt dust, are eliminated. The supply fans can be optionally equipped with an airflow measurement station to precisely measure the amount of air delivered to the conditioned space.

The speed of the supply fan is controlled by a VFD. VFD redundancy is optionally available with an additional VFD for each motor to ensure uptime in the unlikely event of a VFD failure.

4. Heating options

See item D in Figure 2. Gas heat options are available either in staged or modulating control. The flexibility of heater sizes meets the specific application heating needs. Electric heat is also available with size and staging or modulating options, see Figure 4. All modulating heat options can be controlled precisely to temper the supply air, which is especially important when fresh air is needed in cold climates. Hydronic heating is available with hot water and steam connection options.

5. Double wall construction

The air handler section of the rooftop unit provides foam injected double wall construction for maximum unit rigidity and cleanability of the interior surfaces for long term indoor air quality (IAQ). This construction of the walls, roof, and floor provides an insulating value that minimizes unit sweating and contributes to the overall unit efficiency.

Figure 3: Dual DDP supply fan

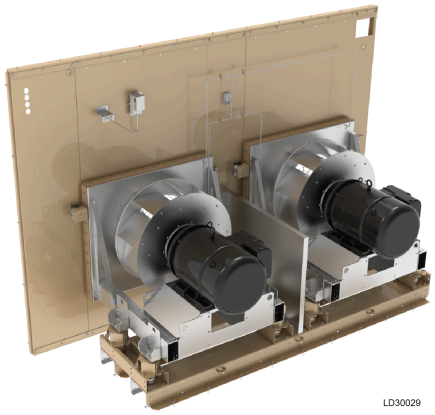
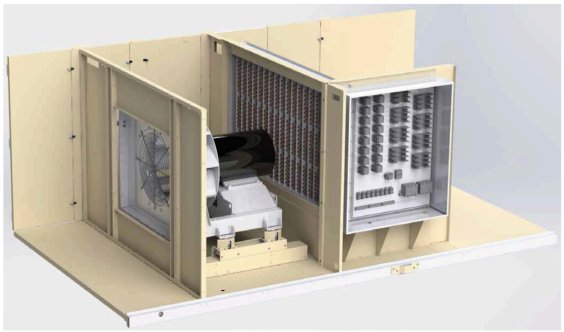


Figure 4: Electric heat



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6. Controls system

See item I in Figure 2. The rooftop unit's sophisticated options are intelligently controlled by a best-in-class controls platform built exclusively for this application.

A 5.5 in., 5 row × 35 character (256 × 64 dot matrix) OLED display, see Figure 5, with full numerical and optimized navigational keypad conveniently located in the low voltage compartment, act as the nerve center.

The control system can be optionally augmented with a WiFi hotspot capability for local or line-of-sight smart device control.

Figure 5: OLED display

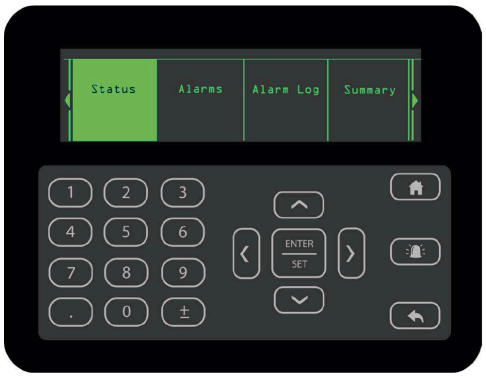

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Figure 6: Touchscreen display

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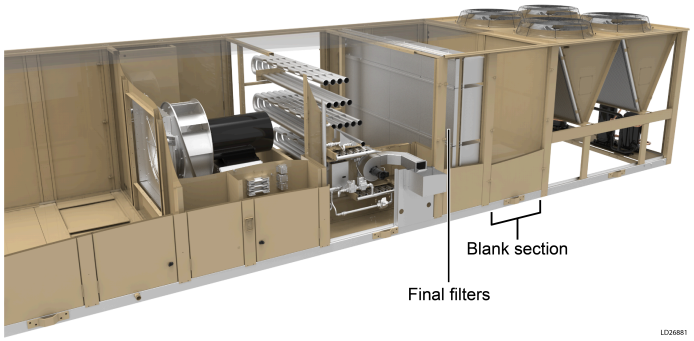
The control platform minimizes commissioning time when connected to the Verasys™ Building Automation Systems (BAS), with self-discovery of the rooftop unit and its points by the BAS.

The unit controller has sequences of operation for standalone applications. These sequences cover simple applications such as single zone variable air volume (SZVAV) control of the supply fan and compressors in

accordance with ASHRAE 90.1-2022, as well as demand control ventilation (DCV) that ensures adequate fresh air to the building.

Complex applications are also supported, like the twinning of multiple rooftops on a common supply and return duct shaft for the ultimate in redundancy for critical spaces, such as Medical Office Buildings (MOBs).

Figure 7: Final filter section



7. Blank section

Blank sections can be provided for field installed accessories or to accommodate the installation of specific factory components including an air blender, final filters, humidifier, or sound attenuator.

The rooftop unit can be equipped with a final filter before the conditioned air is delivered from the rooftop into the supply duct. See Figure 7.

Various final filter options are available to meet critical needs including high efficiency particulate air (HEPA) filtration. Differential pressure measuring options can be supplied to meet the requirements for ASHRAE 170-2021.

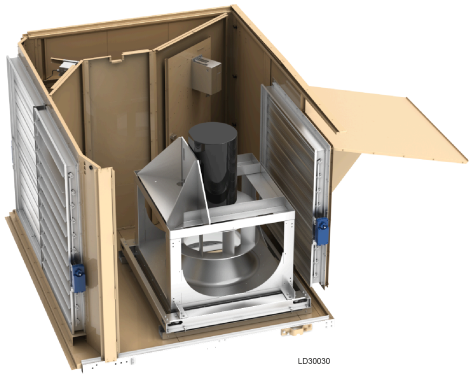
For cold northern climates where heat tends to dry out the supply air, a humidifier option with a stainless steel drain pan is also available.

In order to mitigate sound originating in the rooftop unit from reaching the conditioned space, optional sound attenuators in the rooftop unit can be factory-installed.

8. Exhaust and return fan

See item A in Figure 2. The rooftop units enable installation flexibility with the option of either exhaust or return fan to control the building static pressure. Return ductwork with shorter runs and lower static requirements usually only need an exhaust fan. A direct drive plenum return fan, see Figure 8, is available to overcome the static imposed by longer return ducts.

Figure 8: DDP return fan



Optional airflow measurement is available for units equipped with a return fan. This makes it possible to precisely understand and log the different airflows through the rooftop unit.

9. Hot gas reheat (HGRH)

Occupant comfort can be a challenge during shoulder months when low loads and high humidity occur. In many cases, the combined efforts of refrigeration system compressor multistep control, an interlaced evaporator coil, and the supply fan modulation of SZVAV control are sufficient.

The rooftop unit provides an optional modulating hot gas reheat (HGRH) coil to further reduce and control the humidity level within the space.

10. Indoor air quality (IAQ)

To meet the critical needs of IAQ, the rooftop unit provides a stainless steel evaporator drain pan for longevity and to facilitate cleanability. The drain pan can be optionally equipped with an overflow switch to warn of incorrect drainage and minimize the potential for damage to the conditioned space. Ultraviolet (UV) light banks are also an available option that minimize mold and bacteria growth and assists in keeping the evaporator coil clean.

11. Energy recovery wheel (ERW)

The rooftop unit provides an option for an ERW as an integral part of the unit. This device uses exhaust air to condition the fresh air brought into the unit and the conditioned space, increasing the overall rooftop efficiency. As a factory-installed option, the ERW ensures reliability, minimizes field labor, and simplifies long-term maintenance of the device. On 90 ton to 150 ton units, an ERW is provided with exhaust fans.

12. Airflow flexibility

Whether a rooftop unit is mounted on a roof or on grade, the orientation of airflow from the rooftop to the conditioned space and vice versa is important.

The Premier units were specifically designed to provide discharge airflow either at the bottom, top, or horizontally to the left or right.

Similarly, the unit is designed for maximum flexibility to provide return airflow in either directions on both vertical and horizontal options. This airflow flexibility minimizes installation costs and maximizes possible locations for this flexible rooftop unit.

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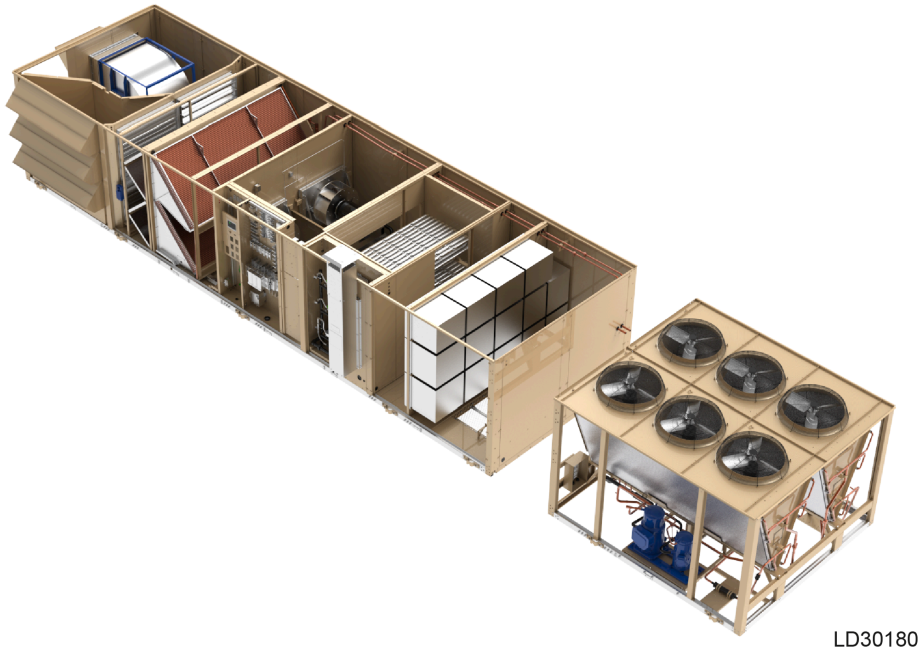
13. Split ship

Premier 90 ton to 150 ton units are provided with either a two-piece or three-piece split ship option, to meet specific applications where there is constraint for using a higher capacity crane due to unfavorable ground conditions or maneuvering space for the crane to make a safe lift.

Split ship units are factory tested, pre-charged with refrigerant and delivered to the job site split in two segments, air handling and condenser section, or three segments, economizer air handling, evaporator air handling, and condenser section, for an easy lift and seamless integration between power and refrigeration connections.

Units which are shipped split are intended to be reconnected into one on a common curb.

Figure 9: Split ship option (two-piece example shown)



Nomenclature for 90 ton to 150 ton unit

Table 1: Example model number

GZ	K	A	C	4	B	5	G	A	1	A	6	0	D	D	2	0	2	B	J	2	A	2	G	2	C	0	E	0	D	A	A	A	0	1	0	0	1	A	0	0	0	L	E	0	0	0	1
1,2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

Note: The first row displays an example model number. The second row displays the corresponding digit.

Digit	Category	Option	Description
1,2	Product brand name	GZ	YORK
3	Nominal capacity / Basic unit	K	90 ton
		L	105 ton
		M	120 ton
		N	130 ton
		P	150 ton
4	Efficiency level	A	Standard capacity, standard efficiency
		B	Standard capacity, high efficiency
		C	High capacity, standard efficiency
		D	Standard capacity, standard efficiency, low sound
		E	Standard capacity, high efficiency, low sound
		F	High capacity, standard efficiency, low sound
5	Heat source	A	Cooling only
		B	Staged gas aluminized burner
		C	Staged gas stainless steel burner
		G	Modulating gas stainless steel burner
		K	Steam coil
		L	Hot water coil
		M	Electric heat
6A	Electric heat capacity	0	None
		1	Low heat
		3	High heat
		4	Low heat with Silicon Controlled Rectifier (SCR)
		6	High heat with SCR
6B	Natural gas heat capacity	0	None
		4	1000 MBH
		6	1500 MBH
		8	2000 MBH
		9	2500 MBH
6C	Hot water or steam heating coil option	0	None
		1	Low heat without valves
		2	High heat without valves
		3	High heat without valves
		4	High heat with valves
7	Unit type	A	Single Zone VAV (SZVAV) no duct pressure transducer
		B	Variable Air Volume (VAV) duct pressure transducer
8	Motor control options	1	Supply fan only with variable frequency drive (VFD)
		2	Supply fan VFD and line reactor
		3	Supply fan VFD with bypass (redundant VFD)
		4	Supply fan with bypass (redundant VFD) and line reactor
		5	Supply fan VFD and return/exhaust fan VFDs
		6	Supply fan VFDs with line reactor and return/exhaust fan VFD
		7	Supply fan VFD and return/exhaust fan VFD, with bypass (redundant VFD) for supply fan, and return or exhaust fan
		8	Supply fan VFD with line reactor and return/exhaust fan VFD with line reactors, with bypass (redundant VFD) for supply fan, and return or exhaust fan

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Digit	Category	Option	Description
9	Voltage	G	460 V 3Ph 60 Hz, single point terminal block
		H	460 V 3Ph 60 Hz, dual point terminal block
		J	460 V 3Ph 60 Hz, single point, non-fused disconnect
		K	460 V 3Ph 60 Hz, single point terminal block, 65KA SCCR
		L	460 V 3Ph 60 Hz, dual point terminal block, 65KA SCCR
		M	460 V 3Ph 60 Hz, single point fused disconnect, 65KA SCCR
		N	575 V 3Ph 60 Hz, single point terminal block
		P	575 V 3Ph 60 Hz, dual point terminal block
		Q	575 V 3Ph 60 Hz, single point non-fused disconnect
		R	575 V 3Ph 60 Hz, single point terminal block, 65 KA SCCR
		S	575 V 3Ph 60 Hz, dual point terminal block, 65 KA SCCR
		T	575 V 3Ph 60 Hz, single point fused disconnect, 25KA SCCR
10	Return configuration	A	Bottom return, right Outside Air (OA), side exhaust
		B	Bottom return, right OA, front exhaust
		C	Bottom return, left OA, side exhaust
		D	Bottom return, left OA, front exhaust
		E	Top return, right OA, side exhaust (no return fan available)
		F	Top return, right OA, front exhaust (no return fan available)
		G	Top return, left OA, side exhaust (no return fan available)
		H	Top return, left OA, front exhaust (no return fan available)
		J	Left return, right OA, front exhaust
		K	Right return, left OA, front exhaust
		L	Front return, left OA, right exhaust
		M	Front return, right OA, left Exhaust
		N	Bottom return, no OA, no exhaust air (EA) (no return fan or exhaust fan available)
		P	Top return, no OA, no EA (no return fan or exhaust fan available)
		Q	Left return, no OA, no EA (no return fan or exhaust fan available)
		R	Right return, no OA, no EA (no return fan or exhaust fan available)
		S	Front return, no OA, no EA (no return fan or exhaust fan available)
11	Discharge locations	1	Bottom discharge, from discharge plenum
		2	Bottom discharge, discharge through heat section
		3	Top discharge, from discharge plenum
		4	Right discharge, from discharge plenum
		5	Left discharge, from discharge plenum
		6	Left discharge, discharge through heat section
12	Supply configuration	A	None
		B	Small blank
		C	Large blank
		E	Large blank with final filter
		F	Small blank with humidifier with stainless steel drain pan
		H	Large blank with humidifier with stainless steel drain pan
		L	Small blank with sound attenuator
		M	Large blank with sound attenuator
		P	Small blank with final filter
		Q	Large blank with sound attenuator and final filter
		S	Large blank with sound attenuator and humidifier and stainless steel drain pan
13	Final filter options	1	MERV 15 bag final filters with 2 in. MERV 8 filters
		2	MERV 14 rigid final filters with 2 in. MERV 8 filters
		3	MERV 17 HEPA final filters with 2 in. MERV 8 filters
		4	MERV 14/15 filter rack with 2 in rack (no filters)
		5	HEPA filter rack (no filters)
		6	None

Digit	Category	Option	Description
14	Final filter control options	0	None
		1	Combined pre and post filter transducer
		2	Separate pre and post filter transducer
		3	Combined pre and post filter transducer and combined magnehelic gauge
		4	Separate pre and post filter transducer and magnehelic gauge
		5	Combined pre and post filter magnehelic gauge
		6	Separate pre and post filter magnehelic gauge
		7	Combined pre and post filter transducer, separate pre and post filter magnehelic gauge
15	Supply fan	D	Dual direct drive plenum supply fans with 1 in. spring isolation
		E	Dual direct drive plenum supply fans with 2 in. spring isolation
		F	Dual direct drive plenum supply fans with 2 in. spring isolation and seismic restraint
16	Supply fan motor HP	C	10 HP x 2
		D	15 HP x 2
		E	20 HP x 2
		F	25 HP x 2
		G	30 HP x 2
		H	40 HP x 2
		J	50 HP x 2
		K	60 HP x 2
17	Supply fan motor type	2	ODP premium efficiency 1800 rpm
		4	TEFC premium efficiency 1800 rpm
18	Supply fan options	0	None
		1	Inlet guard
		2	Airflow measurement station
		3	Shaft grounding ring
		4	Inlet guard and airflow measurement station
		5	Inlet guard and shaft grounding
		6	Airflow measurement station and shaft grounding
		7	Shaft grounding, inlet guard and airflow measurement station
19	Building pressure control	0	None
		1	Barometric damper
		2	Exhaust with VFD and backdraft damper
		3	Modulating damper (on/off exhaust fan only with no VFD)
		4	Modulating damper (return fan only with VFD)
20	Return/exhaust fan	A	None
		B	Exhaust fan with 1 in. spring isolation
		C	Exhaust fan with 2 in. spring isolation
		D	Exhaust fan with 2 in. spring isolation and seismic restraint
		H	DDP return fan with 1 in. spring isolation
		J	DDP return fan with 2 in. spring isolation
		K	DDP return fan with 2 in. spring isolation and seismic restraint
21	Return/exhaust fan motor	A	None
		G	7.5 HP
		H	10 HP
		J	15 HP
		K	20 HP
		L	25 HP
		M	30 HP
		N	40 HP
		P	50 HP
		Q	60 HP
		R	75 HP

Digit	Category	Option	Description
22	Return/exhaust fan motor type	0	None
		1	ODP premium efficiency 1200 rpm
		2	ODP premium efficiency 1800 rpm
		3	TEFC premium efficiency 1200 rpm
		4	TEFC premium efficiency 1800 rpm
23	Return/exhaust fan options	A	None
		B	Shaft grounding ring
		C	Extended grease lines
		D	Extended grease lines and shaft grounding
		E	Belt guards
		F	Belt guards and shaft grounding
		G	Return fan airflow measurement station
		H	Return fan airflow measurement station and shaft grounding
		J	Extended grease lines and belt guards
		K	Extended grease lines and belt guards and shaft grounding
24	Return/exhaust fan drive	0	None
		1-9	rpm
		A-Z	Hz
25	Evaporator options	G	Aluminum fin evaporator with stainless steel drain pan
		H	Aluminum fin evaporator with stainless steel drain pan with condensate overflow switch
		J	E-coat aluminum fin evaporator with stainless steel drain pan
		K	E-coat aluminum fin evaporator with stainless steel drain pan with condensate overflow switch
		L	Copper fin evaporator with stainless steel drain pan
		M	Copper fin evaporator with stainless steel drain pan with condensate overflow switch
26	Condenser coil options	2	With wire guards
		3	Full louvered panels
		4	Partial louvered panels, with wire guards
		6	E-coat condenser, with wire guards
		7	E-coat condenser, full louvered panels
		8	E-coat condenser, partial louvered panels, with wire guards
27	Pre-evap filter options	A	Angled filter rack - no filters
		B	Angled filter rack - 2 in. throwaway filters
		C	Angled filter rack - 2 in. MERV 8 filters
		D	Rigid filter rack - no filters
		E	Rigid filter rack - MERV 15 bag filters with 2 in. MERV 8 pre filters
		F	Rigid filter rack - MERV 14 rigid filters with 2 in. MERV 8 pre filters
		G	Vertical filter rack - no filters
		H	Vertical filter rack - 4 in. MERV 8 filters
28	Pre-evap filter control options	0	None
		1	Combined pre and post filter transducer
		2	Separate pre and post filter transducer
		3	Combined pre and post filter transducer and combined magnehelic gauge
		4	Separate pre and post filter transducer and magnehelic gauge
		5	Combined pre and post filter magnehelic gauge
		6	Separate pre and post filter magnehelic gauge
		7	Combined pre and post filter transducer, separate pre and post filter magnehelic gauge

Digit	Category	Option	Description
29	Economizer options	A	None
		K	Dry bulb economizer, ultra low leak dampers
		L	Single enthalpy economizer, ultra low leak dampers
		S	Dual enthalpy economizer, ultra low leak dampers
		T	Dry bulb economizer, ultra low leak dampers with airflow measurement station
		U	Single enthalpy economizer, ultra low leak dampers with airflow measurement station
		V	Dual enthalpy economizer, ultra low leak dampers with airflow measurement station
30	Energy recovery options	0	None
		1	Low CFM Energy Recovery Wheel (ERW) without VFD
		2	Low CFM ERW with VFD
		3	High CFM ERW without VFD
		4	High CFM ERW with VFD
31	Refrigeration system piping options	D	Suction, discharge, and liquid valves with replaceable core filter driers
		H	Suction, discharge, and liquid valves with replaceable core filter driers with HGRH
		R	Suction, discharge, and liquid valves with replaceable core filter driers with E-Coat HGRH
32	Lights/ detectors/convenience options	A	None
		B	Convenience outlet
		C	Convenience outlet and internal lights
		D	Supply smoke detector
		E	Return smoke detector
		F	Supply and return smoke detector
		G	Convenience outlet with supply smoke detector
		H	Convenience outlet with return smoke detector
		J	Convenience outlet with supply and return smoke detectors
		K	Convenience outlet and internal lights with supply smoke detector
		L	Convenience outlet and internal lights with return smoke detector
		M	Convenience outlet and internal lights with supply and return smoke detectors
33	Controls options	A	None
		B	Low ambient
		D	Subcool and superheat measurement
		E	Low ambient with subcool and superheat measurement
		F	With Verasys
		G	Low ambient with Verasys
		H	Subcool and superheat measurement with Verasys
		I	Low ambient with subcool and superheat measurement with Verasys
34	User interface options	C	BACnet MSTP, Modbus, N2 with Connected Workflow Wireless Converter (CWCVT)
		D	CWCVT with BACnet IP
		E	BACnet MSTP, Modbus, N2 with CWCVT, Touch Screen, CEG
		F	Touch Screen with CEG, CWCVT, BACnet IP
		Q	BACnet MSTP, Modbus, N2 with CWCVT and CTB
		R	CWCVT with BACnet IP and CTB
		S	BACnet MSTP, Modbus, N2 with CWCVT, Touch Screen, CEG, with CTB
		T	Touch Screen with CEG, CWCVT, BACnet IP, with CTB
35	IAQ options	4	Refrigerant detection system (RDS)
		5	UV lights and RDS
		6	CO_2 sensors (demand controlled ventilation) and RDS
		7	UV lights, CO_2 sensors (demand controlled ventilation) and RDS

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Digit	Category	Option	Description
36	Gas heat shipped loose kits	0	None
		1	Gas heat, side penetration
		2	Gas heat, bottom penetration
		3	Gas heat, high altitude kit natural gas (NG), side penetration
		4	Gas heat, high altitude kit NG, bottom penetration
37	Security options	0	None
		1	Supply and return opening burglar bars
		2	Supply opening burglar bars
		3	Return opening burglar bars
38	Door options	0	None
		1	Viewport
		2	Single handle with padlock
		3	Single handle with padlock and viewport
39	Cabinet shipping options	1	Single piece construction
		2	Two piece construction
		3	Three piece construction
40	Curb options	A	No roof curb
		B	Full perimeter curb
		C	Pedestal curb
41	Pre-evap options	0	None
		1	Blank pre-evap extension, no air blender
		3	Blank pre-evap extension with air blender
42	Shipped loose options	0	None
		1	Spare belts for return/exhaust
43	Construction standard	0	None
44	Supply fan VFD frequency	F	56 Hz
		G	54 Hz
		H	52 Hz
		J	50 Hz
		K	48 Hz
		L	46 Hz
		M	44 Hz
		N	42 Hz
		P	40 Hz
		Q	38 Hz
		R	36 Hz
		S	34 Hz
		T	32 Hz
		U	30 Hz
		V	28 Hz
		W	26 Hz
		X	24 Hz
		Y	22 Hz
		Z	20 Hz
45	Supply fan brake horsepower (each motor)	C	5 HP
		D	7.5 HP
		E	10 HP
		F	15 HP
		G	20 HP
		H	25 HP
		J	30 HP
		K	40 HP
		L	50 HP
		M	60 HP

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Digit	Category	Option	Description
46	Return fan brake horsepower	D	5 HP
		E	7.5 HP
		F	10 HP
		G	15 HP
		H	20 HP
		J	25 HP
		K	30 HP
		L	40 HP
		M	50 HP
		N	60 HP
		P	75 HP
47	Future 4	0	None
48	Testing and special requests	0	None
		T	Record test report
		M	Mechanical special request (SR)
		1	Mechanical SR and record test report
		S	Software SR
		3	Software SR and record test report
		B	Mechanical and software SR
		5	Mechanical and software SR and test report
49	Generation/revision level	1	First generation

Selection procedure examples

Given:	
Required cooling capacity	970 MBtuh
Required sensible cooling	600 MBtuh
Required heating	800 MBtuh
Entering air on evaporator	80.0°F dry bulb (DB)/ 67.0°F wet bulb (WB)
Outside design temperature	95.0°F
Supply fan CFM	25,000 CFM
External static pressure (ESP)	3.5 iwg
Electrical supply voltage	460-3-60
Economizer required	
2 in. throwaway filters	
Variable air volume (VAV)	

Calculating cooling and heating capacity

1. Assume that the required cooling capacity and required sensible capacity include the space load requirements, as well as the ventilation load requirements.
2. Determine the nominal unit size. Using Table 12 at design conditions of 80/67 and 25,000 CFM, we can determine capacity is 1,050 MBtuh total and 703 MBtuh sensible. Therefore, use 90 ton nominal unit size standard efficiency as a starting point.
3. Calculate the supply fan motor heat Btuh addition.
   a. See Supply fan speed and horsepower requirements to determine the horsepower (HP) of the supply fans. The example (using) is based on a 1,077 RPM and 24.9 BHP (two fans at 15 nameplate motor HP each when we apply the UL60335 VFD limited direct drive fan requirements) fan requirement.

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b. Calculate sensible Btuh addition as a result of the supply fans HP:
   Supply fan sensible Btuh addition = 24.9 HP x 2,750 = 68,475 Btuh
   where 2,750 = constant for motor heat calculation
c. Required capacity = Total load + supply fan motor heat:
   970 MBH + 68.47 MBH = 1,038.47 MBH (86.5 tons)
   Therefore our selection of 90 tons nominal from Table 12 is valid.

4. We can now use the capacity data from Table 12 to calculate the unit leaving air temperature.
   a. Unit sensible heat capacity corrected for supply air fan motor heat:
      703 MBH - 68.47 MBH = 634.53 MBH
   b. Supply air dry bulb temperature difference:

$$\frac{Sensible\ \ Btu}{(1.085)\ \ (Supply\ \ CFM)} = \frac{634.53\ \ MBtuh}{(1.085)\ \ (25{,}000)} = 23.39°F$$

      Supply air dry bulb:
      80°F - 23.39°F = 56.61°F
   c. We can use the unit enthalpy delta to find the leaving wet bulb temperature:

$$\frac{Total\ \ Btu}{(4.5)\ \ (Supply\ \ CFM)} = \frac{1{,}050\ \ MBtuh}{(4.5)\ \ (25{,}000)} = 9.3\ \ \text{Btu/lb}$$

      From a psychometric chart:
      - entering enthalpy of 80/67 is 31.5 Btu/lb
      - leaving air enthalpy = 31.5 Btu/lb - 9.3 Btu/lb = 22.2 Btu/lb

   From the psychometric chart, 22.2 Btu/lb enthalpy is a wet bulb of 53.1°F, so the unit LAT is 56.61°F DB and 53.1°F WB.
5. For gas heating capacity, see Table 85:
   a. Trace down to the maximum output capacity (MBH) column.
   b. Find the output that exceeds the 800 MBtuh requirement.
      The 1,000 MBH output meets this requirement.
   c. This option is available on the 90 ton unit.
      From the nomenclature, select digit 5, option B for staged gas, option C for staged gas with stainless steel burner, or option G for modulating gas with stainless steel burner.
      From digit 6B, select option 4 for 1,000 MBH. The resulting model number shows C4 for digits 5 and 6, assuming staged gas with stainless steel burner was selected.
6. For electric heating capacity, see Table 86.
   a. Trace down to the heat capacity (MBH) column.
   b. Find the output that exceeds the 800 MBtuh requirement at the given 460-3-60 voltage.
      The 280 kW output exceeds this requirement.
   c. This option is available on the 90 ton unit.
      From the nomenclature, select digit 5, option M for electric heat.
      From digit 6A, select either option 3 with high staged electric heat or option 6 with high silicon controlled rectifier (SCR) electric heat. The resulting model number shows M6 for digits 5 and 6, assuming high SCR electric heat was selected.

Supply fan speed and horsepower requirements

1. See for the 90 ton unit.

a. Make any necessary additions to the static resistance for the ductwork. See and subsequent tables for component static pressure drops (iwg):

Ductwork static resistance/ESP	2.0 iwg
+ return duct static pressure (assumed)	0.375 iwg
+ economizer static resistance addition	0.235 iwg
+ bottom supply air opening resistance addition	0.055 iwg
+ wet evaporator coil standard capacity static resistance addition	0.46 iwg
+ gas heat (1,000 MBH)	0.32 iwg
+ throwaway filters	0.055 iwg
Total Static Resistance (TSP)	3.50 iwg

b. Enter at 25,000 CFM and 3.5 iwg TSP:

RPM = 1,077

BHP = 24.90

2. From the nomenclature, select:

- digit 15, option D to opt for direct drive plenum (DDP) supply fan with 1 in. spring isolation
- digit 16, option D for 30 HP supply fan motor
- digit 17, option 2 for ODP premium efficiency, 1,800 RPM

Exhaust fan speed and horsepower requirements

1. See for the 90 ton unit. In the following example, a unit is designed for exhaust air capacity of 24,000 CFM.

a. Make any necessary additions to the static resistance. To find the exhaust air damper pressure drop, see .

Return duct static pressure (assumed)	0.50 iwg
+ exhaust air damper pressure drop	0.75 iwg
TSP	1.25 iwg

b. Enter at 24,000 CFM and 1.25 iwg TSP:

RPM = 1,017 (interpolated)

BHP = 14.4 (interpolated)

2. From the nomenclature, select:

- digit 19, option 2 for exhaust with variable frequency drive (VFD) and backdraft damper
- digit 20, option B for the exhaust fan with 1 in. spring isolation
- digit 21, option J for 15 HP exhaust fan motor

The resulting model number shows 2BJ for digits 19, 20, and 21.

Example model number

The following model number is an example based on the options selected in the previous sections.

Table 2: Example model number

GZ	K	A	C	4	B	5	G	A	1	A	6	0	D	D	2	0	2	B	J	2	A	2	G	2	C	0	E	0	D	M	A	A	6	1	0	0	1	A	0	0	0	L	F	0	0	0	1
1,2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

Note: The first row displays an example model number. The second row displays the corresponding digit.

Table 3: Model nomenclature description

Digit	Option	Description
3	K	Capacity 90 ton
4	A	Standard capacity, standard efficiency
5	C	Staged gas stainless steel
6	4	1,000 MBH
7	B	Variable air volume
8	5	Supply fan with VFD and return and exhaust fan with VFD
9	G	460 V 3Ph 60 Hz, single point terminal block
15	D	Dual direct drive plenum supply fans with 1 in. spring isolation
16	D	Supply fan motors, 15 HP x 2
17	2	Supply fan motor type, ODP premium efficiency 1,800 RPM
19	2	Exhaust fan with VFD and backdraft damper
20	B	Forward curved exhaust fan with 1 in. spring isolation
21	J	Exhaust fan motor, 15 HP
22	2	Exhaust fan motor type, ODP premium efficiency 1,800 RPM
27	C	Pre-evaporator filter, angled filter rack, 2 in. MERV 8 filters
29	E	Dual enthalpy economizer, low leak dampers
31	D	Suction, discharge, and liquid line valves with replaceable core filter driers
32	M	Convenience outlet and internal lights with supply and return smoke detectors
35	6	Carbon dioxide (CO_2) sensors - demand controlled ventilation and RDS
49	1	First generation

Physical data - 90 to 150 ton

Table 4: Physical data - 90 ton to 150 ton unit

Unit size	90 ton	105 ton	120 ton	130 ton	150 ton
Compressor data - standard capacity, standard efficiency					
Quantity / size (nominal HP)	1/20, 1/20, 1/20, 1/20	1/15, 1/24, 1/24, 1/30	1/20,1/20, 1/30, 1/30	1/24, 1/30, 1/30, 1/30	1/24, 1/30, 1/39, 1/39
Type	Scroll				
Capacity steps	4	9	8	7	11
Number of circuits	2				
Compressor data - high capacity, standard efficiency					
Quantity / size (nominal HP)	1/15,1/20,1/20,1/30	1/24,1/24,1/24,1/30	1/20,1/24,1/24,1/39	1/20,1/20,1/39,1/39	1/30,1/39,1/39,1/39
Type	Scroll				
Capacity steps	9	7	9	8	7
Number of circuits	2				
Compressor data - standard capacity, high efficiency					
Quantity / size (nominal HP)	1/15, 1/20, 1/27, 1/30	1/24, 1/24, 1/27, 1/30	1/15, 1/27, 1/30, 1/39	1/20, 1/27, 1/30, 1/39	1/27, 1/30, 1/39, 1/39
Type	Variable speed drive scroll				
Capacity steps	15-100%				
Number of circuits	2				
Supply fan					
Quantity of fans / motors	2/2				
Type	Direct-driven plenum				
Size (in.)	33	33	36.5	36.5	36.5
Motor size range (min to max HP)	10-50	10-50	20-60	20-60	20-60
Airflow range (min to max CFM)	18000-45000	21000-45000	24000-48000	26000-52000	30000-60000
Total static pressure range (min to max iwg)	1.0-8.3				
Return fan					
Quantity of fans / motors	1				
Type	Direct-driven plenum				
Size (in.)	40.2	44.5	44.5	49	49
Motor size range (min to max HP)	10-40 HP	10-50 HP	10-60 HP	10-75 HP	10-75 HP
Airflow range (min to max CFM)	18,000-36,000	21,000-45,000	24,000-48,000	26,000-52,500	30,000-60,000
Total static pressure range (min to max iwg)	0.5-3.5				
Exhaust fan					
Quantity of fans / motors	1				
Type	Belt-driven forward curved				
Size (in.)	30	36.5	36.5	40.2	40.2
Motor size range (min to max HP)	7.5-50	7.5-50	10-75	10-75	10-75
Airflow range (min to max CFM)	18,000-36,000	21,000-45,000	24,000-48,000	26,000-52,500	30,000-60,000
Total static pressure range (min to max iwg)	0.5-3.5				
Condenser Fan					
Quantity	6	6	9	9	9
Type	Propeller				
Size (diameter in in.)	36				
Power (HP)	2				

Table 5: Physical data - 90 ton to 150 ton unit - continued

Unit size	90 ton	105 ton	120 ton	130 ton	150 ton
Evaporator coil - standard capacity, standard efficiency					
Size (sq. ft.)	75	75	111	111	111
Number of rows/fins per in.	4/15	6/15	5/14	5/14	5/14
Size (tube diameter in in.)	3/8	3/8	1/2	1/2	1/2
Evaporator coil - high capacity, standard efficiency					
Size (sq. ft.)	75	75	111	111	111
Number of rows/fins per in.	6/15	6/15	6/14	6/14	6/14
Size (tube diameter in in.)	3/8	3/8	1/2	1/2	1/2
Evaporator coil - standard capacity, high efficiency					
Size (sq. ft.)	75	75	111	111	111
Number of rows/fins per in.	4/15	5/15	5/14	5/14	6/14
Size (tube diameter in in.)	3/8	3/8	1/2	1/2	1/2
Hot Gas Reheat (HGRH) Coil					
Coil type	Microchannel				
Control type	Modulating				
Size (area in sq. ft. / thickness in in.)	37 / 1	37 / 1	53 / 1	53 / 1	53 / 1
Number of rows/fins per in.	1 / 23				
Minimum outside air (OA) temperature for mechanical cooling	45.0 °F				
Low Ambient Option Minimum OA Temperature for Mechanical Cooling	-10.0 °F				
Condenser coil - standard capacity, standard efficiency					
Size (sq. ft.)	225	225	338	338	338
Number of rows/fins per in.	1 / 23				
Size (thickness in in.)	1				
Type	Microchannel				
Condenser coil - high capacity, standard efficiency					
Size (sq. ft.)	225	225	338	338	338
Number of rows/fins per in.	1 / 23				
Size (thickness in inches)	1				
Type	Microchannel				
Condenser Coil - Standard Capacity, High Efficiency					
Size (sq. ft.)	225	225	338	338	338
Number of rows/fins per in.	1 / 23				
Size (thickness in in.)	1				
Type	Microchannel				
Energy recovery wheel - High CFM					
Cassette dimensions (LxWxH in in.)	104 x 10 x 104	104 x 10 x 104	108 x 14 x 108	108 x 14 x 108	108 x 14 x 108
Wheel segments	16				
Motor (V, ph, Hz)	460/3/60, 575/3/60				
Horsepower (HP)	1				
Filter type	2-in. MERV 8 Pleated				
RA filters - size (number)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3), 16 x 25 (2)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3), 16 x 25 (2)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3), 16 x 25 (2)
OA filters - size (number)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3), 16 x 25 (2)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3), 16 x 25 (2)	14 x 20 (9), 14 x 25 (6) 16 x 20 (3),16 x 25 (2)

Table 6: Physical data - 90 ton to 150 ton unit - continued

Unit size	90 ton	105 ton	120 ton	130 ton	150 ton
Energy recovery wheel - Low CFM					
Cassette dimensions (LxWxH in in.)	85 x 7.07 x 85	85 x 7.07 x 85	104 x 10 x104	104 x 10 x 104	104 x 10 x 104
Wheel segments	8	8	16	16	16
Motor (V, ph, Hz)	460/3/60, 575/3/60				
Horsepower (HP)	1/3	1/3	1	1	1
Filter type	2-in. MERV 8 Pleated				
RA filters - size (number)	20 x 24 (6) 20 x 20 (2)	20 x 24 (6) 20 x 20 (2)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)
OA filters - size (number)	20 x 24 (6) 20 x 20 (2)	20 x 24 (6) 20 x 20 (2)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)	14 x 20 (10) 12 x 20 (10)
Electric heat (460V/575V)					
Size range - low/high (kW)	140/280	140/280	210/350	210/350	210/350
Heating steps - low/high	4/8	4/8	6/10	6/10	6/10
SCR (Modulating heat)	Available				
Gas Furnace					
Staged furnace sizes (input/output/stages)	1000 / 810 / 4		1500 / 1215 / 6		
	1500 / 1215 / 6		2000 / 1620 / 8		
	2000 / 1620 / 8		2500 / 2025 / 10		
Airflow range (min to max CFM)	18,000 - 42,000		24,000 - 60,000		
Gas heat steady state efficiency (SSE)	81%				
Modulating furnace sizes (input/output/turndown)	1000 / 810 / 20:1		1500 / 1215 / 30:1		
	1500 / 1215 / 30:1		2000 / 1620 / 40:1		
	2000 / 1620 / 40:1		2500 / 2025 / 50:1		
Hot water coil					
Coil tube diameter (inches)	5/8				
Material	Copper tube / aluminum fin				
Fins per in. - low/high	11/10	11/10	13/10	13/10	8/10
Size (H x L in in.) / rows - low heat	(60.5 x 105) / 1	(60.5 x 105) / 1	(60.5 x 105) / 1	(60.5 x 105) / 1	(60.5 x 105) / 2
Size (H x L in in.) / Rows - high heat	(60.5 x 105) / 2	(60.5 x 105) / 2	(64.5 x 105) / 2	(64.5 x 105) / 2	(64.5 x 105) / 2
Steam coil					
Coil tube diameter (in.)	1	1	1	1	5/8
Material	Copper tube / aluminum fin				
Fins per in. - Low/high	8/12	8/12	10/10	10/10	12/10
Size (H x L in in.) / Rows - low heat	(60 x 105) / 1	(60 x 105) / 1	(60 x 105) / 1	(60 x 105) / 1	(60 x 105) / 2
Size (H x L in in.) / Rows - high heat	(60 x 105) / 1	(60 x 105) / 1	(67.5 x 110) / 1	(67.5 x 110) / 1	(67.5 x 110) / 1
Draw-through - 2-in. throwaway angled filters					
Quantity	42				
Size (L x W in in.)	20 X 20				
Total filter face area (sq. ft.)	112.33				
Draw-through - 2-in. MERV 8 angled filters					
Quantity	42				
Size (L x W in in.)	20 x 20				
Total filter face area (sq. ft.)	110.91				

Table 7: Physical data - 90 ton to 150 ton unit - continued

Unit size		90 ton	105 ton	120 ton	130 ton	150 ton
Draw-through - MERV 15 bag filters with 2-in. MERV 8 pre-filters						
Pre-filters	Quantity	28	28	14 / 14	14 / 14	14 / 14
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	73.94	73.94	83.42	83.42	83.42
Bag filters	Quantity	28	28	14 / 14	14 / 14	14 / 14
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	73.00	73.00	82.41	82.41	82.41
Draw-through - MERV 14 rigid filters with 2-in. MERV 8 pre-filters						
Pre-filters	Quantity	28	28	14 / 14	14 / 14	14 / 14
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	73.94	73.94	83.42	83.42	83.42
Rigid filters	Quantity	28	28	14 / 14	14 / 14	14 / 14
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	73.00	73.00	82.41	82.41	82.41
Draw-through - vertical 4-inch MERV 8 filters						
Quantity		28	28	14 / 14	14 / 14	14 / 14
Size (length x width) (in.)		20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
Total filter face area (sq. ft.)		73.94	73.94	83.42	83.42	83.42
Final filters - MERV 15 bag filters with 2-in. pre-filters						
Pre-filters	Quantity	26	26	14 / 12	14 / 12	14 / 12
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	68.66	68.66	78.14	78.14	78.14
Bag filters	Quantity	26	26	14 / 12	14 / 12	14 / 12
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	67.78	67.78	77.20	77.20	77.20
Final filters - MERV 14 rigid filters with 2-in. pre-filters						
Pre-filters	Quantity	26	26	14 / 12	14 / 12	14 / 12
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	68.66	68.66	78.14	78.14	78.14
Rigid Filters	Quantity	26	26	14 / 12	14 / 12	14 / 12
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	67.78	67.78	77.20	77.20	77.20

Table 8: Physical data - 90 ton to 150 ton unit - continued

Unit size		90 ton	105 ton	120 ton	130 ton	150 ton
Final filters - MERV 17 HEPA filters with 2-in. pre-filters						
Pre-filters	Quantity	26	26	14 / 12	14 / 12	14 / 12
	Size (L x W, in.)	20 x 20	20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20	25 x 20 / 20 x 20
	Total filter face area (sq. ft.)	68.66	68.66	78.14	78.14	78.14
HEPA filters	Quantity	20 / 8	20 / 8	20 / 8	20 / 8	20 / 8
	Size (L x W, in.)	23.38 x 19.38 23.38 x 11.38	23.38 x 19.38 23.38 x 11.38	23.38 x 19.38 23.38 x 11.38	23.38 x 19.38 23.38 x 11.38	23.38 x 19.38 23.38 x 11.38
	Total filter face area (sq. ft.)	77.67	77.67	77.67	77.67	77.67

Note: HEPA filter sizes shown are actual, all other filters are nominal. Some components listed are optional.

Capacity performance

Altitude and temperature correction factors

Table 9: Altitude and temperature correction factors

Air temp (°F)	Altitude (ft)										
	0*	1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000
40	1.060	1.022	0.986	0.950	0.916	0.822	0.849	0.818	0.788	0.758	0.729
50	1.039	1.002	0.966	0.931	0.898	0.864	0.832	0.802	0.772	0.743	0.715
60	1.019	0.982	0.948	0.913	0.880	0.848	0.816	0.787	0.757	0.729	0.701
70	1.000	0.964	0.930	0.896	0.864	0.832	0.801	0.772	0.743	0.715	0.688
80	0.982	0.947	0.913	0.880	0.848	0.817	0.787	0.758	0.730	0.702	0.676
90	0.964	0.929	0.897	0.864	0.833	0.802	0.772	0.744	0.716	0.689	0.663
100	0.946	0.912	0.880	0.848	0.817	0.787	0.758	0.730	0.703	0.676	0.651

Note:

* Correction factors at sea level to calculate for actual temperature conditions.

The information below must be used to assist in application of product when applied at altitudes equal to or above 1000 ft above sea level.

The following examples assist in determining the airflow performance of Premier units at specific altitudes.

Example 1: What are the corrected cubic ft per minute (CFM), static pressure, and brake horse power (BHP) at an elevation of 5,000 ft if the airflow performance data is 25,000 CFM, 3.5 in. of water gauge (iwg), and 20.0 BHP?

Solution: At an elevation of 5,000 ft, the supply fan still delivers 25,000 CFM if the revolutions per minute (RPM) is unchanged. However, the altitude correction must be used to determine the static pressure and BHP. Since no temperature data is given, we assume an air temperature of 70.0°F. Table 9 shows the correction factor to be 0.832.

Corrected static pressure = 3.5 x 0.832 = 2.91 iwg

Corrected BHP = 20.0 x 0.832 = 16.64

Example 2: A system, located at 5,000 ft of elevation is to deliver 25,000 CFM at a static pressure of 3.5 iwg. Use the unit blower tables to select the RPM, blower speed, and the BHP requirement.

Solution: As in the example above, no temperature information is given, so 70.0°F is assumed.

The 3.5 iwg static pressure given is at an elevation of 5,000 ft. The first step is to convert this static pressure to equivalent sea level conditions.

Sea level static pressure = 3.5 iwg / 0.832 = 4.21 iwg

Enter at 25,000 CFM and static pressure of 4.21 iwg. The RPM listed is the same RPM needed at 5,000 ft.

Using interpolation, the corresponding BHP listed in the table is 30.57. This value must be corrected for elevation.

BHP at 5,000 ft = 30.57 x 0.832 = 25.43

Example 3: Plot fan performance using .

Plot the fan performance at cooling sea level (0 ft) elevation. Design conditions are a 90 ton unit producing 30,000 CFM at 2.5 external static pressure (ESP) with additional static losses for a wet evaporator coil, bottom return air, bottom supply air, outside air, and angled filter rack with 2 in. MERV 8 filters. Refer to onwards for component static pressure drops (iwg)

Wet evaporator coil standard capacity additional static loss = 0.62 iwg

Bottom return air additional static loss = 0.10 iwg

Bottom supply air additional static loss = 0.08 iwg

Outside air additional static loss = 0.16 iwg

Air filter additional static loss = 0.11 iwg

Add the ESP and all additional losses (internal static loss):

ESP loss = 2.5 iwg

Total internal static loss = 1.07 iwg

Total system static = 3.57 iwg

Cooling performance data

Cooling performance data - 90 ton - standard efficiency

Table 10: 90 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,246	735	66	1,244	647	66	1,244	560	66	1,244	473	66	—	—	—	—	—	—	—	—	—
	72	1,141	821	65	1,141	730	65	1,140	650	65	1,138	558	65	1,139	467	65	—	—	—	—	—	—
	67	1,045	909	65	1,045	826	65	1,044	731	65	1,043	647	65	1,042	563	65	1,042	469	65	—	—	—
	62	974	974	64	954	906	64	954	820	64	954	734	64	952	648	64	951	561	64	951	466	64
	57	973	973	64	934	926	63	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,294	789	66	1,294	686	66	1,292	582	66	1,293	479	66	—	—	—	—	—	—	—	—	—
	72	1,189	892	66	1,188	796	66	1,188	689	66	1,186	593	66	1,187	487	66	—	—	—	—	—	—
	67	1,090	992	65	1,090	894	65	1,089	795	65	1,088	696	65	1,086	587	65	1,086	489	65	—	—	—
	62	1,042	1,042	64	996	996	64	998	898	64	997	798	64	995	687	64	994	587	64	993	487	64
	57	1,041	1,041	64	994	994	64	955	939	64	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,344	860	66	1,343	739	66	1,342	617	66	1,342	496	66	—	—	—	—	—	—	—	—	—
	72	1,238	978	66	1,237	866	66	1,236	742	66	1,235	630	66	1,234	506	66	—	—	—	—	—	—
	67	1,137	1,092	65	1,136	988	65	1,135	863	65	1,134	749	65	1,133	623	65	1,132	509	65	—	—	—
	62	1,118	1,118	65	1,067	1,067	65	1,042	979	65	1,041	864	65	1,039	748	65	1,037	633	65	1,035	507	65
	57	1,117	1,117	65	1,066	1,066	65	1,019	1,009	64	977	948	64	952	865	64	952	744	64	950	629	64
33,000	77	1,412	988	67	1,410	832	67	1,408	676	67	1,406	534	67	—	—	—	—	—	—	—	—	—
	72	1,304	1,147	66	1,301	989	66	1,301	846	66	1,299	688	66	1,297	532	67	—	—	—	—	—	—
	67	1,237	1,237	66	1,203	1,143	66	1,200	996	66	1,198	839	66	1,196	694	66	1,193	537	66	—	—	—
	62	1,236	1,236	66	1,177	1,177	65	1,120	1,120	65	1,102	991	65	1,098	846	65	1,096	691	65	1,093	536	65
	57	1,235	1,235	66	1,177	1,177	65	1,119	1,119	65	1,068	1,050	65	1,020	978	64	1,007	849	64	1,006	691	64
36,000	77	1,430	1,030	67	1,429	872	67	1,426	699	67	1,424	541	67	—	—	—	—	—	—	—	—	—
	72	1,322	1,203	66	1,320	1,043	66	1,320	871	66	1,318	711	67	1,315	539	67	—	—	—	—	—	—
	67	1,274	1,274	66	1,221	1,196	66	1,216	1,046	66	1,215	875	66	1,213	716	66	1,210	544	66	—	—	—
	62	1,274	1,274	66	1,212	1,212	66	1,151	1,151	65	1,118	1,040	65	1,116	882	65	1,114	713	65	1,110	555	65
	57	1,272	1,272	66	1,211	1,211	66	1,151	1,151	65	1,095	1,082	65	1,046	1,007	65	1,023	881	65	1,022	720	65
45,000	77	—	—	—	—	—	—	—	—	—	1,463	571	67	—	—	—	—	—	—	—	—	—
	72	1,365	1,365	66	1,362	1,172	67	1,361	966	67	1,359	775	67	1,355	569	67	—	—	—	—	—	—
	67	1,363	1,363	66	1,296	1,296	66	1,259	1,171	66	1,256	980	66	1,254	777	66	1,250	575	67	—	—	—
	62	1,362	1,362	66	1,295	1,295	66	1,229	1,229	66	1,164	1,164	66	1,155	982	66	1,152	784	66	1,148	574	66
	57	1,362	1,362	66	1,294	1,294	66	1,229	1,229	66	1,164	1,164	66	1,109	1,080	65	1,061	982	65	1,059	781	65

Table 11: 90 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,204	710	73	1,203	626	73	1,203	541	73	1,203	457	73	—	—	—	—	—	—	—	—	—
	72	1,103	805	72	1,103	717	72	1,102	628	72	1,101	539	72	1,102	452	73	—	—	—	—	—	—
	67	1,010	889	71	1,010	808	71	1,010	717	71	1,008	635	71	1,007	544	71	1,007	453	71	—	—	—
	62	949	949	71	923	895	70	923	803	70	922	719	70	921	626	70	919	543	70	920	451	70
	57	948	948	71	908	904	70	873	853	70	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,249	775	74	1,248	662	74	1,248	562	74	1,248	462	74	—	—	—	—	—	—	—	—	—
	72	1,148	873	73	1,148	769	73	1,148	677	73	1,146	573	73	1,146	470	73	—	—	—	—	—	—
	67	1,053	980	72	1,053	874	72	1,052	778	72	1,050	672	72	1,049	577	72	1,049	472	72	—	—	—
	62	1,014	1,014	71	968	968	71	964	878	71	963	780	71	961	673	71	960	576	71	959	470	71
	57	1,013	1,013	71	967	967	71	928	914	70	890	860	70	879	774	70	878	671	70	877	573	70

Table 11: 90 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
25,000	77	1,296	842	74	1,295	725	74	1,293	608	74	1,293	479	74	—	—	—	—	—	—	—	—	—
	72	1,193	967	73	1,192	846	73	1,192	727	73	1,191	607	73	1,189	487	74	—	—	—	—	—	—
	67	1,097	1,075	72	1,094	962	72	1,094	842	72	1,094	722	72	1,092	612	73	1,090	491	73	—	—	—
	62	1,088	1,088	72	1,037	1,037	72	1,003	963	71	1,003	842	71	1,001	731	71	1,000	610	71	998	489	72
	57	1,087	1,087	72	1,036	1,036	72	988	981	71	948	921	71	919	844	70	917	725	70	916	606	70
33,000	77	1,358	964	75	1,357	814	75	1,355	664	75	1,353	514	75	—	—	—	—	—	—	—	—	—
	72	1,254	1,116	74	1,253	977	74	1,252	826	74	1,250	675	74	1,248	512	74	—	—	—	—	—	—
	67	1,202	1,202	73	1,156	1,121	73	1,155	982	73	1,153	830	73	1,150	667	73	1,148	516	73	—	—	—
	62	1,201	1,201	73	1,143	1,143	73	1,086	1,086	72	1,059	974	72	1,057	825	72	1,054	675	72	1,052	526	72
	57	1,200	1,200	73	1,142	1,142	73	1,085	1,085	72	1,034	1,019	72	987	948	71	969	827	71	968	674	71
36,000	77	1,375	1,017	75	1,374	852	75	1,371	686	75	1,369	520	75	—	—	—	—	—	—	—	—	—
	72	1,272	1,183	74	1,270	1,016	74	1,269	850	74	1,268	697	74	1,264	531	74	—	—	—	—	—	—
	67	1,236	1,236	74	1,176	1,176	73	1,171	1,019	73	1,169	865	73	1,166	700	73	1,161	534	74	—	—	—
	62	1,235	1,235	74	1,175	1,175	73	1,116	1,116	73	1,077	1,023	72	1,074	859	72	1,071	696	72	1,067	533	73
	57	1,234	1,234	74	1,174	1,174	73	1,115	1,115	73	1,060	1,051	72	1,011	976	72	983	864	71	982	700	71
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,322	1,322	74	1,308	1,151	74	1,308	955	74	1,306	757	75	1,301	560	75	—	—	—	—	—	—
	67	1,321	1,321	74	1,255	1,255	74	1,207	1,159	74	1,206	953	74	1,205	759	74	1,199	552	74	—	—	—
	62	1,320	1,320	74	1,254	1,254	74	1,190	1,190	73	1,126	1,126	73	1,110	955	73	1,106	763	73	1,102	562	73
	57	1,319	1,319	74	1,253	1,253	74	1,189	1,189	73	1,126	1,126	73	1,071	1,045	72	1,019	962	72	1,016	760	72

Table 12: 90 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,157	694	81	1,158	614	81	1,158	521	81	1,158	429	81	—	—	—	—	—	—	—	—	—
	72	1,063	786	80	1,061	701	80	1,061	615	80	1,060	519	80	1,061	435	80	—	—	—	—	—	—
	67	973	876	79	973	788	79	972	700	79	971	612	79	969	523	79	969	436	79	—	—	—
	62	922	922	78	887	870	77	888	790	77	888	701	77	886	612	78	886	523	78	885	434	78
	57	921	921	78	881	878	77	846	830	77	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,201	744	82	1,200	648	82	1,199	552	82	1,199	444	82	—	—	—	—	—	—	—	—	—
	72	1,104	850	81	1,103	750	81	1,103	651	81	1,101	551	81	1,101	452	81	—	—	—	—	—	—
	67	1,012	951	79	1,011	860	79	1,011	758	79	1,010	656	79	1,008	555	79	1,008	453	79	—	—	—
	62	984	984	79	939	939	78	927	853	78	925	759	78	924	656	78	922	553	78	921	451	78
	57	984	984	79	938	938	78	899	886	78	862	834	77	846	753	77	844	652	77	843	551	77
25,000	77	1,243	820	82	1,242	696	82	1,240	583	82	1,241	459	82	—	—	—	—	—	—	—	—	—
	72	1,145	939	81	1,145	824	81	1,143	709	81	1,142	582	81	1,141	468	81	—	—	—	—	—	—
	67	1,055	1,055	80	1,051	946	80	1,050	829	80	1,050	703	80	1,048	587	80	1,046	471	80	—	—	—
	62	1,054	1,054	80	1,004	1,004	79	962	942	79	962	828	79	961	712	79	960	586	79	956	469	79
	57	1,053	1,053	80	1,004	1,004	79	955	952	79	915	893	78	881	824	77	881	710	78	878	589	78
33,000	77	1,300	949	83	1,298	792	83	1,296	648	83	1,295	492	83	—	—	—	—	—	—	—	—	—
	72	1,201	1,105	82	1,199	947	82	1,198	803	82	1,197	646	82	1,195	502	82	—	—	—	—	—	—
	67	1,162	1,162	81	1,106	1,106	81	1,106	951	81	1,105	806	81	1,102	650	81	1,099	494	81	—	—	—
	62	1,161	1,161	81	1,105	1,105	81	1,049	1,049	80	1,015	954	80	1,013	810	80	1,010	656	80	1,007	503	80
	57	1,160	1,160	81	1,104	1,104	81	1,048	1,048	80	997	987	79	951	918	79	928	808	78	927	653	78
36,000	77	—	—	—	—	—	—	—	—	—	1,311	498	83	—	—	—	—	—	—	—	—	—
	72	1,216	1,155	82	1,216	997	82	1,215	838	82	1,213	667	82	1,209	508	82	—	—	—	—	—	—
	67	1,194	1,194	82	1,136	1,136	81	1,120	996	81	1,119	839	81	1,116	670	81	1,112	511	81	—	—	—
	62	1,193	1,193	82	1,135	1,135	81	1,077	1,077	80	1,029	998	80	1,028	843	80	1,025	677	80	1,022	511	80
	57	1,193	1,193	82	1,134	1,134	81	1,077	1,077	80	1,021	1,016	80	974	943	79	942	837	79	940	678	79
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,274	1,274	83	1,251	1,126	82	1,250	925	83	1,248	736	83	1,244	535	83	—	—	—	—	—	—
	67	1,274	1,274	83	1,210	1,210	82	1,156	1,133	81	1,153	934	81	1,151	737	82	1,147	539	82	—	—	—
	62	1,273	1,273	83	1,209	1,209	82	1,147	1,147	81	1,085	1,085	80	1,061	934	80	1,058	740	80	1,053	537	80
	57	1,272	1,272	83	1,209	1,209	82	1,146	1,146	81	1,084	1,084	80	1,029	1,008	80	979	926	79	971	742	79

BHC Group Heating & Cooling

Table 13: 90 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,109	676	90	1,109	588	90	1,109	499	90	1,109	410	90	—	—	—	—	—	—	—	—	—
	72	1,018	764	88	1,017	682	88	1,017	590	88	1,016	508	88	1,016	417	88	—	—	—	—	—	—
	67	932	858	87	932	764	87	932	680	87	931	596	87	929	502	87	929	418	87	—	—	—
	62	893	893	86	852	852	85	852	767	85	851	681	85	850	595	85	849	501	85	849	416	85
	57	892	892	86	851	851	85	817	803	85	784	756	84	777	677	84	776	591	84	775	500	84
21,000	77	1,147	734	90	1,147	631	90	1,146	527	90	1,146	424	90	—	—	—	—	—	—	—	—	—
	72	1,055	833	89	1,054	738	89	1,054	632	89	1,053	537	89	1,052	431	89	—	—	—	—	—	—
	67	967	938	87	968	832	87	967	735	87	966	638	87	965	531	87	964	434	88	—	—	—
	62	952	952	87	907	907	86	886	833	86	886	735	86	884	637	86	883	530	86	881	432	86
	57	951	951	87	907	907	86	867	858	85	831	806	85	809	735	85	808	630	85	807	534	85
25,000	77	1,186	794	91	1,185	675	91	1,184	556	91	1,184	438	91	—	—	—	—	—	—	—	—	—
	72	1,093	918	89	1,093	798	89	1,092	688	90	1,091	567	90	1,089	447	90	—	—	—	—	—	—
	67	1,018	1,018	88	1,002	922	88	1,002	802	88	1,001	691	88	1,001	570	88	999	450	88	—	—	—
	62	1,018	1,018	88	968	968	87	921	921	86	920	809	87	919	689	87	917	568	87	915	448	87
	57	1,017	1,017	88	967	967	87	920	920	86	881	862	86	842	804	85	841	686	85	839	569	85
33,000	77	—	—	—	—	—	—	—	—	—	1,233	469	92	—	—	—	—	—	—	—	—	—
	72	1,145	1,076	90	1,142	925	90	1,142	777	90	1,140	627	90	1,137	478	91	—	—	—	—	—	—
	67	1,118	1,118	90	1,064	1,064	89	1,054	928	89	1,052	778	89	1,051	630	89	1,046	481	89	—	—	—
	62	1,117	1,117	90	1,063	1,063	89	1,009	1,009	88	965	936	87	965	782	88	963	635	88	959	480	88
	57	1,117	1,117	90	1,062	1,062	89	1,008	1,008	88	957	952	87	913	882	86	884	786	86	883	629	86
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,159	1,136	90	1,157	972	90	1,156	809	91	1,155	647	91	1,152	484	91	—	—	—	—	—	—
	67	1,149	1,149	90	1,092	1,092	89	1,067	982	89	1,065	820	89	1,062	648	89	1,059	487	89	—	—	—
	62	1,148	1,148	90	1,092	1,092	89	1,035	1,035	88	980	980	88	979	823	88	977	655	88	972	486	88
	57	1,147	1,147	90	1,091	1,091	89	1,035	1,035	88	980	980	88	934	908	87	896	820	86	895	653	86
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,224	1,224	91	1,189	1,106	91	1,188	903	91	1,186	712	91	1,183	509	91	—	—	—	—	—	—
	67	1,223	1,223	91	1,161	1,161	90	1,101	1,101	90	1,096	910	90	1,094	711	90	1,091	513	90	—	—	—
	62	1,222	1,222	91	1,161	1,161	90	1,100	1,100	90	1,041	1,041	89	1,010	919	88	1,006	714	88	1,002	511	88
	57	1,221	1,221	91	1,160	1,160	90	1,100	1,100	90	1,040	1,040	89	986	971	88	937	888	87	924	713	87

Table 14: 90 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,055	654	99	1,056	570	99	1,055	485	99	1,055	391	99	—	—	—	—	—	—	—	—	—
	72	969	746	97	969	659	97	968	571	97	968	484	97	968	397	97	—	—	—	—	—	—
	67	888	835	95	889	746	96	888	657	96	887	577	96	886	487	96	885	398	96	—	—	—
	62	860	860	95	821	821	94	812	747	94	811	657	94	811	575	94	809	486	94	809	396	94
	57	860	860	95	820	820	94	785	775	93	753	727	93	741	659	93	739	571	93	739	483	93
21,000	77	1,090	709	99	1,090	610	99	1,089	512	100	1,089	403	100	—	—	—	—	—	—	—	—	—
	72	1,002	811	98	1,001	711	98	1,002	611	98	1,001	511	98	1,001	410	98	—	—	—	—	—	—
	67	918	918	96	920	819	96	920	717	96	919	616	96	918	514	96	917	413	96	—	—	—
	62	916	916	96	872	872	95	841	816	95	842	716	95	842	615	95	840	512	95	838	410	95
	57	916	916	96	872	872	95	831	827	94	796	775	94	768	712	93	769	614	93	767	514	93
25,000	77	1,124	775	100	1,124	663	100	1,123	539	100	1,122	426	100	—	—	—	—	—	—	—	—	—
	72	1,037	892	98	1,037	778	98	1,036	663	99	1,035	548	99	1,034	424	99	—	—	—	—	—	—
	67	978	978	97	953	896	97	951	780	97	950	665	97	950	551	97	949	427	97	—	—	—
	62	977	977	97	930	930	96	884	884	95	873	785	95	872	663	95	871	548	95	869	426	96
	57	977	977	97	930	930	96	883	883	95	843	828	95	805	771	94	798	666	94	797	547	94
33,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,082	1,049	99	1,081	908	99	1,081	757	99	1,080	605	99	1,077	452	100	—	—	—	—	—	—
	67	1,071	1,071	99	1,018	1,018	98	999	909	98	996	757	98	994	606	98	991	456	98	—	—	—
	62	1,070	1,070	99	1,018	1,018	98	966	966	97	914	914	96	914	759	96	913	612	96	908	454	96
	57	1,070	1,070	99	1,017	1,017	98	965	965	97	913	913	96	871	845	95	837	759	95	836	610	95
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,100	1,100	99	1,095	952	99	1,094	787	100	1,093	623	100	1,090	458	100	—	—	—	—	—	—
	67	1,099	1,099	99	1,045	1,045	98	1,015	954	98	1,007	796	98	1,005	623	98	1,003	461	98	—	—	—
	62	1,098	1,098	99	1,044	1,044	98	990	990	98	937	937	97	926	797	97	924	628	97	921	470	97
	57	1,097	1,097	99	1,043	1,043	98	989	989	98	936	936	97	891	869	96	848	799	95	847	633	95

BHC Group Heating & Cooling

Table 14: 90 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,122	1,077	100	1,122	887	100	1,121	684	100	1,118	492	100	—	—	—	—	—	—
	67	—	—	—	1,109	1,109	100	1,051	1,051	99	1,036	891	99	1,035	693	99	1,030	495	99	—	—	—
	62	—	—	—	1,108	1,108	100	1,050	1,050	99	993	993	98	955	888	97	951	694	97	947	492	97
	57	—	—	—	1,107	1,107	100	1,050	1,050	99	992	992	98	938	927	97	891	849	96	873	690	96

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 90 ton - high efficiency

Table 15: 90 ton high efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,238	730	67	1,236	642	67	1,236	556	67	1,237	470	67	—	—	—	—	—	—	—	—	—
	72	1,134	817	66	1,134	726	66	1,133	646	66	1,132	555	66	1,132	464	66	—	—	—	—	—	—
	67	1,039	904	66	1,039	821	66	1,037	737	66	1,036	643	66	1,035	559	66	1,035	466	66	—	—	—
	62	969	969	65	946	908	65	948	815	65	947	729	65	946	643	65	945	557	65	945	463	65
	57	968	968	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,287	785	67	1,286	682	67	1,285	578	67	1,285	476	67	—	—	—	—	—	—	—	—	—
	72	1,181	886	67	1,180	791	67	1,179	684	67	1,179	589	67	1,179	483	67	—	—	—	—	—	—
	67	1,082	985	66	1,083	888	66	1,081	789	66	1,080	691	66	1,079	583	66	1,078	485	66	—	—	—
	62	1,036	1,036	65	994	984	65	991	892	65	990	792	65	989	692	65	988	583	65	986	483	65
	57	1,035	1,035	65	989	987	65	950	933	65	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,336	855	68	1,335	734	68	1,334	614	68	1,334	493	68	—	—	—	—	—	—	—	—	—
	72	1,228	970	67	1,229	860	67	1,228	737	67	1,226	625	67	1,226	502	67	—	—	—	—	—	—
	67	1,129	1,095	66	1,129	982	66	1,128	857	66	1,126	743	66	1,125	619	67	1,123	505	67	—	—	—
	62	1,112	1,112	66	1,061	1,061	66	1,034	982	66	1,033	857	66	1,032	743	66	1,030	628	66	1,028	504	66
	57	1,111	1,111	66	1,060	1,060	66	1,013	1,004	65	971	942	65	945	866	65	945	747	65	944	625	65
33,000	77	1,403	982	68	1,403	827	68	1,401	686	68	1,399	531	68	—	—	—	—	—	—	—	—	—
	72	1,295	1,140	67	1,294	983	68	1,292	840	68	1,290	684	68	1,289	528	68	—	—	—	—	—	—
	67	1,231	1,231	67	1,191	1,144	67	1,191	989	67	1,190	845	67	1,188	689	67	1,184	533	67	—	—	—
	62	1,231	1,231	67	1,171	1,171	67	1,113	1,113	66	1,093	994	66	1,092	841	66	1,090	687	66	1,087	532	66
	57	1,230	1,230	67	1,170	1,170	67	1,112	1,112	66	1,061	1,045	66	1,014	972	65	1,001	843	65	999	686	66
36,000	77	—	—	—	—	—	—	1,418	695	68	1,416	538	68	—	—	—	—	—	—	—	—	—
	72	1,314	1,195	68	1,312	1,036	68	1,310	865	68	1,308	706	68	1,305	548	68	—	—	—	—	—	—
	67	1,266	1,266	67	1,214	1,190	67	1,209	1,040	67	1,207	869	67	1,204	711	67	1,201	541	67	—	—	—
	62	1,266	1,266	67	1,205	1,205	67	1,144	1,144	66	1,110	1,043	66	1,108	876	66	1,106	708	67	1,103	551	67
	57	1,265	1,265	67	1,204	1,204	67	1,144	1,144	66	1,088	1,077	66	1,039	1,000	66	1,016	875	66	1,014	714	66
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,363	1,350	68	1,353	1,164	68	1,352	973	68	1,350	769	68	1,345	565	68	—	—	—	—	—	—
	67	1,356	1,356	68	1,289	1,289	67	1,248	1,173	67	1,248	973	67	1,244	772	68	1,240	570	68	—	—	—
	62	1,355	1,355	68	1,288	1,288	67	1,222	1,222	67	1,159	1,159	67	1,148	976	67	1,144	778	67	1,141	582	67
	57	1,354	1,354	68	1,287	1,287	67	1,221	1,221	67	1,157	1,157	67	1,101	1,073	66	1,055	977	66	1,051	777	66

Table 16: 90 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,238	730	67	1,236	642	67	1,236	556	67	1,237	470	67	—	—	—	—	—	—	—	—	—
	72	1,134	817	66	1,134	726	66	1,133	646	66	1,132	555	66	1,132	464	66	—	—	—	—	—	—
	67	1,039	904	66	1,039	821	66	1,037	737	66	1,036	643	66	1,035	559	66	1,035	466	66	—	—	—
	62	969	969	65	946	908	65	948	815	65	947	729	65	946	643	65	945	557	65	945	463	65
	57	968	968	65	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,243	770	75	1,241	670	75	1,241	571	75	1,242	459	75	—	—	—	—	—	—	—	—	—
	72	1,141	867	74	1,140	775	74	1,140	672	74	1,139	569	74	1,139	467	74	—	—	—	—	—	—
	67	1,046	973	73	1,045	868	73	1,045	773	73	1,044	668	73	1,043	573	73	1,042	469	73	—	—	—
	62	1,009	1,009	72	963	963	72	957	871	72	957	775	72	956	669	72	954	572	72	953	467	72
	57	1,008	1,008	72	962	962	72	923	909	71	—	—	—	—	—	—	—	—	—	—	—	—

Table 16: 90 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
25,000	77	1,289	838	76	1,288	721	76	1,286	605	76	1,286	476	76	—	—	—	—	—	—	—	—	—
	72	1,186	961	75	1,185	841	75	1,185	723	75	1,183	603	75	1,182	485	75	—	—	—	—	—	—
	67	1,094	1,072	73	1,088	958	74	1,088	838	74	1,087	728	74	1,085	608	74	1,084	488	74	—	—	—
	62	1,082	1,082	73	1,032	1,032	73	997	967	72	997	847	73	995	726	73	994	606	73	992	486	73
	57	1,081	1,081	73	1,031	1,031	73	983	978	72	942	917	72	912	845	71	912	728	72	911	603	72
33,000	77	—	—	—	—	—	—	1,348	661	76	1,346	511	76	—	—	—	—	—	—	—	—	—
	72	1,247	1,123	75	1,246	972	75	1,245	821	75	1,243	671	75	1,240	509	75	—	—	—	—	—	—
	67	1,194	1,194	74	1,152	1,117	74	1,148	976	74	1,146	825	74	1,143	675	74	1,141	513	75	—	—	—
	62	1,195	1,195	74	1,137	1,137	74	1,080	1,080	73	1,052	978	73	1,051	820	73	1,049	671	73	1,046	523	73
	57	1,194	1,194	74	1,136	1,136	74	1,079	1,079	73	1,028	1,015	73	982	943	72	963	821	72	962	670	72
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,263	1,175	75	1,262	1,010	75	1,261	857	75	1,259	693	76	1,256	528	76	—	—	—	—	—	—
	67	1,230	1,230	75	1,174	1,162	74	1,163	1,024	74	1,161	859	75	1,159	695	75	1,156	532	75	—	—	—
	62	1,229	1,229	75	1,169	1,169	74	1,110	1,110	74	1,067	1,025	73	1,067	854	74	1,065	692	74	1,061	531	74
	57	1,229	1,229	75	1,168	1,168	74	1,109	1,109	74	1,053	1,046	73	1,006	970	73	977	859	72	976	696	73
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,315	1,315	76	1,301	1,145	76	1,299	949	76	1,296	752	76	1,292	556	76	—	—	—	—	—	—
	67	1,314	1,314	76	1,249	1,249	75	1,200	1,152	75	1,199	959	75	1,197	754	75	1,191	548	75	—	—	—
	62	1,313	1,313	76	1,248	1,248	75	1,183	1,183	74	1,120	1,120	74	1,104	961	74	1,100	759	74	1,096	559	74
	57	1,312	1,312	76	1,247	1,247	75	1,183	1,183	74	1,119	1,119	74	1,064	1,041	73	1,016	950	73	1,010	755	73

Table 17: 90 ton high efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,153	692	82	1,151	610	83	1,152	518	83	1,152	426	83	—	—	—	—	—	—	—	—	—
	72	1,058	783	81	1,057	698	81	1,056	613	81	1,055	517	81	1,056	433	81	—	—	—	—	—	—
	67	968	871	80	968	784	80	968	697	80	966	609	80	965	521	80	966	434	80	—	—	—
	62	918	918	79	886	868	78	885	787	79	884	698	79	883	609	79	882	520	79	881	432	79
	57	918	918	79	877	875	78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,195	753	83	1,194	645	83	1,194	549	83	1,194	442	83	—	—	—	—	—	—	—	—	—
	72	,1099	857	82	1,097	746	82	1,097	647	82	1,095	548	82	1,095	449	82	—	—	—	—	—	—
	67	1,006	956	80	1,007	856	80	1,006	754	81	1,005	653	81	1,004	552	81	1,003	451	81	—	—	—
	62	980	980	80	935	935	79	920	856	79	921	755	79	920	653	79	918	551	79	917	449	79
	57	979	979	80	934	934	79	895	884	79	858	830	78	—	—	—	—	—	—	—	—	—
25,000	77	1,238	817	84	1,237	693	84	1,235	581	84	1,235	457	84	—	—	—	—	—	—	—	—	—
	72	1,140	935	82	1,139	820	82	1,137	705	82	1,136	579	83	1,135	466	83	—	—	—	—	—	—
	67	1,055	1,044	81	1,046	942	81	1,045	826	81	1,044	710	81	1,043	584	81	1,041	468	81	—	—	—
	62	1,050	1,050	81	1,000	1,000	80	962	942	80	957	823	80	957	708	80	955	592	80	953	467	80
	57	1,049	1,049	81	1,000	1,000	80	951	948	80	912	889	79	878	822	79	876	708	79	875	586	79
33,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,195	1,099	83	1,194	943	83	1,193	799	83	1,191	643	83	1,188	499	83	—	—	—	—	—	—
	67	1,157	1,157	82	1,107	1,096	82	1,100	957	82	1,098	801	82	1,097	647	82	1,094	492	82	—	—	—
	62	1,156	1,156	82	1,100	1,100	82	1,044	1,044	81	1,008	958	81	1,008	806	81	1,006	654	81	1,003	502	81
	57	1,156	1,156	82	1,099	1,099	82	1,044	1,044	81	992	983	80	947	913	80	924	804	79	922	650	80
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,210	1,162	83	1,209	991	83	1,208	834	83	1,206	663	84	1,203	505	84	—	—	—	—	—	—
	67	1,189	1,189	83	1,131	1,131	82	1,115	1,004	82	1,113	835	82	1,111	667	82	1,107	509	82	—	—	—
	62	1,188	1,188	83	1,129	1,129	82	1,072	1,072	81	1,026	995	81	1,023	839	81	1,020	673	81	1,017	508	81
	57	1,188	1,188	83	1,129	1,129	82	1,072	1,072	81	1,017	1011	81	970	939	80	936	840	80	935	674	80
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,244	1,132	84	1,243	933	84	1,240	732	84	1,237	532	84	—	—	—	—	—	—
	67	—	—	—	1,205	1,205	83	1,152	1,117	83	1,147	929	83	1,145	733	83	1,140	536	83	—	—	—
	62	—	—	—	1,204	1,204	83	1,141	1,141	82	1,080	1,080	82	1,057	941	81	1,054	738	82	1,049	535	82
	57	—	—	—	1,204	1,204	83	1,141	1,141	82	1,079	1,079	82	1,025	1,006	81	975	923	80	967	739	80

BHC Group Heating & Cooling

Table 18: 90 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,105	674	91	1,105	585	91	1,104	497	91	1,105	409	91	—	—	—	—	—	—	—	—	—
	72	1,014	761	89	1,014	679	89	1,013	588	89	1,013	506	89	1,013	415	89	—	—	—	—	—	—
	67	929	855	88	929	771	88	929	678	88	928	594	88	927	501	88	927	417	88	—	—	—
	62	890	890	87	852	844	86	848	772	86	849	679	86	847	593	86	847	508	86	846	415	86
	57	889	889	87	849	848	86	815	802	85	—	—	—	—	—	—	—	—	—	—	—	—
21,000	77	1,144	732	91	1,143	629	92	1,142	525	92	1,142	423	92	—	—	—	—	—	—	—	—	—
	72	1,051	830	90	1,051	736	90	1,050	630	90	1,049	535	90	1,048	430	90	—	—	—	—	—	—
	67	965	936	88	964	839	88	964	733	88	963	636	88	962	529	89	961	433	89	—	—	—
	62	949	949	88	905	905	87	881	837	87	883	733	87	882	635	87	880	537	87	879	431	87
	57	948	948	88	904	904	87	864	856	86	828	803	86	805	738	85	806	630	86	805	533	86
25,000	77	1,183	792	92	1,182	674	92	1,179	566	92	1,179	436	92	—	—	—	—	—	—	—	—	—
	72	1,089	915	91	1,088	805	91	1,087	685	91	1,087	565	91	1,085	445	91	—	—	—	—	—	—
	67	1,015	1,015	89	1,000	920	89	999	800	89	998	688	89	997	568	89	995	448	89	—	—	—
	62	1,014	1,014	89	966	966	88	922	913	88	916	806	88	916	687	88	914	566	88	912	447	88
	57	1,013	1,013	89	965	965	88	918	916	87	878	860	87	842	797	86	839	685	86	837	568	86
33,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,139	1,082	91	1,138	922	91	1,138	774	92	1,135	624	92	1,134	476	92	—	—	—	—	—	—
	67	1,115	1,115	91	1,060	1,060	90	1,050	934	90	1,048	786	90	1,046	627	90	1,043	480	90	—	—	—
	62	1,114	1,114	91	1,060	1,060	90	1,006	1,006	89	964	935	88	961	779	89	961	634	89	957	479	89
	57	1,114	1,114	91	1,059	1,059	90	1,005	1,005	89	954	949	88	909	879	88	881	784	87	880	628	87
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,157	1,122	92	1,151	978	92	1,151	806	92	1,150	644	92	1,147	482	92	—	—	—	—	—	—
	67	1,145	1,145	91	1,088	1,088	90	1,063	978	90	1,061	817	90	1,059	646	90	1,056	486	91	—	—	—
	62	1,144	1,144	91	1,088	1,088	90	1,032	1,032	90	981	971	89	976	820	89	974	652	89	970	485	89
	57	1,144	1,144	91	1,087	1,087	90	1,031	1,031	90	977	975	89	931	905	88	894	819	87	892	651	87
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,184	1,101	92	1,184	900	92	1,182	709	92	1,177	506	93	—	—	—	—	—	—
	67	—	—	—	1,158	1,158	92	1,101	1,090	91	1,092	907	91	1,090	709	91	1,086	510	91	—	—	—
	62	—	—	—	1,157	1,157	92	1,097	1,097	91	1,037	1,037	90	1,006	915	89	1,003	712	90	999	510	90
	57	—	—	—	1,156	1,156	92	1,096	1,096	91	1,036	1,036	90	983	968	89	935	886	88	921	711	88

Table 19: 90 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18,000	77	1,054	653	100	1,053	569	100	1,053	484	100	1,053	390	100	—	—	—	—	—	—	—	—	—
	72	968	745	98	967	658	98	966	570	98	966	483	98	966	396	98	—	—	—	—	—	—
	67	886	833	96	888	746	96	887	656	96	887	576	96	885	487	96	885	398	96	—	—	—
	62	859	859	95	820	820	95	809	753	95	811	657	95	810	575	95	809	485	95	808	396	95
	57	859	859	95	819	819	95	785	775	94	753	727	93	—	—	—	—	—	—	—	—	—
21,000	77	1,088	708	100	1,088	609	100	1,086	511	101	1,086	402	101	—	—	—	—	—	—	—	—	—
	72	1,001	811	99	1,001	711	99	1,001	610	99	999	509	99	999	409	99	—	—	—	—	—	—
	67	922	904	97	919	818	97	919	716	97	918	615	97	917	513	97	916	412	97	—	—	—
	62	915	915	97	872	872	96	842	816	95	842	716	95	841	614	95	840	512	96	838	410	96
	57	914	914	97	871	871	96	831	826	95	796	775	94	769	712	94	769	614	94	767	514	94
25,000	77	—	—	—	—	—	—	1,121	538	101	1,120	426	101	—	—	—	—	—	—	—	—	—
	72	1,035	900	99	1,035	776	99	1,035	662	99	1,032	547	100	1,031	423	100	—	—	—	—	—	—
	67	977	977	98	948	900	98	951	780	98	950	665	98	949	550	98	947	426	98	—	—	—
	62	976	976	98	929	929	97	882	882	96	872	785	96	872	662	96	870	548	96	868	425	96
	57	975	975	98	928	928	97	882	882	96	842	828	95	805	770	95	798	666	95	797	547	95
33,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,083	1,051	100	1,079	906	100	1,079	755	100	1,077	603	100	1,076	452	101	—	—	—	—	—	—
	67	1,069	1,069	100	1,017	1,017	99	995	905	99	994	756	99	993	606	99	990	455	99	—	—	—
	62	1,069	1,069	100	1,016	1,016	99	964	964	98	917	908	97	913	758	97	912	611	97	909	454	97
	57	1,068	1,068	100	1,015	1,015	99	963	963	98	913	912	97	870	844	96	837	760	95	836	610	96
36,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,101	1,090	100	1,092	950	101	1,091	785	101	1,090	621	101	1,087	456	101	—	—	—	—	—	—
	67	1,097	1,097	100	1,043	1,043	99	1,006	956	99	1,007	795	99	1,004	622	99	1,001	461	99	—	—	—
	62	1,096	1,096	100	1,042	1,042	99	988	988	98	935	935	97	925	795	97	924	628	97	920	469	98
	57	1,096	1,096	100	1,042	1,042	99	988	988	98	935	935	97	890	868	96	850	794	96	847	633	96

BHC Group Heating & Cooling

Table 19: 90 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,122	1,077	101	1,119	884	101	1,118	682	101	1,114	490	102	—	—	—	—	—	—
	67	—	—	—	1,107	1,107	101	1,049	1,049	100	1,034	889	100	1,033	692	100	1,029	494	100	—	—	—
	62	—	—	—	1,106	1,106	101	1,048	1,048	100	991	991	98	953	896	98	951	694	98	946	492	98
	57	—	—	—	1,106	1,106	101	1,048	1,048	100	991	991	98	938	928	97	891	848	97	873	690	96

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 90 ton - high capacity

Table 20: 90 ton high capacity — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18000	77	1309	759	71	1310	668	71	1310	577	71	1310	498	71	-	-	-	-	-	-	-	-	-
	72	1201	853	71	1202	769	71	1202	673	71	1201	589	71	1202	493	71	-	-	-	-	-	-
	67	1097	954	70	1097	856	70	1098	769	70	1099	681	70	1099	582	70	1099	495	70	-	-	-
	62	1020	1020	69	1002	951	69	1003	862	69	1003	772	69	1004	673	69	1003	582	69	1003	492	69
	57	1019	1019	69	979	971	68	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21000	77	1364	818	72	1364	723	72	1365	614	72	1366	505	72	-	-	-	-	-	-	-	-	-
	72	1255	928	71	1255	828	71	1255	728	71	1255	615	71	1255	515	71	-	-	-	-	-	-
	67	1148	1045	70	1149	931	70	1151	829	70	1151	725	70	1151	622	70	1151	518	70	-	-	-
	62	1094	1094	70	1051	1040	69	1051	936	69	1052	831	69	1052	726	70	1052	621	70	1052	516	70
	57	1093	1093	70	1045	1043	69	1006	986	69	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1419	894	72	1422	782	72	1422	654	72	1423	526	72	-	-	-	-	-	-	-	-	-
	72	1308	1020	71	1309	903	72	1310	786	72	1309	655	72	1310	537	72	-	-	-	-	-	-
	67	1199	1151	71	1201	1033	71	1203	902	71	1203	782	71	1203	662	71	1203	541	71	-	-	-
	62	1178	1178	70	1125	1125	70	1101	1034	70	1103	915	70	1104	784	70	1103	662	70	1103	540	70
	57	1177	1177	70	1124	1124	70	1075	1064	70	1033	1002	69	1008	913	69	1009	787	69	1009	659	69
33000	77	1495	1031	73	1496	883	73	1498	719	73	1499	569	73	-	-	-	-	-	-	-	-	-
	72	1383	1204	72	1386	1053	72	1387	888	72	1386	735	72	1385	568	73	-	-	-	-	-	-
	67	1310	1310	71	1272	1221	71	1275	1046	71	1275	893	72	1275	740	72	1275	574	72	-	-	-
	62	1309	1309	71	1249	1249	71	1188	1188	71	1170	1064	71	1171	901	71	1171	738	71	1170	573	71
	57	1308	1308	71	1248	1248	71	1187	1187	71	1134	1117	70	1085	1041	70	1074	897	70	1075	738	70
36000	77	-	-	-	-	-	-	-	-	-	1520	578	73	-	-	-	-	-	-	-	-	-
	72	1402	1275	72	1405	1096	72	1405	928	72	1405	759	73	1405	576	73	-	-	-	-	-	-
	67	1350	1350	72	1292	1279	71	1296	1101	72	1296	933	72	1296	765	72	1294	582	72	-	-	-
	62	1349	1349	72	1286	1286	71	1223	1223	71	1189	1117	71	1191	929	71	1191	762	71	1189	583	71
	57	1348	1348	72	1285	1285	71	1223	1223	71	1165	1153	71	1114	1071	70	1092	940	70	1093	759	70
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1448	1448	72	1451	1248	73	1453	1032	73	1453	828	73	1452	610	73	-	-	-	-	-	-
	67	1447	1447	72	1380	1380	72	1339	1259	72	1343	1047	72	1341	832	72	1340	617	73	-	-	-
	62	1446	1446	72	1379	1379	72	1311	1311	72	1243	1243	71	1237	1051	72	1237	829	72	1234	617	72
	57	1445	1445	72	1378	1378	72	1310	1310	72	1242	1242	71	1185	1154	71	1133	1056	71	1134	837	71

Table 21: 90 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18000	77	1267	747	80	1267	659	80	1268	571	80	1269	482	80	-	-	-	-	-	-	-	-	-
	72	1161	836	78	1162	744	78	1162	662	78	1163	570	78	1163	477	79	-	-	-	-	-	-
	67	1061	934	77	1062	839	77	1063	755	77	1063	659	77	1063	574	77	1063	478	77	-	-	-
	62	994	994	76	968	929	76	969	843	76	970	747	76	970	660	76	970	572	76	970	475	76
	57	993	993	76	952	946	76	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
21000	77	1318	804	80	1318	699	80	1320	594	80	1320	488	80	-	-	-	-	-	-	-	-	-
	72	1212	909	79	1213	813	79	1213	703	79	1211	606	79	1212	497	79	-	-	-	-	-	-
	67	1108	1019	78	1110	922	78	1112	812	78	1112	712	78	1112	600	78	1112	500	78	-	-	-
	62	1065	1065	77	1018	1018	77	1015	923	77	1016	813	77	1016	711	77	1016	599	77	1016	498	77
	57	1064	1064	77	1017	1017	77	977	962	76	938	904	76	-	-	-	-	-	-	-	-	-

BHC Group Heating & Cooling

Table 21: 90 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
25000	77	1370	877	81	1372	754	81	1373	631	81	1373	508	81	-	-	-	-	-	-	-	-	-
	72	1262	1009	80	1263	884	80	1263	758	80	1263	644	80	1264	518	80	-	-	-	-	-	-
	67	1155	1132	78	1158	1008	78	1161	894	79	1161	766	79	1161	639	79	1161	522	79	-	-	-
	62	1146	1146	78	1093	1093	78	1060	1018	77	1063	893	77	1064	766	78	1064	649	78	1063	521	78
	57	1144	1144	78	1093	1093	78	1044	1037	77	1001	973	77	971	889	76	972	768	76	972	643	76
33000	77	-	-	-	1442	865	82	1442	707	82	1443	549	82	-	-	-	-	-	-	-	-	-
	72	1329	1196	80	1333	1027	81	1334	867	81	1334	707	81	1334	547	81	-	-	-	-	-	-
	67	1273	1273	80	1223	1198	79	1227	1030	79	1228	872	80	1227	712	80	1227	552	80	-	-	-
	62	1271	1271	80	1212	1212	79	1153	1153	78	1125	1035	78	1127	879	78	1127	721	79	1125	551	79
	57	1271	1271	80	1211	1211	79	1152	1152	78	1098	1083	78	1050	1009	77	1033	881	77	1034	718	77
36000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1348	1254	81	1353	1082	81	1353	906	81	1352	730	81	1351	554	81	-	-	-	-	-	-
	67	1311	1311	80	1249	1249	79	1247	1085	80	1247	910	80	1247	736	80	1245	560	80	-	-	-
	62	1308	1308	80	1248	1248	79	1186	1186	79	1142	1096	78	1145	916	79	1144	744	79	1143	572	79
	57	1308	1308	80	1247	1247	79	1185	1185	79	1127	1119	78	1077	1039	78	1048	922	77	1050	740	78
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1404	1404	81	1392	1225	81	1396	1019	81	1396	796	81	1396	586	82	-	-	-	-	-	-
	67	1403	1403	81	1337	1337	80	1284	1246	80	1291	1020	80	1289	812	80	1287	592	81	-	-	-
	62	1402	1402	81	1336	1336	80	1269	1269	80	1204	1204	79	1188	1033	79	1187	807	79	1185	604	80
	57	1401	1401	81	1335	1335	80	1268	1268	80	1203	1203	79	1145	1119	79	1090	1027	78	1089	814	78

Table 22: 90 ton high capacity — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18000	77	1221	720	88	1221	635	88	1222	550	88	1221	452	88	-	-	-	-	-	-	-	-	-
	72	1118	816	86	1119	727	87	1120	638	87	1121	549	87	1121	460	87	-	-	-	-	-	-
	67	1021	909	85	1023	818	85	1023	737	85	1024	645	85	1024	553	85	1025	461	85	-	-	-
	62	966	966	84	932	914	84	933	821	84	934	729	84	934	645	84	934	551	84	935	458	84
	57	965	965	84	924	921	83	888	870	83	-	-	-	-	-	-	-	-	-	-	-	-
21000	77	1267	786	89	1268	685	89	1268	571	89	1269	469	89	-	-	-	-	-	-	-	-	-
	72	1164	896	87	1166	793	87	1167	688	87	1167	583	88	1167	478	88	-	-	-	-	-	-
	67	1065	1001	86	1068	897	86	1068	791	86	1069	684	86	1070	588	86	1070	481	86	-	-	-
	62	1035	1035	85	988	988	84	975	897	84	976	791	84	977	694	85	977	586	85	977	479	85
	57	1034	1034	85	987	987	84	946	933	84	907	876	83	891	793	83	892	688	83	892	583	83
25000	77	1316	856	89	1318	738	90	1318	619	90	1318	488	90	-	-	-	-	-	-	-	-	-
	72	1211	981	88	1212	860	88	1212	740	88	1213	619	88	1213	497	88	-	-	-	-	-	-
	67	1112	1112	86	1111	989	87	1113	868	87	1115	747	87	1115	624	87	1114	501	87	-	-	-
	62	1111	1111	86	1060	1060	86	1017	997	85	1020	877	85	1021	745	85	1021	623	85	1020	500	86
	57	1110	1110	86	1059	1059	86	1009	1006	85	968	944	84	931	870	84	933	744	84	933	625	84
33000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1272	1171	89	1277	1009	89	1279	844	89	1279	691	89	1279	524	90	-	-	-	-	-	-
	67	1231	1231	88	1173	1173	87	1177	1012	88	1176	847	88	1176	694	88	1175	529	88	-	-	-
	62	1230	1230	88	1172	1172	87	1114	1114	87	1077	1023	86	1080	853	86	1079	690	87	1077	539	87
	57	1229	1229	88	194	194	14	1113	1113	87	1059	1050	86	1012	974	85	988	858	85	990	698	85
36000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1288	1237	89	1294	1061	89	1296	882	89	1295	713	90	1295	544	90	-	-	-	-	-	-
	67	1267	1267	89	1206	1206	88	1192	1072	88	1194	884	88	1194	716	88	1193	549	88	-	-	-
	62	1266	1266	89	1205	1205	88	1145	1145	87	1093	1071	86	1096	888	87	1096	723	87	1094	547	87
	57	1265	1265	89	1204	1204	88	1145	1145	87	1086	1083	86	1038	1003	86	1002	899	85	1007	718	86
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1356	1356	90	1330	1210	90	1335	988	90	1336	775	90	1336	574	91	-	-	-	-	-	-
	67	1354	1354	90	1291	1291	89	1229	1216	88	1235	1000	89	1234	790	89	1231	579	89	-	-	-
	62	1353	1353	90	1289	1289	89	1223	1223	88	1159	1159	87	1133	1008	87	1135	795	88	1133	578	88
	57	1353	1353	90	1288	1288	89	1223	1223	88	1159	1159	87	1101	1080	87	1049	992	86	1040	795	86

Table 23: 90 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18000	77	1170	702	97	1171	621	97	1171	527	97	1171	433	97	-	-	-	-	-	-	-	-	-
	72	1073	804	95	1073	708	95	1075	623	95	1075	527	95	1075	441	96	-	-	-	-	-	-
	67	979	891	93	981	804	94	982	717	94	982	618	94	982	531	94	983	442	94	-	-	-
	62	936	936	93	895	895	92	895	805	92	896	717	92	896	618	92	897	529	92	897	439	92
	57	935	935	93	893	893	92	858	843	91	-	-	-	-	-	-	-	-	-	-	-	-
21000	77	1212	764	98	1213	655	98	1214	558	98	1215	449	98	-	-	-	-	-	-	-	-	-
	72	1114	869	96	1115	770	96	1117	659	96	1117	559	96	1117	458	96	-	-	-	-	-	-
	67	1019	978	94	1021	878	94	1022	777	94	1023	665	95	1024	563	95	1024	461	95	-	-	-
	62	1001	1001	94	955	955	93	933	877	93	934	776	93	935	673	93	936	562	93	935	458	93
	57	1000	1000	94	954	954	93	912	903	92	875	848	92	853	774	91	854	666	91	854	565	91
25000	77	1258	843	99	1258	717	99	1259	592	99	1259	466	99	-	-	-	-	-	-	-	-	-
	72	1155	970	97	1158	845	97	1158	718	97	1159	603	97	1160	475	97	-	-	-	-	-	-
	67	1075	1075	95	1060	976	95	-	-	-	1066	725	95	1065	597	96	1065	479	96	-	-	-
	62	1073	1073	95	1023	1023	94	973	973	93	973	856	94	975	722	94	976	605	94	975	478	94
	57	1073	1073	95	1022	1022	94	973	973	93	931	912	93	891	849	92	891	727	92	892	605	92
33000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1210	1150	98	1216	985	98	1219	829	98	1219	671	98	1219	512	99	-	-	-	-	-	-
	67	1186	1186	97	1129	1129	96	1119	996	96	1122	830	97	1121	673	97	1120	504	97	-	-	-
	62	1185	1185	97	1128	1128	96	1073	1073	95	1026	995	95	1028	833	95	1029	669	95	1028	514	95
	57	1184	1184	97	1127	1127	96	1071	1071	95	1017	1012	94	971	939	94	941	835	93	944	673	94
36000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1225	1213	98	1230	1033	98	1235	865	99	1235	691	99	1234	518	99	-	-	-	-	-	-
	67	1219	1219	98	1160	1160	97	1133	1043	97	1138	865	97	1138	694	97	1137	523	97	-	-	-
	62	1218	1218	98	1159	1159	97	1102	1102	96	1044	1044	95	1043	876	95	1044	699	95	1042	521	96
	57	1217	1217	98	1159	1159	97	1101	1101	96	1043	1043	95	995	968	94	954	881	93	957	698	94
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	-	-	-	1262	1186	99	1270	965	99	1271	763	99	1270	546	100	-	-	-	-	-	-
	67	-	-	-	1239	1239	98	1176	1176	97	1172	985	98	1174	763	98	1171	550	98	-	-	-
	62	-	-	-	1238	1238	98	1175	1175	97	1113	1113	96	1077	990	96	1080	767	96	1078	550	96
	57	-	-	-	1236	1236	98	1174	1174	97	1112	1112	96	1054	1040	95	1003	951	94	988	771	94

Table 24: 90 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
18000	77	1170	702	97	1171	621	97	1171	527	97	1171	433	97	-	-	-	-	-	-	-	-	-
	72	1073	804	95	1073	708	95	1075	623	95	1075	527	95	1075	441	96	-	-	-	-	-	-
	67	979	891	93	981	804	94	982	717	94	982	618	94	982	531	94	983	442	94	-	-	-
	62	936	936	93	895	895	92	895	805	92	896	717	92	896	618	92	897	529	92	897	439	92
	57	935	935	93	893	893	92	858	843	91	-	-	-	-	-	-	-	-	-	-	-	-
21000	77	1212	764	98	1213	655	98	1214	558	98	1215	449	98	-	-	-	-	-	-	-	-	-
	72	1114	869	96	1115	770	96	1117	659	96	1117	559	96	1117	458	96	-	-	-	-	-	-
	67	1019	978	94	1021	878	94	1022	777	94	1023	665	95	1024	563	95	1024	461	95	-	-	-
	62	1001	1001	94	955	955	93	933	877	93	934	776	93	935	673	93	936	562	93	935	458	93
	57	1000	1000	94	954	954	93	912	903	92	875	848	92	853	774	91	854	666	91	854	565	91
25000	77	1258	843	99	1258	717	99	1259	592	99	1259	466	99	-	-	-	-	-	-	-	-	-
	72	1155	970	97	1158	845	97	1158	718	97	1159	603	97	1160	475	97	-	-	-	-	-	-
	67	1075	1075	95	1060	976	95	-	-	-	1066	725	95	1065	597	96	1065	479	96	-	-	-
	62	1073	1073	95	1023	1023	94	973	973	93	973	856	94	975	722	94	976	605	94	975	478	94
	57	1073	1073	95	1022	1022	94	973	973	93	931	912	93	891	849	92	891	727	92	892	605	92
33000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1210	1150	98	1216	985	98	1219	829	98	1219	671	98	1219	512	99	-	-	-	-	-	-
	67	1186	1186	97	1129	1129	96	1119	996	96	1122	830	97	1121	673	97	1120	504	97	-	-	-
	62	1185	1185	97	1128	1128	96	1073	1073	95	1026	995	95	1028	833	95	1029	669	95	1028	514	95
	57	1184	1184	97	1127	1127	96	1071	1071	95	1017	1012	94	971	939	94	941	835	93	944	673	94
36000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1225	1213	98	1230	1033	98	1235	865	99	1235	691	99	1234	518	99	-	-	-	-	-	-
	67	1219	1219	98	1160	1160	97	1133	1043	97	1138	865	97	1138	694	97	1137	523	97	-	-	-
	62	1218	1218	98	1159	1159	97	1102	1102	96	1044	1044	95	1043	876	95	1044	699	95	1042	521	96
	57	1217	1217	98	1159	1159	97	1101	1101	96	1043	1043	95	995	968	94	954	881	93	957	698	94

Table 24: 90 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	-	-	-	1262	1186	99	1270	965	99	1271	763	99	1270	546	100	-	-	-	-	-	-
	67	-	-	-	1239	1239	98	1176	1176	97	1172	985	98	1174	763	98	1171	550	98	-	-	-
	62	-	-	-	1238	1238	98	1175	1175	97	1113	1113	96	1077	990	96	1080	767	96	1078	550	96
	57	-	-	-	1236	1236	98	1174	1174	97	1112	1112	96	1054	1040	95	1003	951	94	988	771	94

Cooling performance data - 105 ton - standard efficiency

Table 25: 105 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,442	851	80	1,441	749	80	1,443	650	80	1,443	534	80	—	—	—	—	—	—	—	—	—
	72	1,327	969	78	1,328	863	78	1,327	757	78	1,328	651	79	1,328	545	79	—	—	—	—	—	—
	67	1,214	1,069	77	1,214	971	77	1,217	864	77	1,217	754	77	1,217	657	77	1,217	548	77	—	—	—
	62	1,142	1,142	76	1,110	1,077	76	1,112	968	76	1,113	857	76	1,113	757	76	1,112	656	76	1,113	545	76
	57	1,141	1,141	76	1,094	1,089	75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,504	933	80	1,505	813	80	1,507	678	81	1,507	558	81	—	—	—	—	—	—	—	—	—
	72	1,387	1,054	79	1,387	929	79	1,387	818	79	1,388	694	79	1,388	569	79	—	—	—	—	—	—
	67	1,271	1,195	78	1,276	1,059	78	1,277	945	78	1,276	817	78	1,276	689	78	1,276	574	78	—	—	—
	62	1,233	1,233	77	1,177	1,177	77	1,168	1,075	77	1,170	948	77	1,170	819	77	1,170	702	77	1,170	573	77
	57	1,231	1,231	77	1,176	1,176	77	1,130	1,114	76	1,085	1,048	76	—	—	—	—	—	—	—	—	—
34,000	77	1,597	1,086	81	1,598	927	81	1,600	768	82	1,601	592	82	—	—	—	—	—	—	—	—	—
	72	1,480	1,258	80	1,481	1,096	80	1,482	934	80	1,483	771	81	1,482	608	81	—	—	—	—	—	—
	67	1,389	1,389	79	1,362	1,266	79	1,364	1,105	79	1,365	942	79	1,365	778	79	1,365	614	79	—	—	—
	62	1,388	1,388	79	1,325	1,325	78	1,262	1,262	78	1,254	1,116	78	1,255	942	78	1,256	779	78	1,254	615	78
	57	1,387	1,387	79	1,324	1,324	78	1,261	1,261	78	1,207	1,184	77	1,157	1,104	77	1,152	950	77	1,153	782	77
38,000	77	1,626	1,155	82	1,625	975	82	1,630	799	82	1,631	620	82	—	—	—	—	—	—	—	—	—
	72	1,506	1,355	80	1,510	1,163	81	1,510	982	81	1,510	801	81	1,511	620	81	—	—	—	—	—	—
	67	1,444	1,444	80	1,388	1,360	79	1,394	1,171	79	1,394	990	80	1,393	808	80	1,392	627	80	—	—	—
	62	1,442	1,442	80	1,377	1,377	79	1,311	1,311	78	1,279	1,177	78	1,281	1,000	78	1,281	820	78	1,281	628	79
	57	1,441	1,441	80	1,376	1,376	79	1,310	1,310	78	1,250	1,233	78	1,196	1,149	77	1,176	1,003	77	1,178	818	77
42,000	77	—	—	—	1,652	1,024	82	1,654	827	82	1,656	629	82	—	—	—	—	—	—	—	—	—
	72	1,528	1,436	81	1,533	1,226	81	1,533	1,027	81	1,534	828	81	1,533	644	81	—	—	—	—	—	—
	67	1,491	1,491	80	1,423	1,423	80	1,417	1,247	80	1,419	1,036	80	1,418	837	80	1,417	638	80	—	—	—
	62	1,490	1,490	80	1,422	1,422	80	1,353	1,353	79	1,301	1,249	78	1,306	1,044	79	1,305	848	79	1,303	652	79
	57	1,489	1,489	80	1,421	1,421	80	1,352	1,352	79	1,286	1,278	78	1,231	1,188	78	1,197	1,053	77	1,199	845	78
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,540	1,492	81	1,547	1,282	81	1,548	1,064	81	1,550	855	81	1,549	650	81	—	—	—	—	—	—
	67	1,522	1,522	80	1,453	1,453	80	1,431	1,292	80	1,433	1,079	80	1,432	862	80	1,431	652	80	—	—	—
	62	1,521	1,521	80	1,452	1,452	80	1,381	1,381	79	1,318	1,296	79	1,320	1,079	79	1,320	873	79	1,318	659	79
	57	1,520	1,520	80	1,450	1,450	80	1,380	1,380	79	1,311	1,307	78	1,254	1,214	78	1,211	1,095	78	1,212	871	78

Table 26: 105 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,394	837	88	1,395	726	89	1,396	628	89	1,396	516	89	—	—	—	—	—	—	—	—	—
	72	1,282	949	87	1,283	834	87	1,283	731	87	1,283	629	87	1,283	526	87	—	—	—	—	—	—
	67	1,173	1,056	85	1,174	951	85	1,176	847	85	1,176	741	85	1,176	635	86	1,177	530	86	—	—	—
	62	1,112	1,112	84	1,072	1,050	84	1,073	945	84	1,074	849	84	1,075	742	84	1,075	634	84	1,075	527	84
	57	1,111	1,111	84	1,064	1,060	83	1,024	1,002	83	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,451	914	89	1,454	785	89	1,454	669	90	1,455	538	90	—	—	—	—	—	—	—	—	—
	72	1,338	1,044	88	1,338	910	88	1,339	790	88	1,339	669	88	1,340	549	88	—	—	—	—	—	—
	67	1,225	1,164	86	1,229	1,045	86	1,231	923	86	1,232	801	86	1,232	677	86	1,232	554	87	—	—	—
	62	1,198	1,198	85	1,145	1,145	85	1,125	1,047	85	1,128	925	85	1,129	802	85	1,128	677	85	1,128	553	85
	57	1,198	1,198	85	1,144	1,144	85	1,096	1,083	84	1,053	1,019	83	1,031	926	83	1,032	796	83	1,032	674	83
34,000	77	1,538	1,061	91	1,540	909	91	1,541	740	91	1,542	586	91	—	—	—	—	—	—	—	—	—
	72	1,424	1,239	89	1,426	1,084	89	1,426	913	89	1,427	756	89	1,427	585	89	—	—	—	—	—	—
	67	1,349	1,349	88	1,308	1,256	87	1,313	1,076	88	1,314	920	88	1,313	762	88	1,314	591	88	—	—	—
	62	1,348	1,348	88	1,286	1,286	87	1,224	1,224	86	1,205	1,097	86	1,208	918	86	1,208	761	86	1,207	591	86
	57	1,347	1,347	88	1,285	1,285	87	1,223	1,223	86	1,169	1,151	85	1,119	1,071	85	1,107	933	85	1,108	761	85

Table 26: 105 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
38,000	77	1,566	1,143	91	1,567	956	91	1,569	769	91	1,570	597	91	—	—	—	—	—	—	—	—	—
	72	1,447	1,331	89	1,453	1,148	90	1,453	959	90	1,453	784	90	1,452	595	90	—	—	—	—	—	—
	67	1,401	1,401	89	1,336	1,336	88	1,338	1,151	88	1,341	965	88	1,341	791	88	1,340	603	88	—	—	—
	62	1,400	1,400	89	1,335	1,335	88	1,270	1,270	87	1,231	1,157	86	1,233	974	87	1,233	789	87	1,231	616	87
	57	1,399	1,399	89	1,334	1,334	88	1,269	1,269	87	1,209	1,197	86	1,157	1,113	85	1,130	982	85	1,132	798	85
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,466	1,422	90	1,474	1,209	90	1,474	1,017	90	1,474	811	90	1,473	619	90	—	—	—	—	—	—
	67	1,446	1,446	89	1,379	1,379	88	1,359	1,223	88	1,363	1,022	88	1,364	818	89	1,362	627	89	—	—	—
	62	1,445	1,445	89	1,378	1,378	88	1,310	1,310	87	1,250	1,237	87	1,255	1,029	87	1,253	827	87	1,252	626	87
	57	1,444	1,444	89	1,377	1,377	88	1,309	1,309	87	1,244	1,242	87	1,190	1,152	86	1,149	1,031	85	1,151	830	86
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,485	1,466	90	1,488	1,263	90	1,488	1,053	90	1,489	836	90	1,488	625	90	—	—	—	—	—	—
	67	1,476	1,476	90	1,408	1,408	89	1,372	1,274	88	1,377	1,057	89	1,377	842	89	1,375	633	89	—	—	—
	62	1,475	1,475	90	1,406	1,406	89	1,337	1,337	88	1,271	1,266	87	1,268	1,061	87	1,267	851	87	1,265	633	88
	57	1,474	1,474	90	1,405	1,405	89	1,336	1,336	88	1,268	1,267	87	1,211	1,177	86	1,162	1,067	86	1,164	850	86

Table 27: 105 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,341	818	98	1,342	711	98	1,342	604	98	1,342	497	98	—	—	—	—	—	—	—	—	—
	72	1,232	924	96	1,234	814	96	1,235	716	96	1,235	605	96	1,235	506	96	—	—	—	—	—	—
	67	1,128	1,037	94	1,130	927	94	1,131	826	94	1,132	713	94	1,132	611	94	1,133	510	94	—	—	—
	62	1,080	1,080	93	1,032	1,032	92	1,032	929	92	1,034	827	92	1,035	714	92	1,035	610	92	1,034	507	93
	57	1,079	1,079	93	1,031	1,031	92	991	974	91	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,394	892	99	1,396	768	99	1,396	642	99	1,397	517	99	—	—	—	—	—	—	—	—	—
	72	1,284	1,015	97	1,286	887	97	1,286	772	97	1,287	643	97	1,287	528	97	—	—	—	—	—	—
	67	1,176	1,152	95	1,180	1,026	95	1,183	899	95	1,184	782	95	1,184	651	95	1,183	533	95	—	—	—
	62	1,162	1,162	94	1,110	1,110	94	1,080	1,026	93	1,083	899	93	1,084	781	93	1,084	651	94	1,084	531	94
	57	1,161	1,161	94	1,109	1,109	94	1,060	1,051	93	1,018	987	92	989	906	92	991	781	92	991	656	92
34,000	77	1,476	1,048	100	1,475	885	100	1,476	723	100	1,477	561	101	—	—	—	—	—	—	—	—	—
	72	1,360	1,224	98	1,365	1,051	98	1,366	888	98	1,367	724	99	1,368	561	99	—	—	—	—	—	—
	67	1,305	1,305	97	1,252	1,227	96	1,257	1,068	96	1,259	894	97	1,259	730	97	1,258	566	97	—	—	—
	62	1,304	1,304	97	1,243	1,243	96	1,183	1,183	95	1,153	1,072	95	1,158	903	95	1,157	741	95	1,156	566	95
	57	1,303	1,303	97	1,242	1,242	96	1,182	1,182	95	1,127	1,114	94	1,079	1,036	93	1,060	904	93	1,062	738	93
38,000	77	—	—	—	—	—	—	—	—	—	1,503	571	101	—	—	—	—	—	—	—	—	—
	72	1,382	1,313	99	1,391	1,127	99	1,392	946	99	1,392	765	99	1,391	584	99	—	—	—	—	—	—
	67	1,354	1,354	98	1,290	1,290	97	1,279	1,139	97	1,284	950	97	1,284	770	97	1,283	577	98	—	—	—
	62	1,353	1,353	98	1,289	1,289	97	1,226	1,226	96	1,175	1,140	95	1,180	956	95	1,180	767	96	1,179	589	96
	57	1,352	1,352	98	1,289	1,289	97	1,225	1,225	96	1,165	1,159	95	1,114	1,077	94	1,080	958	94	1,084	773	94
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,401	1,387	99	1,409	1,184	99	1,410	987	99	1,410	790	99	1,410	592	100	—	—	—	—	—	—
	67	1,397	1,397	99	1,331	1,331	98	1,300	1,196	97	1,305	991	98	1,305	796	98	1,304	600	98	—	—	—
	62	1,396	1,396	99	1,330	1,330	98	1,264	1,264	96	1,200	1,200	95	1,199	1,007	96	1,199	803	96	1,198	599	96
	57	1,395	1,395	99	1,329	1,329	98	1,264	1,264	96	1,199	1,199	95	1,145	1,113	95	1,098	1,014	94	1,101	803	94
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,427	1,421	99	1,418	1,240	99	1,423	1,021	100	1,423	813	100	1,424	598	100	—	—	—	—	—	—
	67	1,425	1,425	99	1,357	1,357	98	1,310	1,251	97	1,318	1,032	98	1,317	819	98	1,316	605	98	—	—	—
	62	1,424	1,424	99	1,356	1,356	98	1,289	1,289	97	1,223	1,223	96	1,210	1,044	96	1,212	826	96	1,210	612	96
	57	1,423	1,423	99	1,356	1,356	98	1,289	1,289	97	1,222	1,222	96	1,165	1,138	95	1,114	1,042	94	1,113	823	94

Table 28: 105 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,283	796	108	1,284	681	108	1,285	578	108	1,285	476	108	—	—	—	—	—	—	—	—	—
	72	1,180	897	105	1,181	803	105	1,183	686	106	1,183	592	106	1,184	485	106	—	—	—	—	—	—
	67	1,079	1,014	103	1,081	908	103	1,083	802	104	1,085	694	104	1,085	586	104	1,085	488	104	—	—	—
	62	1,046	1,046	102	999	999	102	989	910	101	990	802	102	991	694	102	992	595	102	992	486	102
	57	1,045	1,045	102	998	998	101	957	944	101	919	887	100	905	803	100	905	699	100	906	592	100

BHC Group Heating & Cooling

Table 28: 105 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
25,000	77	1,333	866	109	1,334	747	109	1,334	614	109	1,335	494	109	—	—	—	—	—	—	—	—	—
	72	1,226	993	106	1,228	872	107	1,229	750	107	1,230	627	107	1,231	505	107	—	—	—	—	—	—
	67	1,125	1,125	104	1,126	1,003	104	1,130	881	105	1,132	747	105	1,133	634	105	1,132	509	105	—	—	—
	62	1,123	1,123	104	1,072	1,072	103	1,032	1,011	102	1,034	879	103	1,037	757	103	1,037	633	103	1,037	508	103
	57	1,122	1,122	104	1,071	1,071	103	1,022	1,019	102	980	954	101	946	883	101	948	756	101	948	627	101
34,000	77	—	—	—	1,406	858	110	1,408	690	110	1,408	535	111	—	—	—	—	—	—	—	—	—
	72	1,295	1,204	108	1,301	1,028	108	1,303	873	108	1,304	704	108	1,305	535	109	—	—	—	—	—	—
	67	1,257	1,257	107	1,198	1,198	106	1,196	1,041	106	1,201	876	106	1,200	708	106	1,200	540	107	—	—	—
	62	1,256	1,256	107	1,197	1,197	106	1,139	1,139	105	1,098	1,043	104	1,103	882	104	1,104	706	104	1,103	551	105
	57	1,255	1,255	107	1,196	1,196	106	1,138	1,138	105	1,083	1,073	104	1,035	999	103	1,010	878	102	1,013	714	103
38,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,313	1,287	108	1,320	1,096	109	1,325	914	109	1,325	729	109	1,326	557	109	—	—	—	—	—	—
	67	1,303	1,303	108	1,241	1,241	107	1,218	1,108	106	1,224	918	107	1,223	734	107	1,223	562	107	—	—	—
	62	1,302	1,302	108	1,240	1,240	107	1,179	1,179	106	1,120	1,120	104	1,122	932	105	1,124	742	105	1,123	561	105
	57	1,301	1,301	108	1,239	1,239	107	1,179	1,179	106	1,118	1,118	104	1,068	1,037	103	1,029	931	103	1,032	744	103
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,344	1,344	109	1,336	1,176	109	1,343	967	109	1,343	765	109	1,343	564	110	—	—	—	—	—	—
	67	1,343	1,343	109	1,279	1,279	108	1,233	1,183	107	1,242	969	107	1,243	771	107	1,242	571	108	—	—	—
	62	1,342	1,342	109	1,278	1,278	107	1,215	1,215	106	1,153	1,153	105	1,140	980	105	1,143	777	105	1,140	570	106
	57	1,341	1,341	109	1,278	1,278	107	1,214	1,214	106	1,152	1,152	105	1,098	1,071	104	1,047	986	103	1,048	781	103
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,370	1,370	109	1,347	1,224	109	1,354	998	109	1,354	788	110	1,356	577	110	—	—	—	—	—	—
	67	1,369	1,369	109	1,304	1,304	108	1,247	1,226	107	1,252	1,012	107	1,254	792	108	1,253	583	108	—	—	—
	62	1,368	1,368	109	1,303	1,303	108	1,238	1,238	107	1,174	1,174	106	1,150	1,016	105	1,154	798	106	1,152	583	106
	57	1,367	1,367	109	1,302	1,302	108	1,238	1,238	107	1,173	1,173	106	1,116	1,094	104	1,064	1,005	103	1,058	805	104

Table 29: 105 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,222	770	118	1,222	660	118	1,224	563	118	1,224	453	118	—	—	—	—	—	—	—	—	—
	72	1,122	875	116	1,124	776	116	1,127	665	116	1,128	564	116	1,129	463	116	—	—	—	—	—	—
	67	1,027	986	113	1,030	886	114	1,031	784	114	1,033	672	114	1,034	569	114	1,035	466	114	—	—	—
	62	1,008	1,008	113	963	963	112	942	885	112	944	783	112	945	671	112	946	568	112	946	464	112
	57	1,007	1,007	113	961	961	112	920	911	111	883	856	110	862	781	110	863	673	110	865	565	110
25,000	77	1,266	835	119	1,267	722	119	1,268	596	120	1,269	469	120	—	—	—	—	—	—	—	—	—
	72	1,163	977	117	1,166	851	117	1,169	725	117	1,170	597	117	1,171	480	117	—	—	—	—	—	—
	67	1,082	1,082	115	1,070	974	115	1,072	858	115	1,076	731	115	1,077	603	115	1,077	485	115	—	—	—
	62	1,081	1,081	115	1,031	1,031	114	982	982	113	984	856	113	985	729	113	987	602	113	987	484	113
	57	1,080	1,080	115	1,030	1,030	114	980	980	112	940	919	112	900	858	111	901	734	111	902	604	111
34,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,224	1,175	118	1,228	1,007	118	1,235	840	119	1,236	680	119	1,237	519	119	—	—	—	—	—	—
	67	1,205	1,205	118	1,148	1,148	116	1,140	1,015	117	1,137	853	117	1,139	683	117	1,138	523	117	—	—	—
	62	1,204	1,204	118	1,148	1,148	116	1,091	1,091	115	1,041	1,020	114	1,044	856	114	1,047	680	115	1,046	523	115
	57	1,203	1,203	118	1,147	1,147	116	1,090	1,090	115	1,035	1,032	114	989	958	113	957	857	112	960	692	113
38,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,248	1,248	119	1,247	1,085	119	1,255	891	119	1,257	704	120	1,257	528	120	—	—	—	—	—	—
	67	1,247	1,247	119	1,189	1,189	117	1,151	1,082	117	1,156	902	117	1,159	719	117	1,159	533	118	—	—	—
	62	1,246	1,246	119	1,187	1,187	117	1,129	1,129	116	1,071	1,071	115	1,062	903	115	1,066	714	115	1,064	532	115
	57	1,246	1,246	119	1,187	1,187	117	1,128	1,128	116	1,070	1,070	115	1,019	993	114	974	908	113	976	728	113
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,286	1,286	120	1,263	1,149	119	1,271	941	120	1,270	737	120	1,272	547	120	—	—	—	—	—	—
	67	1,285	1,285	120	1,224	1,224	118	1,166	1,154	117	1,172	949	117	1,177	741	118	1,176	541	118	—	—	—
	62	1,284	1,284	120	1,223	1,223	118	1,162	1,162	117	1,101	1,101	116	1,078	960	115	1,082	747	116	1,080	551	116
	57	1,283	1,283	120	1,222	1,222	118	1,161	1,161	117	1,100	1,100	116	1,047	1,028	114	998	942	113	990	756	113
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,273	1,195	119	1,280	977	120	1,282	758	120	1,283	552	121	—	—	—	—	—	—
	67	—	—	—	1,247	1,247	119	1,186	1,181	117	1,181	990	118	1,187	768	118	1,186	552	118	—	—	—
	62	—	—	—	1,246	1,246	119	1,184	1,184	117	1,122	1,122	116	1,088	993	115	1,093	773	116	1,091	563	116
	57	—	—	—	1,245	1,245	119	1,183	1,183	117	1,121	1,121	116	1,064	1,049	115	1,014	961	114	1,000	779	114

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)
SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 105 ton - high efficiency

Table 30: 105 ton high efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,436	847	83	1,437	747	83	1,437	647	83	1,437	546	83	—	—	—	—	—	—	—	—	—
	72	1,321	951	81	1,320	845	81	1,320	752	81	1,319	646	81	1,319	541	81	—	—	—	—	—	—
	67	1,209	1,064	80	1,209	955	80	1,209	858	80	1,208	749	80	1,207	652	80	1,208	544	80	—	—	—
	62	1,130	1,130	79	1,101	1,057	78	1,105	961	78	1,104	850	78	1,104	750	78	1,103	651	79	1,102	540	79
	57	1,129	1,129	79	1,083	1,076	78	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,500	915	84	1,500	795	84	1,500	675	84	1,501	555	84	—	—	—	—	—	—	—	—	—
	72	1,380	1,049	82	1,381	925	82	1,381	801	82	1,380	690	82	1,380	566	82	—	—	—	—	—	—
	67	1,265	1,176	81	1,269	1,053	81	1,269	926	81	1,268	812	81	1,267	684	81	1,267	570	81	—	—	—
	62	1,219	1,219	80	1,164	1,164	79	1,160	1,056	79	1,162	929	79	1,160	812	79	1,160	696	79	1,160	568	79
	57	1,218	1,218	80	1,163	1,163	79	1,118	1,100	79	—	—	—	—	—	—	—	—	—	—	—	—
34,000	77	1,594	1,068	85	1,594	909	85	1,594	749	85	1,594	590	85	—	—	—	—	—	—	—	—	—
	72	1,473	1,238	83	1,475	1,077	83	1,474	929	84	1,473	766	84	1,473	604	84	—	—	—	—	—	—
	67	1,375	1,375	82	1,353	1,245	82	1,356	1,085	82	1,356	922	82	1,356	773	82	1,355	610	82	—	—	—
	62	1,374	1,374	82	1,310	1,310	81	1,248	1,248	81	1,246	1,096	81	1,247	935	81	1,246	773	81	1,245	610	81
	57	1,373	1,373	82	1,309	1,309	81	1,247	1,247	81	1,194	1,169	80	1,143	1,091	79	1,143	933	79	1,143	775	79
38,000	77	1,622	1,135	85	1,622	957	85	1,623	795	85	1,623	617	85	—	—	—	—	—	—	—	—	—
	72	1,501	1,321	84	1,504	1,143	84	1,503	977	84	1,503	796	84	1,501	616	84	—	—	—	—	—	—
	67	1,430	1,430	83	1,380	1,339	82	1,385	1,150	82	1,384	983	82	1,384	803	83	1,383	622	83	—	—	—
	62	1,429	1,429	83	1,361	1,361	82	1,295	1,295	81	1,271	1,157	81	1,273	981	81	1,273	802	81	1,272	623	81
	57	1,428	1,428	83	1,361	1,361	82	1,294	1,294	81	1,236	1,217	80	1,182	1,134	80	1,167	984	80	1,169	802	80
42,000	77	1,647	1,202	85	1,647	1,005	85	1,648	824	86	1,648	626	86	—	—	—	—	—	—	—	—	—
	72	1,523	1,416	84	1,527	1,206	84	1,526	1,022	84	1,525	824	84	1,524	625	84	—	—	—	—	—	—
	67	1,477	1,477	83	1,408	1,408	83	1,408	1,225	83	1,409	1,029	83	1,408	831	83	1,408	634	83	—	—	—
	62	1,476	1,476	83	1,407	1,407	83	1,337	1,337	82	1,292	1,227	81	1,296	1,024	81	1,296	842	81	1,294	647	82
	57	1,475	1,475	83	1,406	1,406	83	1,337	1,337	82	1,273	1,262	81	1,217	1,172	80	1,188	1,034	80	1,190	839	80
45,000	77	1,661	1,251	86	1,662	1,043	86	1,668	844	86	1,662	632	86	—	—	—	—	—	—	—	—	—
	72	1,535	1,472	84	1,541	1,253	84	1,541	1,050	84	1,540	850	84	1,540	640	84	—	—	—	—	—	—
	67	1,509	1,509	84	1,437	1,437	83	1,422	1,270	83	1,424	1,064	83	1,423	856	83	1,422	648	83	—	—	—
	62	1,508	1,508	84	1,437	1,437	83	1,365	1,365	82	1,306	1,278	81	1,311	1,066	82	1,310	859	82	1,308	654	82
	57	1,507	1,507	84	1,436	1,436	83	1,364	1,364	82	1,296	1,292	81	1,240	1,199	81	1,201	1,069	80	1,203	859	80

Table 31: 105 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,389	834	92	1,389	722	92	1,388	625	92	1,388	514	92	—	—	—	—	—	—	—	—	—
	72	1,276	931	90	1,276	829	90	1,275	727	90	1,275	625	90	1,275	523	90	—	—	—	—	—	—
	67	1,167	1,038	88	1,169	935	88	1,168	829	88	1,167	735	88	1,167	630	88	1,167	525	88	—	—	—
	62	1,101	1,101	87	1,064	1,042	86	1,067	939	86	1,067	832	86	1,066	725	86	1,066	629	86	1,066	522	86
	57	1,100	1,100	87	1,053	1,049	86	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,447	897	93	1,447	781	93	1,447	666	93	1,447	535	93	—	—	—	—	—	—	—	—	—
	72	1,332	1,025	91	1,332	906	91	1,332	786	91	1,331	666	91	1,331	546	91	—	—	—	—	—	—
	67	1,219	1,158	89	1,223	1,028	89	1,225	906	89	1,224	796	89	1,222	672	89	1,222	550	89	—	—	—
	62	1,186	1,186	88	1,133	1,133	87	1,117	1,039	87	1,121	908	87	1,120	795	87	1,119	671	87	1,119	548	87
	57	1,185	1,185	88	1,132	1,132	87	1,084	1,071	87	1,041	1,006	86	—	—	—	—	—	—	—	—	—
34,000	77	1,534	1,059	94	1,535	890	94	1,534	736	94	1,534	568	94	—	—	—	—	—	—	—	—	—
	72	1,417	1,219	92	1,418	1,064	92	1,418	908	92	1,417	737	92	1,417	581	92	—	—	—	—	—	—
	67	1,335	1,335	91	1,300	1,235	90	1,305	1,070	90	1,306	901	91	1,305	744	91	1,305	587	91	—	—	—
	62	1,334	1,334	91	1,271	1,271	90	1,210	1,210	89	1,197	1,078	89	1,200	912	89	1,199	756	89	1,198	587	89
	57	1,333	1,333	91	1,270	1,270	90	1,209	1,209	89	1,156	1,136	88	1,106	1,058	87	1,099	917	87	1,100	746	87
38,000	77	1,560	1,124	94	1,560	936	94	1,561	765	95	1,561	593	95	—	—	—	—	—	—	—	—	—
	72	1,442	1,312	93	1,447	1,128	93	1,446	954	93	1,445	780	93	1,443	592	93	—	—	—	—	—	—
	67	1,387	1,387	92	1,325	1,312	91	1,331	1,132	91	1,332	959	91	1,331	772	91	1,330	599	91	—	—	—
	62	1,386	1,386	92	1,320	1,320	91	1,256	1,256	90	1,221	1,147	89	1,224	955	89	1,224	783	89	1,223	599	89
	57	1,385	1,385	92	1,319	1,319	91	1,255	1,255	90	1,195	1,183	89	1,144	1,099	88	1,121	965	87	1,124	781	88

BHC Group Heating & Cooling

Table 31: 105 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
42,000	77	1,583	1,188	95	1,584	982	95	1,584	792	95	1,584	602	95	—	—	—	—	—	—	—	—	—
	72	1,461	1,388	93	1,467	1,188	93	1,467	997	93	1,466	806	93	1,465	615	93	—	—	—	—	—	—
	67	1,433	1,433	92	1,364	1,364	91	1,351	1,203	91	1,355	1,003	91	1,355	813	91	1,353	623	92	—	—	—
	62	1,432	1,432	92	1,363	1,363	91	1,296	1,296	90	1,240	1,215	89	1,246	1,009	90	1,245	809	90	1,244	622	90
	57	1,431	1,431	92	1,362	1,362	91	1,295	1,295	90	1,230	1,226	89	1,176	1,137	88	1,140	1,012	88	1,143	815	88
45,000	77	1,596	1,234	95	1,597	1,018	95	1,597	817	95	1,597	607	95	—	—	—	—	—	—	—	—	—
	72	1,475	1,444	93	1,480	1,232	93	1,480	1,032	93	1,480	823	93	1,479	621	93	—	—	—	—	—	—
	67	1,462	1,462	93	1,392	1,392	92	1,363	1,253	91	1,369	1,037	92	1,368	837	92	1,367	629	92	—	—	—
	62	1,461	1,461	93	1,391	1,391	92	1,322	1,322	91	1,258	1,248	90	1,259	1,042	90	1,259	833	90	1,257	628	90
	57	1,460	1,460	93	1,391	1,391	92	1,321	1,321	91	1,254	1,252	90	1,198	1,161	89	1,152	1,052	88	1,156	835	88

Table 32: 105 ton high efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,336	802	101	1,336	708	101	1,336	601	101	1,336	494	101	—	—	—	—	—	—	—	—	—
	72	1,228	909	99	1,228	810	99	1,228	712	99	1,227	601	99	1,227	503	99	—	—	—	—	—	—
	67	1,120	1,020	97	1,124	911	97	1,125	810	97	1,124	708	97	1,124	607	97	1,124	506	97	—	—	—
	62	1,070	1,070	95	1,023	1,023	95	1,025	923	95	1,027	812	95	1,027	708	95	1,026	605	95	1,026	503	95
	57	1,069	1,069	95	1,021	1,021	94	981	964	94	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,389	875	102	1,389	764	102	1,389	639	102	1,389	514	102	—	—	—	—	—	—	—	—	—
	72	1,279	1,010	100	1,279	882	100	1,279	768	100	1,279	640	100	1,280	525	100	—	—	—	—	—	—
	67	1,169	1,134	98	1,174	1,010	98	1,177	894	98	1,176	764	98	1,175	646	98	1,175	529	98	—	—	—
	62	1,151	1,151	97	1,098	1,098	96	1,073	1,019	96	1,076	893	96	1,077	765	96	1,076	645	96	1,075	527	96
	57	1,150	1,150	97	1,097	1,097	96	1,049	1,040	95	1,007	976	94	—	—	—	—	—	—	—	—	—
34,000	77	1,469	1,029	104	1,470	867	104	1,469	720	104	1,469	558	104	—	—	—	—	—	—	—	—	—
	72	1,355	1,206	101	1,359	1,033	101	1,359	883	102	1,358	720	102	1,358	557	102	—	—	—	—	—	—
	67	1,291	1,291	100	1,245	1,208	99	1,250	1,050	99	1,251	888	99	1,251	725	100	1,250	563	100	—	—	—
	62	1,290	1,290	100	1,230	1,230	99	1,170	1,170	98	1,145	1,053	97	1,150	885	97	1,150	724	98	1,148	563	98
	57	1,290	1,290	100	1,229	1,229	99	1,169	1,169	98	1,115	1,100	97	1,067	1,023	96	1,051	895	95	1,054	724	96
38,000	77	1,493	1,090	104	1,493	926	104	1,493	747	104	1,493	567	104	—	—	—	—	—	—	—	—	—
	72	1,377	1,280	102	1,383	1,107	102	1,384	927	102	1,383	747	102	1,382	567	102	—	—	—	—	—	—
	67	1,341	1,341	101	1,276	1,276	100	1,272	1,107	100	1,276	931	100	1,275	752	100	1,274	573	100	—	—	—
	62	1,340	1,340	101	1,275	1,275	100	1,213	1,213	99	1,167	1,120	98	1,172	938	98	1,172	762	98	1,171	585	98
	57	1,339	1,339	101	1,275	1,275	100	1,212	1,212	99	1,153	1,145	97	1,102	1,063	96	1,073	943	96	1,076	758	96
42,000	77	1,514	1,150	104	1,514	969	104	1,514	772	105	1,514	575	105	—	—	—	—	—	—	—	—	—
	72	1,395	1,367	102	1,402	1,163	102	1,403	968	102	1,402	785	102	1,402	589	103	—	—	—	—	—	—
	67	1,383	1,383	102	1,317	1,317	101	1,291	1,174	100	1,296	972	100	1,297	791	100	1,295	596	101	—	—	—
	62	1,382	1,382	102	1,316	1,316	101	1,251	1,251	99	1,187	1,187	98	1,191	989	98	1,191	786	98	1,190	595	99
	57	1,381	1,381	102	1,315	1,315	101	1,250	1,250	99	1,185	1,185	98	1,133	1,099	97	1,090	996	96	1,094	789	96
45,000	77	1,525	1,203	105	1,527	1,003	105	1,527	796	105	1,527	589	105	—	—	—	—	—	—	—	—	—
	72	1,417	1,405	102	1,412	1,213	102	1,416	1,001	103	1,415	801	103	1,414	594	103	—	—	—	—	—	—
	67	1,411	1,411	102	1,343	1,343	101	1,302	1,230	100	1,309	1,012	101	1,309	806	101	1,307	601	101	—	—	—
	62	1,410	1,410	102	1,342	1,342	101	1,275	1,275	100	1,210	1,210	99	1,202	1,026	99	1,204	809	99	1,202	608	99
	57	1,409	1,409	102	1,341	1,341	101	1,275	1,275	100	1,208	1,208	99	1,153	1,123	97	1,103	1,026	96	1,105	814	97

Table 33: 105 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,278	780	111	1,279	678	111	1,279	576	111	1,279	473	111	—	—	—	—	—	—	—	—	—
	72	1,175	893	108	1,176	788	108	1,176	682	109	1,176	588	109	1,176	482	109	—	—	—	—	—	—
	67	1,074	998	106	1,076	893	106	1,078	787	106	1,078	690	106	1,077	582	106	1,078	485	106	—	—	—
	62	1,035	1,035	105	988	988	104	982	894	104	984	788	104	985	689	104	984	590	104	984	482	104
	57	1,035	1,035	105	988	988	104	948	933	103	—	—	—	—	—	—	—	—	—	—	—	—
25,000	77	1,326	849	112	1,327	730	112	1,327	610	112	1,327	491	112	—	—	—	—	—	—	—	—	—
	72	1,221	977	109	1,222	856	110	1,223	746	110	1,223	624	110	1,223	502	110	—	—	—	—	—	—
	67	1,117	1,106	107	1,120	986	107	1,124	866	107	1,125	743	107	1,124	630	107	1,124	506	108	—	—	—
	62	1,112	1,112	107	1,061	1,061	106	1,025	995	105	1,028	874	105	1,030	742	105	1,030	628	105	1,029	504	105
	57	1,111	1,111	107	1,060	1,060	106	1,012	1,007	105	970	945	104	938	867	103	941	751	103	941	623	103

Table 33: 105 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
34,000	77	1,400	1,008	114	1,400	854	114	1,400	686	114	1,400	532	114	—	—	—	—	—	—	—	—	—
	72	1,288	1,185	111	1,294	1,009	111	1,295	855	111	1,295	699	111	1,294	531	111	—	—	—	—	—	—
	67	1,244	1,244	110	1,187	1,187	109	1,190	1,023	109	1,193	859	109	1,193	704	109	1,193	537	109	—	—	—
	62	1,243	1,243	110	1,185	1,185	109	1,127	1,127	107	1,092	1,026	107	1,096	866	107	1,096	702	107	1,096	537	107
	57	1,242	1,242	110	1,184	1,184	109	1,126	1,126	107	1,072	1,061	106	1,025	986	105	1,003	872	105	1,006	699	105
38,000	77	1,421	1,065	114	1,422	896	114	1,421	725	114	1,421	540	114	—	—	—	—	—	—	—	—	—
	72	1,308	1,269	111	1,314	1,077	112	1,318	896	112	1,318	725	112	1,317	553	112	—	—	—	—	—	—
	67	1,290	1,290	111	1,228	1,228	110	1,210	1,089	109	1,216	912	110	1,215	729	110	1,214	558	110	—	—	—
	62	1,290	1,290	111	1,228	1,228	110	1,167	1,167	108	1,111	1,100	107	1,116	915	107	1,117	737	107	1,116	558	107
	57	1,289	1,289	111	1,227	1,227	110	1,166	1,166	108	1,106	1,105	107	1,057	1,024	106	1,021	916	105	1,025	739	105
42,000	77	1,437	1,135	114	1,440	936	115	1,440	749	115	1,440	547	115	—	—	—	—	—	—	—	—	—
	72	1,331	1,331	112	1,330	1,157	112	1,335	948	112	1,335	761	112	1,335	561	112	—	—	—	—	—	—
	67	1,334	1,334	112	1,266	1,266	110	1,227	1,153	110	1,234	950	110	1,234	765	110	1,233	567	110	—	—	—
	62	1,329	1,329	112	1,265	1,265	110	1,202	1,202	109	1,140	1,140	108	1,132	962	108	1,135	760	108	1,133	567	108
	57	1,328	1,328	112	1,264	1,264	110	1,201	1,201	109	1,139	1,139	108	1,086	1,057	107	1,037	967	105	1,041	768	106
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,357	1,357	113	1,340	1,197	112	1,347	979	112	1,346	775	113	1,347	573	113	—	—	—	—	—	—
	67	1,357	1,357	113	1,290	1,290	111	1,238	1,199	110	1,244	994	110	1,246	787	110	1,244	580	111	—	—	—
	62	1,355	1,355	113	1,290	1,290	111	1,225	1,225	110	1,161	1,161	108	1,143	998	108	1,146	781	108	1,144	579	108
	57	1,354	1,354	112	1,289	1,289	111	1,224	1,224	110	1,160	1,160	108	1,104	1,080	107	1,054	989	106	1,051	791	106

Table 34: 105 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21,000	77	1,217	754	121	1,216	657	122	1,217	560	122	1,217	450	122	—	—	—	—	—	—	—	—	—
	72	1,118	872	119	1,120	762	119	1,121	661	119	1,121	560	119	1,121	460	119	—	—	—	—	—	—
	67	1,022	971	116	1,024	870	116	1,027	770	117	1,028	668	117	1,028	565	117	1,028	462	117	—	—	—
	62	999	999	116	953	953	115	937	871	114	938	769	114	939	667	114	939	563	115	939	460	115
	57	998	998	116	952	952	115	912	901	114	874	846	113	—	—	—	—	—	—	—	—	—
25,000	77	1,259	831	123	1,259	705	123	1,260	592	123	1,260	466	123	—	—	—	—	—	—	—	—	—
	72	1,159	962	120	1,161	836	120	1,163	721	120	1,163	593	120	1,163	477	120	—	—	—	—	—	—
	67	1,072	1,072	118	1,065	969	118	1,068	843	118	1,070	717	118	1,070	599	118	1,070	482	118	—	—	—
	62	1,071	1,071	118	1,021	1,021	116	974	965	115	978	851	115	980	725	116	980	598	116	980	480	116
	57	1,070	1,070	118	1,020	1,020	116	971	969	115	931	910	114	893	843	113	895	722	113	896	600	114
34,000	77	1,323	979	124	1,325	822	124	1,325	663	125	1,326	504	125	—	—	—	—	—	—	—	—	—
	72	1,218	1,157	122	1,223	990	122	1,227	835	122	1,228	675	122	1,228	516	122	—	—	—	—	—	—
	67	1,193	1,193	121	1,137	1,137	119	1,127	1,003	119	1,131	837	119	1,131	679	120	1,131	509	120	—	—	—
	62	1,193	1,193	121	1,136	1,136	119	1,080	1,080	118	1,034	1,003	117	1,038	841	117	1,041	676	117	1,040	520	117
	57	1,192	1,192	121	1,135	1,135	119	1,079	1,079	118	1,025	1,020	117	980	947	116	951	844	115	954	680	115
38,000	77	1,339	1,045	125	1,344	874	125	1,345	686	125	1,345	511	125	—	—	—	—	—	—	—	—	—
	72	1,238	1,238	122	1,241	1,067	122	1,247	873	122	1,248	699	123	1,248	524	123	—	—	—	—	—	—
	67	1,235	1,235	122	1,176	1,176	120	1,144	1,064	120	1,150	885	120	1,152	702	120	1,151	529	120	—	—	—
	62	1,234	1,234	122	1,176	1,176	120	1,117	1,117	119	1,059	1,059	118	1,056	897	118	1,059	710	118	1,058	529	118
	57	1,234	1,234	122	1,175	1,175	120	1,116	1,116	119	1,058	1,058	118	1,010	983	116	967	893	115	971	716	116
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,273	1,273	123	1,256	1,131	123	1,263	922	123	1,263	733	123	1,263	530	123	—	—	—	—	—	—
	67	1,272	1,272	123	1,211	1,211	121	1,159	1,136	120	1,165	932	120	1,169	736	121	1,168	537	121	—	—	—
	62	1,272	1,272	123	1,210	1,210	121	1,150	1,150	120	1,090	1,090	118	1,072	943	118	1,075	742	118	1,073	547	118
	57	1,270	1,270	123	1,209	1,209	121	1,149	1,149	120	1,089	1,089	118	1,036	1,015	117	988	932	116	985	744	116
45,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,297	1,297	124	1,265	1,175	123	1,271	957	123	1,274	753	123	1,273	542	123	—	—	—	—	—	—
	67	1,296	1,296	124	1,234	1,234	122	1,175	1,165	120	1,175	967	121	1,179	757	121	1,178	549	121	—	—	—
	62	1,295	1,295	124	1,233	1,233	122	1,171	1,171	120	1,109	1,109	119	1,081	976	118	1,085	761	118	1,083	553	119
	57	1,294	1,294	123	1,232	1,232	122	1,171	1,171	120	1,109	1,109	119	1,053	1,036	117	1,004	950	116	995	765	116

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

BHC Group Heating & Cooling

Cooling performance data - 105 ton - high capacity

Table 35: 105 ton high capacity — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21000	77	1521	882	89	1522	776	89	1522	670	89	1522	578	89	-	-	-	-	-	-	-	-	-
	72	1399	993	87	1399	895	87	1399	784	88	1400	686	88	1400	574	88	-	-	-	-	-	-
	67	1279	1100	85	1279	998	86	1282	897	86	1282	795	86	1281	679	86	1283	577	86	-	-	-
	62	1189	1189	84	1170	1112	84	1172	996	84	1173	892	84	1173	786	84	1173	680	84	1173	587	84
	57	1188	1188	84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1590	970	90	-	-	-	1589	715	90	1593	589	91	-	-	-	-	-	-	-	-	-
	72	1467	1100	89	1467	968	89	1467	851	89	1468	719	89	1468	602	89	-	-	-	-	-	-
	67	1346	1225	87	1348	1106	87	1349	972	87	1349	850	87	1349	729	87	1349	607	87	-	-	-
	62	1286	1286	86	1233	1220	85	1234	1099	85	1236	977	85	1236	853	85	1236	729	85	1237	606	85
	57	1285	1285	86	1228	1226	85	1183	1160	84	-	-	-	-	-	-	-	-	-	-	-	-
34000	77	1695	1119	92	1696	967	92	1698	798	92	1699	628	92	-	-	-	-	-	-	-	-	-
	72	1570	1303	90	1571	1131	90	1571	974	90	1571	801	90	1572	644	91	-	-	-	-	-	-
	67	1455	1455	88	1445	1315	88	1448	1144	88	1448	970	89	1448	811	89	1448	652	89	-	-	-
	62	1453	1453	88	1388	1388	87	1328	1315	86	1333	1146	87	1334	987	87	1335	814	87	1333	653	87
	57	1451	1451	88	1387	1387	87	1323	1320	86	1270	1239	86	1221	1154	85	1224	987	85	1224	820	85
38000	77	1726	1191	92	1727	1019	93	1730	830	93	1730	658	93	-	-	-	-	-	-	-	-	-
	72	1600	1392	91	1604	1203	91	1605	1027	91	1605	835	91	1605	658	91	-	-	-	-	-	-
	67	1513	1513	89	1475	1402	89	1480	1213	89	1480	1036	89	1480	844	89	1479	666	89	-	-	-
	62	1512	1512	89	1444	1444	88	1376	1376	87	1360	1224	87	1363	1036	87	1362	858	87	1362	667	88
	57	1511	1511	89	1443	1443	88	1375	1375	87	1315	1293	86	1261	1206	85	1252	1045	86	1253	850	86
42000	77	1752	1261	93	1755	1053	93	1757	861	93	1759	668	93	-	-	-	-	-	-	-	-	-
	72	1625	1479	91	1631	1272	91	1631	1076	91	1631	881	91	1629	668	91	-	-	-	-	-	-
	67	1565	1565	90	1501	1486	89	1506	1280	89	1508	1086	90	1507	874	90	1507	678	90	-	-	-
	62	1563	1563	90	1493	1493	89	1422	1422	88	1384	1287	87	1388	1082	88	1388	889	88	1388	680	88
	57	1562	1562	90	1491	1491	89	1421	1421	88	1356	1339	87	1298	1248	86	1276	1088	86	1277	887	86
45000	77	1768	1309	93	1772	1099	93	1775	887	93	1777	675	94	-	-	-	-	-	-	-	-	-
	72	1640	1541	91	1646	1317	91	1647	1103	92	1647	890	92	1648	676	92	-	-	-	-	-	-
	67	1599	1599	90	1527	1527	90	1523	1325	90	1526	1114	90	1526	900	90	1524	686	90	-	-	-
	62	1598	1598	90	1526	1526	89	1453	1453	88	1400	1344	88	1406	1125	88	1404	913	88	1404	702	88
	57	1597	1597	90	1525	1525	89	1452	1452	88	1383	1373	87	1324	1277	87	1290	1134	86	1292	911	86

Table 36: 105 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21000	77	1470	867	99	1472	765	99	1472	663	99	1472	559	99	-	-	-	-	-	-	-	-	-
	72	1353	974	96	1352	866	97	1353	771	97	1353	663	97	1354	555	97	-	-	-	-	-	-
	67	1236	1088	94	1238	978	94	1240	868	94	1239	768	94	1239	669	94	1241	558	94	-	-	-
	62	1159	1159	93	1131	1085	92	1132	985	92	1133	872	92	1134	771	92	1134	669	92	1133	555	92
	57	1158	1158	93	1111	1104	92	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1535	936	100	1536	814	100	1536	691	100	1537	569	100	-	-	-	-	-	-	-	-	-
	72	1415	1076	98	1416	949	98	1416	822	98	1417	709	98	1417	581	98	-	-	-	-	-	-
	67	1296	1206	95	1300	1079	96	1302	950	96	1302	833	96	1302	703	96	1303	586	96	-	-	-
	62	1251	1251	94	1196	1196	93	1191	1084	93	1192	954	94	1193	835	94	1193	704	94	1193	584	94
	57	1250	1250	94	1194	1194	93	1148	1130	93	-	-	-	-	-	-	-	-	-	-	-	-
34000	77	1633	1094	102	1635	932	102	1636	769	102	1636	605	102	-	-	-	-	-	-	-	-	-
	72	1509	1283	100	1512	1104	100	1512	953	100	1513	787	100	1513	620	100	-	-	-	-	-	-
	67	1412	1412	98	1390	1292	97	1393	1114	97	1394	948	98	1394	795	98	1394	627	98	-	-	-
	62	1411	1411	98	1347	1347	96	1284	1284	95	1281	1127	95	1284	963	96	1283	796	96	1282	628	96
	57	1410	1410	98	1346	1346	96	1283	1283	95	1230	1204	94	1178	1125	93	1179	962	94	1178	799	94
38000	77	1663	1164	102	1663	981	102	1664	815	103	1665	633	103	-	-	-	-	-	-	-	-	-
	72	1538	1368	100	1543	1172	100	1543	1003	100	1544	818	100	1544	633	101	-	-	-	-	-	-
	67	1468	1468	99	1417	1374	98	1423	1181	98	1423	1011	98	1423	825	98	1423	641	98	-	-	-
	62	1467	1467	99	1401	1401	97	1333	1333	96	1307	1203	96	1311	1009	96	1310	825	96	1310	642	96
	57	1466	1466	99	1399	1399	97	1332	1332	96	1273	1256	95	1219	1169	94	1203	1014	94	1205	827	94
42000	77	1686	1231	103	1689	1030	103	1690	845	103	1691	643	103	-	-	-	-	-	-	-	-	-
	72	1560	1451	101	1568	1254	101	1568	1050	101	1568	847	101	1567	643	101	-	-	-	-	-	-
	67	1518	1518	100	1448	1448	98	1444	1257	98	1449	1058	99	1450	855	99	1449	652	99	-	-	-
	62	1516	1516	100	1447	1447	98	1377	1377	97	1329	1263	96	1334	1054	97	1335	868	97	1333	667	97
	57	1515	1515	100	1446	1446	98	1376	1376	97	1311	1300	96	1255	1208	95	1224	1076	94	1228	865	95

Table 36: 105 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
45000	77	1703	1277	103	1705	1074	103	1706	870	103	1707	649	104	-	-	-	-	-	-	-	-	-
	72	1573	1510	101	1583	1298	101	1583	1076	101	1583	871	101	1583	665	101	-	-	-	-	-	-
	67	1551	1551	100	1479	1479	99	1462	1315	99	1466	1085	99	1466	880	99	1466	674	99	-	-	-
	62	1549	1549	100	1478	1478	99	1407	1407	98	1344	1317	97	1351	1094	97	1350	891	97	1349	674	97
	57	1548	1548	100	1477	1477	99	1406	1406	98	1336	1331	96	1279	1237	95	1238	1111	95	1242	885	95

Table 37: 105 ton high capacity — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21000	77	1415	835	109	1416	736	109	1417	638	109	1417	524	109	-	-	-	-	-	-	-	-	-
	72	1300	949	106	1301	846	106	1302	742	106	1303	638	106	1303	534	106	-	-	-	-	-	-
	67	1190	1059	104	1191	953	104	1193	847	104	1194	752	104	1194	645	104	1195	538	104	-	-	-
	62	1126	1126	102	1087	1066	101	1090	959	101	1091	851	102	1092	742	102	1092	644	102	1091	535	102
	57	1125	1125	102	1077	1073	101	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1474	914	110	1475	797	110	1476	679	110	1477	546	110	-	-	-	-	-	-	-	-	-
	72	1358	1046	107	1360	925	108	1361	803	108	1361	680	108	1361	558	108	-	-	-	-	-	-
	67	1244	1182	105	1248	1061	105	1250	938	105	1252	801	105	1252	689	105	1252	563	105	-	-	-
	62	1214	1214	104	1159	1159	103	1143	1063	103	1146	940	103	1147	803	103	1147	688	103	1147	562	103
	57	1212	1212	104	1158	1158	103	1111	1097	102	1067	1033	101	-	-	-	-	-	-	-	-	-
34000	77	1566	1081	112	1566	908	112	1567	752	112	1567	596	112	-	-	-	-	-	-	-	-	-
	72	1444	1256	109	1448	1086	110	1449	927	110	1449	753	110	1450	594	110	-	-	-	-	-	-
	67	1366	1366	108	1329	1263	107	1334	1094	107	1337	936	107	1336	762	107	1337	602	108	-	-	-
	62	1365	1365	108	1303	1303	106	1241	1241	105	1225	1103	105	1229	934	105	1230	775	105	1229	602	105
	57	1364	1364	107	1302	1302	106	1240	1240	105	1186	1166	104	1136	1087	103	1127	940	103	1129	766	103
38000	77	1591	1146	113	1592	971	113	1593	780	113	1592	605	113	-	-	-	-	-	-	-	-	-
	72	1469	1337	110	1476	1151	110	1478	976	110	1478	798	110	1479	606	111	-	-	-	-	-	-
	67	1418	1418	109	1357	1343	107	1360	1170	108	1363	982	108	1363	804	108	1363	613	108	-	-	-
	62	1419	1419	109	1353	1353	107	1288	1288	106	1250	1175	105	1255	979	106	1255	803	106	1254	614	106
	57	1417	1417	109	1352	1352	107	1287	1287	106	1227	1214	105	1174	1128	104	1150	990	103	1154	801	103
42000	77	1614	1210	113	1615	1018	113	1617	808	113	1619	615	114	-	-	-	-	-	-	-	-	-
	72	1489	1430	110	1497	1227	111	1501	1020	111	1500	825	111	1499	630	111	-	-	-	-	-	-
	67	1466	1466	110	1398	1398	108	1381	1229	108	1387	1026	108	1387	832	109	1387	638	109	-	-	-
	62	1464	1464	110	1397	1397	108	1329	1329	107	1270	1244	106	1277	1034	106	1277	830	106	1276	638	106
	57	1464	1464	110	1396	1396	108	1328	1328	107	1262	1258	105	1208	1168	104	1170	1048	104	1174	837	104
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1503	1488	111	1510	1269	111	1514	1060	111	1514	848	111	1514	636	111	-	-	-	-	-	-
	67	1497	1497	110	1427	1427	109	1395	1283	108	1402	1066	109	1403	856	109	1402	645	109	-	-	-
	62	1495	1495	110	1426	1426	109	1357	1357	107	1289	1289	106	1290	1083	106	1291	852	107	1290	645	107
	57	1495	1495	110	1425	1425	109	1356	1356	107	1288	1288	106	1231	1197	105	1183	1081	104	1187	856	104

Table 38: 105 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21000	77	1355	813	119	1356	719	120	1357	610	120	1357	502	120	-	-	-	-	-	-	-	-	-
	72	1245	934	117	1246	822	117	1251	726	117	1249	612	117	1250	512	117	-	-	-	-	-	-
	67	1140	1037	114	1141	936	114	1143	823	114	1145	721	114	1145	618	114	1145	515	114	-	-	-
	62	1090	1090	113	1044	1034	112	1044	940	112	1046	826	112	1046	722	112	1047	618	112	1047	513	112
	57	1089	1089	113	1041	1039	111	1001	984	111	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1409	887	121	1410	775	121	1410	649	121	1411	522	121	-	-	-	-	-	-	-	-	-
	72	1297	1025	118	1299	897	118	1302	781	118	1302	651	118	1302	534	118	-	-	-	-	-	-
	67	1188	1153	115	1193	1038	115	1195	908	116	1198	779	116	1198	659	116	1198	539	116	-	-	-
	62	1173	1173	115	1120	1120	113	1094	1039	113	1095	909	113	1097	790	113	1097	658	113	1097	538	113
	57	1172	1172	115	1119	1119	113	1071	1062	112	1028	997	111	1002	909	111	1003	783	111	1003	664	111
34000	77	1491	1059	123	1492	895	123	1493	732	123	1494	568	123	-	-	-	-	-	-	-	-	-
	72	1373	1236	120	1378	1061	120	1381	898	120	1382	733	121	1382	567	121	-	-	-	-	-	-
	67	1317	1317	118	1266	1240	117	1271	1068	117	1274	905	118	1275	739	118	1275	574	118	-	-	-
	62	1315	1315	118	1255	1255	117	1195	1195	115	1168	1074	115	1172	914	115	1174	740	115	1173	575	116
	57	1314	1314	118	1254	1254	117	1194	1194	115	1140	1124	114	1091	1048	113	1074	914	113	1077	748	113

BHC Group Heating & Cooling

Table 38: 105 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
38000	77	1515	1121	124	1515	939	124	1516	758	124	1518	577	124	-	-	-	-	-	-	-	-	-
	72	1396	1313	121	1402	1136	121	1407	943	121	1408	760	121	1409	578	121	-	-	-	-	-	-
	67	1366	1366	120	1302	1302	118	1294	1139	118	1299	948	118	1299	767	119	1298	584	119	-	-	-
	62	1365	1365	120	1301	1301	118	1239	1239	117	1190	1154	116	1195	956	116	1196	777	116	1196	598	116
	57	1364	1364	120	1300	1300	118	1238	1238	117	1178	1172	115	1127	1087	114	1096	972	113	1099	784	114
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1415	1401	121	1420	1207	121	1428	1000	122	1428	800	122	1429	600	122	-	-	-	-	-	-
	67	1409	1409	121	1343	1343	119	1313	1208	119	1319	1003	119	1321	806	119	1321	608	119	-	-	-
	62	1408	1408	121	1342	1342	119	1277	1277	118	1213	1213	116	1214	1007	116	1216	803	117	1215	607	117
	57	1407	1407	121	1341	1341	119	1276	1276	118	1212	1212	116	1158	1124	115	1113	1017	114	1117	814	114
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1439	1439	122	1434	1247	122	1440	1037	122	1441	821	122	1441	605	122	-	-	-	-	-	-
	67	1438	1438	122	1371	1371	120	1325	1259	119	1333	1039	119	1335	828	120	1335	614	120	-	-	-
	62	1437	1437	121	1370	1370	120	1303	1303	118	1237	1237	117	1226	1054	117	1229	836	117	1228	614	117
	57	1436	1436	121	1369	1369	120	1302	1302	118	1236	1236	117	1180	1151	115	1127	1061	114	1129	833	115

Table 39: 105 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
21000	77	1286	797	131	1291	684	131	1291	581	131	1292	478	131	-	-	-	-	-	-	-	-	-
	72	1185	912	128	1188	796	128	1189	701	128	1190	595	129	1191	488	129	-	-	-	-	-	-
	67	1085	1020	125	1088	914	126	1089	806	126	1091	698	126	1092	590	126	1093	492	126	-	-	-
	62	1051	1051	124	1004	1004	123	996	917	123	997	808	123	998	699	123	999	599	124	999	490	124
	57	1050	1050	124	1003	1003	123	963	949	122	-	-	-	-	-	-	-	-	-	-	-	-
25000	77	1338	870	133	1339	750	133	1341	617	133	1341	496	133	-	-	-	-	-	-	-	-	-
	72	1230	997	129	1234	876	130	1238	755	130	1239	632	130	1239	508	130	-	-	-	-	-	-
	67	1131	1131	127	1134	1009	127	1136	886	127	1139	763	127	1140	639	127	1140	513	128	-	-	-
	62	1129	1129	127	1078	1078	125	1039	1007	124	1042	886	125	1043	762	125	1045	638	125	1045	512	125
	57	1128	1128	127	1077	1077	125	1028	1023	124	986	960	123	953	890	122	955	762	122	956	632	123
34000	77	1410	1030	135	1413	862	135	1415	693	135	1416	538	135	-	-	-	-	-	-	-	-	-
	72	1298	1207	131	1302	1041	132	1309	864	132	1310	708	132	1312	538	132	-	-	-	-	-	-
	67	1262	1262	130	1204	1204	129	1204	1048	129	1208	881	129	1209	713	129	1209	544	130	-	-	-
	62	1261	1261	130	1203	1203	129	1145	1145	127	1107	1051	126	1110	888	127	1114	713	127	1113	557	127
	57	1261	1261	130	1202	1202	129	1144	1144	127	1090	1080	126	1043	1006	125	1019	885	124	1021	719	124
38000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1319	1293	132	1325	1113	132	1332	919	133	1334	733	133	1335	561	133	-	-	-	-	-	-
	67	1307	1307	132	1247	1247	130	1224	1114	130	1230	922	130	1232	739	130	1231	566	130	-	-	-
	62	1307	1307	132	1246	1246	130	1186	1186	128	1128	1117	127	1130	938	127	1134	748	128	1133	566	128
	57	1306	1306	132	1245	1245	130	1185	1185	128	1126	1124	127	1076	1044	126	1037	939	125	1041	759	125
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1349	1349	133	1342	1181	133	1351	973	133	1353	771	133	1353	568	134	-	-	-	-	-	-
	67	1348	1348	133	1284	1284	131	1242	1192	130	1246	984	130	1252	776	131	1250	575	131	-	-	-
	62	1346	1346	133	1284	1284	131	1222	1222	129	1159	1159	128	1148	987	128	1152	783	128	1151	575	128
	57	1346	1346	133	1283	1283	131	1221	1221	129	1159	1159	128	1105	1078	126	1055	994	125	1057	788	126
45000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1375	1375	134	1353	1231	133	1361	1007	133	1363	790	134	1364	573	134	-	-	-	-	-	-
	67	1376	1376	134	1310	1310	132	1251	1239	130	1257	1018	131	1264	796	131	1264	581	131	-	-	-
	62	1374	1374	134	1310	1310	132	1246	1246	130	1183	1183	128	1159	1032	128	1162	802	128	1163	593	129
	57	1373	1373	134	1309	1309	132	1245	1245	130	1182	1182	128	1124	1103	127	1073	1013	126	1067	815	126

Cooling performance data - 120 ton - standard efficiency

Table 40: 120 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,643	969	84	1,643	854	84	1,642	739	85	1,642	624	85	—	—	—	—	—	—	—	—	—
	72	1,506	1,100	84	1,506	979	84	1,506	858	84	1,505	737	84	1,504	616	85	—	—	—	—	—	—
	67	1,379	1,213	84	1,379	1,103	84	1,378	979	84	1,377	854	84	1,376	743	84	1,374	618	84	—	—	—
	62	1,293	1,293	83	1,258	1,208	83	1,258	1,094	83	1,257	980	83	1,256	854	83	1,254	740	83	1,253	614	83
	57	1,292	1,292	83	1,238	1,230	83	1,190	1,162	82	—	—	—	—	—	—	—	—	—	—	—	—

BHC Group Heating & Cooling

Table 40: 120 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
29,000	77	1,723	1,068	85	1,722	930	85	1,722	792	85	1,720	636	85	—	—	—	—	—	—	—	—	—
	72	1,581	1,218	84	1,581	1,075	84	1,581	933	85	1,579	790	85	1,578	647	85	—	—	—	—	—	—
	67	1,450	1,363	84	1,450	1,218	84	1,450	1,073	84	1,449	927	84	1,447	796	84	1,444	650	85	—	—	—
	62	1,405	1,405	84	1,341	1,341	83	1,327	1,221	83	1,327	1,075	84	1,325	928	84	1,323	794	84	1,319	646	84
	57	1,404	1,404	84	1,339	1,339	83	1,284	1,266	83	1,231	1,189	83	1,211	1,075	83	1,209	933	83	1,207	789	83
34,200	77	1,782	1,158	85	1,782	998	85	1,781	837	85	1,779	658	85	—	—	—	—	—	—	—	—	—
	72	1,642	1,330	85	1,641	1,165	85	1,641	1,001	85	1,639	836	85	1,636	671	85	—	—	—	—	—	—
	67	1,506	1,506	84	1,507	1,341	84	1,505	1,174	84	1,504	1,008	85	1,503	841	85	1,498	674	85	—	—	—
	62	1,502	1,502	84	1,432	1,432	84	1,379	1,338	84	1,379	1,172	84	1,378	1,006	84	1,375	839	84	1,371	672	84
	57	1,500	1,500	84	1,430	1,430	84	1,364	1,357	84	1,306	1,272	83	1,262	1,169	83	1,261	1,006	83	1,258	843	84
42,000	77	1,848	1,294	85	1,848	1,090	85	1,846	886	85	1,843	700	86	—	—	—	—	—	—	—	—	—
	72	1,706	1,501	85	1,704	1,295	85	1,703	1,107	85	1,701	902	85	1,697	696	86	—	—	—	—	—	—
	67	1,621	1,621	84	1,571	1,508	85	1,570	1,303	85	1,568	1,098	85	1,564	907	85	1,558	701	86	—	—	—
	62	1,619	1,619	84	1,542	1,542	84	1,466	1,466	84	1,438	1,309	84	1,435	1,105	85	1,432	902	85	1,427	699	85
	57	1,618	1,618	84	1,541	1,541	84	1,465	1,465	84	1,397	1,375	84	1,334	1,279	84	1,315	1,108	84	1,312	900	84
48,000	77	—	—	—	—	—	—	—	—	—	1,879	714	86	—	—	—	—	—	—	—	—	—
	72	1,743	1,621	85	1,741	1,393	85	1,741	1,166	85	1,739	939	86	1,732	728	86	—	—	—	—	—	—
	67	1,695	1,695	84	1,614	1,614	84	1,605	1,396	85	1,602	1,169	85	1,598	943	85	1,591	732	86	—	—	—
	62	1,693	1,693	84	1,612	1,612	84	1,530	1,530	84	1,474	1,400	85	1,471	1,177	85	1,467	954	85	1,459	730	85
	57	1,692	1,692	84	1,611	1,611	84	1,530	1,530	84	1,454	1,441	84	1,387	1,337	84	1,347	1,184	84	1,343	957	84

Table 41: 120 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,591	955	94	1,591	827	94	1,591	716	95	1,590	588	95	—	—	—	—	—	—	—	—	—
	72	1,459	1,079	94	1,458	948	94	1,458	831	94	1,456	714	94	1,455	597	94	—	—	—	—	—	—
	67	1,334	1,188	92	1,334	1,081	93	1,333	960	93	1,332	839	93	1,330	718	93	1,329	598	93	—	—	—
	62	1,261	1,261	92	1,215	1,190	91	1,216	1,070	91	1,215	960	91	1,215	838	91	1,213	715	92	1,212	594	92
	57	1,260	1,260	91	1,204	1,200	91	1,157	1,133	90	1,111	1,068	90	1,108	955	90	1,107	834	90	1,106	714	90
29,000	77	1,667	1,050	95	1,666	900	95	1,666	766	95	1,664	616	96	—	—	—	—	—	—	—	—	—
	72	1,529	1,192	94	1,529	1,055	94	1,528	901	94	1,526	763	95	1,524	625	95	—	—	—	—	—	—
	67	1,401	1,331	93	1,401	1,191	93	1,401	1,051	93	1,399	909	93	1,397	768	94	1,395	628	94	—	—	—
	62	1,369	1,369	93	1,305	1,305	92	1,282	1,192	92	1,281	1,050	92	1,279	908	92	1,277	766	92	1,273	624	93
	57	1,368	1,368	93	1,304	1,304	92	1,247	1,233	92	1,195	1,157	91	1,169	1,050	91	1,168	911	91	1,165	762	91
34,200	77	1,721	1,136	95	1,721	981	95	1,720	809	96	1,718	636	96	—	—	—	—	—	—	—	—	—
	72	1,586	1,301	95	1,586	1,142	95	1,585	983	95	1,583	807	95	1,579	647	95	—	—	—	—	—	—
	67	1,463	1,463	93	1,454	1,309	94	1,452	1,147	94	1,451	987	94	1,449	812	94	1,445	650	94	—	—	—
	62	1,462	1,462	93	1,392	1,392	93	1,330	1,316	92	1,329	1,143	93	1,328	983	93	1,326	822	93	1,321	647	93
	57	1,461	1,461	93	1,391	1,391	93	1,324	1,321	92	1,267	1,236	92	1,215	1,147	91	1,215	982	92	1,212	812	92
42,000	77	—	—	—	—	—	—	1,782	873	96	1,777	675	97	—	—	—	—	—	—	—	—	—
	72	1,645	1,464	95	1,644	1,282	95	1,643	1,068	95	1,640	869	96	1,634	670	96	—	—	—	—	—	—
	67	1,576	1,576	94	1,514	1,483	94	1,513	1,286	94	1,511	1,088	95	1,507	874	95	1,501	675	95	—	—	—
	62	1,574	1,574	94	1,499	1,499	94	1,423	1,423	93	1,385	1,274	93	1,382	1,078	94	1,379	882	94	1,373	686	94
	57	1,574	1,574	94	1,497	1,497	94	1,422	1,422	93	1,353	1,334	93	1,291	1,240	92	1,266	1,080	92	1,262	879	93
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,682	1,598	95	1,679	1,377	95	1,678	1,141	96	1,675	921	96	1,668	700	96	—	—	—	—	—	—
	67	1,648	1,648	95	1,566	1,566	94	1,546	1,376	95	1,542	1,156	95	1,538	923	95	1,531	704	96	—	—	—
	62	1,646	1,646	95	1,565	1,565	94	1,485	1,485	94	1,418	1,376	94	1,415	1,160	94	1,411	932	94	1,404	702	95
	57	1,645	1,645	95	1,564	1,564	94	1,484	1,484	94	1,407	1,400	93	1,341	1,299	93	1,295	1,152	93	1,291	931	93

Table 42: 120 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,534	921	105	1,535	813	105	1,534	690	105	1,534	567	105	—	—	—	—	—	—	—	—	—
	72	1,407	1,055	103	1,406	928	103	1,405	815	103	1,404	688	104	1,403	575	104	—	—	—	—	—	—
	67	1,286	1,171	102	1,286	1,054	102	1,285	938	102	1,284	809	102	1,283	693	102	1,280	576	102	—	—	—
	62	1,226	1,226	101	1,170	1,170	100	1,172	1,055	100	1,171	937	100	1,171	808	100	1,169	690	100	1,167	572	101
	57	1,225	1,225	101	1,169	1,169	100	1,122	1,103	99	1,076	1,037	99	1,082	933	99	1,067	804	99	1,066	688	99

BHC Group Heating & Cooling

Table 42: 120 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
29,000	77	1,606	1,028	105	1,605	883	106	1,604	738	106	1,602	593	106	—	—	—	—	—	—	—	—	—
	72	1,472	1,162	104	1,471	1,030	104	1,470	882	104	1,468	749	104	1,466	601	105	—	—	—	—	—	—
	67	1,348	1,307	102	1,347	1,172	103	1,347	1,024	103	1,346	888	103	1,344	739	103	1,341	603	103	—	—	—
	62	1,330	1,330	102	1,267	1,267	101	1,233	1,171	101	1,232	1,023	101	1,231	886	101	1,228	749	102	1,224	600	102
	57	1,329	1,329	102	1,265	1,265	101	1,208	1,198	101	1,157	1,122	100	1,124	1,030	100	1,123	887	100	1,120	741	100
34,200	77	1,656	1,109	106	1,655	943	106	1,654	777	106	1,651	611	107	—	—	—	—	—	—	—	—	—
	72	1,525	1,281	105	1,525	1,113	105	1,524	960	105	1,521	791	105	1,517	622	106	—	—	—	—	—	—
	67	1,420	1,420	103	1,397	1,285	103	1,395	1,116	103	1,393	961	104	1,391	793	104	1,388	624	104	—	—	—
	62	1,419	1,419	103	1,350	1,350	102	1,282	1,282	102	1,312	1,076	103	1,276	957	102	1,273	790	102	1,269	622	103
	57	1,418	1,418	103	1,349	1,349	102	1,281	1,281	102	1,230	1,191	101	1,170	1,117	100	1,167	952	101	1,164	789	101
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,581	1,454	105	1,578	1,247	106	1,577	1,056	106	1,573	849	106	1,568	659	106	—	—	—	—	—	—
	67	1,527	1,527	104	1,453	1,453	104	1,451	1,248	104	1,450	1,058	104	1,446	853	105	1,439	647	105	—	—	—
	62	1,526	1,526	104	1,451	1,451	104	1,377	1,377	103	1,329	1,249	103	1,325	1,060	103	1,321	859	103	1,315	658	103
	57	1,525	1,525	104	1,450	1,450	104	1,376	1,376	103	1,306	1,293	102	1,246	1,202	102	1,213	1,056	101	1,210	853	102
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,611	1,563	105	1,611	1,353	106	1,610	1,127	106	1,606	899	106	1,599	672	107	—	—	—	—	—	—
	67	1,595	1,595	105	1,516	1,516	105	1,483	1,349	105	1,478	1,123	105	1,474	899	105	1,467	675	106	—	—	—
	62	1,594	1,594	105	1,515	1,515	104	1,436	1,436	104	1,358	1,358	103	1,356	1,126	103	1,352	906	104	1,344	672	104
	57	1,593	1,593	105	1,514	1,514	104	1,435	1,435	104	1,357	1,357	103	1,293	1,255	102	1,241	1,126	102	1,236	902	102

Table 43: 120 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,473	899	115	1,473	781	115	1,472	662	116	1,471	544	116	—	—	—	—	—	—	—	—	—
	72	1,350	1,026	113	1,350	905	113	1,349	783	114	1,348	674	114	1,347	552	114	—	—	—	—	—	—
	67	1,235	1,148	111	1,234	1,025	112	1,234	913	112	1,233	789	112	1,231	677	112	1,229	553	112	—	—	—
	62	1,189	1,189	111	1,134	1,134	110	1,125	1,024	110	1,124	911	110	1,123	786	110	1,122	673	110	1,120	549	110
	57	1,188	1,188	110	1,133	1,133	110	1,085	1,068	109	1,040	1,005	108	1,025	902	108	1,024	782	108	1,022	668	108
29,000	77	1,539	1,000	116	1,539	862	116	1,537	722	117	1,535	568	117	—	—	—	—	—	—	—	—	—
	72	1,411	1,143	114	1,410	1,001	115	1,408	859	115	1,407	717	115	1,405	576	115	—	—	—	—	—	—
	67	1,289	1,289	112	1,290	1,148	113	1,291	1,007	113	1,290	864	113	1,288	721	113	1,284	578	113	—	—	—
	62	1,288	1,288	112	1,226	1,226	111	1,179	1,143	111	1,180	1,003	111	1,179	861	111	1,177	718	111	1,173	575	111
	57	1,287	1,287	112	1,225	1,225	111	1,166	1,160	110	1,116	1,087	110	1,075	1,005	109	1,076	859	109	1,073	719	109
34,200	77	1,585	1,094	117	1,584	919	117	1,583	760	117	1,579	600	118	—	—	—	—	—	—	—	—	—
	72	1,460	1,256	115	1,459	1,094	115	1,458	933	115	1,456	757	116	1,451	595	116	—	—	—	—	—	—
	67	1,373	1,373	114	1,337	1,257	113	1,335	1,095	114	1,333	933	114	1,330	758	114	1,326	597	114	—	—	—
	62	1,372	1,372	114	1,305	1,305	113	1,238	1,238	112	1,220	1,098	112	1,221	928	112	1,218	767	112	1,213	594	112
	57	1,371	1,371	114	1,304	1,304	113	1,237	1,237	112	1,180	1,160	111	1,127	1,078	110	1,115	931	110	1,113	764	110
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,512	1,421	116	1,508	1,221	116	1,506	1,024	116	1,503	827	117	1,497	629	117	—	—	—	—	—	—
	67	1,475	1,475	115	1,401	1,401	114	1,387	1,220	114	1,385	1,025	115	1,381	829	115	1,374	632	115	—	—	—
	62	1,474	1,474	115	1,400	1,400	114	1,327	1,327	113	1,269	1,231	112	1,266	1,025	113	1,262	833	113	1,256	628	113
	57	1,473	1,473	115	1,399	1,399	114	1,326	1,326	113	1,257	1,251	112	1,197	1,157	111	1,157	1,029	111	1,155	824	111
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,540	1,540	116	1,539	1,323	117	1,537	1,091	117	1,533	874	117	1,526	641	118	—	—	—	—	—	—
	67	1,539	1,539	116	1,461	1,461	115	1,415	1,316	115	1,410	1,100	115	1,407	872	115	1,399	643	116	—	—	—
	62	1,538	1,538	116	1,461	1,461	115	1,383	1,383	114	1,307	1,307	113	1,294	1,100	113	1,290	877	114	1,282	641	114
	57	1,537	1,537	116	1,459	1,459	115	1,382	1,382	114	1,306	1,306	113	1,242	1,209	112	1,183	1,104	111	1,178	869	112

Table 44: 120 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,407	873	126	1,407	760	127	1,406	647	127	1,406	520	127	—	—	—	—	—	—	—	—	—
	72	1,290	1,007	124	1,290	877	124	1,289	761	125	1,288	644	125	1,286	527	125	—	—	—	—	—	—
	67	1,178	1,119	122	1,180	1,003	122	1,179	884	122	1,178	766	123	1,177	647	123	1,174	528	123	—	—	—
	62	1,149	1,149	121	1,095	1,095	120	1,075	1,000	120	1,075	881	120	1,074	762	120	1,072	643	121	1,070	524	121
	57	1,148	1,148	121	1,094	1,094	120	1,046	1,033	120	1,002	969	119	979	879	118	978	763	119	977	638	119

BHC Group Heating & Cooling

Table 44: 120 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
29,000	77	1,468	969	128	1,467	836	128	1,466	689	128	1,463	541	128	—	—	—	—	—	—	—	—	—
	72	1,345	1,116	125	1,344	968	126	1,343	833	126	1,341	684	126	1,338	549	126	—	—	—	—	—	—
	67	1,243	1,243	123	1,230	1,120	123	1,231	972	124	1,230	836	124	1,228	688	124	1,225	551	124	—	—	—
	62	1,242	1,242	123	1,182	1,182	122	1,122	1,122	121	1,125	979	122	1,125	832	122	1,122	696	122	1,118	548	122
	57	1,241	1,241	123	1,181	1,181	122	1,121	1,121	121	1,073	1,049	120	1,025	976	119	1,025	829	120	1,023	686	120
34,200	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,390	1,223	126	1,389	1,069	126	1,388	902	127	1,386	734	127	1,382	566	127	—	—	—	—	—	—
	67	1,323	1,323	125	1,272	1,234	124	1,271	1,068	124	1,270	902	125	1,267	735	125	1,262	568	125	—	—	—
	62	1,322	1,322	125	1,256	1,256	124	1,191	1,191	123	1,162	1,069	122	1,162	906	123	1,159	742	123	1,154	565	123
	57	1,321	1,321	125	1,255	1,255	124	1,190	1,190	123	1,132	1,117	122	1,081	1,038	121	1,062	905	121	1,059	736	121
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,435	1,392	127	1,433	1,189	127	1,432	1,002	128	1,429	800	128	1,423	598	128	—	—	—	—	—	—
	67	1,418	1,418	126	1,347	1,347	125	1,318	1,199	125	1,316	1,000	126	1,313	801	126	1,306	601	126	—	—	—
	62	1,417	1,417	126	1,346	1,346	125	1,275	1,275	124	1,205	1,205	123	1,203	999	123	1,200	804	124	1,192	596	124
	57	1,416	1,416	126	1,345	1,345	125	1,274	1,274	124	1,204	1,204	123	1,147	1,113	122	1,099	997	121	1,097	800	122
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,479	1,479	128	1,461	1,286	128	1,459	1,065	128	1,456	845	128	1,448	623	129	—	—	—	—	—	—
	67	1,478	1,478	128	1,403	1,403	126	1,344	1,290	126	1,339	1,071	126	1,335	841	126	1,327	611	127	—	—	—
	62	1,477	1,477	127	1,402	1,402	126	1,327	1,327	125	1,253	1,253	124	1,229	1,069	124	1,225	845	124	1,217	620	125
	57	1,476	1,476	127	1,401	1,401	126	1,326	1,326	125	1,252	1,252	124	1,188	1,161	123	1,128	1,065	122	1,118	845	122

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 120 ton - high efficiency

Table 45: 120 ton high efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,646	971	83	1,646	856	83	1,645	740	83	1,645	625	83	—	—	—	—	—	—	—	—	—
	72	1,508	1,101	82	1,509	981	83	1,508	860	83	1,507	739	83	1,506	618	83	—	—	—	—	—	—
	67	1,381	1,215	82	1,382	1,092	82	1,381	981	82	1,380	856	82	1,378	744	83	1,377	620	83	—	—	—
	62	1,296	1,296	82	1,258	1,220	82	1,260	1,096	82	1,260	982	82	1,258	856	82	1,257	742	82	1,257	616	82
	57	1,294	1,294	82	1,240	1,234	82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
29,000	77	1,725	1,070	83	1,725	931	83	1,723	793	83	1,723	637	83	—	—	—	—	—	—	—	—	—
	72	1,585	1,220	83	1,585	1,078	83	1,584	935	83	1,583	791	83	1,581	648	83	—	—	—	—	—	—
	67	1,452	1,365	82	1,453	1,220	83	1,452	1,075	83	1,451	929	83	1,449	797	83	1,447	651	83	—	—	—
	62	1,407	1,407	82	1,343	1,343	82	1,328	1,222	82	1,330	1,077	82	1,329	930	82	1,326	796	83	1,323	648	83
	57	1,406	1,406	82	1,342	1,342	82	1,286	1,268	82	1,234	1,192	82	1,213	1,077	82	1,213	937	82	1,211	792	82
34,200	77	1,784	1,160	83	1,784	999	83	1,783	838	83	1,782	659	83	—	—	—	—	—	—	—	—	—
	72	1,645	1,333	83	1,644	1,167	83	1,643	1,002	83	1,641	837	83	1,638	672	84	—	—	—	—	—	—
	67	1,516	1,485	82	1,509	1,343	83	1,509	1,177	83	1,508	1,010	83	1,506	843	83	1,502	676	84	—	—	—
	62	1,504	1,504	82	1,434	1,434	82	1,383	1,342	82	1,382	1,175	83	1,381	1,008	83	1,379	841	83	1,375	674	83
	57	1,503	1,503	82	1,433	1,433	82	1,367	1,360	82	1,309	1,274	82	1,265	1,172	82	1,265	1,010	82	1,262	835	82
42,000	77	—	—	—	—	—	—	—	—	—	1,845	701	84	—	—	—	—	—	—	—	—	—
	72	1,708	1,503	83	1,708	1,298	83	1,706	1,109	83	1,704	903	84	1,700	697	84	—	—	—	—	—	—
	67	1,622	1,622	83	1,571	1,508	83	1,573	1,305	83	1,570	1,099	83	1,567	909	84	1,561	703	84	—	—	—
	62	1,621	1,621	83	1,544	1,544	83	1,468	1,468	83	1,441	1,311	83	1,440	1,109	83	1,437	905	83	1,430	701	84
	57	1,620	1,620	83	1,543	1,543	83	1,467	1,467	83	1,399	1,378	83	1,337	1,282	82	1,319	1,112	83	1,316	903	83
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,744	1,622	83	1,744	1,396	83	1,743	1,168	83	1,740	940	84	1,735	729	84	—	—	—	—	—	—
	67	1,696	1,696	83	1,618	1,602	83	1,608	1,399	83	1,605	1,172	83	1,601	945	84	1,595	734	84	—	—	—
	62	1,695	1,695	83	1,613	1,613	83	1,533	1,533	83	1,476	1,417	83	1,475	1,180	83	1,471	956	84	1,463	732	84
	57	1,694	1,694	83	1,612	1,612	83	1,532	1,532	83	1,456	1,446	83	1,390	1,341	83	1,350	1,187	83	1,347	960	83

BHC Group Heating & Cooling

Table 46: 120 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,594	957	93	1,594	829	93	1,593	717	93	1,593	589	93	—	—	—	—	—	—	—	—	—
	72	1,461	1,067	92	1,461	950	92	1,460	832	92	1,459	715	92	1,458	598	93	—	—	—	—	—	—
	67	1,336	1,202	91	1,337	1,070	91	1,337	962	92	1,336	842	92	1,335	721	92	1,332	600	92	—	—	—
	62	1,264	1,264	91	1,221	1,196	90	1,219	1,072	90	1,219	951	91	1,218	840	91	1,217	718	91	1,216	596	91
	57	1,263	1,263	91	1,208	1,204	90	1,160	1,136	90	—	—	—	—	—	—	—	—	—	—	—	—
29,000	77	1,669	1,052	93	1,669	901	93	1,667	767	94	1,666	616	94	—	—	—	—	—	—	—	—	—
	72	1,532	1,195	93	1,532	1,057	93	1,531	904	93	1,530	765	93	1,528	627	93	—	—	—	—	—	—
	67	1,402	1,346	92	1,404	1,193	92	1,404	1,053	92	1,403	912	92	1,401	770	92	1,398	629	93	—	—	—
	62	1,371	1,371	91	1,307	1,307	91	1,282	1,205	91	1,285	1,054	91	1,284	911	91	1,281	769	92	1,278	626	92
	57	1,370	1,370	91	1,306	1,306	91	1,250	1,237	91	1,199	1,160	90	1,171	1,052	90	1,172	914	90	1,170	764	90
34,200	77	1,725	1,139	93	1,724	966	94	1,723	810	94	1,721	637	94	—	—	—	—	—	—	—	—	—
	72	1,589	1,303	93	1,589	1,144	93	1,587	984	93	1,585	808	94	1,582	648	94	—	—	—	—	—	—
	67	1,467	1,467	92	1,457	1,311	92	1,456	1,150	93	1,455	989	93	1,453	813	93	1,449	652	93	—	—	—
	62	1,464	1,464	92	1,395	1,395	92	1,338	1,311	91	1,333	1,147	92	1,332	986	92	1,330	825	92	1,326	650	92
	57	1,463	1,463	92	1,394	1,394	92	1,327	1,323	91	1,270	1,239	91	1,222	1,144	91	1,220	986	91	1,217	815	91
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,648	1,467	93	1,647	1,284	93	1,646	1,070	94	1,644	871	94	1,638	672	94	—	—	—	—	—	—
	67	1,578	1,578	93	1,520	1,474	93	1,517	1,289	93	1,515	1,075	93	1,511	876	93	1,504	677	94	—	—	—
	62	1,577	1,577	93	1,501	1,501	92	1,426	1,426	92	1,388	1,290	92	1,387	1,082	92	1,383	885	93	1,378	689	93
	57	1,576	1,576	93	1,500	1,500	92	1,424	1,424	92	1,356	1,340	92	1,295	1,244	91	1,270	1,083	92	1,267	883	92
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,682	1,598	93	1,682	1,379	94	1,681	1,143	94	1,678	923	94	1,671	702	95	—	—	—	—	—	—
	67	1,649	1,649	93	1,568	1,568	93	1,549	1,379	93	1,546	1,160	93	1,542	925	94	1,535	706	94	—	—	—
	62	1,648	1,648	93	1,567	1,567	93	1,488	1,488	93	1,423	1,380	92	1,420	1,164	93	1,416	934	93	1,408	704	93
	57	1,647	1,647	93	1,567	1,567	93	1,487	1,487	92	1,410	1,403	92	1,345	1,302	92	1,299	1,165	92	1,296	935	92

Table 47: 120 ton high efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,539	923	103	1,538	815	103	1,538	692	104	1,537	569	104	—	—	—	—	—	—	—	—	—
	72	1,410	1,057	102	1,409	930	102	1,409	817	102	1,408	690	102	1,407	577	103	—	—	—	—	—	—
	67	1,287	1,171	101	1,290	1,058	101	1,290	941	101	1,289	812	101	1,287	695	101	1,285	578	101	—	—	—
	62	1,229	1,229	100	1,180	1,168	99	1,174	1,057	100	1,176	929	100	1,175	811	100	1,174	693	100	1,172	574	100
	57	1,228	1,228	100	1,173	1,171	99	1,126	1,106	99	—	—	—	—	—	—	—	—	—	—	—	—
29,000	77	1,608	1,029	104	1,608	884	104	1,606	739	104	1,605	594	105	—	—	—	—	—	—	—	—	—
	72	1,476	1,166	103	1,476	1,033	103	1,475	885	103	1,473	751	103	1,471	603	103	—	—	—	—	—	—
	67	1,353	1,313	101	1,352	1,176	102	1,352	1,027	102	1,350	891	102	1,349	742	102	1,346	606	102	—	—	—
	62	1,333	1,333	101	1,270	1,270	101	1,233	1,171	100	1,237	1,026	101	1,236	890	101	1,233	752	101	1,230	603	101
	57	1,332	1,332	101	1,269	1,269	101	1,211	1,201	100	1,161	1,126	99	1,127	1,032	99	1,128	891	99	1,126	745	99
34,200	77	—	—	—	1,659	945	105	1,657	779	105	1,655	612	105	—	—	—	—	—	—	—	—	—
	72	1,529	1,284	103	1,528	1,116	103	1,527	962	104	1,525	793	104	1,520	623	104	—	—	—	—	—	—
	67	1,423	1,423	102	1,400	1,288	102	1,400	1,120	102	1,399	951	103	1,396	796	103	1,393	627	103	—	—	—
	62	1,422	1,422	102	1,353	1,353	101	1,289	1,276	101	1,282	1,128	101	1,281	961	101	1,278	793	102	1,282	628	102
	57	1,420	1,420	102	1,352	1,352	101	1,285	1,283	101	1,229	1,203	100	1,176	1,123	100	1,171	956	100	1,171	794	100
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,583	1,456	104	1,582	1,249	104	1,581	1,059	104	1,578	852	105	1,572	645	105	—	—	—	—	—	—
	67	1,530	1,530	103	1,462	1,447	103	1,456	1,252	103	1,454	1,062	103	1,450	856	103	1,444	650	104	—	—	—
	62	1,529	1,529	103	1,454	1,454	103	1,380	1,380	102	1,331	1,264	102	1,331	1,064	102	1,328	863	102	1,322	661	103
	57	1,528	1,528	103	1,453	1,453	103	1,379	1,379	102	1,310	1,299	101	1,250	1,206	101	1,218	1,061	101	1,216	857	101
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,617	1,569	104	1,615	1,340	104	1,612	1,128	105	1,610	901	105	1,602	673	105	—	—	—	—	—	—
	67	1,598	1,598	104	1,518	1,518	103	1,486	1,352	103	1,483	1,127	104	1,479	902	104	1,472	677	104	—	—	—
	62	1,597	1,597	104	1,518	1,518	103	1,439	1,439	103	1,368	1,354	102	1,361	1,130	102	1,358	910	103	1,350	675	103
	57	1,596	1,596	104	1,516	1,516	103	1,438	1,438	103	1,362	1,360	102	1,297	1,259	101	1,246	1,130	101	1,242	906	101

BHC Group Heating & Cooling

Table 48: 120 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,478	902	114	1,478	784	114	1,477	665	114	1,477	546	115	—	—	—	—	—	—	—	—	—
	72	1,354	1,029	113	1,354	907	113	1,354	785	113	1,353	676	113	1,351	554	113	—	—	—	—	—	—
	67	1,236	1,150	111	1,239	1,028	111	1,239	917	111	1,238	792	111	1,237	668	111	1,235	556	112	—	—	—
	62	1,193	1,193	110	1,137	1,137	109	1,128	1,027	109	1,129	915	109	1,129	790	110	1,128	677	110	1,126	552	110
	57	1,192	1,192	110	1,136	1,136	109	1,089	1,072	109	1,045	1,009	108	1,029	906	108	1,031	787	108	1,029	672	108
29,000	77	1,543	1,003	115	1,542	864	115	1,540	724	115	1,539	569	116	—	—	—	—	—	—	—	—	—
	72	1,415	1,146	113	1,415	1,005	114	1,414	863	114	1,413	720	114	1,410	578	114	—	—	—	—	—	—
	67	1,301	1,275	112	1,296	1,153	112	1,296	1,011	112	1,295	868	112	1,293	724	112	1,290	581	113	—	—	—
	62	1,291	1,291	111	1,230	1,230	111	1,185	1,150	110	1,185	1,007	110	1,185	865	111	1,183	721	111	1,179	578	111
	57	1,290	1,290	111	1,229	1,229	111	1,171	1,165	110	1,121	1,091	109	1,082	1,002	109	1,081	863	109	1,080	723	109
34,200	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,464	1,259	114	1,463	1,097	114	1,463	936	114	1,460	759	115	1,455	597	115	—	—	—	—	—	—
	67	1,376	1,376	113	1,339	1,259	112	1,340	1,099	113	1,339	938	113	1,337	762	113	1,333	600	113	—	—	—
	62	1,375	1,375	113	1,309	1,309	112	1,243	1,243	111	1,226	1,104	111	1,226	932	111	1,224	771	112	1,219	598	112
	57	1,374	1,374	113	1,308	1,308	112	1,241	1,241	111	1,185	1,164	110	1,132	1,083	110	1,121	935	110	1,120	768	110
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,513	1,422	115	1,513	1,225	115	1,511	1,028	115	1,508	830	115	1,503	631	116	—	—	—	—	—	—
	67	1,478	1,478	114	1,405	1,405	113	1,391	1,224	113	1,390	1,029	114	1,386	832	114	1,380	635	114	—	—	—
	62	1,477	1,477	114	1,404	1,404	113	1,331	1,331	112	1,275	1,236	112	1,272	1,030	112	1,269	825	112	1,263	631	113
	57	1,476	1,476	114	1,403	1,403	113	1,331	1,331	112	1,262	1,255	112	1,203	1,163	111	1,164	1,033	110	1,162	828	111
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,550	1,534	115	1,542	1,327	115	1,541	1,094	116	1,537	876	116	1,530	643	116	—	—	—	—	—	—
	67	1,542	1,542	115	1,464	1,464	114	1,419	1,334	114	1,416	1,105	114	1,413	876	114	1,405	646	115	—	—	—
	62	1,541	1,541	115	1,464	1,464	114	1,387	1,387	113	1,311	1,311	112	1,300	1,105	113	1,296	882	113	1,289	644	113
	57	1,540	1,540	115	1,463	1,463	114	1,386	1,386	113	1,311	1,311	112	1,247	1,214	112	1,192	1,103	111	1,186	875	111

Table 49: 120 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24,000	77	1,414	876	125	1,413	763	126	1,412	650	126	1,412	522	126	—	—	—	—	—	—	—	—	—
	72	1,295	997	124	1,295	881	124	1,294	764	124	1,293	647	124	1,292	530	124	—	—	—	—	—	—
	67	1,182	1,122	122	1,184	1,006	122	1,184	888	122	1,184	770	122	1,183	650	122	1,181	531	122	—	—	—
	62	1,153	1,153	121	1,099	1,099	120	1,078	1,003	120	1,080	886	120	1,080	767	120	1,079	647	120	1,077	528	120
	57	1,152	1,152	121	1,098	1,098	120	1,050	1,037	119	1,006	974	118	984	883	118	984	768	118	984	643	118
29,000	77	—	—	—	1,471	839	127	1,470	691	127	1,468	543	127	—	—	—	—	—	—	—	—	—
	72	1,350	1,121	125	1,350	972	125	1,349	837	125	1,348	688	125	1,346	552	125	—	—	—	—	—	—
	67	1,247	1,247	123	1,236	1,125	123	1,237	977	123	1,236	840	123	1,234	691	123	1,231	554	124	—	—	—
	62	1,246	1,246	123	1,186	1,186	122	1,134	1,112	121	1,130	983	121	1,131	837	121	1,129	700	121	1,125	551	122
	57	1,245	1,245	122	1,185	1,185	122	1,127	1,123	121	1,078	1,053	120	1,035	977	119	1,031	842	119	1,030	690	120
34,200	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,394	1,227	125	1,394	1,074	125	1,393	906	126	1,391	737	126	1,387	569	126	—	—	—	—	—	—
	67	1,327	1,327	124	1,278	1,240	123	1,277	1,073	124	1,276	906	124	1,274	739	124	1,270	572	124	—	—	—
	62	1,326	1,326	124	1,260	1,260	123	1,196	1,196	122	1,168	1,074	122	1,168	911	122	1,166	746	122	1,162	569	123
	57	1,325	1,325	124	1,260	1,260	123	1,195	1,195	122	1,138	1,122	121	1,086	1,043	120	1,067	910	120	1,067	741	120
42,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,441	1,398	126	1,439	1,194	126	1,438	992	127	1,435	804	127	1,429	600	127	—	—	—	—	—	—
	67	1,422	1,422	125	1,351	1,351	124	1,323	1,203	124	1,322	1,005	125	1,319	805	125	1,313	604	126	—	—	—
	62	1,421	1,421	125	1,350	1,350	124	1,279	1,279	123	1,216	1,204	123	1,210	1,004	123	1,207	809	123	1,201	601	124
	57	1,420	1,420	125	1,349	1,349	124	1,278	1,278	123	1,210	1,208	122	1,152	1,118	122	1,107	1,005	121	1,105	806	121
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,466	1,290	127	1,464	1,069	127	1,462	848	127	1,454	611	128	—	—	—	—	—	—
	67	—	—	—	1,407	1,407	125	1,349	1,295	125	1,346	1,077	125	1,343	846	126	1,335	614	126	—	—	—
	62	—	—	—	1,406	1,406	125	1,332	1,332	124	1,258	1,258	123	1,235	1,075	123	1,232	850	124	1,224	624	124
	57	—	—	—	1,405	1,405	125	1,331	1,331	124	1,257	1,257	123	1,193	1,167	122	1,135	1,071	121	1,127	852	122

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

BHC Group Heating & Cooling

Cooling performance data - 120 ton - high capacity

Table 50: 120 ton high capacity — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24000	77	1730	1003	86	1731	900	86	1733	780	87	1731	658	87	-	-	-	-	-	-	-	-	-
	72	1590	1145	86	1591	1018	86	1591	891	86	1590	779	86	1591	652	86	-	-	-	-	-	-
	67	1457	1268	85	1457	1137	86	1457	1020	86	1457	903	86	1456	786	86	1457	656	86	-	-	-
	62	1355	1355	85	1329	1263	85	1331	1145	85	1331	1025	85	1330	904	85	1329	784	85	1329	651	85
	57	1353	1353	85	1300	1289	84	1251	1220	84	-	-	-	-	-	-	-	-	-	-	-	-
29000	77	1819	1110	87	1820	964	87	1821	820	87	1822	674	87	-	-	-	-	-	-	-	-	-
	72	1673	1255	86	1674	1121	86	1675	971	87	1675	837	87	1676	687	87	-	-	-	-	-	-
	67	1537	1414	86	1538	1261	86	1538	1123	86	1538	985	86	1537	830	86	1536	691	86	-	-	-
	62	1474	1474	85	1409	1409	85	1409	1268	85	1409	1127	86	1409	986	86	1408	831	86	1407	689	86
	57	1473	1473	85	1408	1408	85	1354	1330	85	1300	1253	85	1288	1123	85	1287	980	85	1286	830	85
34200	77	1884	1206	87	1885	1037	87	1887	868	87	1889	699	87	-	-	-	-	-	-	-	-	-
	72	1740	1392	87	1741	1219	87	1741	1045	87	1742	888	87	1742	714	87	-	-	-	-	-	-
	67	1597	1549	86	1599	1391	86	1600	1216	86	1600	1056	87	1600	880	87	1598	719	87	-	-	-
	62	1578	1578	86	1507	1507	86	1468	1394	86	1471	1221	86	1469	1058	86	1467	895	86	1465	718	87
	57	1577	1577	86	1506	1506	86	1441	1429	85	1382	1340	85	1344	1232	85	1345	1052	85	1343	889	86
42000	77	-	-	-	-	-	-	1961	941	87	1963	746	88	-	-	-	-	-	-	-	-	-
	72	1810	1556	87	1811	1358	87	1811	1159	87	1812	942	87	1813	743	88	-	-	-	-	-	-
	67	1705	1705	86	1672	1572	87	1672	1371	87	1672	1154	87	1671	952	87	1669	751	88	-	-	-
	62	1703	1703	86	1626	1626	86	1549	1549	86	1535	1366	86	1534	1166	87	1533	966	87	1531	750	87
	57	1702	1702	86	1626	1626	86	1548	1548	86	1481	1453	86	1417	1356	86	1409	1164	86	1407	954	86
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1851	1684	87	1853	1464	87	1854	1224	87	1855	1002	88	1854	760	88	-	-	-	-	-	-
	67	1784	1784	86	1706	1689	86	1713	1473	87	1711	1232	87	1710	1009	87	1708	769	88	-	-	-
	62	1783	1783	86	1700	1700	86	1619	1619	86	1575	1464	87	1574	1243	87	1572	1006	87	1569	784	87
	57	1781	1781	86	1700	1700	86	1618	1618	86	1543	1525	86	1476	1421	86	1444	1243	86	1442	1016	87

Table 51: 120 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24000	77	1678	990	97	1680	873	97	1680	756	97	1680	639	97	-	-	-	-	-	-	-	-	-
	72	1542	1110	96	1542	1003	96	1541	879	96	1541	755	96	1541	632	96	-	-	-	-	-	-
	67	1410	1241	95	1411	1115	95	1411	1002	95	1411	875	95	1410	762	95	1410	635	95	-	-	-
	62	1322	1322	94	1286	1234	94	1288	1121	94	1288	992	94	1287	875	94	1286	759	94	1286	630	94
	57	1320	1320	94	1266	1257	93	1218	1190	93	-	-	-	-	-	-	-	-	-	-	-	-
29000	77	1762	1092	97	1763	952	98	1764	794	98	1764	653	98	-	-	-	-	-	-	-	-	-
	72	1619	1230	96	1619	1101	97	1620	956	97	1620	810	97	1620	664	97	-	-	-	-	-	-
	67	1485	1382	95	1488	1250	96	1488	1101	96	1487	952	96	1486	817	96	1485	668	96	-	-	-
	62	1437	1437	95	1372	1372	94	1361	1252	95	1362	1103	95	1361	953	95	1360	816	95	1359	666	95
	57	1436	1436	95	1371	1371	94	1315	1297	94	1263	1219	94	1243	1094	94	1243	949	94	1242	811	94
34200	77	1824	1185	98	1824	1021	98	1825	858	98	1827	676	98	-	-	-	-	-	-	-	-	-
	72	1682	1363	97	1683	1195	97	1683	1027	97	1683	858	98	1683	690	98	-	-	-	-	-	-
	67	1542	1542	96	1544	1359	96	1545	1189	96	1545	1035	96	1545	865	97	1544	695	97	-	-	-
	62	1537	1537	96	1467	1467	95	1415	1373	95	1416	1204	95	1418	1035	96	1416	863	96	1413	692	96
	57	1536	1536	96	1466	1466	95	1399	1392	95	1341	1306	94	1296	1200	94	1297	1035	94	1295	857	95
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1750	1540	97	1748	1329	98	1749	1119	98	1749	927	98	1749	717	98	-	-	-	-	-	-
	67	1661	1661	97	1611	1547	97	1612	1338	97	1612	1128	97	1611	934	97	1609	724	98	-	-	-
	62	1659	1659	97	1582	1582	96	1505	1505	96	1479	1346	96	1478	1138	96	1477	930	96	1474	722	97
	57	1658	1658	97	1580	1580	96	1503	1503	96	1436	1414	95	1372	1316	95	1356	1132	95	1354	930	95
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1787	1662	98	1788	1430	98	1789	1199	98	1788	966	98	1788	751	99	-	-	-	-	-	-
	67	1736	1736	97	1655	1655	97	1652	1437	97	1650	1204	98	1648	972	98	1645	740	98	-	-	-
	62	1735	1735	97	1653	1653	97	1572	1572	96	1516	1440	96	1515	1212	97	1513	983	97	1509	754	97
	57	1734	1734	97	1652	1652	97	1572	1572	96	1495	1482	96	1428	1377	96	1389	1209	96	1387	988	96

BHC Group Heating & Cooling

Table 52: 120 ton high capacity — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24000	77	1619	971	108	1621	843	108	1622	730	108	1621	600	108	-	-	-	-	-	-	-	-	-
	72	1488	1086	106	1488	967	106	1488	848	107	1488	729	107	1487	610	107	-	-	-	-	-	-
	67	1360	1210	105	1361	1089	105	1361	980	105	1360	857	105	1359	734	105	1360	612	106	-	-	-
	62	1285	1285	104	1238	1213	103	1241	1092	104	1241	968	104	1241	856	104	1240	732	104	1239	607	104
	57	1284	1284	104	1228	1224	103	1181	1156	103	1134	1088	102	1132	966	102	1133	844	102	1132	731	102
29000	77	1699	1070	108	1699	918	109	1699	782	109	1700	629	109	-	-	-	-	-	-	-	-	-
	72	1559	1216	107	1560	1076	107	1560	921	107	1560	780	108	1560	639	108	-	-	-	-	-	-
	67	1428	1357	106	1432	1217	106	1432	1074	106	1432	931	106	1430	786	106	1429	643	107	-	-	-
	62	1396	1396	105	1332	1332	104	1309	1217	104	1310	1074	105	1309	930	105	1308	785	105	1307	640	105
	57	1395	1395	105	1331	1331	104	1274	1259	104	1222	1183	103	1194	1073	103	1195	923	103	1194	780	104
34200	77	1756	1159	109	1757	984	109	1758	826	109	1757	650	110	-	-	-	-	-	-	-	-	-
	72	1618	1327	108	1618	1165	108	1619	1004	108	1618	825	108	1618	663	109	-	-	-	-	-	-
	67	1494	1494	106	1485	1337	107	1485	1173	107	1485	995	107	1484	831	107	1483	667	107	-	-	-
	62	1492	1492	106	1423	1423	106	1359	1346	105	1362	1172	105	1362	1008	106	1360	830	106	1358	665	106
	57	1491	1491	106	1422	1422	106	1353	1351	105	1297	1265	104	1244	1174	104	1246	1005	104	1244	833	104
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1682	1497	108	1680	1310	109	1680	1109	109	1679	890	109	1678	688	110	-	-	-	-	-	-
	67	1610	1610	107	1545	1514	107	1548	1316	108	1547	1114	108	1545	896	108	1543	694	108	-	-	-
	62	1608	1608	107	1532	1532	107	1456	1456	106	1419	1306	106	1417	1105	106	1416	906	107	1414	693	107
	57	1607	1607	107	1531	1531	107	1455	1455	106	1386	1367	106	1324	1272	105	1300	1108	105	1298	902	105
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1715	1629	109	1717	1408	109	1717	1168	109	1717	944	110	1714	720	110	-	-	-	-	-	-
	67	1682	1682	108	1603	1603	108	1584	1410	108	1583	1187	108	1581	948	109	1577	725	109	-	-	-
	62	1681	1681	108	1601	1601	108	1521	1521	107	1451	1422	106	1451	1190	107	1449	957	107	1445	722	108
	57	1680	1680	108	1601	1601	108	1520	1520	107	1442	1437	106	1376	1333	106	1329	1182	105	1328	957	106

Table 53: 120 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24000	77	1557	934	119	1557	825	119	1558	701	120	1558	576	120	-	-	-	-	-	-	-	-	-
	72	1429	1072	117	1429	943	118	1430	829	118	1429	700	118	1428	586	118	-	-	-	-	-	-
	67	1304	1187	116	1307	1072	116	1307	954	116	1306	823	116	1306	705	116	1305	587	117	-	-	-
	62	1246	1246	115	1189	1189	114	1191	1072	114	1192	942	114	1191	822	114	1190	702	115	1189	583	115
	57	1245	1245	115	1188	1188	114	1142	1122	113	1095	1054	113	1086	944	113	1087	819	113	1086	701	113
29000	77	1629	1043	120	1629	896	120	1629	750	121	1631	603	121	-	-	-	-	-	-	-	-	-
	72	1495	1181	118	1496	1047	119	1496	897	119	1496	763	119	1496	613	119	-	-	-	-	-	-
	67	1368	1340	116	1372	1194	117	1372	1043	117	1372	906	117	1371	754	118	1369	616	118	-	-	-
	62	1352	1352	116	1289	1289	115	1252	1189	115	1255	1042	115	1254	903	116	1253	765	116	1251	613	116
	57	1351	1351	116	1288	1288	115	1230	1219	115	1179	1143	114	1143	1047	114	1145	904	114	1143	757	114
34200	77	-	-	-	-	-	-	1683	791	121	1683	623	122	-	-	-	-	-	-	-	-	-
	72	1549	1302	119	1550	1131	119	1551	977	120	1549	806	120	1548	635	120	-	-	-	-	-	-
	67	1444	1444	117	1420	1307	118	1421	1137	118	1421	980	118	1420	809	118	1418	638	119	-	-	-
	62	1443	1443	117	1375	1375	117	1307	1307	116	1303	1146	116	1303	977	117	1301	807	117	1298	636	117
	57	1442	1442	117	1374	1374	117	1306	1306	116	1249	1223	115	1194	1140	114	1191	972	115	1189	806	115
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1607	1479	120	1606	1269	120	1605	1075	121	1605	867	121	1602	657	121	-	-	-	-	-	-
	67	1555	1555	119	1480	1480	118	1479	1287	119	1478	1079	119	1476	871	119	1473	663	120	-	-	-
	62	1553	1553	119	1479	1479	118	1404	1404	117	1353	1286	117	1353	1083	117	1351	878	118	1348	674	118
	57	1552	1552	119	1478	1478	118	1404	1404	117	1333	1322	117	1272	1227	116	1239	1079	116	1239	873	116
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1636	1604	120	1639	1377	121	1640	1148	121	1639	918	121	1636	687	122	-	-	-	-	-	-
	67	1624	1624	120	1544	1544	119	1511	1375	119	1511	1148	120	1508	920	120	1504	692	120	-	-	-
	62	1622	1622	120	1544	1544	119	1466	1466	118	1387	1387	117	1385	1150	118	1383	926	118	1379	689	119
	57	1621	1621	120	1542	1542	119	1465	1465	118	1387	1387	117	1321	1282	117	1267	1160	116	1266	923	117

BHC Group Heating & Cooling

Table 54: 120 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
24000	77	1488	907	132	1488	788	132	1490	670	132	1489	551	132	-	-	-	-	-	-	-	-	-
	72	1366	1038	130	1366	915	130	1366	792	130	1366	683	130	1365	560	130	-	-	-	-	-	-
	67	1244	1157	127	1248	1036	128	1249	924	128	1248	799	128	1248	674	128	1247	561	129	-	-	-
	62	1204	1204	127	1148	1148	126	1136	1045	126	1139	922	126	1138	797	126	1137	682	127	1137	557	127
	57	1203	1203	127	1147	1147	126	1099	1084	125	1054	1018	124	1036	920	124	1037	801	124	1037	678	125
29000	77	1554	1010	133	1555	871	133	1555	731	133	1555	575	134	-	-	-	-	-	-	-	-	-
	72	1426	1155	131	1425	1012	131	1426	870	131	1426	727	131	1425	584	132	-	-	-	-	-	-
	67	1305	1305	128	1306	1162	129	1309	1021	129	1309	877	129	1307	732	130	1306	588	130	-	-	-
	62	1304	1304	128	1243	1243	127	1192	1168	127	1195	1016	127	1196	873	128	1195	729	128	1193	585	128
	57	1303	1303	128	1241	1241	127	1182	1178	127	1132	1102	126	1089	1018	125	1091	870	126	1090	730	126
34200	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1476	1269	132	1475	1107	132	1476	944	132	1476	768	132	1474	604	133	-	-	-	-	-	-
	67	1391	1391	130	1351	1283	130	1353	1109	130	1352	946	130	1351	770	131	1349	607	131	-	-	-
	62	1390	1390	130	1323	1323	129	1257	1257	128	1238	1114	128	1239	942	128	1238	780	129	1235	605	129
	57	1389	1389	130	1322	1322	129	1256	1256	128	1198	1177	127	1144	1095	126	1132	944	127	1131	776	127
42000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1526	1450	132	1527	1252	133	1526	1038	133	1525	839	133	1523	640	134	-	-	-	-	-	-
	67	1495	1495	132	1422	1422	131	1406	1251	131	1405	1053	131	1403	842	132	1400	644	132	-	-	-
	62	1494	1494	131	1421	1421	131	1348	1348	130	1285	1259	129	1285	1054	129	1283	847	130	1280	640	130
	57	1493	1493	131	1420	1420	131	1347	1347	130	1276	1272	129	1218	1180	128	1175	1054	127	1177	848	128
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1561	1561	133	1555	1338	133	1557	1121	134	1557	887	134	1553	652	135	-	-	-	-	-	-
	67	1560	1560	133	1483	1483	132	1433	1347	131	1434	1119	132	1431	888	132	1427	656	133	-	-	-
	62	1559	1559	132	1482	1482	132	1405	1405	131	1329	1329	130	1314	1130	130	1312	892	130	1307	667	131
	57	1558	1558	132	1481	1481	132	1404	1404	130	1328	1328	129	1264	1233	129	1202	1132	128	1200	896	128

Cooling performance data - 130 ton - standard efficiency

Table 55: 130 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,815	1,071	99	1,816	944	99	1,816	817	99	1,816	690	99	—	—	—	—	—	—	—	—	—
	72	1,666	1,200	98	1,666	1,066	98	1,665	949	98	1,665	816	98	1,664	682	98	—	—	—	—	—	—
	67	1,527	1,329	97	1,526	1,206	97	1,526	1,068	97	1,525	946	97	1,524	823	97	1,522	685	97	—	—	—
	62	1,424	1,424	96	1,394	1,324	96	1,394	1,199	96	1,393	1,072	96	1,392	946	96	1,390	820	96	1,390	681	96
	57	1,423	1,423	96	1,365	1,353	95	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,913	1,186	100	1,913	1,033	100	1,913	861	100	1,912	707	100	—	—	—	—	—	—	—	—	—
	72	1,758	1,336	99	1,758	1,178	99	1,758	1,037	99	1,757	878	99	1,756	720	99	—	—	—	—	—	—
	67	1,614	1,501	98	1,614	1,340	98	1,614	1,194	98	1,613	1,032	98	1,612	887	98	1,609	724	98	—	—	—
	62	1,559	1,559	97	1,488	1,488	96	1,480	1,347	97	1,480	1,199	97	1,477	1,034	97	1,475	885	97	1,472	721	97
	57	1,558	1,558	97	1,487	1,487	96	1,427	1,405	96	1,370	1,323	95	1,352	1,189	95	1,350	1,031	95	1,348	881	95
41,600	77	2,015	1,350	101	2,016	1,149	101	2,015	947	101	2,013	745	101	—	—	—	—	—	—	—	—	—
	72	1,860	1,544	100	1,860	1,358	100	1,859	1,153	100	1,857	965	100	1,854	760	100	—	—	—	—	—	—
	67	1,728	1,728	99	1,712	1,558	99	1,711	1,369	99	1,710	1,163	99	1,708	956	99	1,704	767	100	—	—	—
	62	1,727	1,727	99	1,646	1,646	98	1,571	1,555	97	1,569	1,365	98	1,568	1,160	98	1,566	971	98	1,561	765	98
	57	1,725	1,725	99	1,645	1,645	98	1,566	1,564	97	1,501	1,467	97	1,439	1,359	96	1,438	1,163	97	1,434	961	97
48,000	77	2,063	1,444	101	2,064	1,218	101	2,064	1,011	101	2,061	783	102	—	—	—	—	—	—	—	—	—
	72	1,908	1,679	100	1,907	1,469	100	1,906	1,239	100	1,904	1,009	101	1,900	779	101	—	—	—	—	—	—
	67	1,817	1,817	99	1,759	1,688	99	1,758	1,459	99	1,756	1,247	99	1,754	1,017	100	1,748	787	100	—	—	—
	62	1,815	1,815	99	1,730	1,730	99	1,646	1,646	98	1,615	1,469	98	1,612	1,241	98	1,608	1,013	99	1,603	785	99
	57	1,814	1,814	99	1,729	1,729	99	1,644	1,644	98	1,570	1,545	98	1,500	1,438	97	1,478	1,245	97	1,475	1,012	97
52,000	77	—	—	—	2,090	1,275	101	2,089	1,024	102	2,085	792	102	—	—	—	—	—	—	—	—	—
	72	1,933	1,759	100	1,932	1,526	100	1,932	1,275	101	1,929	1,041	101	1,925	789	101	—	—	—	—	—	—
	67	1,866	1,866	100	1,783	1,766	99	1,781	1,531	100	1,779	1,281	100	1,776	1,048	100	1,771	797	100	—	—	—
	62	1,864	1,864	99	1,776	1,776	99	1,688	1,688	98	1,639	1,540	98	1,636	1,293	99	1,632	1,045	99	1,625	812	99
	57	1,863	1,863	99	1,775	1,775	99	1,687	1,687	98	1,607	1,591	98	1,535	1,478	97	1,499	1,291	97	1,495	1,054	98

BHC Group Heating & Cooling

Table 56: 130 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,759	1,038	110	1,759	915	110	1,759	792	110	1,758	668	110	—	—	—	—	—	—	—	—	—
	72	1,614	1,178	108	1,614	1,049	109	1,613	919	109	1,612	790	109	1,611	661	109	—	—	—	—	—	—
	67	1,478	1,300	107	1,478	1,182	107	1,477	1,049	107	1,477	916	107	1,475	796	107	1,473	663	107	—	—	—
	62	1,389	1,389	105	1,347	1,307	105	1,349	1,174	105	1,348	1,051	105	1,347	916	105	1,345	794	105	1,345	659	105
	57	1,388	1,388	105	1,329	1,322	104	1,278	1,249	104	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,851	1,148	111	1,851	1,000	111	1,850	851	112	1,849	684	112	—	—	—	—	—	—	—	—	—
	72	1,700	1,309	110	1,699	1,156	110	1,699	1,002	110	1,698	849	110	1,697	696	110	—	—	—	—	—	—
	67	1,560	1,466	108	1,560	1,326	108	1,560	1,170	108	1,559	1,013	108	1,557	856	108	1,555	700	108	—	—	—
	62	1,519	1,519	107	1,449	1,449	106	1,429	1,315	106	1,429	1,172	106	1,427	1,013	106	1,424	854	107	1,421	696	107
	57	1,518	1,518	107	1,448	1,448	106	1,387	1,368	105	1,331	1,288	105	1,305	1,162	104	1,304	1,006	105	1,302	851	105
41,600	77	1,947	1,324	112	1,947	1,129	113	1,946	934	113	1,944	739	113	—	—	—	—	—	—	—	—	—
	72	1,796	1,527	111	1,795	1,328	111	1,794	1,130	111	1,792	932	111	1,790	734	112	—	—	—	—	—	—
	67	1,681	1,681	109	1,652	1,536	109	1,651	1,337	109	1,649	1,138	110	1,647	939	110	1,642	739	110	—	—	—
	62	1,680	1,680	109	1,601	1,601	108	1,523	1,523	107	1,512	1,331	108	1,512	1,134	108	1,509	936	108	1,505	737	108
	57	1,679	1,679	109	1,600	1,600	108	1,521	1,521	107	1,455	1,425	107	1,391	1,328	106	1,386	1,143	106	1,382	937	106
48,000	77	—	—	—	1,992	1,195	113	1,990	975	113	1,988	755	114	—	—	—	—	—	—	—	—	—
	72	1,841	1,657	111	1,839	1,434	111	1,838	1,213	112	1,836	991	112	1,832	751	112	—	—	—	—	—	—
	67	1,766	1,766	110	1,694	1,660	110	1,695	1,441	110	1,694	1,219	110	1,690	997	110	1,684	758	111	—	—	—
	62	1,765	1,765	110	1,681	1,681	109	1,598	1,598	108	1,555	1,446	108	1,552	1,211	108	1,549	991	109	1,542	771	109
	57	1,764	1,764	110	1,680	1,680	109	1,597	1,597	108	1,521	1,503	108	1,452	1,395	107	1,423	1,213	107	1,419	989	107
52,000	77	—	—	—	—	—	—	—	—	—	2,010	764	114	—	—	—	—	—	—	—	—	—
	72	1,864	1,733	111	1,862	1,490	112	1,862	1,247	112	1,860	1,023	112	1,855	779	113	—	—	—	—	—	—
	67	1,814	1,814	111	1,726	1,726	110	1,717	1,511	110	1,714	1,268	110	1,711	1,026	111	1,704	784	111	—	—	—
	62	1,813	1,813	111	1,725	1,725	110	1,638	1,638	109	1,577	1,514	109	1,575	1,260	109	1,571	1,021	109	1,563	781	109
	57	1,811	1,811	111	1,724	1,724	110	1,637	1,637	109	1,556	1,546	108	1,486	1,433	107	1,443	1,269	107	1,439	1,026	107

Table 57: 130 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,697	1,018	121	1,698	883	122	1,697	764	122	1,697	628	122	—	—	—	—	—	—	—	—	—
	72	1,557	1,152	119	1,557	1,028	119	1,556	903	119	1,556	762	120	1,555	637	120	—	—	—	—	—	—
	67	1,426	1,283	117	1,426	1,155	117	1,425	1,026	117	1,424	897	117	1,423	768	117	1,421	639	117	—	—	—
	62	1,351	1,351	115	1,299	1,286	115	1,301	1,158	115	1,300	1,027	115	1,299	896	115	1,298	766	115	1,297	636	115
	57	1,350	1,350	115	1,290	1,288	114	1,240	1,216	114	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,783	1,123	123	1,783	981	123	1,782	820	123	1,781	659	123	—	—	—	—	—	—	—	—	—
	72	1,636	1,293	121	1,637	1,129	121	1,636	982	121	1,635	818	121	1,634	670	121	—	—	—	—	—	—
	67	1,501	1,441	118	1,501	1,291	119	1,501	1,141	119	1,501	990	119	1,499	824	119	1,496	673	119	—	—	—
	62	1,476	1,476	118	1,407	1,407	117	1,374	1,292	116	1,376	1,142	116	1,374	989	117	1,371	823	117	1,367	670	117
	57	1,474	1,474	118	1,406	1,406	117	1,344	1,330	116	1,288	1,249	115	1,255	1,140	114	1,255	979	114	1,252	829	115
41,600	77	1,872	1,291	124	1,871	1,104	124	1,870	898	125	1,869	710	125	—	—	—	—	—	—	—	—	—
	72	1,727	1,502	122	1,725	1,294	122	1,724	1,104	122	1,723	913	123	1,719	705	123	—	—	—	—	—	—
	67	1,630	1,630	120	1,587	1,508	120	1,586	1,301	120	1,585	1,109	120	1,582	917	121	1,577	710	121	—	—	—
	62	1,629	1,629	120	1,552	1,552	119	1,475	1,475	118	1,453	1,308	118	1,451	1,103	118	1,449	913	118	1,444	708	119
	57	1,628	1,628	120	1,551	1,551	119	1,474	1,474	118	1,407	1,383	117	1,344	1,286	116	1,331	1,111	116	1,327	911	116
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,767	1,626	123	1,766	1,412	123	1,765	1,183	123	1,763	952	123	1,758	738	124	—	—	—	—	—	—
	67	1,712	1,712	122	1,630	1,630	120	1,628	1,416	121	1,626	1,187	121	1,622	957	121	1,615	727	122	—	—	—
	62	1,711	1,711	122	1,628	1,628	120	1,547	1,547	119	1,492	1,418	119	1,489	1,192	119	1,486	966	119	1,480	740	119
	57	1,709	1,709	122	1,627	1,627	120	1,545	1,545	119	1,469	1,456	118	1,402	1,352	117	1,365	1,189	117	1,361	959	117
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,787	1,716	123	1,787	1,465	123	1,787	1,233	123	1,785	982	124	1,779	747	124	—	—	—	—	—	—
	67	1,756	1,756	122	1,671	1,671	121	1,649	1,467	121	1,644	1,233	121	1,641	984	122	1,634	752	122	—	—	—
	62	1,755	1,755	122	1,670	1,670	121	1,585	1,585	120	1,512	1,482	119	1,510	1,238	119	1,507	994	120	1,499	750	120
	57	1,754	1,754	122	1,669	1,669	121	1,584	1,584	120	1,502	1,497	119	1,433	1,388	118	1,383	1,241	117	1,380	995	117

BHC Group Heating & Cooling

Table 58: 130 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,631	995	133	1,631	865	133	1,631	734	134	1,631	603	134	—	—	—	—	—	—	—	—	—
	72	1,497	1,123	131	1,497	1,003	131	1,496	868	131	1,495	747	131	1,494	613	131	—	—	—	—	—	—
	67	1,370	1,247	128	1,370	1,124	128	1,370	1,000	128	1,369	876	128	1,367	738	128	1,365	614	129	—	—	—
	62	1,311	1,311	127	1,251	1,251	125	1,250	1,125	126	1,250	1,000	126	1,249	874	126	1,247	736	126	1,246	611	126
	57	1,310	1,310	127	1,250	1,250	125	1,200	1,179	124	1,152	1,110	124	1,140	994	123	1,139	868	124	1,138	735	124
32,000	77	1,710	1,111	135	1,710	940	135	1,709	786	135	1,708	632	135	—	—	—	—	—	—	—	—	—
	72	1,570	1,256	132	1,569	1,114	132	1,569	957	132	1,568	800	133	1,566	642	133	—	—	—	—	—	—
	67	1,438	1,424	129	1,439	1,267	130	1,440	1,109	130	1,439	950	130	1,437	805	130	1,435	646	130	—	—	—
	62	1,429	1,429	129	1,362	1,362	128	1,317	1,264	127	1,319	1,108	127	1,319	963	128	1,315	802	128	1,311	643	128
	57	1,428	1,428	129	1,361	1,361	128	1,298	1,289	127	1,244	1,209	126	1,203	1,114	125	1,204	951	125	1,201	795	125
41,600	77	—	—	—	—	—	—	1,790	877	137	1,788	679	137	—	—	—	—	—	—	—	—	—
	72	1,653	1,471	134	1,651	1,271	134	1,650	1,073	134	1,648	874	134	1,645	674	135	—	—	—	—	—	—
	67	1,576	1,576	132	1,517	1,471	131	1,517	1,274	131	1,516	1,076	132	1,513	878	132	1,509	679	132	—	—	—
	62	1,575	1,575	132	1,499	1,499	131	1,424	1,424	129	1,390	1,279	129	1,388	1,083	129	1,386	887	129	1,382	677	130
	57	1,574	1,574	132	1,498	1,498	131	1,423	1,423	129	1,355	1,337	128	1,294	1,243	127	1,273	1,085	127	1,270	882	127
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,688	1,603	134	1,687	1,384	135	1,687	1,147	135	1,685	927	135	1,680	706	136	—	—	—	—	—	—
	67	1,653	1,653	134	1,573	1,573	132	1,556	1,385	132	1,554	1,150	132	1,550	930	133	1,544	710	133	—	—	—
	62	1,652	1,652	134	1,572	1,572	132	1,492	1,492	131	1,425	1,382	130	1,424	1,153	130	1,420	937	130	1,413	707	131
	57	1,651	1,651	133	1,570	1,570	132	1,490	1,490	131	1,413	1,406	129	1,348	1,303	128	1,304	1,159	127	1,301	927	128
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,705	1,671	135	1,708	1,434	135	1,708	1,195	135	1,705	955	136	1,700	714	136	—	—	—	—	—	—
	67	1,694	1,694	134	1,612	1,612	133	1,575	1,449	133	1,571	1,209	133	1,567	956	133	1,561	718	134	—	—	—
	62	1,693	1,693	134	1,610	1,610	133	1,528	1,528	131	1,447	1,447	130	1,442	1,211	130	1,439	964	131	1,432	716	131
	57	1,692	1,692	134	1,609	1,609	133	1,527	1,527	131	1,445	1,445	130	1,378	1,339	129	1,320	1,209	128	1,317	960	128

Table 59: 130 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,559	967	146	1,559	842	146	1,559	717	146	1,558	577	146	—	—	—	—	—	—	—	—	—
	72	1,431	1,102	143	1,431	973	143	1,431	844	143	1,430	715	143	1,429	586	143	—	—	—	—	—	—
	67	1,308	1,230	140	1,311	1,101	140	1,311	970	140	1,309	838	140	1,308	719	141	1,306	588	141	—	—	—
	62	1,268	1,268	139	1,209	1,209	138	1,196	1,100	138	1,196	969	138	1,195	837	138	1,194	716	138	1,192	584	138
	57	1,267	1,267	139	1,208	1,208	138	1,157	1,141	137	1,110	1,072	136	1,091	969	135	1,091	842	136	1,089	712	136
32,000	77	1,631	1,076	148	1,631	914	148	1,631	766	148	1,630	603	148	—	—	—	—	—	—	—	—	—
	72	1,498	1,229	145	1,498	1,078	145	1,496	927	145	1,496	763	145	1,494	612	145	—	—	—	—	—	—
	67	1,381	1,381	142	1,374	1,236	142	1,374	1,085	142	1,374	920	142	1,372	768	142	1,369	616	143	—	—	—
	62	1,379	1,379	142	1,314	1,314	140	1,256	1,243	139	1,259	1,083	139	1,258	931	140	1,256	766	140	1,252	613	140
	57	1,379	1,379	141	1,313	1,313	140	1,249	1,247	139	1,197	1,167	138	1,148	1,084	137	1,149	927	137	1,147	768	137
41,600	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,573	1,432	146	1,572	1,242	147	1,571	1,052	147	1,569	847	147	1,565	642	147	—	—	—	—	—	—
	67	1,518	1,518	145	1,445	1,445	143	1,445	1,242	144	1,444	1,054	144	1,441	850	144	1,436	646	145	—	—	—
	62	1,516	1,516	145	1,443	1,443	143	1,369	1,369	142	1,323	1,243	141	1,322	1,044	141	1,320	858	141	1,316	658	142
	57	1,516	1,516	145	1,442	1,442	143	1,368	1,368	142	1,300	1,287	140	1,241	1,195	139	1,211	1,055	139	1,209	852	139
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,603	1,571	147	1,605	1,348	147	1,605	1,123	148	1,602	897	148	1,597	671	148	—	—	—	—	—	—
	67	1,589	1,589	146	1,511	1,511	145	1,478	1,345	144	1,478	1,123	145	1,475	900	145	1,468	676	146	—	—	—
	62	1,588	1,588	146	1,510	1,510	145	1,432	1,432	143	1,357	1,357	141	1,354	1,124	142	1,351	905	142	1,344	672	143
	57	1,587	1,587	146	1,509	1,509	145	1,432	1,432	143	1,355	1,355	141	1,292	1,253	140	1,239	1,134	139	1,237	902	140
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,629	1,629	147	1,623	1,412	148	1,623	1,169	148	1,621	924	148	1,616	679	149	—	—	—	—	—	—
	67	1,628	1,628	147	1,548	1,548	146	1,495	1,421	145	1,492	1,164	145	1,490	924	145	1,484	682	146	—	—	—
	62	1,627	1,627	147	1,547	1,547	146	1,467	1,467	144	1,388	1,388	142	1,371	1,179	142	1,369	931	143	1,361	694	143
	57	1,626	1,626	147	1,546	1,546	146	1,466	1,466	144	1,387	1,387	142	1,319	1,287	141	1,256	1,173	140	1,252	936	140

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

BHC Group Heating & Cooling

Cooling performance data - 130 ton - high efficiency

Table 60: 130 ton high efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,769	1,044	92	1,770	920	92	1,769	796	92	1,769	672	92	—	—	—	—	—	—	—	—	—
	72	1,624	1,185	91	1,624	1,055	91	1,623	925	92	1,623	795	92	1,622	665	92	—	—	—	—	—	—
	67	1,489	1,310	91	1,489	1,191	91	1,488	1,057	91	1,487	922	91	1,486	802	91	1,484	668	91	—	—	—
	62	1,397	1,397	90	1,358	1,317	90	1,360	1,183	90	1,360	1,061	90	1,358	924	90	1,357	800	90	1,356	665	90
	57	1,396	1,396	90	1,338	1,331	90	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,860	1,153	92	1,861	1,005	92	1,860	856	93	1,859	688	93	—	—	—	—	—	—	—	—	—
	72	1,712	1,318	92	1,711	1,164	92	1,711	1,009	92	1,709	855	92	1,708	700	92	—	—	—	—	—	—
	67	1,570	1,476	91	1,571	1,320	91	1,571	1,178	91	1,570	1,020	92	1,569	863	92	1,566	705	92	—	—	—
	62	1,528	1,528	91	1,457	1,457	90	1,439	1,324	91	1,441	1,167	91	1,439	1,021	91	1,436	862	91	1,433	702	91
	57	1,526	1,526	91	1,456	1,456	90	1,397	1,377	90	1,340	1,294	90	1,316	1,171	90	1,315	1,015	90	1,313	858	90
41,600	77	1,956	1,330	92	1,956	1,135	93	1,956	939	93	1,953	742	93	—	—	—	—	—	—	—	—	—
	72	1,807	1,536	92	1,806	1,336	92	1,805	1,137	93	1,803	938	93	1,800	738	93	—	—	—	—	—	—
	67	1,690	1,690	92	1,664	1,531	92	1,663	1,347	92	1,662	1,147	92	1,660	946	92	1,655	745	93	—	—	—
	62	1,689	1,689	92	1,610	1,610	91	1,534	1,534	91	1,525	1,342	91	1,524	1,143	92	1,522	943	92	1,517	743	92
	57	1,688	1,688	92	1,609	1,609	91	1,531	1,531	91	1,466	1,435	91	1,403	1,339	91	1,398	1,141	91	1,394	946	91
48,000	77	—	—	—	—	—	—	—	—	—	1,998	759	93	—	—	—	—	—	—	—	—	—
	72	1,851	1,666	92	1,850	1,443	93	1,850	1,221	93	1,848	979	93	1,844	756	93	—	—	—	—	—	—
	67	1,775	1,775	92	1,708	1,674	92	1,707	1,451	92	1,705	1,227	92	1,702	987	93	1,696	763	93	—	—	—
	62	1,774	1,774	92	1,690	1,690	92	1,607	1,607	92	1,568	1,442	92	1,566	1,222	92	1,562	1,000	92	1,556	778	93
	57	1,773	1,773	92	1,689	1,689	92	267	267	14	1,531	1,510	91	1,463	1,406	91	1,436	1,224	91	1,432	998	91
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,874	1,743	92	1,874	1,499	93	1,873	1,255	93	1,871	1,010	93	1,866	784	94	—	—	—	—	—	—
	67	1,821	1,821	92	1,738	1,738	92	1,729	1,504	92	1,726	1,260	93	1,723	1,017	93	1,717	790	93	—	—	—
	62	1,820	1,820	92	1,735	1,735	92	1,649	1,649	92	1,589	1,510	92	1,589	1,271	92	1,584	1,030	92	1,577	788	93
	57	1,819	1,819	92	1,733	1,733	92	1,648	1,648	92	1,567	1,554	92	1,497	1,444	91	1,456	1,268	91	1,452	1,023	92

Table 61: 130 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,714	1,028	103	1,714	891	103	1,714	771	103	1,714	634	103	—	—	—	—	—	—	—	—	—
	72	1,573	1,164	102	1,573	1,022	102	1,571	896	102	1,572	770	102	1,571	644	102	—	—	—	—	—	—
	67	1,441	1,282	100	1,442	1,168	100	1,441	1,038	101	1,440	907	101	1,438	777	101	1,436	646	101	—	—	—
	62	1,363	1,363	99	1,316	1,289	99	1,316	1,158	99	1,316	1,026	99	1,315	907	99	1,313	775	99	1,312	643	100
	57	1,362	1,362	99	1,303	1,298	99	1,252	1,226	98	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,801	1,134	103	1,799	990	104	1,799	828	104	1,798	665	104	—	—	—	—	—	—	—	—	—
	72	1,655	1,291	102	1,655	1,142	102	1,654	992	103	1,653	826	103	1,651	677	103	—	—	—	—	—	—
	67	1,517	1,457	101	1,519	1,306	101	1,518	1,139	101	1,518	987	102	1,516	834	102	1,513	681	102	—	—	—
	62	1,489	1,489	101	1,420	1,420	100	1,390	1,307	100	1,392	1,155	100	1,390	987	100	1,387	832	100	1,383	678	101
	57	1,487	1,487	101	1,419	1,419	100	1,357	1,344	100	1,302	1,262	99	1,270	1,151	99	1,271	991	99	1,268	829	99
41,600	77	1,890	1,304	104	1,890	1,096	104	1,889	907	105	1,886	717	105	—	—	—	—	—	—	—	—	—
	72	1,744	1,500	103	1,743	1,307	103	1,743	1,115	103	1,740	905	104	1,737	712	104	—	—	—	—	—	—
	67	1,645	1,645	102	1,604	1,508	102	1,605	1,316	102	1,603	1,122	103	1,601	912	103	1,595	718	103	—	—	—
	62	1,644	1,644	102	1,566	1,566	102	1,489	1,489	101	1,471	1,324	101	1,469	1,117	101	1,467	924	102	1,462	716	102
	57	1,642	1,642	102	1,565	1,565	102	1,488	1,488	101	1,422	1,397	100	1,359	1,300	100	1,347	1,124	100	1,344	923	100
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,786	1,643	103	1,785	1,410	104	1,784	1,196	104	1,782	962	104	1,777	746	105	—	—	—	—	—	—
	67	1,727	1,727	103	1,650	1,634	102	1,646	1,416	103	1,643	1,200	103	1,640	967	103	1,634	735	104	—	—	—
	62	1,725	1,725	103	1,643	1,643	102	1,561	1,561	102	1,510	1,419	102	1,508	1,191	102	1,505	978	102	1,498	749	102
	57	1,724	1,724	103	1,642	1,642	102	1,560	1,560	102	1,484	1,469	101	1,417	1,364	101	1,382	1,204	100	1,379	972	101
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,806	1,716	103	1,806	1,481	104	1,806	1,228	104	1,804	992	104	1,798	755	105	—	—	—	—	—	—
	67	1,772	1,772	103	1,686	1,686	103	1,667	1,484	103	1,663	1,247	103	1,660	996	103	1,653	760	104	—	—	—
	62	1,770	1,770	103	1,685	1,685	103	1,600	1,600	102	1,531	1,485	102	1,529	1,239	102	1,525	1,007	102	1,518	759	103
	57	1,769	1,769	103	1,684	1,684	103	1,599	1,599	102	1,518	1,510	101	1,449	1,400	101	1,400	1,245	101	1,397	996	101

BHC Group Heating & Cooling

Table 62: 130 ton high efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,654	1,009	114	1,654	877	114	1,653	744	114	1,653	612	114	—	—	—	—	—	—	—	—	—
	72	1,518	1,138	112	1,518	1,002	112	1,517	880	112	1,516	743	113	1,515	621	113	—	—	—	—	—	—
	67	1,389	1,264	110	1,391	1,141	111	1,390	1,015	111	1,389	875	111	1,387	749	111	1,385	623	111	—	—	—
	62	1,326	1,326	109	1,271	1,259	109	1,268	1,142	109	1,269	1,002	109	1,268	875	109	1,267	747	109	1,265	620	109
	57	1,325	1,325	109	1,266	1,263	108	1,215	1,194	108	—	—	—	—	—	—	—	—	—	—	—	—
32,000	77	1,734	1,110	115	1,734	954	115	1,733	797	115	1,731	641	115	—	—	—	—	—	—	—	—	—
	72	1,593	1,275	113	1,594	1,116	113	1,593	956	113	1,591	811	114	1,590	652	114	—	—	—	—	—	—
	67	1,462	1,433	111	1,462	1,272	112	1,461	1,125	112	1,461	964	112	1,459	802	112	1,457	655	112	—	—	—
	62	1,446	1,446	111	1,379	1,379	110	1,337	1,284	110	1,340	1,125	110	1,338	964	110	1,335	815	110	1,332	653	111
	57	1,445	1,445	111	1,378	1,378	110	1,315	1,306	109	1,261	1,225	109	1,222	1,119	108	1,223	966	108	1,220	808	109
41,600	77	—	—	—	—	—	—	—	—	—	1,813	689	117	—	—	—	—	—	—	—	—	—
	72	1,678	1,476	114	1,675	1,273	114	1,675	1,089	115	1,673	887	115	1,669	684	115	—	—	—	—	—	—
	67	1,595	1,595	113	1,541	1,479	113	1,542	1,295	113	1,540	1,094	113	1,537	892	113	1,533	690	114	—	—	—
	62	1,594	1,594	113	1,518	1,518	112	1,442	1,442	111	1,413	1,285	111	1,411	1,086	111	1,409	888	112	1,403	688	112
	57	1,593	1,593	113	1,517	1,517	112	1,441	1,441	111	1,374	1,353	110	1,312	1,258	110	1,294	1,090	110	1,291	897	110
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,714	1,611	115	1,714	1,388	115	1,713	1,165	115	1,711	941	115	1,706	716	116	—	—	—	—	—	—
	67	1,673	1,673	114	1,592	1,592	113	1,581	1,391	113	1,578	1,168	114	1,574	944	114	1,567	721	114	—	—	—
	62	1,672	1,672	114	1,591	1,591	113	1,511	1,511	112	1,448	1,405	112	1,447	1,172	112	1,444	938	112	1,437	718	113
	57	1,671	1,671	114	1,590	1,590	113	1,510	1,510	112	1,433	1,426	111	1,368	1,322	111	1,326	1,165	110	1,323	943	111
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,735	1,683	115	1,734	1,457	115	1,734	1,214	115	1,731	969	116	1,725	724	116	—	—	—	—	—	—
	67	1,716	1,716	114	1,632	1,632	114	1,600	1,456	114	1,596	1,213	114	1,592	971	114	1,585	729	115	—	—	—
	62	1,715	1,715	114	1,631	1,631	114	1,548	1,548	113	1,472	1,457	112	1,467	1,218	112	1,463	980	113	1,455	728	113
	57	1,714	1,714	114	1,630	1,630	114	1,547	1,547	113	1,466	1,463	112	1,398	1,356	111	1,343	1,218	111	1,340	977	111

Table 63: 130 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,589	969	125	1,589	842	125	1,589	715	126	1,588	588	126	—	—	—	—	—	—	—	—	—
	72	1,458	1,108	123	1,458	977	123	1,458	846	123	1,457	728	124	1,456	597	124	—	—	—	—	—	—
	67	1,333	1,240	121	1,336	1,109	121	1,335	988	121	1,335	854	121	1,333	720	122	1,331	599	122	—	—	—
	62	1,286	1,286	120	1,227	1,227	119	1,218	1,108	119	1,219	988	119	1,218	853	119	1,217	730	120	1,215	595	120
	57	1,285	1,285	120	1,226	1,226	119	1,176	1,157	118	1,128	1,089	117	1,111	978	117	1,112	849	117	1,110	726	118
32,000	77	1,663	1,081	127	1,662	931	127	1,662	781	127	1,660	614	127	—	—	—	—	—	—	—	—	—
	72	1,528	1,238	124	1,528	1,085	125	1,527	932	125	1,526	778	125	1,524	625	125	—	—	—	—	—	—
	67	1,406	1,392	122	1,402	1,248	122	1,401	1,093	123	1,401	938	123	1,399	783	123	1,396	628	123	—	—	—
	62	1,401	1,401	122	1,335	1,335	121	1,283	1,244	120	1,284	1,091	121	1,283	936	121	1,281	781	121	1,277	625	121
	57	1,400	1,400	122	1,333	1,333	121	1,270	1,264	120	1,217	1,185	119	1,172	1,096	119	1,172	936	119	1,170	784	119
41,600	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,606	1,445	126	1,601	1,249	126	1,603	1,058	126	1,600	864	126	1,595	654	127	—	—	—	—	—	—
	67	1,542	1,542	124	1,477	1,447	124	1,475	1,254	124	1,474	1,061	124	1,471	868	124	1,466	660	125	—	—	—
	62	1,541	1,541	124	1,467	1,467	123	1,393	1,393	122	1,350	1,269	122	1,350	1,067	122	1,347	862	122	1,342	671	123
	57	1,540	1,540	124	1,466	1,466	123	1,392	1,392	122	1,323	1,310	121	1,264	1,216	120	1,236	1,064	120	1,234	870	120
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,637	1,588	126	1,639	1,360	127	1,638	1,130	127	1,636	900	127	1,630	685	128	—	—	—	—	—	—
	67	1,616	1,616	126	1,536	1,536	124	1,511	1,360	125	1,508	1,131	125	1,504	918	125	1,498	689	125	—	—	—
	62	1,614	1,614	126	1,535	1,535	124	1,457	1,457	123	1,387	1,359	122	1,383	1,134	123	1,379	910	123	1,373	686	123
	57	1,614	1,614	126	1,534	1,534	124	1,456	1,456	123	1,380	1,375	122	1,315	1,274	121	1,266	1,146	121	1,263	911	121
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,662	1,645	126	1,657	1,425	127	1,656	1,176	127	1,653	942	127	1,647	692	128	—	—	—	—	—	—
	67	1,656	1,656	126	1,574	1,574	125	1,527	1,435	125	1,524	1,189	125	1,521	943	125	1,514	696	126	—	—	—
	62	1,655	1,655	126	1,573	1,573	125	1,492	1,492	124	1,412	1,412	123	1,401	1,191	123	1,398	950	123	1,390	695	124
	57	1,654	1,654	126	1,572	1,572	125	1,491	1,491	124	1,411	1,411	123	1,343	1,308	122	1,284	1,188	121	1,279	944	121

BHC Group Heating & Cooling

Table 64: 130 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26,000	77	1,519	942	138	1,519	820	138	1,519	699	138	1,518	562	138	—	—	—	—	—	—	—	—	—
	72	1,394	1,073	135	1,394	948	135	1,394	822	135	1,393	696	136	1,391	570	136	—	—	—	—	—	—
	67	1,274	1,210	133	1,277	1,085	133	1,277	958	133	1,276	830	133	1,275	701	133	1,272	573	134	—	—	—
	62	1,244	1,244	132	1,185	1,185	131	1,164	1,083	131	1,166	956	131	1,165	827	131	1,164	698	131	1,163	570	131
	57	1,242	1,242	132	1,184	1,184	131	1,133	1,119	130	1,086	1,051	129	1,063	954	129	1,063	820	129	1,062	694	129
32,000	77	1,586	1,062	139	1,586	904	139	1,585	745	139	1,584	586	140	—	—	—	—	—	—	—	—	—
	72	1,459	1,211	136	1,458	1,064	137	1,457	903	137	1,455	757	137	1,453	596	137	—	—	—	—	—	—
	67	1,352	1,352	134	1,336	1,216	134	1,337	1,070	134	1,336	909	134	1,335	761	135	1,332	599	135	—	—	—
	62	1,351	1,351	134	1,287	1,287	133	1,227	1,214	132	1,224	1,065	132	1,224	906	132	1,222	757	132	1,218	597	133
	57	1,350	1,350	134	1,286	1,286	133	1,223	1,221	132	1,170	1,143	131	1,120	1,058	130	1,118	913	130	1,116	757	130
41,600	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,526	1,419	138	1,526	1,221	138	1,532	1,027	138	1,523	822	139	1,519	638	139	—	—	—	—	—	—
	67	1,484	1,484	137	1,412	1,412	135	1,404	1,236	136	1,405	1,039	136	1,400	840	136	1,395	642	137	—	—	—
	62	1,484	1,484	137	1,411	1,411	135	1,339	1,339	134	1,285	1,233	133	1,284	1,028	134	1,282	834	134	1,277	638	134
	57	1,483	1,483	137	1,410	1,410	135	1,338	1,338	134	1,270	1,261	133	1,211	1,168	132	1,175	1,033	131	1,175	838	132
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,561	1,545	138	1,558	1,325	139	1,558	1,106	139	1,556	871	139	1,550	651	140	—	—	—	—	—	—
	67	1,553	1,553	138	1,476	1,476	137	1,434	1,334	136	1,434	1,104	137	1,431	887	137	1,424	655	138	—	—	—
	62	1,552	1,552	138	1,475	1,475	137	1,399	1,399	135	1,324	1,324	134	1,315	1,105	134	1,312	879	135	1,305	653	135
	57	1,551	1,551	138	1,474	1,474	137	1,398	1,398	135	1,323	1,323	134	1,260	1,225	133	1,205	1,113	132	1,201	886	132
52,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	—	—	—	1,575	1,386	139	1,574	1,149	139	1,572	912	140	1,565	657	140	—	—	—	—	—	—
	67	—	—	—	1,511	1,511	137	1,450	1,406	137	1,448	1,159	137	1,446	911	137	1,438	662	138	—	—	—
	62	—	—	—	1,511	1,511	137	1,432	1,432	136	1,354	1,354	135	1,331	1,158	135	1,328	917	135	1,320	673	136
	57	—	—	—	1,510	1,510	137	1,431	1,431	136	1,353	1,353	135	1,286	1,257	134	1,223	1,154	132	1,215	918	133

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 130 ton - high capacity

Table 65: 130 ton high capacity — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26000	77	1863	1099	95	1864	969	95	1865	839	96	1866	709	96	-	-	-	-	-	-	-	-	-
	72	1714	1234	95	1715	1097	95	1715	961	95	1715	840	95	1714	703	95	-	-	-	-	-	-
	67	1571	1367	94	1573	1227	94	1573	1101	94	1573	975	95	1572	849	95	1572	708	95	-	-	-
	62	1463	1463	93	1436	1364	93	1438	1237	94	1438	1107	94	1437	977	94	1436	847	94	1437	704	94
	57	1462	1462	93	1405	1393	93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
32000	77	1964	1198	96	1966	1042	96	1968	886	96	1968	728	96	-	-	-	-	-	-	-	-	-
	72	1809	1375	95	1810	1213	95	1811	1051	96	1812	906	96	1812	743	96	-	-	-	-	-	-
	67	1660	1544	95	1666	1382	95	1666	1216	95	1667	1067	95	1666	900	95	1665	749	96	-	-	-
	62	1602	1602	94	1533	1533	94	1529	1391	94	1530	1224	95	1529	1070	95	1528	901	95	1526	748	95
	57	1602	1602	94	1531	1531	94	1473	1450	94	1415	1364	94	1399	1231	94	1399	1066	94	1397	902	94
41600	77	2069	1386	96	2071	1181	96	2074	975	96	2077	768	97	-	-	-	-	-	-	-	-	-
	72	1917	1592	96	1918	1400	96	1918	1189	96	1919	998	96	1919	787	97	-	-	-	-	-	-
	67	1778	1778	95	1769	1592	95	1768	1397	96	1768	1202	96	1768	990	96	1767	795	96	-	-	-
	62	1776	1776	95	1697	1697	95	1626	1609	95	1625	1398	95	1625	1203	95	1625	1007	96	1623	795	96
	57	1775	1775	95	1696	1696	95	1618	1616	95	1552	1514	95	1493	1410	94	1493	1207	95	1491	999	95
48000	77	-	-	-	-	-	-	-	-	-	2128	808	97	-	-	-	-	-	-	-	-	-
	72	1963	1727	96	1966	1494	96	1969	1280	96	1968	1043	97	1968	807	97	-	-	-	-	-	-
	67	1869	1869	95	1815	1743	96	1819	1510	96	1819	1273	96	1818	1054	96	1817	818	97	-	-	-
	62	1866	1866	95	1784	1784	95	1700	1700	95	1673	1523	95	1672	1287	96	1671	1053	96	1668	817	96
	57	1866	1866	95	1783	1783	95	1699	1699	95	1624	1599	95	1555	1491	95	1537	1295	95	1534	1053	95
52000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1988	1809	96	1992	1573	96	1994	1316	96	1996	1078	97	1994	818	97	-	-	-	-	-	-
	67	1919	1919	95	1839	1821	95	1844	1586	96	1842	1326	96	1841	1086	96	1841	828	97	-	-	-
	62	1918	1918	95	1831	1831	95	1745	1745	95	1698	1579	96	1698	1342	96	1696	1086	96	1693	847	97
	57	1916	1916	95	1830	1830	95	1744	1744	95	1664	1644	95	1593	1533	95	1559	1342	95	1557	1097	96

BHC Group Heating & Cooling

Table 66: 130 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26000	77	1807	1066	107	1808	940	107	1809	814	107	1809	688	107	-	-	-	-	-	-	-	-	-
	72	1661	1196	106	1662	1080	106	1662	948	106	1662	814	106	1661	681	106	-	-	-	-	-	-
	67	1522	1339	105	1523	1203	105	1523	1082	105	1524	945	105	1523	822	105	1523	685	105	-	-	-
	62	1428	1428	104	1389	1334	103	1391	1210	104	1392	1072	104	1391	946	104	1390	820	104	1390	681	104
	57	1426	1426	103	1368	1359	103	1317	1286	102	-	-	-	-	-	-	-	-	-	-	-	-
32000	77	1903	1180	108	1905	1029	108	1906	877	108	1907	706	108	-	-	-	-	-	-	-	-	-
	72	1750	1348	107	1752	1191	107	1753	1034	107	1753	876	107	1753	719	107	-	-	-	-	-	-
	67	1607	1510	105	1611	1353	106	1611	1192	106	1612	1031	106	1611	886	106	1610	724	106	-	-	-
	62	1563	1563	105	1493	1493	104	1476	1358	105	1479	1198	105	1477	1049	105	1476	886	105	1474	722	105
	57	1561	1561	105	1491	1491	104	1431	1411	104	1374	1327	103	1350	1202	103	1351	1042	104	1349	882	104
41600	77	2002	1361	108	2005	1163	109	2007	963	109	2008	743	109	-	-	-	-	-	-	-	-	-
	72	1852	1574	108	1853	1371	108	1853	1167	108	1853	963	108	1853	760	108	-	-	-	-	-	-
	67	1732	1732	106	1706	1570	107	1707	1366	107	1707	1178	107	1706	973	107	1705	767	108	-	-	-
	62	1730	1730	106	1651	1651	106	1573	1573	105	1567	1379	106	1567	1175	106	1566	971	106	1564	766	107
	57	1729	1729	106	1650	1650	106	1572	1572	105	1506	1474	105	1441	1376	104	1439	1175	105	1437	975	105
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1897	1707	108	1898	1480	108	1898	1253	108	1899	1006	109	1899	779	109	-	-	-	-	-	-
	67	1820	1820	107	1749	1714	107	1754	1491	107	1754	1263	108	1753	1017	108	1751	788	108	-	-	-
	62	1818	1818	107	1735	1735	107	1651	1651	106	1613	1484	106	1611	1257	107	1609	1030	107	1606	787	107
	57	1817	1817	107	1733	1733	107	1650	1650	106	1575	1553	106	1506	1447	105	1479	1261	105	1477	1026	106
52000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1921	1787	108	1922	1537	108	1924	1289	108	1924	1039	109	1924	808	109	-	-	-	-	-	-
	67	1867	1867	107	1782	1782	107	1778	1546	107	1776	1297	108	1775	1047	108	1773	798	108	-	-	-
	62	1866	1866	107	1780	1780	107	1695	1695	106	1634	1553	106	1635	1308	107	1633	1061	107	1630	815	107
	57	1865	1865	107	1779	1779	107	1693	1693	106	1612	1598	106	1541	1486	106	1500	1306	105	1498	1056	106

Table 67: 130 ton high capacity — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26000	77	1745	1047	119	1746	908	119	1747	786	119	1747	646	119	-	-	-	-	-	-	-	-	-
	72	1603	1170	117	1605	1043	118	1605	915	118	1605	786	118	1604	657	118	-	-	-	-	-	-
	67	1468	1306	116	1469	1175	116	1470	1058	116	1469	926	116	1469	793	116	1469	661	116	-	-	-
	62	1388	1388	114	1340	1314	114	1341	1180	114	1342	1047	114	1341	926	114	1341	791	115	1341	657	115
	57	1388	1388	114	1328	1323	114	1277	1250	113	-	-	-	-	-	-	-	-	-	-	-	-
32000	77	1835	1156	120	1835	991	120	1836	845	120	1838	680	121	-	-	-	-	-	-	-	-	-
	72	1686	1315	118	1687	1164	119	1688	1013	119	1689	844	119	1689	692	119	-	-	-	-	-	-
	67	1546	1484	117	1551	1334	117	1551	1163	117	1552	1009	117	1551	853	118	1549	697	118	-	-	-
	62	1518	1518	116	1450	1450	115	1420	1335	115	1422	1166	116	1422	1009	116	1421	852	116	1419	695	116
	57	1517	1517	116	1449	1449	115	1386	1372	115	1330	1288	114	1299	1166	114	1300	1014	114	1298	848	114
41600	77	-	-	-	-	-	-	-	-	-	1931	734	122	-	-	-	-	-	-	-	-	-
	72	1781	1532	120	1781	1336	120	1782	1141	120	1783	927	120	1781	730	121	-	-	-	-	-	-
	67	1679	1679	118	1639	1541	118	1640	1345	118	1640	1148	119	1639	934	119	1637	737	119	-	-	-
	62	1678	1678	118	1601	1601	117	1524	1524	117	1505	1339	117	1504	1143	117	1504	947	117	1501	736	118
	57	1677	1677	118	1600	1600	117	1522	1522	117	1455	1427	116	1391	1331	115	1381	1152	115	1379	946	116
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1823	1677	120	1821	1439	120	1823	1222	121	1824	985	121	1824	748	121	-	-	-	-	-	-
	67	1764	1764	119	1683	1683	118	1684	1448	119	1684	1229	119	1682	992	120	1680	756	120	-	-	-
	62	1762	1762	119	1680	1680	118	1599	1599	118	1546	1453	117	1545	1221	118	1543	1003	118	1540	770	119
	57	1761	1761	119	1679	1679	118	1597	1597	118	1520	1505	117	1452	1398	116	1417	1234	116	1416	998	116
52000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1842	1750	120	1845	1513	121	1847	1274	121	1848	1016	121	1847	776	122	-	-	-	-	-	-
	67	1810	1810	120	1725	1725	119	1706	1519	119	1705	1278	120	1703	1022	120	1700	782	120	-	-	-
	62	1808	1808	120	1724	1724	119	1639	1639	118	1565	1533	118	1567	1285	118	1565	1033	118	1562	781	119
	57	1807	1807	120	1722	1722	119	1638	1638	118	1555	1550	117	1486	1439	117	1436	1277	116	1435	1035	117

Table 68: 130 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26000	77	1676	1022	132	1677	889	132	1679	756	132	1679	621	132	-	-	-	-	-	-	-	-	-
	72	1541	1156	130	1541	1017	130	1542	894	130	1541	755	130	1541	632	130	-	-	-	-	-	-
	67	1409	1283	127	1411	1157	128	1412	1031	128	1412	890	128	1411	762	128	1411	635	128	-	-	-
	62	1347	1347	126	1289	1276	125	1288	1159	126	1289	1031	126	1289	889	126	1288	760	126	1287	631	126
	57	1346	1346	126	1286	1284	125	1236	1214	124	1186	1143	124	1176	1023	124	1176	886	124	1176	759	124
32000	77	1758	1125	133	1760	968	133	1761	810	134	1763	652	134	-	-	-	-	-	-	-	-	-
	72	1619	1295	131	1618	1132	131	1618	971	131	1619	826	132	1619	664	132	-	-	-	-	-	-
	67	1483	1453	129	1486	1293	129	1487	1145	129	1487	981	129	1487	818	130	1485	668	130	-	-	-
	62	1471	1471	128	1403	1403	127	1359	1305	127	1363	1145	127	1362	981	127	1361	830	128	1359	666	128
	57	-	-	-	1402	1402	127	1338	1329	126	1283	1247	126	1243	1139	125	1245	983	125	1244	823	126
41600	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1705	1500	132	1704	1312	133	1706	1109	133	1705	904	133	1703	698	133	-	-	-	-	-	-
	67	1623	1623	131	1566	1519	130	1568	1317	131	1568	1113	131	1567	909	131	1565	704	132	-	-	-
	62	1622	1622	131	1546	1546	130	1470	1470	129	1438	1323	129	1438	1107	129	1438	906	129	1435	703	130
	57	1621	1621	131	1545	1545	130	1469	1469	129	1401	1382	128	1339	1284	127	1318	1122	127	1318	916	127
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1740	1653	133	1741	1410	133	1743	1185	134	1743	959	134	1742	732	134	-	-	-	-	-	-
	67	1703	1703	132	1622	1622	131	1609	1416	131	1609	1190	132	1608	965	132	1605	738	133	-	-	-
	62	1701	1701	132	1620	1620	131	1541	1541	130	1475	1431	129	1476	1195	130	1474	958	130	1470	735	130
	57	1701	1701	132	1620	1620	131	1540	1540	130	1462	1455	129	1397	1350	128	1351	1199	128	1351	963	128
52000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1757	1722	133	1764	1482	134	1764	1235	134	1765	988	134	1764	741	135	-	-	-	-	-	-
	67	1746	1746	133	1663	1663	131	1629	1483	132	1628	1237	132	1626	992	132	1623	746	133	-	-	-
	62	1745	1745	133	1662	1662	131	1579	1579	130	1498	1498	129	1495	1241	130	1494	1001	130	1490	745	131
	57	1743	1743	133	1661	1661	131	1578	1578	130	1496	1496	129	1428	1385	129	1370	1254	128	1369	998	128

Table 69: 130 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
26000	77	1602	993	145	1604	850	145	1604	722	146	1606	594	146	-	-	-	-	-	-	-	-	-
	72	1473	1119	143	1474	987	143	1474	869	143	1474	737	143	1473	604	144	-	-	-	-	-	-
	67	1346	1252	140	1348	1132	140	1349	998	141	1350	864	141	1349	742	141	1349	607	141	-	-	-
	62	1302	1302	139	1242	1242	138	1231	1132	138	1232	998	138	1232	862	139	1231	739	139	1231	603	139
	57	1301	1301	139	1241	1241	138	1190	1174	137	1142	1103	136	1124	998	136	1124	867	136	1124	734	137
32000	77	1678	1091	147	1680	941	147	1678	789	147	1682	622	148	-	-	-	-	-	-	-	-	-
	72	1543	1265	144	1544	1111	144	1544	942	145	1543	787	145	1543	633	145	-	-	-	-	-	-
	67	1420	1420	141	1415	1273	142	1418	1106	142	1418	950	142	1418	794	143	1416	637	143	-	-	-
	62	1418	1418	141	1352	1352	140	1297	1271	139	1298	1117	140	1299	949	140	1298	792	140	1296	635	141
	57	1417	1417	141	1351	1351	140	1287	1283	139	1233	1203	138	1186	1108	138	1186	956	138	1185	794	138
41600	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1619	1473	146	1622	1281	146	1623	1071	146	1622	876	147	1621	665	147	-	-	-	-	-	-
	67	1562	1562	144	1492	1477	143	1492	1283	144	1492	1074	144	1492	880	144	1488	670	145	-	-	-
	62	1561	1561	144	1487	1487	143	1413	1413	142	1367	1285	141	1368	1081	142	1367	875	142	1364	682	143
	57	1560	1560	144	1486	1486	143	1412	1412	142	1343	1329	141	1283	1235	140	1251	1087	139	1253	883	140
48000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1650	1617	146	1655	1390	147	1657	1160	147	1656	928	147	1655	695	148	-	-	-	-	-	-
	67	1636	1636	146	1558	1558	144	1528	1390	144	1529	1162	145	1528	932	145	1524	701	146	-	-	-
	62	1635	1635	146	1557	1557	144	1479	1479	143	1404	1390	142	1402	1164	143	1400	938	143	1397	698	143
	57	1634	1634	146	1556	1556	144	1478	1478	143	1401	1398	142	1336	1297	141	1283	1174	140	1283	936	141
52000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1679	1679	146	1675	1440	147	1676	1207	147	1676	955	148	1675	703	149	-	-	-	-	-	-
	67	1677	1677	146	1597	1597	145	1545	1452	145	1546	1206	145	1543	957	146	1540	708	146	-	-	-
	62	1676	1676	146	1596	1596	145	1516	1516	144	1435	1435	142	1420	1207	143	1419	965	143	1414	707	144
	57	1675	1675	146	1595	1595	145	1514	1514	144	1434	1434	142	1365	1330	141	1302	1216	140	1299	958	141

Cooling performance data - 150 ton - standard efficiency

Table 70: 150 ton standard efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	2,040	1,204	111	2,041	1,061	111	2,041	919	112	2,042	776	112	—	—	—	—	—	—	—	—	—
	72	1,878	1,352	110	1,878	1,221	110	1,878	1,070	110	1,876	919	110	1,877	769	110	—	—	—	—	—	—
	67	1,725	1,518	109	1,725	1,362	109	1,723	1,224	109	1,722	1,068	109	1,721	929	109	1,720	774	109	—	—	—
	62	1,616	1,616	107	1,579	1,516	107	1,579	1,374	107	1,579	1,216	107	1,577	1,073	107	1,576	930	108	1,576	772	108
	57	1,614	1,614	107	1,550	1,539	107	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
38,000	77	2,156	1,358	112	2,158	1,165	112	2,157	992	113	2,158	798	113	—	—	—	—	—	—	—	—	—
	72	1,991	1,553	111	1,993	1,355	111	1,990	1,174	111	1,989	995	112	1,987	815	112	—	—	—	—	—	—
	67	1,832	1,722	110	1,830	1,556	110	1,831	1,373	110	1,830	1,190	110	1,829	1,006	110	1,827	822	110	—	—	—
	62	1,784	1,784	109	1,704	1,704	108	1,684	1,549	108	1,682	1,379	109	1,681	1,193	109	1,678	1,007	109	1,675	821	109
	57	1,782	1,782	109	1,703	1,703	108	1,634	1,611	108	1,569	1,518	107	1,543	1,373	107	1,541	1,189	107	1,538	1,006	107
48,000	77	2,252	1,509	113	2,254	1,285	113	2,254	1,059	114	2,254	834	114	—	—	—	—	—	—	—	—	—
	72	2,084	1,751	112	2,085	1,522	112	2,085	1,313	112	2,084	1,083	112	2,081	853	113	—	—	—	—	—	—
	67	1,947	1,947	111	1,926	1,772	111	1,924	1,539	111	1,922	1,307	111	1,921	1,095	111	1,917	863	112	—	—	—
	62	1,946	1,946	111	1,858	1,858	110	1,771	1,771	109	1,768	1,538	110	1,767	1,326	110	1,765	1,094	110	1,761	863	110
	57	1,944	1,944	111	1,856	1,856	110	1,768	1,768	109	1,695	1,657	109	1,626	1,552	108	1,624	1,326	108	1,621	1,099	108
54,000	77	2,295	1,607	114	2,296	1,354	114	2,297	1,125	114	2,296	872	114	—	—	—	—	—	—	—	—	—
	72	2,127	1,872	112	2,127	1,617	112	2,127	1,383	113	2,126	1,127	113	2,122	870	113	—	—	—	—	—	—
	67	2,026	2,026	111	1,966	1,888	111	1,966	1,631	111	1,964	1,394	111	1,961	1,138	112	1,957	881	112	—	—	—
	62	2,025	2,025	111	1,933	1,933	111	1,840	1,840	110	1,809	1,646	110	1,807	1,391	110	1,804	1,137	110	1,798	881	111
	57	2,023	2,023	111	1,931	1,931	111	1,839	1,839	110	1,757	1,730	109	1,682	1,612	109	1,660	1,399	109	1,658	1,138	109
60,000	77	2,330	1,701	114	2,331	1,422	114	2,332	1,166	114	2,331	886	115	—	—	—	—	—	—	—	—	—
	72	2,161	1,989	112	2,163	1,730	113	2,163	1,449	113	2,162	1,167	113	2,157	906	113	—	—	—	—	—	—
	67	2,095	2,095	112	2,002	2,002	111	1,998	1,739	112	1,997	1,458	112	1,994	1,177	112	1,990	896	112	—	—	—
	62	2,094	2,094	112	1,998	1,998	111	1,902	1,902	111	1,843	1,733	110	1,842	1,455	111	1,839	1,195	111	1,831	916	111
	57	2,092	2,092	112	1,997	1,997	111	1,901	1,901	111	1,811	1,793	110	1,732	1,668	109	1,692	1,460	109	1,688	1,190	109

Table 71: 150 ton standard efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,976	1,185	124	1,977	1,028	124	1,977	889	124	1,977	731	124	—	—	—	—	—	—	—	—	—
	72	1,818	1,327	122	1,818	1,182	122	1,817	1,036	122	1,816	890	122	1,816	745	122	—	—	—	—	—	—
	67	1,669	1,486	120	1,670	1,336	120	1,668	1,185	120	1,667	1,050	120	1,666	899	120	1,665	749	120	—	—	—
	62	1,575	1,575	118	1,527	1,481	118	1,528	1,345	118	1,528	1,191	118	1,526	1,053	118	1,525	900	118	1,524	747	118
	57	1,574	1,574	118	1,509	1,501	117	1,452	1,421	117	—	—	—	—	—	—	—	—	—	—	—	—
38,000	77	2,087	1,315	125	2,085	1,147	126	2,085	959	126	2,085	771	126	—	—	—	—	—	—	—	—	—
	72	1,923	1,519	123	1,923	1,327	124	1,922	1,153	124	1,921	961	124	1,920	787	124	—	—	—	—	—	—
	67	1,768	1,697	121	1,767	1,520	121	1,768	1,344	122	1,768	1,149	122	1,768	972	122	1,765	794	122	—	—	—
	62	1,737	1,737	121	1,658	1,658	120	1,625	1,528	120	1,625	1,348	120	1,623	1,168	120	1,620	972	120	1,617	792	120
	57	1,736	1,736	121	1,657	1,657	120	1,587	1,571	119	1,523	1,477	118	1,489	1,340	118	1,488	1,160	118	1,485	971	118
48,000	77	2,174	1,500	127	2,176	1,262	127	2,175	1,044	127	2,174	826	127	—	—	—	—	—	—	—	—	—
	72	2,011	1,730	125	2,011	1,508	125	2,010	1,266	125	2,009	1,045	125	2,007	823	125	—	—	—	—	—	—
	67	1,894	1,894	123	1,857	1,727	123	1,855	1,503	123	1,855	1,280	123	1,853	1,056	123	1,849	832	124	—	—	—
	62	1,892	1,892	123	1,805	1,805	122	1,719	1,719	121	1,705	1,517	121	1,703	1,295	121	1,702	1,055	121	1,697	832	122
	57	1,891	1,891	123	1,804	1,804	122	1,717	1,717	121	1,644	1,613	120	1,573	1,505	119	1,565	1,291	119	1,562	1,059	119
54,000	77	2,213	1,594	127	2,215	1,329	127	2,214	1,085	128	2,212	841	128	—	—	—	—	—	—	—	—	—
	72	2,051	1,846	125	2,050	1,599	125	2,050	1,353	125	2,048	1,106	126	2,046	839	126	—	—	—	—	—	—
	67	1,970	1,970	124	1,893	1,855	123	1,894	1,610	123	1,893	1,363	124	1,890	1,096	124	1,886	849	124	—	—	—
	62	1,968	1,968	124	1,877	1,877	123	1,785	1,785	122	1,743	1,604	122	1,741	1,358	122	1,738	1,112	122	1,731	866	122
	57	1,967	1,967	124	1,876	1,876	123	1,784	1,784	122	1,703	1,680	121	1,629	1,565	120	1,598	1,363	120	1,595	1,111	120
60,000	77	—	—	—	2,249	1,394	128	2,248	1,124	128	2,246	853	128	—	—	—	—	—	—	—	—	—
	72	2,083	1,958	125	2,084	1,688	126	2,083	1,417	126	2,082	1,145	126	2,078	873	127	—	—	—	—	—	—
	67	2,036	2,036	125	1,941	1,941	124	1,925	1,694	124	1,923	1,423	124	1,921	1,153	124	1,915	881	125	—	—	—
	62	2,035	2,035	124	1,940	1,940	124	1,846	1,846	122	1,774	1,703	122	1,774	1,437	122	1,770	1,150	123	1,763	881	123
	57	2,033	2,033	125	1,939	1,939	124	1,843	1,843	122	1,754	1,742	121	1,676	1,620	121	1,628	1,432	120	1,624	1,158	120

Table 72: 150 ton standard efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,905	1,143	137	1,906	1,010	137	1,905	857	137	1,906	705	137	—	—	—	—	—	—	—	—	—
	72	1,752	1,297	134	1,752	1,157	135	1,752	1,016	135	1,752	858	135	1,751	718	135	—	—	—	—	—	—
	67	1,610	1,449	132	1,610	1,304	132	1,609	1,159	132	1,608	1,013	132	1,606	867	132	1,605	722	133	—	—	—
	62	1,532	1,532	130	1,471	1,456	129	1,473	1,311	130	1,473	1,164	130	1,472	1,016	130	1,470	867	130	1,469	720	130
	57	1,531	1,531	130	1,464	1,462	129	1,408	1,381	128	—	—	—	—	—	—	—	—	—	—	—	—
38,000	77	2,007	1,304	139	2,007	1,104	139	2,006	923	139	2,006	742	139	—	—	—	—	—	—	—	—	—
	72	1,850	1,480	136	1,850	1,295	136	1,849	1,128	136	1,849	943	137	1,848	758	137	—	—	—	—	—	—
	67	1,699	1,665	133	1,701	1,497	134	1,702	1,310	134	1,702	1,123	134	1,700	952	134	1,698	764	134	—	—	—
	62	1,686	1,686	133	1,610	1,610	132	1,563	1,500	131	1,563	1,313	132	1,562	1,124	132	1,559	951	132	1,555	762	132
	57	1,685	1,685	133	1,609	1,609	132	1,537	1,527	131	1,474	1,433	130	1,431	1,311	129	1,431	1,131	129	1,429	946	129
48,000	77	2,089	1,463	140	2,090	1,233	140	2,089	1,003	141	2,088	794	141	—	—	—	—	—	—	—	—	—
	72	1,932	1,701	138	1,931	1,467	138	1,931	1,236	138	1,930	1,023	138	1,928	790	139	—	—	—	—	—	—
	67	1,836	1,836	136	1,782	1,693	135	1,783	1,480	135	1,782	1,248	136	1,780	1,032	136	1,775	799	136	—	—	—
	62	1,834	1,834	136	1,748	1,748	134	1,664	1,664	133	1,637	1,490	133	1,636	1,259	133	1,633	1,029	133	1,630	799	134
	57	1,833	1,833	136	1,747	1,747	134	1,663	1,663	133	1,589	1,564	132	1,520	1,457	131	1,503	1,254	131	1,500	1,030	131
54,000	77	—	—	—	2,125	1,296	141	2,125	1,062	141	2,123	807	142	—	—	—	—	—	—	—	—	—
	72	1,968	1,811	138	1,968	1,574	138	1,968	1,318	139	1,967	1,062	139	1,964	825	139	—	—	—	—	—	—
	67	1,908	1,908	137	1,819	1,819	136	1,819	1,583	136	1,818	1,327	136	1,815	1,071	137	1,809	814	137	—	—	—
	62	1,907	1,907	137	1,817	1,817	135	1,728	1,728	134	1,673	1,573	134	1,671	1,337	134	1,667	1,084	134	1,661	830	134
	57	1,906	1,906	137	1,816	1,816	135	1,727	1,727	134	1,645	1,628	133	1,572	1,516	132	1,533	1,335	131	1,531	1,079	132
60,000	77	—	—	—	—	—	—	—	—	—	2,155	819	142	—	—	—	—	—	—	—	—	—
	72	1,996	1,936	139	1,998	1,658	139	1,999	1,379	139	1,997	1,119	139	1,994	837	140	—	—	—	—	—	—
	67	1,971	1,971	138	1,877	1,877	137	1,848	1,663	136	1,845	1,383	137	1,842	1,124	137	1,837	845	137	—	—	—
	62	1,969	1,969	138	1,876	1,876	137	1,784	1,784	135	1,701	1,684	134	1,702	1,395	134	1,697	1,120	135	1,691	845	135
	57	1,968	1,968	138	1,875	1,875	137	1,782	1,782	135	1,692	1,690	134	1,617	1,566	133	1,561	1,401	132	1,557	1,123	132

Table 73: 150 ton standard efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,828	1,115	151	1,828	969	151	1,829	823	151	1,829	677	151	—	—	—	—	—	—	—	—	—
	72	1,683	1,279	148	1,683	1,128	148	1,683	976	148	1,682	841	148	1,682	690	148	—	—	—	—	—	—
	67	1,546	1,422	145	1,547	1,284	145	1,546	1,128	145	1,545	989	145	1,543	833	145	1,542	694	145	—	—	—
	62	1,486	1,486	143	1,419	1,419	142	1,415	1,274	142	1,415	1,132	142	1,414	990	142	1,412	847	143	1,411	691	143
	57	1,485	1,485	143	1,418	1,418	142	1,362	1,338	141	1,307	1,260	140	1,294	1,128	140	—	—	—	—	—	—
38,000	77	1,921	1,268	153	1,922	1,076	153	1,921	903	153	1,921	711	153	—	—	—	—	—	—	—	—	—
	72	1,772	1,453	150	1,772	1,276	150	1,773	1,081	150	1,771	903	150	1,770	726	150	—	—	—	—	—	—
	67	1,633	1,633	146	1,629	1,450	147	1,630	1,271	147	1,630	1,092	147	1,629	912	147	1,627	732	148	—	—	—
	62	1,632	1,632	146	1,557	1,557	145	1,495	1,465	144	1,498	1,288	144	1,496	1,092	144	1,494	911	145	1,491	730	145
	57	1,630	1,630	146	1,556	1,556	145	1,484	1,479	144	1,422	1,387	142	1,370	1,280	141	1,371	1,095	142	1,369	917	142
48,000	77	1,997	1,438	154	1,997	1,198	155	1,998	979	155	1,997	759	155	—	—	—	—	—	—	—	—	—
	72	1,848	1,663	151	1,846	1,440	151	1,846	1,219	152	1,846	997	152	1,843	756	152	—	—	—	—	—	—
	67	1,772	1,772	150	1,701	1,667	148	1,704	1,449	149	1,704	1,227	149	1,701	987	149	1,697	764	149	—	—	—
	62	1,771	1,771	149	1,688	1,688	148	1,622	1,622	147	1,564	1,455	146	1,564	1,220	146	1,562	1,000	146	1,558	779	147
	57	1,770	1,770	149	1,687	1,687	148	1,608	1,608	146	1,530	1,512	145	1,462	1,405	143	1,437	1,225	143	1,434	999	144
54,000	77	—	—	—	—	—	—	—	—	—	2,029	771	156	—	—	—	—	—	—	—	—	—
	72	1,878	1,784	152	1,879	1,541	152	1,880	1,278	152	1,879	1,034	153	1,876	788	153	—	—	—	—	—	—
	67	1,840	1,840	151	1,753	1,753	149	1,738	1,547	149	1,737	1,285	150	1,734	1,040	150	1,728	795	150	—	—	—
	62	1,839	1,839	151	1,752	1,752	149	1,666	1,666	148	1,597	1,549	146	1,596	1,293	147	1,593	1,051	147	1,587	794	147
	57	1,838	1,838	151	1,751	1,751	149	1,665	1,665	148	1,582	1,574	146	1,511	1,460	145	1,465	1,303	144	1,462	1,043	144
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,905	1,886	152	1,907	1,621	153	1,909	1,355	153	1,908	1,068	153	1,903	799	154	—	—	—	—	—	—
	67	1,900	1,900	152	1,809	1,809	150	1,765	1,624	150	1,761	1,356	150	1,759	1,090	150	1,754	807	151	—	—	—
	62	1,898	1,898	152	1,808	1,808	150	1,719	1,719	149	1,630	1,630	147	1,623	1,363	147	1,621	1,086	148	1,614	807	148
	57	1,897	1,897	152	1,807	1,807	150	1,718	1,718	149	1,628	1,628	147	1,554	1,510	146	1,490	1,364	144	1,487	1,084	145

BHC Group Heating & Cooling

Table 74: 150 ton standard efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,745	1,082	165	1,745	942	166	1,747	804	166	1,748	647	166	—	—	—	—	—	—	—	—	—
	72	1,608	1,238	162	1,609	1,094	162	1,608	949	162	1,608	804	163	1,607	659	163	—	—	—	—	—	—
	67	1,475	1,387	159	1,478	1,242	159	1,478	1,109	159	1,477	960	159	1,475	811	160	1,473	663	160	—	—	—
	62	1,435	1,435	158	1,370	1,370	156	1,353	1,244	156	1,352	1,109	156	1,352	960	156	1,351	810	157	1,349	661	157
	57	1,434	1,434	158	1,369	1,369	156	1,312	1,294	155	1,259	1,219	154	1,237	1,101	154	1,236	954	154	1,234	807	154
38,000	77	1,829	1,226	168	1,831	1,044	168	1,831	861	168	1,832	678	168	—	—	—	—	—	—	—	—	—
	72	1,689	1,419	164	1,690	1,234	164	1,690	1,065	165	1,689	878	165	1,687	692	165	—	—	—	—	—	—
	67	1,574	1,574	161	1,554	1,430	161	1,554	1,243	161	1,553	1,056	161	1,553	885	162	1,551	698	162	—	—	—
	62	1,573	1,573	161	1,500	1,500	159	1,428	1,428	158	1,427	1,242	158	1,427	1,070	158	1,425	884	159	1,422	697	159
	57	1,572	1,572	161	1,499	1,499	159	1,426	1,426	158	1,367	1,336	156	1,308	1,248	155	1,308	1,068	156	1,306	886	156
48,000	77	—	—	—	—	—	—	—	—	—	1,900	722	170	—	—	—	—	—	—	—	—	—
	72	1,757	1,634	166	1,756	1,405	166	1,756	1,177	166	1,756	948	167	1,753	736	167	—	—	—	—	—	—
	67	1,704	1,704	164	1,624	1,624	163	1,621	1,411	163	1,621	1,184	163	1,619	955	164	1,616	727	164	—	—	—
	62	1,705	1,705	164	1,624	1,624	162	1,543	1,543	161	1,489	1,415	160	1,489	1,191	160	1,486	966	160	1,482	741	161
	57	1,702	1,702	164	1,622	1,622	162	1,542	1,542	161	1,467	1,455	159	1,402	1,352	158	1,367	1,191	157	1,365	962	158
54,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,821	1,766	167	1,786	1,500	167	1,787	1,251	167	1,786	1,000	167	1,783	749	168	—	—	—	—	—	—
	67	1,767	1,767	166	1,684	1,684	164	1,652	1,503	164	1,651	1,254	164	1,648	1,005	164	1,644	756	165	—	—	—
	62	1,766	1,766	166	1,683	1,683	164	1,599	1,599	162	1,518	1,518	160	1,518	1,260	161	1,515	1,015	161	1,510	755	162
	57	1,765	1,765	166	1,682	1,682	164	1,598	1,598	162	1,515	1,515	160	1,447	1,404	159	1,392	1,264	158	1,390	1,014	158
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,823	1,823	167	1,811	1,594	167	1,812	1,323	168	1,812	1,033	168	1,808	759	169	—	—	—	—	—	—
	67	1,823	1,823	167	1,736	1,736	165	1,674	1,607	164	1,673	1,322	165	1,670	1,052	165	1,666	766	165	—	—	—
	62	1,821	1,821	167	1,734	1,734	165	1,648	1,648	163	1,562	1,562	161	1,542	1,326	161	1,540	1,047	162	1,534	782	162
	57	1,820	1,820	167	1,733	1,733	165	1,647	1,647	163	1,561	1,561	161	1,486	1,450	160	1,417	1,334	158	1,412	1,056	159

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

Cooling performance data - 150 ton - high efficiency

Table 75: 150 ton high efficiency — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	2,071	1,222	114	—	—	—	2,075	934	114	2,077	789	114	—	—	—	—	—	—	—	—	—
	72	1,909	1,375	112	1,910	1,242	113	1,912	1,090	113	1,912	937	113	1,912	784	113	—	—	—	—	—	—
	67	1,757	1,546	111	1,756	1,387	111	1,756	1,247	111	1,756	1,089	111	1,756	948	111	1,755	790	112	—	—	—
	62	1,645	1,645	110	1,607	1,542	109	1,609	1,384	110	1,609	1,239	110	1,607	1,093	110	1,608	949	110	1,608	788	110
	57	1,643	1,643	110	1,578	1,568	109	1,520	1,482	108	—	—	—	—	—	—	—	—	—	—	—	—
38,000	77	2,193	1,382	115	2,194	1,185	115	2,196	1,010	115	2,198	813	115	—	—	—	—	—	—	—	—	—
	72	2,024	1,579	114	2,026	1,378	114	2,028	1,197	114	2,029	1,014	114	2,030	832	114	—	—	—	—	—	—
	67	1,865	1,771	112	1,865	1,586	112	1,866	1,400	112	1,868	1,214	113	1,867	1,027	113	1,868	840	113	—	—	—
	62	1,817	1,817	111	1,739	1,739	111	1,718	1,580	111	1,718	1,409	111	1,717	1,219	111	1,715	1,029	111	1,715	840	112
	57	1,816	1,816	111	1,737	1,737	111	1,667	1,644	110	1,603	1,551	109	1,576	1,403	109	1,575	1,216	110	1,573	1,028	110
48,000	77	2,292	1,559	116	2,294	1,330	116	2,298	1,103	116	2,299	851	116	—	—	—	—	—	—	—	—	—
	72	2,120	1,802	114	2,122	1,570	115	2,124	1,338	115	2,127	1,106	115	2,128	873	115	—	—	—	—	—	—
	67	1,984	1,984	113	1,963	1,806	113	1,964	1,572	113	1,965	1,336	114	1,965	1,120	114	1,964	884	114	—	—	—
	62	1,983	1,983	113	1,897	1,897	112	1,809	1,809	112	1,805	1,588	112	1,807	1,355	112	1,807	1,121	112	1,806	885	113
	57	1,982	1,982	113	1,895	1,895	112	1,808	1,808	112	1,734	1,698	111	1,661	1,586	110	1,664	1,359	111	1,661	1,127	111
54,000	77	2,335	1,658	116	2,338	1,403	116	2,340	1,147	117	2,344	891	117	—	—	—	—	—	—	—	—	—
	72	2,165	1,927	115	2,167	1,669	115	2,170	1,410	115	2,171	1,151	115	2,172	891	116	—	—	—	—	—	—
	67	2,066	2,066	114	2,005	1,925	114	2,008	1,687	114	2,008	1,426	114	2,007	1,164	114	2,007	903	115	—	—	—
	62	2,065	2,065	114	1,973	1,973	113	1,881	1,881	112	1,850	1,684	112	1,849	1,424	113	1,849	1,165	113	1,846	904	113
	57	2,063	2,063	114	1,972	1,972	113	1,880	1,880	112	1,798	1,770	112	1,722	1,651	111	1,701	1,433	111	1,699	1,167	112
60,000	77	—	—	—	—	—	—	—	—	—	2,381	905	117	—	—	—	—	—	—	—	—	—
	72	2,201	2,047	115	2,203	1,762	115	2,207	1,479	115	2,209	1,193	116	2,209	906	116	—	—	—	—	—	—
	67	2,139	2,139	114	2,042	2,042	114	2,042	1,776	114	2,041	1,490	114	2,040	1,204	115	2,041	918	115	—	—	—
	62	2,136	2,136	114	2,040	2,040	114	1,945	1,945	113	1,886	1,791	113	1,886	1,509	113	1,885	1,225	113	1,882	941	114
	57	2,135	2,135	114	2,040	2,040	114	1,944	1,944	113	1,854	1,839	112	1,775	1,712	112	1,734	1,510	112	1,732	1,221	112

BHC Group Heating & Cooling

Table 76: 150 ton high efficiency — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	2,010	1,206	127	2,011	1,046	127	2,013	906	127	2,014	745	127	—	—	—	—	—	—	—	—	—
	72	1,852	1,352	125	1,852	1,204	125	1,853	1,056	125	1,854	908	125	1,853	760	125	—	—	—	—	—	—
	67	1,701	1,514	122	1,702	1,361	123	1,702	1,208	123	1,702	1,072	123	1,701	919	123	1,701	765	123	—	—	—
	62	1,605	1,605	121	1,555	1,508	120	1,559	1,372	120	1,558	1,215	121	1,558	1,060	121	1,557	919	121	1,558	763	121
	57	1,604	1,604	121	1,538	1,530	120	1,481	1,449	119	—	—	—	—	—	—	—	—	—	—	—	—
38,000	77	2,123	1,359	128	2,125	1,169	128	2,128	979	129	2,128	787	129	—	—	—	—	—	—	—	—	—
	72	1,960	1,548	126	1,961	1,353	126	1,962	1,177	126	1,963	981	126	1,964	805	127	—	—	—	—	—	—
	67	1,804	1,732	124	—	—	—	1,805	1,372	124	1,806	1,174	124	1,807	994	125	1,806	813	125	—	—	—
	62	1,772	1,772	123	1,694	1,694	122	1,659	1,560	122	1,661	1,379	122	1,660	1,179	122	1,659	995	123	1,657	812	123
	57	1,771	1,771	123	1,692	1,692	122	1,621	1,605	121	1,557	1,510	120	1,522	1,367	120	1,521	1,187	120	1,520	994	120
48,000	77	2,215	1,529	129	2,219	1,287	130	2,222	1,067	130	2,224	845	130	—	—	—	—	—	—	—	—	—
	72	2,051	1,763	127	2,051	1,538	128	2,053	1,314	128	2,054	1,068	128	2,055	843	128	—	—	—	—	—	—
	67	1,934	1,934	125	1,895	1,782	125	1,896	1,555	126	1,897	1,309	126	1,897	1,081	126	1,896	853	126	—	—	—
	62	1,932	1,932	125	1,845	1,845	124	1,758	1,758	123	1,745	1,553	124	1,745	1,326	124	1,744	1,081	124	1,742	854	124
	57	1,930	1,930	125	1,844	1,844	124	1,757	1,757	123	1,683	1,651	122	1,612	1,542	122	1,604	1,323	122	1,601	1,086	122
54,000	77	—	—	—	2,259	1,378	130	2,263	1,109	130	2,264	860	131	—	—	—	—	—	—	—	—	—
	72	2,092	1,883	128	2,094	1,633	128	2,095	1,383	128	2,097	1,132	129	2,096	859	129	—	—	—	—	—	—
	67	2,011	2,011	126	1,932	1,893	126	1,937	1,646	126	1,937	1,394	126	1,937	1,143	127	1,936	871	127	—	—	—
	62	2,010	2,010	126	1,919	1,919	125	1,828	1,828	124	1,784	1,659	124	1,784	1,392	124	1,782	1,141	125	1,779	890	125
	57	2,008	2,008	126	1,918	1,918	125	1,827	1,827	124	1,744	1,723	123	1,669	1,604	122	1,638	1,397	122	1,637	1,140	123
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	2,124	2,018	128	2,127	1,744	129	2,130	1,448	129	2,131	1,172	129	2,130	895	129	—	—	—	—	—	—
	67	2,080	2,080	127	1,986	1,986	126	1,970	1,753	127	1,968	1,456	127	1,968	1,181	127	1,967	905	128	—	—	—
	62	2,078	2,078	127	1,984	1,984	126	1,890	1,890	125	1,817	1,744	125	1,818	1,472	125	1,816	1,180	125	1,813	906	126
	57	2,076	2,076	127	1,983	1,983	126	1,888	1,888	125	1,797	1,785	124	1,719	1,662	123	1,670	1,468	123	1,668	1,189	123

Table 77: 150 ton high efficiency — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,941	1,165	140	1,942	1,029	140	1,944	875	140	1,945	720	140	—	—	—	—	—	—	—	—	—
	72	1,788	1,323	137	1,788	1,180	137	1,789	1,038	137	1,789	877	138	1,789	734	138	—	—	—	—	—	—
	67	1,643	1,478	134	1,642	1,330	135	1,644	1,183	135	1,644	1,036	135	1,643	887	135	1,642	739	135	—	—	—
	62	1,563	1,563	133	1,501	1,486	132	1,505	1,339	132	1,504	1,188	132	1,503	1,037	132	1,503	887	132	1,503	736	133
	57	1,561	1,561	133	1,494	1,491	131	1,438	1,410	131	1,381	1,328	129	1,375	1,185	130	—	—	—	—	—	—
38,000	77	2,047	1,331	142	2,049	1,127	142	2,050	943	142	2,051	759	142	—	—	—	—	—	—	—	—	—
	72	1,890	1,512	139	1,889	1,323	139	1,890	1,153	139	1,891	964	140	1,892	776	140	—	—	—	—	—	—
	67	1,734	1,699	136	1,737	1,529	136	1,739	1,339	137	1,740	1,149	137	1,741	975	137	1,739	783	137	—	—	—
	62	1,722	1,722	136	1,645	1,645	134	1,596	1,532	134	1,600	1,344	134	1,599	1,151	134	1,597	974	135	1,595	782	135
	57	1,721	1,721	136	1,643	1,643	134	1,571	1,561	133	1,509	1,466	132	1,464	1,342	132	1,465	1,157	132	1,463	968	132
48,000	77	2,134	1,493	143	2,136	1,260	143	2,138	1,026	144	2,139	813	144	—	—	—	—	—	—	—	—	—
	72	1,975	1,738	141	1,973	1,499	141	1,974	1,283	141	1,976	1,047	141	1,977	811	142	—	—	—	—	—	—
	67	1,877	1,877	139	1,822	1,749	138	1,824	1,514	138	1,824	1,277	138	1,824	1,058	139	1,823	820	139	—	—	—
	62	1,875	1,875	139	1,789	1,789	137	1,704	1,704	136	1,677	1,526	136	1,676	1,290	136	1,676	1,056	136	1,674	820	137
	57	1,873	1,873	139	1,788	1,788	137	1,703	1,703	136	1,628	1,603	135	1,558	1,493	133	1,541	1,287	133	1,539	1,057	134
54,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	2,010	1,849	141	2,012	1,610	141	2,013	1,349	142	2,015	1,088	142	2,015	846	142	—	—	—	—	—	—
	67	1,951	1,951	140	1,861	1,861	138	1,862	1,620	139	1,863	1,360	139	1,862	1,099	140	1,860	837	140	—	—	—
	62	1,950	1,950	140	1,860	1,860	138	1,771	1,771	137	1,714	1,611	136	1,713	1,371	137	1,711	1,112	137	1,708	854	137
	57	1,948	1,948	140	1,859	1,859	138	1,769	1,769	137	1,686	1,669	136	1,612	1,555	134	1,572	1,369	134	1,572	1,108	134
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	2,037	1,976	141	2,043	1,696	142	2,046	1,411	142	2,047	1,147	143	2,048	860	143	—	—	—	—	—	—
	67	2,015	2,015	141	1,922	1,922	139	1,892	1,703	139	1,890	1,436	140	1,890	1,153	140	1,888	869	140	—	—	—
	62	2,014	2,014	141	1,921	1,921	139	1,828	1,828	138	1,741	1,724	137	1,744	1,430	137	1,743	1,150	138	1,740	870	138
	57	2,012	2,012	141	1,920	1,920	139	1,827	1,827	138	1,737	1,734	137	1,660	1,608	135	1,602	1,438	135	1,600	1,153	135

BHC Group Heating & Cooling

Table 78: 150 ton high efficiency — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,866	1,138	154	1,867	990	154	1,869	841	154	1,870	692	154	—	—	—	—	—	—	—	—	—
	72	1,718	1,306	150	1,720	1,152	151	1,721	998	151	1,721	861	151	1,721	706	151	—	—	—	—	—	—
	67	1,577	1,451	147	1,580	1,311	147	1,581	1,154	148	1,581	1,012	148	1,580	853	148	1,579	710	148	—	—	—
	62	1,517	1,517	146	1,449	1,449	144	1,446	1,301	144	1,447	1,157	145	1,446	1,012	145	1,445	853	145	1,445	708	145
	57	1,515	1,515	146	1,448	1,448	144	1,391	1,367	143	1,336	1,288	142	1,322	1,153	142	1,322	1,007	142	1,321	852	142
38,000	77	1,964	1,296	156	1,966	1,101	156	1,967	925	156	1,968	728	156	—	—	—	—	—	—	—	—	—
	72	1,811	1,485	152	1,813	1,305	153	1,814	1,107	153	1,815	926	153	1,815	744	153	—	—	—	—	—	—
	67	1,670	1,670	149	1,667	1,483	149	1,668	1,301	150	1,669	1,118	150	1,670	935	150	1,669	751	150	—	—	—
	62	1,668	1,668	149	1,592	1,592	147	1,529	1,499	146	1,535	1,304	147	1,534	1,120	147	1,532	935	147	1,530	750	148
	57	1,667	1,667	149	1,592	1,592	147	1,518	1,513	146	1,456	1,418	145	1,403	1,311	144	1,405	1,122	144	1,404	940	145
48,000	77	—	—	—	—	—	—	—	—	—	2,051	779	158	—	—	—	—	—	—	—	—	—
	72	1,890	1,701	154	1,890	1,474	154	1,890	1,248	155	1,892	1,022	155	1,892	776	155	—	—	—	—	—	—
	67	1,814	1,814	152	1,741	1,706	151	1,746	1,484	151	1,747	1,258	152	1,747	1,013	152	1,745	785	152	—	—	—
	62	1,812	1,812	152	1,729	1,729	151	1,646	1,646	149	1,605	1,493	148	1,604	1,251	149	1,604	1,026	149	1,602	785	150
	57	1,811	1,811	152	1,728	1,728	151	1,645	1,645	149	1,569	1,551	147	1,500	1,441	146	1,474	1,257	146	1,473	1,024	146
54,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,922	1,826	155	1,924	1,578	155	1,927	1,311	155	1,930	1,061	156	1,927	809	156	—	—	—	—	—	—
	67	1,884	1,884	154	1,797	1,797	152	1,782	1,586	152	1,782	1,319	153	1,781	1,069	153	1,779	818	153	—	—	—
	62	1,883	1,883	154	1,796	1,796	152	1,709	1,709	150	1,638	1,589	149	1,638	1,327	149	1,637	1,080	150	1,634	817	150
	57	1,882	1,882	154	1,794	1,794	152	1,708	1,708	150	1,624	1,615	149	1,552	1,500	147	1,504	1,337	147	1,503	1,072	147
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,948	1,948	155	1,953	1,660	156	1,956	1,389	156	1,958	1,096	156	1,957	822	157	—	—	—	—	—	—
	67	1,945	1,945	155	1,855	1,855	153	1,810	1,683	153	1,807	1,392	153	1,806	1,120	153	1,805	830	154	—	—	—
	62	1,944	1,944	155	1,854	1,854	153	1,764	1,764	151	1,674	1,674	150	1,667	1,400	150	1,666	1,116	151	1,663	831	151
	57	1,943	1,943	155	1,853	1,853	153	1,762	1,762	151	1,672	1,672	150	1,596	1,552	148	1,531	1,414	147	1,529	1,127	148

Table 79: 150 ton high efficiency — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30,000	77	1,785	1,107	168	1,787	965	169	1,789	823	169	1,790	662	169	—	—	—	—	—	—	—	—	—
	72	1,644	1,266	165	1,645	1,119	165	1,647	972	165	1,647	824	165	1,648	675	166	—	—	—	—	—	—
	67	1,507	1,417	161	1,512	1,270	162	1,513	1,119	162	1,513	983	162	1,513	832	162	1,512	680	162	—	—	—
	62	1,467	1,467	160	1,401	1,401	158	1,383	1,272	158	1,385	1,122	159	1,384	983	159	1,384	830	159	1,383	678	159
	57	1,465	1,465	160	1,399	1,399	158	1,342	1,324	157	1,288	1,244	156	1,265	1,126	156	1,266	977	156	1,264	826	156
38,000	77	1,874	1,255	171	1,876	1,070	171	1,878	883	171	1,880	696	171	—	—	—	—	—	—	—	—	—
	72	1,730	1,453	167	1,731	1,264	167	1,733	1,074	167	1,734	901	168	1,731	710	168	—	—	—	—	—	—
	67	1,611	1,611	164	1,593	1,450	164	1,592	1,274	164	1,593	1,084	164	1,593	908	164	1,593	717	165	—	—	—
	62	1,610	1,610	164	1,536	1,536	162	1,462	1,462	160	1,465	1,274	161	1,465	1,099	161	1,464	907	161	1,461	716	162
	57	1,609	1,609	164	1,535	1,535	162	1,461	1,461	160	1,401	1,369	159	1,341	1,280	158	1,342	1,096	158	1,340	909	158
48,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,801	1,657	169	1,801	1,441	169	1,802	1,207	169	1,803	974	170	1,803	757	170	—	—	—	—	—	—
	67	1,746	1,746	167	1,666	1,666	165	1,664	1,448	166	1,664	1,215	166	1,665	982	166	1,664	749	167	—	—	—
	62	1,745	1,745	167	1,664	1,664	165	1,583	1,583	163	1,530	1,453	162	1,529	1,223	163	1,527	993	163	1,526	763	164
	57	1,744	1,744	167	1,664	1,664	165	1,582	1,582	163	1,506	1,493	162	1,440	1,389	160	1,403	1,222	160	1,404	990	160
54,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,825	1,788	169	1,833	1,540	170	1,835	1,284	170	1,836	1,028	171	1,835	771	171	—	—	—	—	—	—
	67	1,813	1,813	169	1,728	1,728	167	1,695	1,543	166	1,696	1,289	167	1,696	1,035	167	1,694	779	168	—	—	—
	62	1,811	1,811	169	1,727	1,727	167	1,643	1,643	165	1,558	1,558	163	1,559	1,294	164	1,559	1,045	164	1,556	778	165
	57	1,810	1,810	169	1,726	1,726	167	1,641	1,641	165	1,557	1,557	163	1,488	1,443	161	1,431	1,298	160	1,431	1,043	161
60,000	77	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	72	1,872	1,872	170	1,858	1,635	170	1,861	1,358	171	1,863	1,062	171	1,862	782	172	—	—	—	—	—	—
	67	1,870	1,870	170	1,782	1,782	168	1,720	1,651	167	1,718	1,357	167	1,719	1,083	168	1,716	789	169	—	—	—
	62	1,868	1,868	170	1,781	1,781	168	1,693	1,693	166	1,606	1,606	164	1,586	1,364	164	1,586	1,078	165	1,582	807	165
	57	1,870	1,870	170	1,780	1,780	168	1,692	1,692	166	1,605	1,605	164	1,529	1,492	162	1,457	1,372	161	1,454	1,087	162

Notes:

Rated performance is at sea level. Cooling capacities are gross cooling capacities.

CFM = airflow, EWB = entering wet bulb air, EDB = entering dry bulb air, TMBH = total cooling capacity (MBH)

SMBH = sensible cooling capacity (MBH), kW = total input

BHC Group Heating & Cooling

Cooling performance data - 150 ton - high capacity

Table 80: 150 ton high capacity — 75°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30000	77	2193	1272	126	2195	1120	126	2197	989	126	2197	835	126	-	-	-	-	-	-	-	-	-
	72	2020	1434	124	2021	1293	124	2022	1132	124	2022	991	124	2022	829	124	-	-	-	-	-	-
	67	1856	1597	122	1857	1448	122	1857	1300	122	1857	1151	122	1857	984	122	1857	836	122	-	-	-
	62	1718	1718	120	1701	1582	120	1701	1445	120	1701	1293	120	1700	1139	120	1699	985	120	1700	850	120
	57	1716	1716	120	1653	1633	119	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38000	77	2329	1421	127	2331	1236	127	2333	1050	128	2334	864	128	-	-	-	-	-	-	-	-	-
	72	2148	1633	125	2150	1440	125	2151	1248	126	2153	1077	126	2154	883	126	-	-	-	-	-	-
	67	1980	1821	123	1981	1645	124	1983	1447	124	1983	1269	124	1983	1071	124	1982	892	124	-	-	-
	62	1904	1904	122	1822	1822	121	1823	1641	122	1824	1459	122	1823	1276	122	1822	1075	122	1820	892	122
	57	1900	1900	122	1820	1820	121	1753	1722	121	1685	1625	120	1673	1459	120	-	-	-	-	-	-
48000	77	2440	1610	129	2442	1368	129	2444	1149	129	2447	905	129	-	-	-	-	-	-	-	-	-
	72	2259	1853	127	2263	1629	127	2265	1382	127	2267	1156	127	2267	929	127	-	-	-	-	-	-
	67	2085	2085	124	2091	1861	125	2088	1629	125	2091	1401	125	2090	1171	125	2089	940	126	-	-	-
	62	2082	2082	124	1992	1992	124	1925	1867	123	1924	1635	123	1925	1405	123	1926	1175	124	1924	943	124
	57	2082	2082	124	1991	1991	124	1904	1895	123	1829	1781	122	1771	1641	121	1773	1416	122	1770	1172	122
54000	77	2490	1718	129	2493	1446	129	2495	1198	130	2498	949	130	-	-	-	-	-	-	-	-	-
	72	2306	1983	127	2309	1732	127	2312	1456	128	2315	1204	128	2316	949	128	-	-	-	-	-	-
	67	2172	2172	125	2139	1989	125	2143	1735	126	2141	1477	126	2141	1221	126	2140	963	126	-	-	-
	62	2171	2171	125	2077	2077	125	1981	1981	124	1971	1734	124	1971	1478	124	1971	1222	124	1970	965	125
	57	2169	2169	125	2075	2075	124	1980	1980	124	1898	1859	123	1820	1738	122	1817	1483	122	1814	1231	123
60000	77	2531	1797	130	2534	1520	130	2536	1243	130	2540	965	130	-	-	-	-	-	-	-	-	-
	72	2349	2091	128	2352	1811	128	2355	1531	128	2358	1249	128	2358	967	129	-	-	-	-	-	-
	67	2250	2250	126	2178	2113	126	2180	1831	126	2181	1548	126	2180	1265	127	2178	980	127	-	-	-
	62	2249	2249	126	2149	2149	125	2051	2051	124	2012	1851	124	2011	1569	125	2012	1288	125	2009	985	125
	57	2247	2247	126	2148	2148	125	2049	2049	124	1960	1934	124	1878	1804	123	1852	1564	123	1851	1286	123

Table 81: 150 ton high capacity — 85°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30000	77	2127	1255	140	2129	1107	140	2131	959	140	2131	810	140	-	-	-	-	-	-	-	-	-
	72	1959	1411	137	1960	1254	137	1960	1117	137	1960	960	137	1960	804	137	-	-	-	-	-	-
	67	1798	1565	134	1799	1403	134	1799	1260	135	1800	1116	135	1799	972	135	1799	810	135	-	-	-
	62	1676	1676	132	1647	1565	132	1648	1418	132	1648	1269	132	1647	1120	132	1645	970	132	1647	807	132
	57	1675	1675	132	1610	1597	131	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38000	77	2254	1398	142	2257	1219	142	2259	1039	142	2260	836	142	-	-	-	-	-	-	-	-	-
	72	2079	1601	139	2080	1415	139	2081	1228	139	2082	1041	140	2082	854	140	-	-	-	-	-	-
	67	1914	1780	136	1916	1609	137	1917	1419	137	1918	1227	137	1917	1054	137	1917	863	137	-	-	-
	62	1856	1856	135	1774	1774	134	1763	1605	134	1764	1429	134	1763	1234	134	1761	1056	135	1759	862	135
	57	1854	1854	135	1773	1773	134	1704	1678	133	1638	1582	132	1617	1423	132	1616	1234	132	1614	1055	132
48000	77	2356	1578	143	2360	1345	144	2364	1111	144	2366	875	144	-	-	-	-	-	-	-	-	-
	72	2188	1816	141	2187	1596	141	2188	1357	141	2189	1138	141	2189	897	142	-	-	-	-	-	-
	67	2030	2030	138	2017	1836	138	2017	1593	138	2018	1372	139	2018	1130	139	2017	908	139	-	-	-
	62	2028	2028	138	1939	1939	137	1855	1836	135	1856	1597	136	1858	1375	136	1858	1152	136	1856	910	137
	57	2027	2027	138	1937	1937	137	1848	1845	135	1775	1732	134	1707	1612	133	1710	1382	134	1708	1145	134
54000	77	2403	1682	144	2407	1420	144	2410	1157	145	2413	917	145	-	-	-	-	-	-	-	-	-
	72	2228	1939	142	2229	1694	142	2232	1429	142	2233	1183	142	2233	915	142	-	-	-	-	-	-
	67	2114	2114	139	2063	1960	139	2065	1693	139	2065	1446	140	2066	1198	140	2065	929	140	-	-	-
	62	2113	2113	139	2019	2019	138	1924	1924	137	1899	1709	137	1901	1445	137	1901	1198	137	1899	930	138
	57	2111	2111	139	2017	2017	138	1924	1924	137	1841	1809	135	1764	1688	134	1750	1461	135	1748	1200	135
60000	77	-	-	-	2446	1492	145	2449	1200	145	2453	932	146	-	-	-	-	-	-	-	-	-
	72	2267	2063	142	2269	1793	142	2272	1500	143	2273	1227	143	2273	932	143	-	-	-	-	-	-
	67	2188	2188	141	2097	2076	139	2103	1808	140	2102	1514	140	2101	1240	140	2101	945	141	-	-	-
	62	2187	2187	141	2089	2089	139	1992	1992	138	1939	1803	137	1940	1533	138	1938	1240	138	1935	967	138
	57	2185	2185	141	2085	2085	139	1989	1989	138	1899	1876	136	1819	1751	135	1783	1535	135	1782	1241	135

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Table 82: 150 ton high capacity — 95°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30000	77	2055	1212	154	2057	1069	155	2057	926	155	2057	782	155	-	-	-	-	-	-	-	-	-
	72	1892	1381	151	1892	1230	151	1893	1079	151	1893	928	151	1893	776	151	-	-	-	-	-	-
	67	1737	1529	148	1738	1373	148	1738	1234	148	1738	1078	148	1738	938	148	1738	782	148	-	-	-
	62	1632	1632	145	1588	1540	145	1592	1385	145	1591	1225	145	1590	1082	145	1590	938	145	1590	779	145
	57	1630	1630	145	1564	1556	144	1507	1472	143	-	-	-	-	-	-	-	-	-	-	-	-
38000	77	2174	1370	157	2176	1175	157	2177	1001	157	2178	806	157	-	-	-	-	-	-	-	-	-
	72	2003	1562	153	2004	1383	153	2004	1183	154	2006	1003	154	2007	823	154	-	-	-	-	-	-
	67	1843	1751	150	1845	1568	150	1847	1386	150	1848	1201	151	1848	1016	151	1847	831	151	-	-	-
	62	1803	1803	149	1724	1724	147	1699	1580	147	1699	1393	147	1698	1206	148	1697	1018	148	1695	830	148
	57	1801	1801	149	1722	1722	147	1652	1632	146	1587	1536	145	1557	1386	144	1556	1201	145	1555	1016	145
48000	77	2268	1542	159	2271	1317	159	2273	1091	159	2275	842	159	-	-	-	-	-	-	-	-	-
	72	2102	1787	155	2103	1556	156	2103	1325	156	2105	1095	156	2106	863	156	-	-	-	-	-	-
	67	1970	1970	152	1940	1804	152	1940	1572	152	1941	1339	153	1941	1106	153	1940	873	153	-	-	-
	62	1968	1968	152	1880	1880	151	1792	1792	149	1784	1570	149	1786	1340	150	1786	1107	150	1784	874	150
	57	1967	1967	152	1878	1878	151	1791	1791	149	1716	1681	148	1645	1570	146	1643	1342	147	1641	1113	147
54000	77	2310	1640	159	2313	1388	160	2316	1135	160	2318	881	160	-	-	-	-	-	-	-	-	-
	72	2144	1908	156	2143	1650	156	2144	1393	157	2145	1137	157	2146	880	157	-	-	-	-	-	-
	67	2050	2050	154	1981	1921	153	1983	1666	153	1986	1410	154	1985	1151	154	1984	893	154	-	-	-
	62	2049	2049	154	1957	1957	152	1864	1864	151	1827	1681	150	1826	1424	151	1824	1168	151	1823	893	151
	57	2047	2047	154	1955	1955	152	1863	1863	151	1780	1756	149	1704	1637	148	1680	1419	148	1679	1166	148
60000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	2177	2024	157	2179	1765	157	2181	1483	157	2183	1201	158	2184	917	158	-	-	-	-	-	-
	67	2121	2121	156	2025	2025	154	2019	1757	154	2019	1494	154	2019	1191	155	2016	907	155	-	-	-
	62	2118	2118	155	2023	2023	154	1926	1926	152	1861	1768	151	1862	1489	151	1860	1209	152	1857	929	152
	57	2117	2117	155	2021	2021	154	1925	1925	152	1835	1820	150	1756	1694	149	1710	1490	148	1710	1205	149

Table 83: 150 ton high capacity — 105°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30000	77	1974	1185	170	1977	1028	170	1979	890	170	1978	732	170	-	-	-	-	-	-	-	-	-
	72	1820	1346	166	1820	1201	166	1821	1038	166	1821	892	166	1822	747	167	-	-	-	-	-	-
	67	1671	1504	162	1672	1354	163	1672	1204	163	1672	1053	163	1672	903	163	1672	752	163	-	-	-
	62	1583	1583	160	1526	1495	159	1531	1347	159	1530	1194	159	1530	1056	159	1530	902	159	1530	750	160
	57	1582	1582	160	1515	1510	158	1459	1428	157	-	-	-	-	-	-	-	-	-	-	-	-
38000	77	2084	1334	172	2086	1147	173	2087	960	173	2089	773	173	-	-	-	-	-	-	-	-	-
	72	1921	1537	168	1922	1346	169	1923	1154	169	1925	982	169	1925	789	169	-	-	-	-	-	-
	67	1767	1714	164	1770	1540	165	1772	1347	165	1773	1170	165	1773	975	166	1772	797	166	-	-	-
	62	1747	1747	164	1669	1669	162	1628	1546	161	1630	1352	162	1629	1173	162	1629	977	162	1626	797	163
	57	1745	1745	164	1667	1667	162	1596	1583	160	1532	1486	159	1493	1356	158	1493	1165	159	1492	987	159
48000	77	2171	1498	174	2174	1283	175	2176	1044	175	2178	828	175	-	-	-	-	-	-	-	-	-
	72	2011	1749	171	2012	1529	171	2015	1289	171	2016	1069	171	2016	827	172	-	-	-	-	-	-
	67	1904	1904	168	1854	1761	167	1858	1524	167	1858	1301	168	1858	1059	168	1857	836	168	-	-	-
	62	1902	1902	168	1816	1816	166	1731	1731	164	1709	1538	164	1709	1299	164	1710	1077	164	1708	837	165
	57	1901	1901	168	1814	1814	166	1729	1729	164	1655	1626	162	1584	1516	161	1573	1313	161	1571	1079	161
54000	77	-	-	-	-	-	-	-	-	-	2218	843	176	-	-	-	-	-	-	-	-	-
	72	2049	1865	172	2049	1619	172	2050	1353	172	2053	1108	172	2054	842	173	-	-	-	-	-	-
	67	1980	1980	170	1889	1889	168	1898	1632	168	1896	1365	169	1900	1121	169	1898	854	169	-	-	-
	62	1979	1979	170	1888	1888	167	1799	1799	165	1747	1642	165	1747	1380	165	1745	1117	165	1743	871	166
	57	1978	1978	170	1887	1887	167	1798	1798	165	1714	1697	164	1640	1579	162	1606	1383	162	1606	1132	162
60000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	2079	1995	172	2082	1707	173	2085	1439	173	2088	1148	173	2089	877	174	-	-	-	-	-	-
	67	2046	2046	171	1953	1953	169	1930	1737	169	1930	1448	169	1929	1158	170	1928	887	170	-	-	-
	62	2045	2045	171	1951	1951	169	1858	1858	167	1776	1740	165	1779	1459	166	1777	1173	166	1775	888	167
	57	2043	2043	171	1950	1950	169	1857	1857	167	1766	1760	165	1689	1636	163	1635	1454	162	1635	1179	163

Table 84: 150 ton high capacity — 115°F ambient air temperature

CFM	EWB (°F)	95°F EDB			90°F EDB			85°F EDB			80°F EDB			75°F EDB			70°F EDB			65°F EDB		
		TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW	TMBH	SMBH	kW
30000	77	1888	1152	186	1891	1002	186	1893	852	187	1893	700	187	-	-	-	-	-	-	-	-	-
	72	1743	1307	182	1743	1168	182	1743	1011	182	1744	872	183	1744	715	183	-	-	-	-	-	-
	67	1599	1455	178	1601	1313	178	1601	1169	178	1601	1025	179	1600	864	179	1601	720	179	-	-	-
	62	1532	1532	176	1464	1464	174	1465	1319	175	1466	1172	175	1466	1012	175	1465	864	175	1465	718	176
	57	1531	1531	176	1463	1463	174	1407	1383	173	1352	1303	171	1340	1166	172	1341	1011	172	1340	865	172
38000	77	1988	1292	189	1991	1115	189	1994	937	190	1994	738	190	-	-	-	-	-	-	-	-	-
	72	1835	1486	185	1836	1303	185	1837	1120	185	1838	937	185	1839	754	186	-	-	-	-	-	-
	67	1687	1687	180	1689	1504	181	1691	1319	181	1693	1134	181	1693	948	182	1693	762	182	-	-	-
	62	1686	1686	180	1610	1610	178	1550	1503	177	1557	1323	177	1556	1136	178	1556	949	178	1554	761	178
	57	1684	1684	180	1608	1608	178	1536	1528	176	1474	1435	175	1423	1330	174	1427	1139	174	1425	943	175
48000	77	-	-	-	2070	1242	191	2072	1015	192	2077	789	192	-	-	-	-	-	-	-	-	-
	72	1917	1706	187	1918	1477	187	1920	1248	187	1921	1018	188	1921	787	188	-	-	-	-	-	-
	67	1833	1833	184	1766	1731	183	1770	1487	183	1771	1257	184	1771	1027	184	1770	797	184	-	-	-
	62	1832	1832	184	1749	1749	182	1666	1666	180	1628	1498	179	1628	1270	180	1629	1043	180	1628	798	181
	57	1831	1831	184	1747	1747	182	1664	1664	180	1589	1567	178	1520	1460	176	1499	1266	177	1498	1041	177
54000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1949	1832	188	1949	1579	188	1953	1328	188	1954	1075	189	1954	821	189	-	-	-	-	-	-
	67	1903	1903	186	1817	1817	184	1807	1590	184	1807	1337	185	1808	1085	185	1807	831	186	-	-	-
	62	1902	1902	186	1816	1816	184	1729	1729	182	1662	1595	180	1663	1347	181	1663	1081	181	1659	830	182
	57	1901	1901	186	1815	1815	184	1728	1728	182	1644	1633	180	1573	1520	178	1528	1344	177	1528	1089	178
60000	77	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	72	1969	1969	188	1980	1683	189	1984	1389	189	1985	1112	190	1986	834	190	-	-	-	-	-	-
	67	1966	1966	188	1876	1876	186	1835	1688	185	1836	1414	185	1835	1119	186	1834	844	187	-	-	-
	62	1964	1964	188	1875	1875	186	1784	1784	183	1694	1694	181	1692	1421	182	1692	1133	182	1689	845	183
	57	1963	1963	188	1874	1874	186	1783	1783	183	1692	1692	181	1617	1572	179	1555	1423	178	1554	1134	179

Staged and modulating gas heat data

Table 85: Staged and modulating gas heat

Staged and modulating gas heat					Staged gas heat	Modulating gas heat
Model	Gas input capacity (MBH)	Maximum output capacity (MBH)	Minimum airflow (CFM)	Gas connection size (in.)	Steps	Turndown
90 to 105 ton	1,000	810	18,000	1.25	4	20:1
	1,500	1,215	18,000	1.50	6	30:1
	2,000	1,620	18,000	2.00	8	40:1
120 to 150 ton	1,500	1,215	24,000	1.50	6	30:1
	2,000	1,620	24,000	2.00	8	40:1
	2,500	2,025	24,000	2.00	10	50:1

Note:

- Minimum airflow (CFM) is based on maximum output capacity (MBH).
- For proper operation, the building supplied natural gas pressure must be 7 iwg to 14 iwg and liquid propane pressure must be 12 iwg to 14 iwg.
- Temperature rise can be calculated where temperature rise = (gas input capacity (Btu) x 0.81) / (CFM x 1.085).
- Maximum leaving air temperature cannot exceed 120.0°F

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Electric heat data

Table 86: Electric heat performance data - 90 to 105 ton

Voltage	Size (kW)	Heat capacity (MBH)	Minimum airflow (CFM)	Maximum temp. rise (°F)*
Low heat				
460	140	478	18,000	28
575	140	478	18,000	28
High heat				
460	280	955	18,000	51
575	280	955	18,000	53

Table 87: Electric heat performance data - 120 to 150 ton

Voltage	Size (kW)	Heat capacity (MBH)	Minimum airflow (CFM)	Maximum temp. rise (°F)*
Low heat				
460	210	717	24,000	32
575	210	717	24,000	32
High heat				
460	350	1194	24,000	50
575	350	1194	24,000	50

Note:

*Maximum temperature rise is based on unit operation at the minimum airflow (CFM).

Hot water heat data

Table 88: Hot water coil performance data (90 to 105 ton low heat option) 1 row

GPM	Water Pressure Drop	FPS	CFM	Capacity (MBH) at Entering Water			
				140°F	160°F	180°F	200°F
92	7.4	5.2	18000	514.5	654.6	795.2	936.3
			21000	553.3	703.9	855.2	1007.1
			24000	587.5	747.6	908.3	1069.7
			30000	645.8	821.9	998.7	1176.3
			36000	694	883.4	1073.7	1264.6
114	11.2	6.4	18000	528.4	671.8	815.9	960.5
			21000	569.4	724	879.4	1035.3
			24000	605.8	770.4	935.7	1101.7
			30000	668	849.8	1032.2	1215.3
			36000	719.9	915.9	1112.7	1310.2
123	13	6.9	18000	532.8	677.4	822.5	968.3
			21000	574.5	730.5	887.1	1044.3
			24000	611.6	777.8	944.6	1111.9
			30000	675.2	858.8	1043.1	1228
			36000	728.3	926.5	1125.3	1324.9
137	16	7.4	18000	538.4	684.4	831	978.1
			21000	581.1	738.7	897	1055.8
			24000	619.1	787.1	955.8	1125
			30000	684.4	870.3	1056.8	1244
			36000	739.1	939.9	1141.5	1343.8

Table 89: Hot water coil performance data (90 to 105 ton high heat) 2 row

GPM	Water Pressure Drop	FPS	CFM	Capacity (MBH) at Entering Water			
				140°F	160°F	180°F	200°F
139	6	3.9	18000	756.6	974.2	1183.5	1393.6
			21000	835.8	1063.8	1292.7	1522.4
			24000	898.7	1144	1390.5	1637.7
			30000	1007	1282.3	1558.9	1836.5
			36000	1097.6	1398.1	1699.9	2003.1
178	9.6	5	18000	786.1	999.7	1214	1429.1
			21000	860.9	1095	1330	1565.7
			24000	928.2	1180.8	1434.4	1688.8
			30000	1045.1	1329.8	1615.9	1902.8
			36000	1143.9	1455.8	1769.3	2083.9
195	11.4	5.5	18000	792.7	1007.9	1223.8	1440.4
			21000	868.9	1105	1341.9	1579.6
			24000	937.7	1192.6	1448.6	1705.2
			30000	1057.4	1345.3	1634.4	1924.3
			36000	1158.9	1474.7	1791.8	2110.1
211	13.6	5.9	18000	798	1014.5	1231.6	1449.5
			21000	875.4	1113.1	1351.6	1590.8
			24000	945.3	1202.2	1460	1718.5
			30000	1067.4	1357.7	1649.3	1941.6
			36000	1171.1	1489.9	1810.1	2131.3

Table 90: Hot water coil performance data (150 ton low heat) 2 row

GPM	Water Pressure Drop	FPS	CFM	Capacity (MBH) at Entering Water			
				140°F	160°F	180°F	200°F
150	6.8	4.2	30000	863.8	1099	1335.3	1572.4
			36000	940.9	1197.2	1454.7	1713.2
			45000	1036.9	1319.8	1603.9	1889
			52000	1099.9	1400.2	1701.6	2004.3
			60000	1162.1	1479.5	1798.3	2118.2
186	10.4	5.2	30000	886.5	1127.3	1369.1	1611.7
			36000	968.2	1231.3	1495.5	1760.7
			45000	1070.8	1362	1654.4	1947.9
			52000	1138.4	1448.2	1759.3	2071.4
			60000	1205.4	1533.8	1863.3	2194
199	11.9	5.6	30000	893.1	1135.5	1378.9	1623.2
			36000	976.2	1241.3	1507.5	1774.6
			45000	1080.7	1374.4	1669.3	1965.2
			52000	1149.7	1462.4	1776.3	2091.2
			60000	1218.3	1549.8	1882.6	2216.5
213	13.8	5.9	30000	899	1142.8	1387.6	1633.3
			36000	983.3	1250.1	1518.8	1786.8
			45000	1089.5	1385.4	1682.5	1980.5
			52000	1159.8	1474.9	1791.3	2108.7
			60000	1229.7	1564	1899.6	2236.3

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Table 91: Hot water coil performance data (120 to 130 ton low heat) 1 row

GPM	Water Pressure Drop	FPS	CFM	Capacity (MBH) at Entering Water			
				140°F	160°F	180°F	200°F
124	10.6	6.9	24000	700.2	890.8	1082.3	1274.5
			30000	775.6	986.9	1199.2	1412.3
			42000	892.4	1136	1380.6	1626.2
			48000	939.4	1196	1453.6	1712.3
			52000	967.7	1232.1	1497.7	1764.2
153	15.7	8.6	24000	719.5	915	1111.3	1308.4
			30000	799.5	1016.9	1235.2	1454.3
			42000	924.6	1176.3	1429.1	1682.9
			48000	975.3	1240.9	1507.7	1775.6
			52000	1005.9	1280	1555.3	1831.6
165	18.2	9.2	24000	725.6	922.6	1120.5	1319.1
			30000	807.1	1026.4	1246.6	1467.7
			42000	934.9	1189.2	1444.6	1701
			48000	986.7	1255.3	1525	1795.8
			52000	1018.1	1295.3	1573.7	1853.2
173	19.9	9.6	24000	-	-	1125.9	1325.4
			30000	-	-	-	1475.7
			42000	-	-	-	1711.8
			48000	-	-	-	1807.9
			52000	-	-	-	1866.1

Table 92: Hot water coil performance data (120 to 150 ton high heat option) 2 row

GPM	Water Pressure Drop	FPS	CFM	Capacity (MBH) at Entering Water			
				140°F	160°F	180°F	200°F
182	10.06	5	24000	992.2	1263	1534.9	1807.6
			30000	1117	1422.8	1730	2038.3
			42000	1310.7	1671.2	2033.8	2397.8
			52000	1433.9	1829.5	2227.5	2627.9
			60000	1515.3	1934.2	2355.8	2779.4
232	16.15	6.4	24000	1022.4	1300.5	1579.5	1859.2
			30000	1156.8	1472.3	1789.1	2106.7
			42000	1368.7	1743.6	2120.3	2498.3
			52000	1505.9	1919.6	2335.3	2752.7
			60000	1597.7	2037.4	2479.5	2923.4
253	19.12	7	24000	1031.9	1312.2	1593.5	1875.4
			30000	1169.4	1487.9	1807.6	2128.2
			42000	1387.2	1766.7	2147.8	2530.1
			52000	1529	1948.4	2369.8	2792.7
			60000	1624.3	2070.6	2519.2	2969.6
271	21.99	7.5	24000	1039.4	1321.4	1604.4	1888
			30000	1179.3	1500.2	1822.2	2145
			42000	1401.8	1784.8	2169.4	2555.2
			52000	1547.3	1971.1	2396.9	2824.2
			60000	1645.3	2096.8	2550.6	3006

Steam heat data

Table 93: Steam coil performance data - 90 to 105 ton (low heat option)

CFM	Capacity (MBH) at steam pressure (PSI)				
	2	4	6	10	15
18000	830.7	862.1	890.7	941.6	996.1
24000	923.9	958.7	990.6	1047.2	1108
30000	992.3	1029.3	1063.5	1124.3	1189.7
36000	1041.2	1082.6	1118.5	1182.5	1251.2
42000	1080.0	1123.1	1160.2	1226.4	1297.7

Table 94: Steam coil performance data - 90 to 105 ton (high heat option)

CFM	Capacity (MBH) at steam pressure (PSI)				
	2	4	6	10	15
18000	1174.9	1223.2	1264.5	1338.4	1417.7
24000	1311	1359.5	1411	1492.8	1581.3
30000	1408	1458	1516	1601.9	1696.7
42000	1532.1	1579.4	1647.4	1735.7	1837

Table 95: Steam coil performance data - 120 to 130 ton (low heat option)

CFM	Capacity (MBH) at steam pressure (PSI)				
	2	4	6	10	15
24000	1121	1163.1	1202.2	1271.9	1348.1
30000	1203.8	1247.9	1289.5	1364.1	1446.2
42000	1311.5	1356.7	1400.6	1481.3	1571
52000	1360.1	1405.4	1449.8	1532.9	1625.9

Table 96: Steam coil performance data - 120 to 150 ton (high heat option)

CFM	Capacity (MBH) at steam pressure (PSI)				
	2	4	6	10	15
24000	1452.9	1506.5	1555.8	1644.4	1740.6
30000	1640.5	1701.1	1756.8	1856.7	1965.4
42000	1944.7	2016.4	2082.5	2201	2329.8
48000	2071.4	2147.8	2218.2	2344.4	2481.6
60000	2289.2	2373.6	2451.4	2590.8	2742.5

Table 97: Steam coil performance data - 150 ton (low heat option)

CFM	Capacity (MBH) at Steam Pressure (PSI)				
	2	4	6	10	15
30000	1408	1458	1516	1601.9	1696.7
42000	1532.1	1579.4	1647.4	1735.7	1837
48000	1567.8	1612.3	1684.2	1771.8	1874.5
60000	1591.9	1634.4	1709.4	1795.7	1893.6

Table 98: Hydronic heat connection data

Model (ton)	Coil	Valve size (in.)	Header size (in.)	Connection size (inlet/outlet)
90-105	Hot water (low heat)	2	2.5	2.5 / 2.5
	Hot water (high heat)	3	3	3 / 3
	Steam (low heat)	2	2	(2 X 2 / 1.5)
	Steam (high heat)	2	2	(2 X 2 / 1.5)

Table 98: Hydronic heat connection data

Model (ton)	Coil	Valve size (in.)	Header size (in.)	Connection size (inlet/outlet)
120-150	Hot water (low heat)	2	3	3 / 3
	Hot water (high heat)	3	3	3 / 3
	Steam (low heat)	2	2	(2 X 2 / 1.5)
	Steam (high heat)	2	2	(2 / 1.5)

Airflow performance - 90 ton to 150 ton

Component static pressure drops (iwg)

Table 99: Wet coil component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	Evaporator coil – standard capacity, standard efficiency	0.27	0.35	0.43	0.49	0.62	0.83	1.07	1.20	—	—	—
	Evaporator coil – standard capacity, high efficiency	0.27	0.35	0.43	0.49	0.62	0.83	1.07	1.20	—	—	—
	Evaporation coil – high capacity, standard efficiency	0.33	0.44	0.52	0.6	0.75	1.01	1.30	1.45	—	—	—
105	Evaporator coil – standard capacity, standard efficiency	—	0.42	0.52	0.60	0.75	1.01	1.30	1.45	—	—	—
	Evaporator coil – standard capacity, high efficiency	—	0.38	0.48	0.54	0.68	0.92	1.19	1.33	—	—	—
	Evaporation coil – high capacity, standard efficiency	—	0.42	0.52	0.6	0.75	1.01	1.30	1.45	—	—	—
120	Evaporator coil – standard capacity, standard efficiency	—	—	0.31	0.35	0.44	0.60	0.77	0.86	0.96	—	—
	Evaporator coil – standard capacity, high efficiency	—	—	0.31	0.35	0.44	0.60	0.77	0.86	0.96	—	—
	Evaporation coil – high capacity, standard efficiency	—	—	0.33	0.38	0.48	0.65	0.84	0.94	1.04	—	—
130	Evaporator coil – standard capacity, standard efficiency	—	—	—	0.35	0.44	0.60	0.77	0.86	0.96	1.09	—
	Evaporator coil – standard capacity, high efficiency	—	—	—	0.35	0.44	0.60	0.77	0.86	0.96	1.09	—
	Evaporation coil – high capacity, standard efficiency	—	—	—	0.38	0.48	0.65	0.84	0.94	1.04	1.19	—
150	Evaporator coil – standard capacity, standard efficiency	—	—	—	—	0.44	0.60	0.77	0.86	0.96	1.09	1.38
	Evaporator coil – standard capacity, high efficiency	—	—	—	—	0.48	0.65	0.84	0.94	1.04	1.19	1.50
	Evaporation coil – high capacity, standard efficiency	—	—	—	—	0.48	0.65	0.84	0.94	1.04	1.19	1.50
90 to 105	Hot gas reheat (HGRH) coil	0.11	0.13	0.16	0.17	0.21	0.27	0.33	0.37	—	—	—
120 to 150	HGRH coil	—	—	0.14	0.16	0.20	0.25	0.31	0.34	0.37	0.41	0.50

Table 100: Dry coil component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	Evaporator coil – standard capacity, standard efficiency	0.2	0.25	0.32	0.36	0.45	0.61	—	—	—	—	—
	Evaporation coil – standard capacity, high efficiency	0.2	0.25	0.32	0.36	0.45	0.61	—	—	—	—	—
	Evaporation coil – high capacity, standard efficiency	0.24	0.31	0.38	0.44	0.55	0.74	—	—	—	—	—

Table 100: Dry coil component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
105	Evaporator coil – standard capacity, standard efficiency	—	0.31	0.38	0.44	0.55	0.74	0.95	—	—	—	—
	Evaporation coil – standard capacity, high efficiency	—	0.28	0.35	0.4	0.5	0.68	0.87	—	—	—	—
	Evaporation coil – high capacity, standard efficiency	—	0.31	0.38	0.44	0.55	0.74	0.95	—	—	—	—
120	Evaporator coil – standard capacity, standard efficiency	—	—	0.2	0.23	0.3	0.4	0.51	0.57	0.64	—	—
	Evaporation coil – standard capacity, high efficiency	—	—	0.2	0.23	0.3	0.4	0.51	0.57	0.64	—	—
	Evaporation coil – high capacity, standard efficiency	—	—	0.22	0.25	0.32	0.44	0.56	0.63	0.69	—	—
130	Evaporator coil – standard capacity, standard efficiency	—	—	—	0.23	0.3	0.4	0.51	0.57	0.64	0.73	—
	Evaporation coil – standard capacity, high efficiency	—	—	—	0.23	0.3	0.4	0.51	0.57	0.64	0.73	—
	Evaporation coil – high capacity, standard efficiency	—	—	—	0.25	0.32	0.44	0.56	0.63	0.69	0.79	—
150	Evaporator coil – standard capacity, standard efficiency	—	—	—	—	0.3	0.4	0.51	0.57	0.64	0.73	0.92
	Evaporation coil – standard capacity, high efficiency	—	—	—	—	0.32	0.44	0.56	0.63	0.69	0.79	1
	Evaporation coil – high capacity, standard efficiency	—	—	—	—	0.32	0.44	0.56	0.63	0.69	0.79	1.0
90 to 105	Hot gas reheat (HGRH) Coil	0.11	0.13	0.16	0.17	0.21	0.27	0.27	—	—	—	—
120 to 150	HGRH Coil	—	—	0.14	0.16	0.20	0.25	0.31	0.34	0.37	0.41	0.50

Table 101: Return air opening - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Bottom return basic econ and barometric relief	0.07	0.08	0.08	0.09	0.1	0.12	0.14	0.15	—	—	—
	Bottom return exhaust fan	0.07	0.07	0.07	0.08	0.09	0.1	0.12	0.13	—	—	—
	Damper	0.01	0.01	0.02	0.02	0.03	0.04	0.06	0.07	—	—	—
	Left and right return – basic econ and barometric relief	0.07	0.07	0.08	0.08	0.09	0.11	0.14	0.15	—	—	—
	Front return – basic econ – basic econ and barometric econ	0.07	0.07	0.08	0.08	0.09	0.11	0.14	0.15	—	—	—
	Top return – basic econ – basic econ and barometric econ	0.07	0.07	0.08	0.09	0.11	0.13	0.16	0.18	—	—	—
	Left and right return – exhaust fan	0.06	0.07	0.07	0.07	0.07	0.08	0.09	0.1	—	—	—
	Front return – basic econ – exhaust fan	0.06	0.07	0.07	0.07	0.07	0.08	0.09	0.1	—	—	—
	Top return – basic econ – exhaust fan	0.07	0.07	0.08	0.08	0.09	0.11	0.14	0.15	—	—	—
	Bottom return – ERW	0.07	0.08	0.09	0.09	0.11	0.13	0.16	0.18	—	—	—

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Table 101: Return air opening - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
120 to 150	Bottom return basic econ and barometric relief	0.07	0.07	0.07	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.16
	Bottom return exhaust fan	0.06	0.07	0.07	0.07	0.08	0.08	0.1	0.1	0.11	0.12	0.14
	Damper	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.05	0.06	0.08
	Left and right return – Basic econ and barometric relief	0.06	0.07	0.07	0.07	0.08	0.09	0.1	0.11	0.12	0.13	0.15
	Front return – basic econ – basic econ and barometric econ	0.06	0.07	0.07	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.15
	Top return – basic econ – basic econ and barometric econ	0.07	0.07	0.07	0.08	0.09	0.10	0.12	0.13	0.14	0.15	0.19
	Left and right return – Exhaust fan	0.06	0.07	0.07	0.07	0.07	0.08	0.09	0.1	0.11	0.11	0.14
	Front return – basic econ – exhaust fan	0.06	0.07	0.07	0.07	0.07	0.08	0.09	0.10	0.11	0.11	0.14
	Top return – basic econ – exhaust fan	0.06	0.07	0.07	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.16
	Bottom return – ERW	0.07	0.07	0.07	0.07	0.08	0.09	0.11	0.12	0.12	0.14	0.17
90	Bottom return return fan	0.1	0.12	0.14	0.16	0.19	0.26	—	—	—	—	—
105	Bottom return return fan	0.09	0.11	0.13	0.14	0.17	0.23	0.29	0.33	—	—	—
120	Bottom return return fan	0.09	0.1	0.11	0.13	0.15	0.2	0.25	0.28	0.32	—	—
150	Bottom return return fan	0.08	0.09	0.11	0.12	0.14	0.18	0.22	0.25	0.28	0.32	0.41
90	Left, right, front return – return fan	0.10	0.12	0.14	0.16	0.20	0.26	—	—	—	—	—
105	Left, right, front return – return fan	0.09	0.10	0.12	0.13	0.16	0.20	0.26	0.29	—	—	—
120	Left, right, front return – return fan	0.09	0.10	0.12	0.13	0.16	0.20	0.26	0.29	0.33	—	—
130 to 150	Left, right, front return – return fan	0.08	0.09	0.10	0.11	0.13	0.16	0.21	0.23	0.26	0.29	0.38

Table 102: Exhaust air opening - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Barometric relief hood and damper	0.12	0.17	0.23	0.27	0.37	0.54	0.75	0.87	—	—	—
	Econ with return fan – hood and modulating damper	0.08	0.1	0.13	0.16	0.21	0.3	0.41	0.47	—	—	—
120 to 150	Barometric relief hood and damper	0.06	0.08	0.11	0.13	0.18	0.27	0.38	0.44	0.50	0.59	0.80
	Econ with return fan – hood and modulating damper	0.04	0.06	0.08	0.09	0.12	0.17	0.24	0.27	0.31	0.36	0.49
90 to 105	Barometric relief damper	0.05	0.07	0.10	0.12	0.16	0.25	0.35	0.40	—	—	—
	Econ with return fan modulating damper	0.01	0.02	0.02	0.03	0.04	0.05	0.07	0.09	—	—	—
120 to 150	Barometric relief damper	0.02	0.03	0.04	0.05	0.08	0.12	0.17	0.20	0.23	0.27	0.37
	Econ with return fan modulating damper	0.01	0.01	0.01	0.02	0.02	0.03	0.04	0.05	0.06	0.06	0.09
90	Econ with fan – hood	0.06	0.08	0.11	0.13	0.17	0.25	—	—	—	—	—
105	Econ with fan – hood	0.06	0.08	0.11	0.13	0.17	0.25	0.34	0.39	—	—	—
120	Econ with fan – hood	0.04	0.05	0.06	0.08	0.10	0.14	0.20	0.22	0.26	—	—
130	Econ with fan – hood	0.04	0.05	0.06	0.08	0.10	0.14	0.20	0.22	0.26	0.30	0.40

Table 102: Exhaust air opening - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	Econ with ERW fan – hood	0.06	0.08	0.11	0.13	0.17	0.25	—	—	—	—	—
105	Econ with ERW fan – hood	0.06	0.08	0.11	0.13	0.17	0.25	0.34	0.39	—	—	—
120	Econ with ERW fan – hood	0.04	0.05	0.06	0.08	0.10	0.14	0.20	0.22	0.26	—	—
130 to 150	Econ with ERW fan – hood	0.04	0.05	0.06	0.08	0.10	0.14	0.20	0.22	0.26	0.30	0.40
90	Econ with ERW – hood and backdraft damper	0.49	0.61	0.75	0.86	1.10	1.52	—	—	—	—	—
105	Econ with ERW – hood and backdraft damper	0.34	0.41	0.49	0.55	0.68	0.92	1.20	1.36	—	—	—
120	Econ with ERW – hood and backdraft damper	0.34	0.41	0.49	0.55	0.68	0.92	1.20	1.36	1.53	—	—
130 to 150	Econ with ERW – hood and backdraft damper	0.29	0.34	0.39	0.44	0.53	0.70	0.91	1.02	1.14	1.32	1.71
90	Econ with exhaust fan – hood and backdraft damper	0.49	0.61	0.75	0.86	1.10	1.52	—	—	—	—	—
	Econ with exhaust fan – hood and modulating damper	0.20	0.27	0.36	0.42	0.56	0.80	—	—	—	—	—
105	Econ with exhaust fan – hood and backdraft damper	0.34	0.41	0.49	0.55	0.68	0.92	1.20	1.36	—	—	—
	Econ with exhaust fan – hood and modulating damper	0.13	0.18	0.23	0.27	0.36	0.52	0.71	0.82	—	—	—
120	Econ with exhaust fan – hood and backdraft damper	0.34	0.41	0.49	0.55	0.68	0.92	1.20	1.36	1.53	—	—
	Econ with exhaust fan – hood and modulating damper	0.13	0.18	0.23	0.27	0.36	0.52	0.71	0.82	0.93	—	—
130 to 150	Econ with exhaust fan – hood and backdraft damper	0.29	0.34	0.39	0.44	0.53	0.70	0.91	1.02	1.14	1.32	1.71
	Econ with exhaust fan – hood and modulating damper	0.09	0.13	0.17	0.19	0.26	0.37	0.51	0.58	0.66	0.78	1.03
90	Econ with exhaust fan backdraft damper	0.34	0.41	0.49	0.55	0.68	0.92	—	—	—	—	—
	Econ with exhaust fan modulating damper	0.05	0.07	0.09	0.11	0.15	0.21	—	—	—	—	—
105	Econ with exhaust fan backdraft damper	0.23	0.26	0.30	0.33	0.39	0.50	0.63	0.70	—	—	—
	Econ with exhaust fan modulating damper	0.02	0.03	0.04	0.05	0.07	0.10	0.14	0.16	—	—	—
120	Econ with exhaust fan backdraft damper	0.23	0.26	0.30	0.33	0.39	0.50	0.63	0.70	0.78	—	—
	Econ with exhaust fan modulating damper	0.02	0.03	0.04	0.05	0.07	0.10	0.14	0.16	0.18	—	—
130 to 150	Econ with exhaust fan backdraft damper	0.21	0.23	0.26	0.28	0.32	0.40	0.49	0.54	0.60	0.68	0.86
	Econ with exhaust fan modulating damper	0.02	0.02	0.03	0.04	0.05	0.07	0.09	0.11	0.12	0.14	0.19

Table 103: Supply air opening - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Discharge from discharge plenum (left and right)	0.04	0.06	0.08	0.09	0.12	0.17	0.23	0.26	—	—	—
	Discharge from blank section (top and bottom)	0.03	0.04	0.05	0.06	0.08	0.11	0.14	0.16	—	—	—
	Discharge from heating section (bottom)	0.04	0.06	0.08	0.09	0.12	0.17	0.23	0.26	—	—	—
	Discharge from heating section (left)	0.05	0.06	0.08	0.09	0.12	0.16	0.22	0.25	—	—	—
120 to 150	Discharge from blank section (left and right)	—	—	0.05	0.06	0.07	0.10	0.14	0.16	0.18	0.21	0.28
	Discharge from blank section (top and bottom)	—	—	0.03	0.04	0.05	0.07	0.09	0.11	0.12	0.14	0.18
	Discharge from heating section (bottom)	—	—	0.04	0.05	0.07	0.10	0.13	0.15	0.17	0.19	0.25
	Discharge from heating section (left)	—	—	0.04	0.05	0.07	0.09	0.13	0.14	0.16	0.19	0.25

Table 104: Outside air - Component static pressure drops (iwg)

Model (unit)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Barometric econ – hood and dampers – ultra low leak	0.15	0.19	0.24	0.27	0.34	0.47	0.63	0.71	—	—	—
	Econ with fan – hood and dampers – ultra low leak	0.11	0.13	0.16	0.18	0.23	0.31	0.40	0.46	—	—	—
120 to 150	Barometric econ – hood and dampers – ultra low leak	0.10	0.13	0.15	0.17	0.22	0.30	0.39	0.44	0.49	0.57	0.74
	Econ with fan – hood and dampers – ultra low leak	0.08	0.09	0.11	0.12	0.15	0.19	0.25	0.28	0.31	0.36	0.46
90 to 105	Barometric econ – mist and damper – ultra low leak	0.09	0.11	0.13	0.15	0.18	0.24	0.31	0.35	—	—	—
	Econ with fan – mist and dampers – ultra low leak	0.07	0.09	0.10	0.11	0.13	0.17	0.22	0.25	—	—	—
120 to 150	Barometric econ – mist and damper – ultra low leak	0.07	0.08	0.10	0.10	0.13	0.16	0.20	0.23	0.25	0.29	0.37
	Econ with fan – mist and dampers – ultra low leak	0.06	0.07	0.08	0.08	0.10	0.12	0.15	0.17	0.18	0.21	0.26
90 to 105	Barometric relief – hood	0.06	0.08	0.10	0.12	0.16	0.23	0.31	0.36	—	—	—
	Exhaust/return fan	0.03	0.05	0.06	0.07	0.09	0.13	0.18	0.21	—	—	—
120 to 150	Barometric relief – hood	0.03	0.05	0.06	0.07	0.09	0.13	0.18	0.21	0.24	0.28	0.37
	Exhaust/return fan	0.02	0.02	0.03	0.04	0.05	0.07	0.10	0.11	0.13	0.15	0.20

Table 105: ERW - low CFM component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	ERW + Filter OA	1.64	1.94	2.26	2.47	2.91	3.60	4.33	4.70	—	—	—
	ERW + Filter RA	1.56	1.85	2.16	2.36	2.79	3.46	4.16	4.53	—	—	—
	By Pass Damper (OA or RA)	0.03	0.05	0.06	0.07	0.09	0.14	0.19	0.22	—	—	—
120 to 150	ERW + Filter OA	1.08	1.27	1.48	1.61	1.90	2.33	2.79	3.03	3.27	3.59	4.27
	ERW + Filter RA	1.03	1.22	1.41	1.54	1.81	2.23	2.68	2.90	3.13	3.45	4.11
	By Pass Damper (OA or RA)	0.05	0.06	0.08	0.10	0.13	0.19	0.26	0.30	0.34	0.40	0.53

Table 106: ERW - high CFM component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	ERW + filter OA	1.07	1.27	1.47	1.61	1.89	2.32	2.77	3.01	—	—	—
	ERW + filter RA	1.02	1.21	1.40	1.54	1.80	2.22	2.66	2.89	—	—	—
	By pass damper (OA or RA)	0.06	0.09	0.11	0.13	0.18	0.26	0.35	0.41	—	—	—
120 to 150	ERW + filter OA	1.06	1.25	1.44	1.57	1.84	2.26	2.69	2.91	3.13	3.44	4.06
	ERW + filter RA	0.92	1.09	1.26	1.38	1.62	1.99	2.37	2.57	2.77	3.05	3.61
	By pass damper (OA or RA)	0.05	0.07	0.09	0.11	0.14	0.20	0.28	0.32	0.36	0.43	0.57

Table 107: Draw-through filters - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	2 in. throwaway angled filters	0.04	0.05	0.05	0.06	0.07	0.09	0.12	0.13	—	—	—
	2 in. MERV 8 angled filters	0.06	0.07	0.08	0.09	0.11	0.15	0.20	0.23	—	—	—
	MERV 15 bag filters with 2 in. MERV 8 pre-filters	0.67	0.80	0.93	1.03	1.22	1.54	1.88	2.06	—	—	—
	MERV 14 rigid filters with 2 in. MERV 8 pre-filters	0.36	0.42	0.49	0.53	0.62	0.76	0.91	0.98	—	—	—
	Vertical 4 in. MERV 8 filters	0.07	0.09	0.11	0.13	0.16	0.22	0.29	0.32	—	—	—
105	2 in. throwaway angled filters	—	0.05	0.05	0.06	0.07	0.09	0.12	0.13	—	—	—
	2 in. MERV 8 Angled Filters	—	0.07	0.08	0.09	0.11	0.15	0.20	0.23	—	—	—
	MERV 15 bag filters with 2 in. MERV 8 pre-filters	—	0.80	0.93	1.03	1.22	1.54	1.88	2.06	—	—	—
	MERV 14 rigid filters with 2 in. MERV 8 pre-filters	—	0.42	0.49	0.53	0.62	0.76	0.91	0.98	—	—	—
	Vertical 4 in. MERV 8 Filters	—	0.09	0.11	0.13	0.16	0.22	0.29	0.32	—	—	—
120	2 in. throwaway angled filters	—	—	0.05	0.06	0.07	0.09	0.12	0.13	0.15	—	—
	2 in. MERV 8 angled filters	—	—	0.08	0.09	0.11	0.15	0.20	0.23	0.25	—	—
	MERV 15 bag filters with 2 in. MERV 8 pre-filters	—	—	0.61	0.67	0.79	1.00	1.22	1.34	1.46	—	—
	MERV 14 rigid filters with 2 in. MERV 8 pre-filters	—	—	0.46	0.50	0.58	0.71	0.85	0.92	0.99	—	—
	Vertical 4 in. MERV 8 filters	—	—	0.11	0.13	0.16	0.22	0.29	0.32	0.36	—	—
130	2 in. throwaway angled filters	—	—	—	0.06	0.07	0.09	0.12	0.13	0.15	0.17	—
	2 in. MERV 8 angled filters	—	—	—	0.09	0.11	0.15	0.20	0.23	0.25	0.29	—
	MERV 15 bag filters with 2 in. MERV 8 pre-filters	—	—	—	0.67	0.79	1.00	1.22	1.34	1.46	1.64	—
	MERV 14 rigid filters with 2 in. MERV 8 pre-filters	—	—	—	0.50	0.58	0.71	0.85	0.92	0.99	1.08	—
	Vertical 4 in. MERV 8 filters	—	—	—	0.13	0.16	0.22	0.29	0.32	0.36	0.41	—
150	2 in. throwaway angled filters	—	—	—	—	0.07	0.09	0.12	0.13	0.15	0.17	0.23
	2 in. MERV 8 angled filters	—	—	—	—	0.11	0.15	0.20	0.23	0.25	0.29	0.38
	MERV 15 bag filters with 2 in. MERV 8 pre-filters	—	—	—	—	0.79	1.00	1.22	1.34	1.46	1.64	2.01
	MERV 14 rigid filters with 2 in. MERV 8 pre-filters	—	—	—	—	0.58	0.71	0.85	0.92	0.99	1.08	1.28
	Vertical 4 in. MERV 8 filters	—	—	—	—	0.16	0.22	0.29	0.32	0.36	0.41	0.52

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Table 108: Final filters - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	MERV 15 bag filters with 2 in. pre-filters	0.68	0.80	0.94	1.03	1.23	1.55	1.90	2.08	—	—	—
	MERV 14 rigid filters with 2 in. pre-filters	0.36	0.43	0.50	0.54	0.63	0.78	0.93	1.0	—	—	—
	MERV 17 HEPA filters with 2 in. pre filters	1.47	1.53	1.59	1.63	1.72	1.84	1.98	2.04	—	—	—
105	MERV 15 bag filters with 2 in. pre-filters	—	0.80	0.94	1.03	1.23	1.55	1.90	2.08	—	—	—
	MERV 14 rigid filters with 2 in. pre-filters	—	0.43	0.50	0.54	0.63	0.78	0.93	1.0	—	—	—
	MERV 17 HEPA filters with 2 in. pre filters	—	1.53	1.59	1.63	1.72	1.84	1.98	2.04	—	—	—
120	MERV 15 bag filters with 2 in. pre-filters	—	—	0.61	0.67	0.79	1.00	1.22	1.34	1.46	—	—
	MERV 14 rigid filters with 2 in. pre-filters	—	—	0.46	0.50	0.58	0.71	0.85	0.91	0.98	—	—
	MERV 17 HEPA filters with 2 in. pre filters	—	—	1.56	1.59	1.67	1.78	1.90	1.96	2.02	—	—
130	MERV 15 bag filters with 2 in. pre-filters	—	—	—	0.67	0.79	1.00	1.22	1.34	1.46	1.64	—
	MERV 14 rigid filters with 2 in. pre-filters	—	—	—	0.50	0.58	0.71	0.85	0.91	0.98	1.08	—
	MERV 17 HEPA filters with 2 in. pre filters	—	—	—	1.59	1.67	1.78	1.90	1.96	2.02	2.10	—
150	MERV 15 bag filters with 2 in. pre-filters	—	—	—	—	0.79	1.00	1.22	1.34	1.46	1.64	2.01
	MERV 14 rigid filters with 2 in. pre-filters	—	—	—	—	0.58	0.71	0.85	0.91	0.98	1.08	1.28
	MERV 17 HEPA filters with 2 in. pre filters	—	—	—	—	1.67	1.78	1.90	1.96	2.02	2.10	2.26

Table 109: Gas heat - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	1,000 MBH	0.18	0.24	0.30	0.34	0.42	0.54	0.66	—	—	—	—
	1,500 MBH	0.01	0.11	0.20	0.26	0.38	0.54	0.68	—	—	—	—
	2,000 MBH	—	0.1	0.18	0.23	0.33	0.46	0.56	—	—	—	—
120 to 150	1,500 MBH	—	—	0.15	0.22	0.36	0.54	0.70	0.77	0.84	0.92	1.05
	2,000 MBH	—	—	0.12	0.18	0.30	0.46	0.60	0.67	0.73	0.81	0.96
	2,500 MBH	—	—	0.23	0.32	0.51	0.81	1.13	1.30	1.47	1.71	2.22

Table 110: Electric heat - Component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Low heat and high heat (480V, 600V electric heaters)	0.06	0.07	0.09	0.01	0.11	0.14	0.16	0.18	—	—	—
120 to 150	Low heat and high heat (480V, 600V electric heaters)	—	—	0.06	0.07	0.09	0.12	0.15	0.17	0.20	0.23	0.31

Table 111: Hot water and steam coil heat - component static pressure drops (iwg)

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90	1 Row hot water, low heat	0.10	0.14	0.17	0.20	0.26	0.35	—	—	—	—	—
	2 Rows hots water, high heat	0.16	0.21	0.26	0.30	0.39	0.53	—	—	—	—	—
	Steam, low heat	0.04	0.05	0.06	0.07	0.09	0.13	—	—	—	—	—
	Steam, high heat	0.06	0.08	0.10	0.11	0.14	0.19	—	—	—	—	—
105	1 Row hot water, low heat	—	0.14	0.17	0.20	0.26	0.35	0.46	0.53	—	—	—
	2 Rows hots water, high heat	—	0.21	0.26	0.30	0.39	0.53	0.70	0.79	—	—	—
	Steam, low heat	—	0.05	0.06	0.07	0.09	0.13	0.17	0.19	—	—	—
	Steam, high heat	—	0.08	0.10	0.11	0.14	0.19	0.24	0.27	—	—	—
120	1 Row hot water, low heat	—	—	0.19	0.22	0.28	0.38	0.50	0.56	0.62	—	—
	2 Rows hots water, high heat	—	—	0.16	0.19	0.24	0.33	0.42	0.48	0.53	—	—
	Steam, low heat	—	—	0.08	0.09	0.12	0.16	0.21	0.24	0.27	—	—
	Steam, high heat	—	—	0.08	0.09	0.11	0.15	0.20	0.22	0.25	—	—
130	1 Row hot water, low heat	—	—	—	0.22	0.28	0.38	0.50	0.56	0.62	0.71	—
	2 Rows hot water, high heat	—	—	—	0.19	0.24	0.33	0.42	0.48	0.53	0.61	—
	Steam, low heat	—	—	—	0.09	0.12	0.16	0.21	0.24	0.27	0.31	—
	Steam, high heat	—	—	—	0.09	0.11	0.15	0.20	0.22	0.25	0.28	—
150	2 Row hot water, low heat	—	—	—	—	0.33	0.46	0.61	0.70	0.79	0.91	1.18
	2 Rows hot water, high heat	—	—	—	—	0.24	0.33	0.42	0.48	0.53	0.61	0.77
	Steam, low heat	—	—	—	—	0.14	0.19	0.24	0.27	0.29	0.34	0.42
	Steam, high heat	—	—	—	—	0.11	0.15	0.20	0.22	0.25	0.28	0.36

Table 112: Options

Model (ton)	Component	SCFM										
		18,000	21,000	24,000	26,000	30,000	36,000	42,000	45,000	48,000	52,000	60,000
90 to 105	Humidifier	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.03	—	—	—
	Sound attenuator	0.16	0.22	0.29	0.34	0.45	0.65	0.88	1.01	—	—	—
	Inlet guard – supply fan	0.52	0.69	0.86	0.97	1.21	1.56	1.96	2.12	—	—	—
	Air blender	0.15	0.19	0.22	0.24	0.27	0.31	0.34	0.34	—	—	—
120 to 150	Humidifier	0.01	0.01	0.01	0.02	0.02	0.02	0.03	0.03	0.03	0.04	0.04
	Sound attenuator	0.16	0.22	0.29	0.34	0.45	0.65	0.88	1.01	1.15	1.35	1.80
	Inlet guard – supply fan	—	—	0.59	0.67	0.84	1.09	1.36	1.49	1.62	1.81	2.18
	Air blender	—	—	0.38	0.43	0.53	0.69	0.86	0.94	1.03	1.15	1.40

Supply fan data

Table 113: 90 to 105 ton total static pressure for 1.0 TSP to 4.0 TSP

CFM	1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP		4.0 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
18,000	634	5.07	722	7.56	806	10.34	887	13.35	980	16.95	—	—	—	—
19,000	649	5.41	733	7.94	815	10.80	893	13.83	976	17.33	—	—	—	—
20,000	665	5.77	747	8.37	825	11.28	901	14.38	973	17.70	1,056	21.61	—	—
21,000	682	6.16	761	8.82	836	11.74	909	14.96	979	18.30	1,052	22.01	1,131	26.21
22,000	700	6.58	775	9.29	848	12.26	919	15.54	987	18.97	1,053	22.58	1,127	26.71
23,000	717	6.99	791	9.80	861	12.82	929	16.13	996	19.66	1,060	23.31	1,123	27.17
24,000	736	7.44	807	10.33	875	13.43	940	16.74	1,005	20.36	1,068	24.09	1,129	27.97
25,000	755	7.93	823	10.88	889	14.04	953	17.40	1,016	21.07	1,077	24.90	1,137	28.84
26,000	774	8.45	841	11.49	905	14.70	966	18.14	1,027	21.77	1,087	25.72	1,145	29.75
27,000	804	8.99	859	12.12	920	15.40	981	18.89	1,039	22.57	1,097	26.55	1,154	30.67
28,000	814	9.57	876	12.74	936	16.11	995	19.67	1,052	23.41	1,108	27.37	1,164	31.62
29,000	834	10.18	893	13.40	953	16.86	1,010	20.49	1,066	24.31	1,120	28.28	1,174	32.56
30,000	854	10.81	913	14.11	970	17.67	1,026	21.35	1,080	25.23	1,133	29.25	1,185	33.50

Table 113: 90 to 105 ton total static pressure for 1.0 TSP to 4.0 TSP

CFM	1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP		4.0 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
31,000	874	11.48	932	14.86	988	18.51	1,042	22.24	1,095	26.16	1,147	30.29	1,197	34.55
32,000	895	12.18	951	15.65	1,005	19.33	1,058	23.15	1,110	27.17	1,161	31.36	1,210	35.65
33,000	916	12.92	971	16.47	1,023	20.18	1,075	24.14	1,126	28.21	1,175	32.43	1,224	36.84
34,000	937	13.70	991	17.32	1,042	21.11	1,093	25.17	1,142	29.28	1,190	33.57	1,238	38.05
35,000	956	14.51	1,011	18.22	1,061	22.08	1,111	26.21	1,158	30.37	1,206	34.76	1,253	39.28
36,000	980	15.35	1,031	19.15	1,080	23.09	1,128	27.25	1,175	31.55	1,222	35.99	1,267	40.55
37,000	1,002	16.24	1,051	20.12	1,100	24.14	1,145	28.32	1,193	32.78	1,238	37.24	1,283	41.90
38,000	1,023	17.17	1,072	21.13	1,119	25.24	1,164	29.49	1,211	34.05	1,254	38.53	1,299	43.29
39,000	1,045	18.13	1,092	22.18	1,139	26.37	1,183	30.70	1,228	35.27	1,272	39.92	1,314	44.70
40,000	1,067	19.14	1,113	23.27	1,159	27.54	1,203	31.95	1,245	36.54	1,289	41.36	1,330	46.15
41,000	1,090	20.19	1,134	24.41	1,179	28.76	1,222	33.25	1,263	37.87	1,307	42.84	1,347	47.66
42,000	1,112	21.29	1,155	25.59	1,199	30.03	1,242	34.60	1,282	39.30	1,324	44.27	1,365	49.27
43,000	1,135	22.43	1,177	26.82	1,219	31.34	1,261	35.99	1,302	40.77	1,342	45.74	1,383	50.93
44,000	1,157	23.62	1,198	28.09	1,240	32.70	1,281	37.43	1,321	42.28	1,359	47.26	1,400	52.61
45,000	1,180	24.85	1,220	29.41	1,261	34.10	1,301	38.92	1,340	43.85	1,378	48.91	1,418	54.25

Table 114: 90 to 105 ton total static pressure for 4.5 TSP to 8.3 TSP

CFM	4.5 TSP		5.0 TSP		5.5 TSP		6.0 TSP		6.5 TSP		7.0 TSP		7.5 TSP		8.0 TSP		8.3 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
22,000	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
23,000	1,196	31.70	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
24,000	1,191	32.17	1,262	36.97	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,000	1,195	32.96	1,257	37.53	1,324	42.53	—	—	—	—	—	—	—	—	—	—	—	—
26,000	1,201	33.90	1,257	38.26	1,320	43.17	1,384	48.37	—	—	—	—	—	—	—	—	—	—
27,000	1,210	34.90	1,263	39.26	1,317	43.84	1,379	49.10	1,440	54.49	—	—	—	—	—	—	—	—
28,000	1,218	35.93	1,271	40.36	1,323	44.94	1,375	49.72	1,436	55.29	1,495	60.88	—	—	—	—	—	—
29,000	1,227	36.98	1,280	41.49	1,330	46.12	1,380	50.91	1,431	55.95	1,491	61.75	1,547	67.53	—	—	—	—
30,000	1,237	38.05	1,288	42.65	1,339	47.34	1,387	52.17	1,436	57.17	1,486	62.46	1,543	68.47	1,598	74.45	1,630	78.08
31,000	1,248	39.11	1,298	43.83	1,347	48.61	1,395	53.49	1,442	58.50	1,489	63.70	1,538	69.23	1,594	75.44	1,626	79.15
32,000	1,259	40.18	1,308	45.01	1,356	49.89	1,404	54.86	1,450	59.94	1,495	65.12	1,541	70.52	1,589	76.25	1,621	80.08
33,000	1,272	41.37	1,319	46.18	1,366	51.20	1,413	56.25	1,458	61.40	1,503	66.66	1,547	72.02	1,591	77.61	1,617	81.00
34,000	1,284	42.61	1,331	47.41	1,377	52.49	1,422	57.67	1,467	62.90	1,511	68.23	1,555	73.67	1,597	79.21	1,623	82.66
35,000	1,298	43.95	1,343	48.74	1,388	53.78	1,432	59.09	1,477	64.43	1,520	69.84	1,563	75.34	1,605	80.95	1,629	84.36
36,000	1,312	45.32	1,356	50.15	1,400	55.20	1,443	60.49	1,486	65.98	1,529	71.47	1,571	77.06	1,613	82.72	1,637	86.19
37,000	1,327	46.70	1,370	51.64	1,412	56.67	1,455	61.94	1,497	67.50	1,539	73.13	1,580	78.80	1,621	84.56	—	—
38,000	1,341	48.11	1,384	49.54	1,426	58.25	1,467	63.53	1,508	69.02	1,549	74.79	1,590	80.57	1,630	86.41	—	—
39,000	1,357	49.62	1,398	54.69	1,439	59.90	1,480	65.15	1,520	70.68	1,560	76.42	1,600	82.36	1,640	88.30	—	—
40,000	1,372	51.17	1,413	56.26	1,454	61.58	1,493	66.93	1,532	72.42	1,572	78.12	1,611	70.69	—	—	—	—
41,000	1,388	52.75	1,429	57.93	1,468	63.26	1,507	68.74	1,546	74.24	1,584	79.97	1,622	85.87	—	—	—	—
42,000	1,404	54.37	1,444	59.65	1,483	64.99	1,521	70.56	1,559	76.18	1,597	81.86	1,634	87.82	—	—	—	—
43,000	1,421	56.02	1,460	61.40	1,498	66.83	1,536	72.41	1,573	78.16	1,610	83.91	—	—	—	—	—	—
44,000	1,438	57.79	1,476	63.18	1,514	68.72	1,551	74.30	1,588	80.13	1,624	86.01	—	—	—	—	—	—
45,000	1,456	59.63	1,492	65.01	1,530	70.65	1,566	76.33	1,602	82.15	1,638	88.14	—	—	—	—	—	—

Note:

The CFM, SP, and BHP values are based on two fans for the DDP supply fans.

Table 115: 120 ton to 150 ton total static pressure for 1.0 TSP to 4.0 TSP

CFM	1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP		4.0 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
24,000	577	5.44	650	7.92	724	10.79	794	13.79	863	17.01	929	20.45	989	23.88
25,000	588	5.72	659	8.25	730	11.15	799	14.23	866	17.49	930	20.94	993	24.61
26,000	601	6.02	669	8.62	737	11.52	805	14.67	869	17.98	933	21.48	994	25.18
27,000	614	6.35	680	9.03	745	11.91	811	15.16	874	18.5	935	22.04	995	25.75
28,000	627	6.69	690	9.4	752	12.32	816	15.61	879	19	938	22.61	998	26.39
29,000	640	7.04	702	9.81	762	12.77	823	16.07	885	19.6	943	23.22	1,000	27.01
30,000	654	7.4	714	10.25	772	13.27	831	16.56	890	20.16	948	23.81	1,003	27.67
31,000	668	7.77	725	10.67	783	13.8	839	17.05	896	20.7	954	24.47	1,008	28.36
32,000	681	8.15	738	11.13	793	14.29	848	17.6	904	21.26	959	25.14	1,013	29.04
33,000	693	8.49	751	11.64	804	14.83	857	18.19	911	21.85	965	25.77	1,019	29.79

BHC Group Heating & Cooling

Table 115: 120 ton to 150 ton total static pressure for 1.0 TSP to 4.0 TSP

CFM	1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP		4.0 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
34,000	707	8.89	764	12.14	817	15.43	868	18.84	919	22.44	972	26.41	1,024	30.56
35,000	722	9.35	777	12.66	828	15.97	879	19.51	928	23.1	979	27.08	1,030	31.29
36,000	738	9.86	791	13.19	840	16.54	889	20.12	938	23.81	987	27.77	1,037	32.01
37,000	752	10.33	804	13.74	853	17.17	901	20.8	948	24.57	995	28.48	1,044	32.76
38,000	767	10.81	818	14.3	866	17.85	913	21.55	959	25.39	1,004	29.26	1,052	33.56
39,000	782	11.33	832	14.89	879	18.51	924	22.24	970	26.12	1,014	30.1	1,059	34.33
40,000	798	11.87	844	15.37	892	19.2	936	22.93	980	26.89	1,025	31	1,068	35.18
41,000	813	12.43	857	15.93	905	19.91	948	23.7	992	27.75	1,036	31.95	1,077	35.97
42,000	828	12.98	871	16.57	919	20.63	962	24.53	1,005	28.69	1,046	32.8	1,087	37.08
43,000	843	13.59	886	17.28	932	21.36	975	25.37	1,016	29.45	1,057	33.7	1,098	38.12
44,000	859	14.25	902	18.05	946	22.11	988	26.21	1,027	30.31	1,068	34.67	1,109	39.22
45,000	874	14.92	917	18.76	960	22.9	1,001	27.08	1,040	31.24	1,081	35.74	1,119	40.17
46,000	890	15.6	931	19.46	972	23.53	1,014	27.96	1,053	32.24	1,092	36.7	1,130	41.2
47,000	905	16.29	946	20.21	984	24.26	1,028	28.86	1,066	33.24	1,103	37.65	1,142	42.32
48,000	921	17.01	962	21	998	25.08	1,042	29.78	1,079	34.25	1,116	38.7	1,154	43.53
49,000	937	17.76	977	21.82	1,013	25.98	1,055	30.72	1,093	35.29	1,128	39.82	1,165	44.66
50,000	953	18.54	992	22.65	1,029	26.95	1,069	31.69	1,106	36.34	1,142	41.01	1,177	45.73
51,000	969	19.35	1,007	23.49	1,045	28	1,081	32.53	1,119	37.41	1,155	42.16	1,189	46.89
52,000	985	20.18	1,022	24.31	1,059	28.92	1,094	33.38	1,133	38.5	1,168	43.35	1,201	48.15
53,000	1,001	21.04	1,038	25.29	1,074	29.84	1,107	34.35	1,147	39.61	1,181	44.56	1,215	49.48
54,000	1,018	21.93	1,054	26.29	1,088	30.84	1,121	35.41	1,160	40.75	1,194	45.79	1,228	50.82
55,000	1,034	22.85	1,069	27.29	1,104	31.88	1,136	36.56	1,174	41.93	1,208	47.04	1,241	52.15
56,000	1,050	23.8	1,084	28.3	1,119	32.96	1,152	37.8	1,186	42.89	1,221	48.31	1,254	53.52
57,000	1,067	24.79	1,100	29.34	1,135	3.4	1,168	39.1	1,198	43.93	1,235	49.59	1,267	54.92
58,000	1,083	25.8	1,115	30.39	1,150	35.17	1,182	40.27	1,212	45.08	1,249	50.91	1,280	56.33
59,000	1,100	26.85	1,131	31.49	1,165	36.28	1,197	41.4	1,226	46.34	1,263	52.27	1,294	57.76
60,000	1,117	27.93	1,147	32.62	1,179	37.37	1,211	42.62	1,241	47.71	1,275	53.51	1,308	59.22

Table 116: 120 ton to 150 ton total static pressure for 4.5 TSP to 8.3 TSP

CFM	4.5 TSP		5.0 TSP		5.5 TSP		6.0 TSP		6.5 TSP		7.0 TSP		7.5 TSP		8.0 TSP		8.3 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
24,000	1,031	26.95	1,075	30.2	—	—	—	—	—	—	—	—	—	—	—	—	—	—
25,000	1,043	28	1,084	31.23	1,127	34.67	—	—	—	—	—	—	—	—	—	—	—	—
26,000	1,053	29	1,095	32.38	1,135	35.77	1,176	39.38	—	—	—	—	—	—	—	—	—	—
27,000	1,054	29.68	1,108	33.57	1,146	37.01	1,184	40.55	1,224	44.33	—	—	—	—	—	—	—	—
28,000	1,054	30.31	1,111	34.43	1,158	38.31	1,194	41.89	1,231	45.59	1,270	49.52	—	—	—	—	—	—
29,000	1,056	30.97	1,111	35.14	1,165	39.41	1,206	43.3	1,241	47.02	1,277	50.86	1,315	54.95	—	—	—	—
30,000	1,060	31.73	1,112	35.85	1,165	40.23	1,216	44.63	1,253	48.54	1,287	52.4	1,322	56.38	1,358	60.6	—	—
31,000	1,061	32.4	1,114	36.62	1,165	40.99	1,217	45.55	1,265	50.08	1,299	54.03	1,332	58.02	1,365	62.14	1,386	64.71
32,000	1,065	33.15	1,118	37.44	1,167	41.8	1,217	46.39	1,266	51.11	1,311	55.69	1,343	59.76	1,375	63.89	1,395	66.42
33,000	1,070	33.94	1,120	38.21	1,171	42.71	1,218	47.24	1,266	52.03	1,314	56.9	1,356	61.55	1,387	65.74	1,405	68.28
34,000	1,075	34.7	1,124	39.06	1,173	43.54	1,221	48.18	1,267	52.94	1,314	57.91	1,360	62.92	1,399	67.65	1,417	70.24
35,000	1,081	35.54	1,129	39.94	1,176	44.44	1,225	49.17	1,269	53.92	1,315	58.88	1,360	64.02	1,404	69.17	1,430	72.21
36,000	1,086	36.41	1,134	40.77	1,180	45.39	1,226	50.08	1,274	55.02	1,316	59.9	1,361	65.07	1,405	70.36	1,431	73.55
37,000	1,092	37.24	1,140	41.74	1,185	46.35	1,230	51.09	1,275	55.98	1,320	61.04	1,362	66.14	1,405	71.48	1,431	74.74
38,000	1,098	38.05	1,145	42.7	1,191	47.24	1,235	52.14	1,278	57.04	1,323	62.16	1,365	67.32	1,406	72.61	1,431	75.9
39,000	1,105	38.88	1,151	43.61	1,196	48.36	1,240	53.17	1,282	58.17	1,325	63.24	1,369	68.59	1,409	73.84	1,433	77.09
40,000	1,113	39.77	1,157	44.51	1,202	49.41	1,245	54.21	1,287	59.3	1,328	64.43	1,370	69.68	1,413	75.22	1,436	78.41
41,000	1,121	40.64	1,164	45.44	1,208	50.41	1,251	55.41	1,293	60.38	1,333	65.65	1,373	70.93	1,414	76.38	1,440	79.82
42,000	1,129	41.56	1,172	46.41	1,214	51.4	1,257	56.54	1,298	61.62	1,339	66.85	1,378	72.24	1,417	77.67	1,441	81.02
43,000	1,138	42.57	1,179	47.38	1,221	52.42	1,263	57.63	1,304	62.89	1,344	68.02	1,383	73.54	1,421	79.05	1,444	82.39
44,000	1,148	43.64	1,187	48.39	1,229	53.49	1,269	58.71	1,310	64.09	1,350	69.44	1,388	74.79	1,426	80.45	1,448	83.83
45,000	1,158	44.77	1,196	49.48	1,236	54.56	1,276	59.82	1,316	65.26	1,355	70.78	1,394	76.2	1,431	81.81	1,454	85.28
46,000	1,169	45.97	1,206	50.65	1,244	55.66	1,284	61	1,322	62.42	1,361	72.06	1,400	77.68	1,437	83.15	1,459	86.68
47,000	1,180	47.15	1,216	51.88	1,253	56.85	1,291	62.17	1,329	67.66	1,367	73.32	1,405	79.08	1,443	84.78	—	—
48,000	1,190	48.24	1,227	53.18	1,262	58.11	1,299	63.36	1,337	68.94	1,374	74.59	1,411	80.44	1,448	86.31	—	—
49,000	1,201	49.42	1,238	54.54	1,272	59.45	1,308	64.65	1,345	70.2	1,381	75.92	1,417	81.79	1,454	87.78	—	—
50,000	1,213	50.69	1,248	55.77	1,283	60.85	1,317	66.02	1,352	71.5	1,389	77.31	1,424	83.17	—	—	—	—
51,000	1,225	52.07	1,259	57.02	1,294	62.33	1,327	67.47	1,361	72.9	1,396	78.65	1,432	84.61	—	—	—	—
52,000	1,236	53.33	1,270	58.36	1,305	63.76	1,338	68.99	1,370	74.38	1,404	80.07	1,440	86.11	—	—	—	—
53,000	1,248	54.52	1,282	59.81	1,315	65.09	1,348	70.58	1,380	75.94	1,413	81.59	1,447	87.54	—	—	—	—
54,000	1,260	55.83	1,294	61.37	1,326	66.52	1,360	72.21	1,391	77.58	1,423	83.18	1,455	89.08	—	—	—	—

Table 116: 120 ton to 150 ton total static pressure for 4.5 TSP to 8.3 TSP

CFM	4.5 TSP		5.0 TSP		5.5 TSP		6.0 TSP		6.5 TSP		7.0 TSP		7.5 TSP		8.0 TSP		8.3 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
55,000	1,272	57.23	1,305	62.69	1,337	68.05	1,370	73.64	1,402	79.3	1,433	84.87	—	—	—	—	—	—
56,000	1,285	58.71	1,317	64.04	1,349	69.7	1,380	75.16	1,413	81.08	1,443	86.63	—	—	—	—	—	—
57,000	1,299	60.24	1,329	65.51	1,362	71.4	1,391	76.78	1,423	82.64	1,454	88.48	—	—	—	—	—	—
58,000	1,312	61.72	1,341	67.07	1,373	72.78	1,403	78.52	1,433	84.26	—	—	—	—	—	—	—	—
59,000	1,325	63.25	1,355	68.72	1,384	74.3	1,416	80.38	1,445	85.99	—	—	—	—	—	—	—	—
60,000	1,338	64.81	1,368	70.42	1,396	75.94	1,427	82.03	1,456	87.83	—	—	—	—	—	—	—	—

Note:

The CFM, SP, and BHP values are based on two fans for the DDP supply fans.

Exhaust fan data

Table 117: 90 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
18,000	731	5.3	807	7.27	878	9.4	946	11.67	1,009	14.06	1,070	16.57	1,128	19.18
19,000	763	6.01	836	8.06	905	10.27	970	12.61	1,031	15.08	1,091	17.66	1,147	20.35
20,000	796	6.78	865	8.92	932	11.21	994	13.63	1,054	16.17	1,112	18.82	1,167	21.58
21,000	828	7.63	895	9.86	959	12.22	1,020	14.72	1,078	17.33	1,134	20.06	1,188	22.89
22,000	861	8.56	926	10.86	987	13.31	1,046	15.89	1,103	18.58	1,157	21.38	1,210	24.28
23,000	895	9.56	957	11.95	1,016	14.48	1,073	17.14	1,128	19.9	1,181	22.78	1,232	25.76
24,000	928	10.65	988	13.13	1,045	15.74	1,101	18.47	1,154	21.32	1,205	24.27	1,255	27.32
25,000	962	11.83	1020	14.39	1,075	17.08	1,129	19.89	1,180	22.82	1,231	25.85	1,279	28.97
26,000	996	13.09	1051	15.74	1,105	18.52	1,157	21.41	1,207	24.41	1,256	27.52	1,304	30.72
27,000	1,030	14.45	1084	17.19	1,136	20.05	1,186	23.02	1,235	26.1	1,283	29.28	1,329	32.56
28,000	1,064	15.91	1116	18.73	1,167	21.68	1,216	24.73	1,263	27.89	1,310	31.15	1,355	34.51
29,000	1,098	17.47	1149	20.38	1,198	23.41	1,245	26.54	1,292	29.79	1,337	33.13	1,381	36.56
30,000	1,132	19.13	1181	22.13	1,229	25.24	1,275	28.46	1,321	31.79	1,365	35.21	1,408	38.72
31,000	1,167	20.9	1215	23.99	1,261	27.19	1,306	30.49	1,350	33.9	1,393	37.4	1,435	40.98
32,000	1,202	22.78	1248	25.96	1,293	29.25	1,337	32.64	1,380	36.12	1,422	39.7	1,463	43.37
33,000	1,236	24.78	1281	28.05	1,325	31.42	1,368	34.9	1,410	38.46	1,451	42.12	1,491	45.87
34,000	1,271	26.9	1315	30.26	1,357	33.72	1,399	37.27	1,440	40.93	1,480	44.67	1,519	48.49
35,000	1,306	29.14	1348	32.59	1,390	36.14	1,431	39.78	1,471	43.51	1,510	47.33	1,548	51.24
36,000	1,341	31.51	1382	35.05	1,423	38.68	1,462	42.41	1,501	46.23	1,540	50.13	1,577	54.12

Table 118: 105 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
21,000	545	4.37	610	6.30	672	8.40	730	10.64	785	13.00	838	15.47	888	18.04
22,000	564	4.83	627	6.84	687	9.00	744	11.30	797	13.72	849	16.26	898	18.89
23,000	584	5.34	645	7.41	703	9.63	758	12.00	810	14.48	860	17.08	908	19.78
24,000	604	5.88	663	8.02	719	10.31	772	12.74	823	15.29	872	17.95	920	20.71
25,000	625	6.47	681	8.67	735	11.03	787	13.52	837	16.14	885	18.86	931	21.68
26,000	645	7.10	700	9.37	752	11.80	803	14.35	851	17.03	898	19.81	943	22.70
27,000	666	7.77	719	10.11	769	12.60	818	15.22	866	17.96	912	20.81	956	23.76
28,000	687	8.49	738	10.90	787	13.46	835	16.15	881	18.95	925	21.86	969	24.87
29,000	707	9.25	757	11.74	805	14.36	851	17.12	896	19.98	940	22.96	982	26.03
30,000	728	10.07	776	12.63	823	15.32	868	18.14	912	21.07	955	24.11	996	27.24
31,000	749	10.94	796	13.57	841	16.33	885	19.21	928	22.21	970	25.31	1,011	28.51
32,000	771	11.86	816	14.56	860	17.39	903	20.34	945	23.40	985	26.57	1,025	29.83
33,000	792	12.83	836	15.60	879	18.50	921	21.52	961	24.65	1,001	27.88	1,040	31.21
34,000	813	13.86	856	16.71	898	19.68	939	22.76	979	25.95	1,017	29.25	1,056	32.64
35,000	835	14.95	876	17.87	917	20.91	957	24.06	996	27.32	1,034	30.68	1,071	34.14
36,000	856	16.10	897	19.09	936	22.20	975	25.42	1,013	28.75	1,051	32.17	1,087	35.69
37,000	878	17.31	917	20.37	956	23.55	994	26.84	1,031	30.23	1,068	33.73	1,104	37.31
38,000	899	18.59	938	21.72	976	24.97	1,013	28.33	1,049	31.79	1,085	35.35	1,120	39.00
39,000	921	19.93	958	23.13	995	26.45	1,032	29.88	1,067	33.41	1,102	37.03	1,137	40.75
40,000	943	21.33	979	24.61	1,015	28.00	1,051	31.50	1,086	35.09	1,120	38.78	1,154	42.57
41,000	964	22.81	1000	26.16	1,035	29.62	1,070	33.19	1,104	36.85	1,138	40.61	1,171	44.45

Table 118: 105 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
42,000	986	24.35	1021	27.77	1,056	31.31	1,090	34.94	1,123	38.68	1,156	42.50	1,189	46.41
43,000	1,008	25.96	1042	29.46	1,076	33.07	1,109	36.77	1,142	40.58	1,174	44.47	1,206	48.45
44,000	1,030	27.65	1063	31.22	1,096	34.90	1,129	38.68	1,161	42.55	1,193	46.51	1,224	50.56
45,000	1,052	29.42	1084	33.06	1,117	36.81	1,149	40.66	1,180	44.60	1,211	48.63	1,242	52.74

Table 119: 120 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
24,000	610	6.56	674	8.99	734	11.5	789	14.1	842	16.79	892	19.55	940	22.38
25,000	630	7.21	692	9.72	750	12.32	804	15.01	856	17.78	905	20.62	952	23.53
26,000	650	7.9	710	10.5	767	13.19	820	15.96	870	18.81	918	21.74	965	24.73
27,000	670	8.64	729	11.33	784	14.11	836	16.96	885	19.9	932	22.9	978	25.98
28,000	691	9.43	748	12.21	801	15.07	852	18.02	900	21.03	946	24.12	991	27.28
29,000	711	10.27	767	13.14	819	16.09	868	19.12	916	22.22	961	25.4	1,005	28.63
30,000	732	11.16	786	14.12	837	17.17	885	20.28	931	23.47	976	26.72	1,019	30.05
31,000	753	12.11	805	15.16	855	18.29	902	21.5	947	24.77	991	28.11	1,033	31.51
32,000	774	13.12	824	16.26	873	19.48	919	22.77	964	26.13	1,007	29.55	1,048	33.04
33,000	794	14.18	844	17.42	891	20.73	937	24.11	980	27.55	1,022	31.06	1,063	34.63
34,000	815	15.31	864	18.64	910	22.03	955	25.5	997	29.03	1,039	32.63	1,079	36.28
35,000	837	16.49	884	19.92	929	23.4	972	26.96	1,014	30.58	1,055	34.26	1,094	38
36,000	858	17.75	904	21.26	948	24.84	991	28.48	1,032	32.19	1,071	35.96	1,110	39.78
37,000	879	19.07	924	22.67	967	26.34	1,009	30.07	1,049	33.87	1,088	37.72	1,126	41.63
38,000	900	20.45	944	24.15	987	27.91	1,027	31.73	1,067	35.62	1,105	39.56	1,143	43.55
39,000	922	21.91	965	25.7	1,006	29.55	1,046	33.46	1,085	37.43	1,123	41.46	1,159	45.54
40,000	943	23.44	985	27.32	1,026	31.26	1,065	35.27	1,103	39.32	1,140	43.44	1,176	47.61
41,000	965	25.04	1006	29.02	1,045	33.05	1,084	37.14	1,121	41.29	1,158	45.49	1,193	49.75
42,000	986	26.72	1026	30.79	1,065	34.91	1,103	39.09	1,140	43.33	1,175	47.62	1,210	51.96
43,000	1,008	28.47	1047	32.64	1,085	36.85	1,122	41.12	1,158	45.45	1,193	49.83	1,228	54.26
44,000	1,029	30.31	1068	34.56	1,105	38.87	1,142	43.23	1,177	47.65	1,212	52.12	1,245	56.63
45,000	1,051	32.22	1089	36.57	1,125	40.97	1,161	45.42	1,196	49.93	1,230	54.48	1,263	59.09
46,000	1,073	34.22	1109	38.66	1,146	43.15	1,181	47.7	1,215	52.29	1,248	56.94	1,281	61.63
47,000	1,094	36.3	1130	40.84	1,166	45.42	1,200	50.06	1,234	54.74	1,267	59.48	1,299	64.26
48,000	1,116	38.47	1152	43.1	1,186	47.78	1,220	52.5	1,253	57.28	1,286	62.1	1,317	66.97

Table 120: 130 ton to 150 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
26,000	522	5.72	583	8.17	640	10.7	693	13.33	742	16.02	789	18.79	834	21.63
28,000	552	6.73	611	9.34	665	12.05	715	14.83	763	17.68	808	20.61	852	23.6
30,000	583	7.87	639	10.65	690	13.52	739	16.46	785	19.48	829	22.56	871	25.7
32,000	615	9.15	667	12.1	717	15.13	763	18.24	808	21.41	850	24.65	891	27.95
34,000	647	10.58	697	13.7	744	16.89	789	20.16	832	23.5	873	26.9	912	30.36
36,000	679	12.16	727	15.45	772	18.82	815	22.25	856	25.74	896	29.3	934	32.92
38,000	711	13.91	757	17.37	800	20.9	842	24.5	882	28.16	920	31.88	957	35.66
40,000	744	15.84	787	19.47	829	23.17	869	26.93	908	30.76	945	34.64	981	38.58
42,000	777	17.94	818	21.75	859	25.62	897	29.55	935	33.54	971	37.58	1,006	41.68
44,000	809	20.25	850	24.22	888	28.26	926	32.36	962	36.51	997	40.72	1,031	44.99
46,000	843	22.75	881	26.9	919	31.11	955	35.38	990	39.7	1,024	44.07	1,057	48.5
48,000	876	25.47	913	29.79	949	34.17	984	38.61	1,018	43.09	1,051	47.63	1,083	52.22
50,000	909	28.41	945	32.9	980	37.45	1,014	42.06	1,047	46.71	1,079	51.42	1,110	56.17
52,000	943	31.57	977	36.24	1,011	40.97	1,044	45.74	1,076	50.56	1,107	55.43	1,137	60.35
54,000	976	34.98	1010	39.82	1,042	44.72	1,074	49.66	1,105	54.65	1,135	59.69	1,165	64.78
56,000	1,010	38.64	1042	43.65	1,074	48.72	1,105	53.83	1,135	59	1,164	64.2	1,193	69.46
58,000	1,044	42.55	1075	47.74	1,106	52.98	1,136	58.27	1,165	63.6	1,194	68.97	1,222	74.39
60,000	1,078	46.73	1108	52.1	1,138	57.51	1,167	62.96	1,195	68.46	1,223	74.01	1,251	79.6

Return fan data

Table 121: 90 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
18,000	529	2.84	596	4.65	656	6.61	710	8.73	763	10.97	813	13.34	861	15.82
19,000	550	3.13	616	5.02	673	7.05	727	9.23	777	11.53	825	13.96	872	16.5
20,000	571	3.44	636	5.41	692	7.51	743	9.75	792	12.12	839	14.61	885	17.21
21,000	593	3.78	656	5.83	710	8	761	10.31	808	12.74	854	15.29	898	17.95
22,000	614	4.14	676	6.27	730	8.52	779	10.89	825	13.39	869	16	912	18.72
23,000	636	4.53	697	6.74	749	9.06	797	11.5	842	14.07	885	16.74	927	19.53
24,000	658	4.95	718	7.24	769	9.64	816	12.15	860	14.78	902	17.52	943	20.36
25,000	680	5.4	739	7.77	789	10.25	835	12.83	878	15.52	919	18.33	959	21.24
26,000	702	5.87	760	8.33	809	10.88	854	13.54	896	16.3	937	19.17	976	22.15
27,000	724	6.38	781	8.93	829	11.56	874	14.29	915	17.12	955	20.06	993	23.09
28,000	746	6.91	802	9.55	850	12.26	893	15.07	934	17.97	973	20.98	1,010	24.08
29,000	768	7.48	824	10.21	871	13	913	15.88	953	18.86	953	18.86	1,028	25.1
30,000	790	8.09	845	10.91	892	13.78	934	16.74	973	19.79	1,010	22.93	1,046	26.17
31,000	812	8.72	867	11.64	913	14.6	954	17.63	993	20.75	1,030	23.97	1,065	27.27
32,000	834	9.39	888	12.41	934	15.45	975	18.56	1,013	21.76	1,049	25.05	1,084	28.42
33,000	856	10.1	910	13.21	955	16.34	995	19.53	1,033	22.81	1,069	26.17	1,103	29.61
34,000	878	10.84	932	14.06	976	17.27	1016	20.55	1,053	23.9	1,088	27.33	1,122	30.85
35,000	900	11.63	954	14.94	998	18.24	1037	21.6	1,074	25.03	1,108	28.54	1,142	32.13
36,000	923	12.45	975	15.87	1019	19.26	1058	22.7	1,094	26.21	1,128	29.79	1,161	33.45

Table 122: 105 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
21,000	464	3.19	524	5.19	577	7.32	627	9.58	674	11.97	719	14.48	762	17.10
22,000	480	3.47	539	5.55	590	7.75	639	10.07	685	12.52	728	15.09	771	17.77
23,000	496	3.77	553	5.93	604	8.20	651	10.59	696	13.10	738	15.73	780	18.47
24,000	512	4.09	568	6.33	618	8.67	664	11.13	707	13.71	749	16.40	789	19.19
25,000	528	4.42	583	6.75	632	9.17	677	11.69	719	14.34	760	17.09	799	19.94
26,000	545	4.78	599	7.19	646	9.69	690	12.28	731	14.99	771	17.80	810	20.72
27,000	561	5.16	614	7.66	660	10.23	703	12.90	744	15.67	783	18.55	821	21.53
28,000	578	5.56	630	8.15	675	10.80	717	13.54	757	16.38	795	19.32	832	22.37
29,000	594	5.98	645	8.66	690	11.39	731	14.20	770	17.11	808	20.12	844	23.23
30,000	611	6.43	661	9.20	705	12.01	746	14.90	784	17.88	820	20.95	856	24.13
31,000	628	6.90	677	9.76	720	12.65	760	15.62	798	18.67	834	21.82	868	25.05
32,000	644	7.40	693	10.35	735	13.32	775	16.37	812	19.49	847	22.71	881	26.01
33,000	661	7.92	709	10.96	751	14.02	789	17.14	826	20.34	861	23.63	894	27.00
34,000	678	8.46	725	11.60	766	14.75	804	17.95	840	21.23	874	24.58	907	28.02
35,000	695	9.04	741	12.27	782	15.50	819	18.79	855	22.14	888	25.57	921	29.08
36,000	712	9.64	758	12.97	798	16.29	835	19.66	869	23.08	902	26.59	934	30.17
37,000	729	10.27	774	13.70	814	17.11	850	20.56	884	24.06	917	27.64	948	31.29
38,000	746	10.93	791	14.45	830	17.96	865	21.49	899	25.07	931	28.73	962	32.45
39,000	763	11.62	807	15.24	846	18.83	881	22.45	914	26.12	946	29.85	976	33.64
40,000	780	12.33	824	16.06	862	19.75	897	23.45	929	27.20	961	31.00	991	34.87
41,000	797	13.08	840	16.91	878	20.69	912	24.48	945	28.31	976	32.19	1,005	36.14
42,000	814	13.86	857	17.80	894	21.67	928	25.55	960	29.46	991	33.42	1,020	37.44
43,000	832	14.68	874	18.72	910	22.68	944	26.65	976	30.64	1,006	34.69	1,035	38.79
44,000	849	15.53	890	19.67	927	23.73	960	27.78	991	31.86	1,021	35.99	1,049	40.17
45,000	866	16.41	907	20.66	943	24.81	976	28.96	1,007	33.12	1,036	37.33	1,064	41.59

Table 123: 120 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
24,000	521	3.45	579	5.97	630	8.59	678	11.33	724	14.19	767	17.15	809	20.22
25,000	537	3.68	594	6.29	644	9	691	11.82	736	14.76	778	17.8	819	20.94
26,000	554	3.92	609	6.63	659	9.43	704	12.33	748	15.34	789	18.46	829	21.67
27,000	571	4.18	625	6.98	673	9.86	718	12.85	760	15.94	801	19.13	840	22.42
28,000	587	4.44	641	7.34	688	10.32	732	13.38	773	16.56	813	19.83	852	23.19
29,000	604	4.71	657	7.72	703	10.78	746	13.94	787	17.19	826	20.54	863	23.98
30,000	621	5	673	8.1	718	11.26	760	14.5	800	17.84	838	21.26	875	24.79

Table 123: 120 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
31,000	638	5.3	689	8.51	733	11.75	775	15.08	814	18.5	852	22.01	888	25.61
32,000	655	5.61	705	8.92	749	12.26	790	15.68	828	19.18	865	22.77	900	26.45
33,000	673	5.94	721	9.35	764	12.79	804	16.29	842	19.88	878	23.55	913	27.31
34,000	690	6.28	738	9.79	780	13.33	819	16.92	857	20.6	892	24.35	927	28.19
35,000	707	6.63	754	10.25	796	13.88	835	17.57	871	21.33	906	25.17	940	29.09
36,000	724	7	771	10.72	812	14.45	850	18.23	886	22.08	920	26.01	954	30.01
37,000	742	7.38	787	11.21	828	15.04	865	18.92	901	22.85	935	26.86	968	30.95
38,000	759	7.78	804	11.72	844	15.65	881	19.61	916	23.64	949	27.74	982	31.91
39,000	776	8.19	821	12.24	860	16.27	897	20.33	931	24.45	964	28.63	996	32.89
40,000	794	8.62	838	12.77	877	16.9	913	21.06	946	25.27	979	29.55	1,010	33.89
41,000	811	9.06	854	13.33	893	17.56	928	21.82	962	26.12	994	30.48	1,025	34.91
42,000	829	9.52	871	13.9	909	18.23	944	22.59	977	26.98	1,009	31.44	1,040	35.95
43,000	846	9.99	888	14.48	926	18.93	960	23.38	993	27.87	1,024	32.41	1,054	37.01
44,000	864	10.48	905	15.09	942	19.64	977	24.19	1,009	28.77	1,040	33.41	1,069	38.1
45,000	882	10.99	923	15.71	959	20.37	993	25.02	1,025	29.7	1,055	34.42	1,084	39.2
46,000	899	11.52	940	16.36	976	21.11	1,009	25.87	1,041	30.64	1,071	35.46	1,100	40.33
47,000	917	12.06	957	17.02	992	21.88	1,025	26.73	1,057	31.61	1,086	36.52	1,115	41.48
48,000	935	12.63	974	17.7	1,009	22.67	1,042	27.62	1,073	32.6	1,102	37.6	1,130	42.66

Table 124: 130 ton to 150 ton total static pressure (TSP)

CFM	0.5 TSP		1.0 TSP		1.5 TSP		2.0 TSP		2.5 TSP		3.0 TSP		3.5 TSP	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
26,000	429	3.69	482	6.32	530	9.26	577	12.47	622	15.9	664	19.52	706	23.3
28,000	454	4.2	504	6.95	550	10.01	594	13.33	636	16.87	677	20.63	717	24.54
30,000	480	4.76	526	7.64	570	10.81	612	14.25	653	17.91	692	21.78	730	25.84
32,000	592	11.68	550	8.39	592	11.68	632	15.24	670	19.02	708	23.01	744	27.17
34,000	531	6.06	574	9.21	614	12.62	652	16.29	689	20.19	725	24.29	760	28.59
36,000	557	6.83	598	10.08	636	13.63	673	17.42	708	21.44	743	25.65	777	30.05
38,000	584	7.67	623	11.05	659	14.73	695	18.63	729	22.76	762	27.1	794	31.61
40,000	611	8.58	648	12.1	683	15.9	717	19.92	750	24.17	782	28.62	813	33.25
42,000	637	9.56	673	13.21	707	17.14	740	21.3	771	25.66	802	30.23	832	34.98
44,000	664	10.63	698	14.41	731	18.46	763	22.77	793	27.24	823	31.93	852	36.8
46,000	691	11.78	724	15.71	756	19.9	786	24.33	816	28.92	845	33.72	873	38.71
48,000	718	13.02	750	17.09	781	21.43	810	25.97	839	30.71	867	35.62	894	40.72
50,000	746	14.39	776	18.6	806	23.05	834	27.7	862	32.6	889	37.6	916	42.83
52,000	773	15.81	802	20.16	831	24.75	859	29.54	886	34.53	912	39.7	938	45.05
54,000	800	17.37	829	21.86	857	26.57	884	31.5	910	36.61	935	41.91	960	47.38
56,000	828	19.03	855	23.66	882	28.51	909	33.56	934	38.81	959	44.23	983	49.82
58,000	855	20.8	882	25.57	908	30.56	934	35.74	958	41.12	983	46.67	1,006	52.38
60,000	883	22.69	909	27.6	934	32.73	959	38.05	983	43.55	1,007	49.22	1,030	55.06

Electrical data

Electrical service sizing

In order to determine the electrical service required for the Sun Premier rooftop unit, use the appropriate calculations listed below from U.L. 60335-2-40. Based on the configuration of the unit, the calculations yield different minimum circuit ampacity (MCA) and maximum overcurrent protection (MOP).

Using the following load definitions and calculations, determine the correct electrical sizing for the unit. All concurrent load conditions must be considered in the calculations, and the highest value for any combination of loads must be used.

Load definitions:

- **LOAD1** is the current of the largest motor – compressor or fan motor.
- **LOAD2** is the sum of the remaining motor currents that may run concurrently with LOAD1.
- **LOAD3** is the current of the electric heaters – zero for cooling only units.
- **LOAD4** is the sum of any remaining currents greater than or equal to 1.0 amp.

Use the following calculations to determine MCA and MOP for units supplied with a single-point power connection:

ⓘ **Note:** For electric heat applications, the nameplate MCA/MOP value is the larger of the cooling mode or the heating mode value calculated.

MCA = (1.25 x Load1) + (1.25 x Load3) + Load2 + Load4

Exception: Load3 may be multiplied by 1 if the electric heater is greater than 50 kW

MOP = (2.25 x Load1) + Load2 + Load3 + Load4

Use the following calculations to determine MCA and MOP for units supplied with a dual-point power connection:

ⓘ **Note:** For electric heat applications, the nameplate MCA 1/MOP 1 value is the larger of the cooling mode or the heating mode value calculated.

Electrical circuit 1: compressors and crankcase heaters, condenser fan motors, electric heat (MCA 1/MOP 1).

Electrical circuit 2: supply fan, return and exhaust fan, convenience outlet, and 24 VAC control transformers (MCA 2/MOP 2).

Use the formulas above to calculate MCA and MOP for electrical circuits 1 and 2.

For single or dual point power connection, if the MOP does not equal a standard current rating of an overcurrent protective device, then the marked maximum rating is to be the next lower standard rating. However, if the device selected for MOP is less than the MCA, then select the lowest standard maximum fuse size greater than or equal to the MCA.

Power supply voltage limits

Table 125: Power supply voltage limits

Power supply	Minimum voltage	Maximum voltage
460V/3Ph/60Hz	416	508
575V/3Ph/60Hz	520	635

Fixed speed compressor data

Table 126: Standard efficiency and standard capacity compressor electrical data

Model (ton)	Compressor	Nominal voltage			
		460/3/60		575/3/60	
		RLA	LRA	RLA	LRA
90	1A	32.7	215	26.3	175
	1B	32.7	215	26.3	175
	2A	32.7	215	26.3	175
	2B	32.7	215	26.3	175
105	1A	24.7	197	22.4	135
	1B	50.6	320	38.5	235
	2A	39.7	260	28.8	210
	2B	39.7	260	28.8	210
120	1A	32.7	215	26.3	175
	1B	50.6	320	38.5	235
	2A	32.7	215	26.3	175
	2B	50.6	320	38.5	235
130	1A	39.7	260	28.8	210
	1B	50.6	320	38.5	235
	2A	50.6	320	38.5	235
	2B	50.6	320	38.5	235
150	1A	39.7	260	28.8	210
	1B	57.7	413	45.5	327
	2A	50.6	320	38.5	235
	2B	57.7	413	45.5	327

Table 127: Standard efficiency and high capacity compressor electrical data

Model (ton)	Compressor	Nominal voltage			
		460/3/60		575/3/60	
		RLA	LRA	RLA	LRA
90	1A	32.7	215	26.3	175
	1B	32.7	215	26.3	175
	2A	24.7	197	22.4	135
	2B	50.6	320	38.5	235
105	1A	39.7	260	28.8	210
	1B	39.7	260	28.8	210
	2A	39.7	260	28.8	210
	2B	50.6	320	38.5	235
120	1A	39.7	260	28.8	210
	1B	39.7	260	28.8	210
	2A	32.7	215	26.3	175
	2B	57.7	413	45.5	327
130	1A	32.7	215	26.3	175
	1B	57.7	413	45.5	327
	2A	32.7	215	26.3	175
	2B	57.7	413	45.5	327
150	1A	50.6	320	38.5	235
	1B	57.7	413	45.5	327
	2A	57.7	413	45.5	327
	2B	57.7	413	45.5	327

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Variable speed drive compressor data

Table 128: High efficiency and standard capacity compressor electrical data

Model (ton)	Compressor	Nominal voltage					
		460/3/60			575/3/60		
		RLA	Input A	LRA	RLA	Input A	LRA
90	VSD[2,3]	—	47	—	—	37	—
	1B	50.6	—	320	38.5	—	235
	2A	24.7	—	197	22.4	—	135
	2B	32.7	—	215	26.3	—	175
105	VSD[2,3]	—	47	—	—	37	—
	1B	50.6	—	320	38.5	—	235
	2A	39.7	—	260	28.8	—	210
	2B	39.7	—	260	28.8	—	210
120	VSD[2,3]	—	47	—	—	37	—
	1B	57.7	—	413	45.5	—	327
	2A	24.7	—	197	22.4	—	135
	2B	50.6	—	230	38.5	—	235
130	VSD[2,3]	—	47	—	—	37	—
	1B	57.7	—	413	45.5	—	327
	2A	32.7	—	215	26.3	—	175
	2B	50.6	—	320	38.5	—	235
150	VSD[2,3]	—	47	—	—	37	—
	1B	57.7	—	413	45.5	—	327
	2A	50.6	—	320	38.5	—	235
	2B	57.7	—	413	45.5	—	327

Note:

1. Variable speed drive compressor on circuit 1A.
2. Input A supplied for maximum input current to compressor VFD.

Condenser fan motor

Table 129: Condenser fan motor 90 ton to 150 ton

Unit configurations					Each motor data	460V/3Ph/60Hz		575V/3Ph/60Hz	
						SS FLA	VFD IN A	SS FLA	VFD IN A
						3.4	4.3	1.7	3.9
Condenser fan option	Unit size	Comp config	Total quantity of fans	Quantity SS fans	Quantity VFD fans	Total fan amps			
Standard ambient	90 to 105 ton	All configurations	6	6	0	20.4		10.2	
	120 to 150 ton	All configurations	9	9	0	30.6		15.3	
Low ambient	90 to 105 ton	All configurations	6	4	2	22.2		14.6	
	120 to 150 ton	All configurations	9	7	2	32.4		19.7	

BHC Group Heating & Cooling

Electric heat

Table 130: Electric heat amp draw

Capacity (ton)	Type of heat	Heater nominal kW	Each stage kW	Steps	460V/3Ph/60Hz	575V/3Ph/60Hz
					Amps	Amps
90 to 105	Low heat	140	35	4	161.4	129.1
	Low heat with SCR**			4***		
	High heat	280	35	8	322.8	258.2
	High heat with SCR**			8***		
120 to 150	Low heat	210	35	6	242.1	193.7
	Low heat with SCR**			6***		
	High heat	350	35	10	403.4	322.8
	High heat with SCR**			10***		

Note:

** Silicon Controlled Rectifier (SCR) is a modulating electric heat option.

*** SCR electric heat is installed on the first stage of the unit and provides modulation from 0–100%

Supply fan and return and exhaust fan motor data

Table 131: 90 ton to 150 ton premium efficiency - ODP

Motor HP (each)		Nominal voltage	
		460/3/60	575/3/60
		FLA	FLA
Supply fan motor*	10	12.5	10
	15	18.2	14.2
	20	24	19.1
	25	30	24.5
	30	36	29
	40	49	40
	50	57	46
	60	68	56
Return fan motor	10	13.9	11.1
	15	18.4	14.7
	20	24.3	19.4
	25	30.8	24.6
	30	36	28.8
	40	47.1	37.7
	50	58.1	46.4
	60	70.3	56.2
	75	85.9	68.7

Table 131: 90 ton to 150 ton premium efficiency - ODP

Motor HP (each)		Nominal voltage	
		460/3/60	575/3/60
		FLA	FLA
Exhaust fan motor	5	6.6	5.3
	7.5	9.7	8
	10	12.5	10
	15	18	14.2
	20	24	19.1
	25	30	24.5
	30	36	29
	40	49	40
	50	57	46
	60	68	56
	75	85	68
Exhaust fan motor with VFD	5	6.8	5.6
	7.5	9.4	8.3
	10	12.6	11.4
	15	18.4	15.7
	20	24.7	21.4
	25	29.3	25.7
	30	34.6	31.5
	40	49.2	42.9
	50	60.6	52
	60	72.5	63.3
	70	88.6	77.4

Table 132: 90 ton to 150 ton premium efficiency - TEFC

Motor HP (each)		Nominal voltage	
		460/3/60	575/3/60
		FLA	FLA
Supply fan motor*	10	12.5	9.8
	15	18.1	14.6
	20	24	19.2
	25	31	24
	30	38	29
	40	48	39
	50	58	46
	60	70	55
Return fan motor	10	13.8	11
	15	17.9	14.3
	20	24.2	19.4
	25	30.8	24.6
	30	36.2	29
	40	46.5	37.2
	50	57.4	45.9
	60	69.5	55.6
	75	84.9	67.9

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Table 132: 90 ton to 150 ton premium efficiency - TEFC

Motor HP (each)		Nominal voltage	
		460/3/60	575/3/60
		FLA	FLA
Exhaust fan motor	5	6.7	5.3
	7.5	9.5	7.6
	10	12	9.6
	15	18.1	14.6
	20	24	19.2
	25	31	24
	30	38	29
	40	48	39
	50	48	39
	60	70	55
	75	87	69
Exhaust fan motor with VFD	5	6.8	5.6
	7.5	9.4	8.3
	10	12.6	11.4
	15	18.4	15.7
	20	24.7	21.4
	25	29.3	25.7
	30	34.6	31.5
	40	49.2	42.9
	50	60.6	52
	60	72.5	63.3
	75	88.6	77.4

Note:

* Actual unit nameplate amps are based on operating conditions and are calculated based on a supply fan amp value that may be less than the maximum amp values shown in the table. See the Selection Navigator output for supply fan amps and return fan amps.

Miscellaneous data

Table 133: Miscellaneous data

Description	Nominal voltage	
	460/3/60	575/3/60
	Amps	Amps
Control transformer 0.2 kVA	0.5	0.5
Convenience outlet	4.5	3.5
Gas heat (per module)	0.46	0.37
1000 MBH	0.92	0.74
1500 MBH	1.38	1.10
2000 MBH	1.84	1.47
2500 MBH	2.3	1.84
Crankcase heater 90W	0.2	0.1
Ultraviolet (UV) lights 90-105 Ton	4.4	3.6
Ultraviolet (UV) lights 120-150 Ton	8.8	7.2
Internal lights (per light)	0.03	0.02

Table 134: Energy recovery wheel (ERW) motor data

Model (ton)	Type	Nominal voltage	
		460/3/60	575/3/60
		FLA	FLA
90	Low CFM ERW	1.3	0.9
	High CFM ERW	2.65	2.65
105	Low CFM ERW	1.3	0.9
	High CFM ERW	2.65	2.65
120	Low CFM ERW	2.65	2.65
	High CFM ERW	2.65	2.65
130	Low CFM ERW	2.65	2.65
	High CFM ERW	2.65	2.65
150	Low CFM ERW	2.65	2.65
	High CFM ERW	2.65	2.65

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Controls

General

The control system for the Sun Premier unit is fully self-contained. To aid in unit setup, maintenance, and operation, the unit controller is equipped with a standard user interface (UI) that has a 5 row × 35 character OLED display. The OLED display presents plain language text in a menu-driven format to facilitate use.

The unit controller can be connected to and operated by a building automation system (BAS). In addition, hard wired control options to the unit controller are provided using a customer terminal board.

The unit controller uses the latest technology and provides complete control for the unit along with standard BACnet® MS/TP and BACnet IP, Modbus™, and N2 communications. The unit controller also has a USB flash drive that can be used to capture historic data on unit operation and to update firmware.

Unit mode

Unit type

The controller supports two rooftop types: multi zone variable air volume (MZVAV) and single zone VAV (SZVAV). Both types can be configured to operate in several different modes of occupancy, temperature control, warm-up/cool down, and automated demand response.

Occupancy modes

Depending on the application, the controller can be indexed between occupied, unoccupied, optimal start, or coast modes of operation. These occupancy modes are initiated automatically via an internal schedule or externally from a BAS command, hard wired input, or tenant override via zone sensor.

Sensors

Temperature control sensor

The controller compares the discharge air temperature (DAT) against a setpoint to determine the heating or cooling demand. On multi zone VAV units, the DAT setpoint can be reset by different methods: fixed, outside air temperature (OAT), supply fan speed, external control (a customer terminal board must be installed to use external control), zone, or return air temperature (RAT). See also DAT setpoint reset.

Changeover sensor

The controller compares this temperature against a setpoint to determine whether to place the unit in heating, cooling, or idle mode. Zone temperature or RAT—or a BAS input—can be used as the changeover sensor.

Mandatory sensors

The following sensors are required to make the unit operate and are included as standard on every rooftop.

- Discharge air temperature
- Return air temperature
- Outside air temperature

Optional sensors

Depending on the application, additional sensors may be required.

- Zone air temperature
- Zone humidity
- Enthalpy sensor (for use with economizer)

- Dual enthalpy sensors (measures enthalpy of outdoor air and return air; used with economizer)
- Supply duct pressure (VAV units)
- Building pressure (required for exhaust/return fan)
- Carbon dioxide (CO_2) (required for demand ventilation)
- Smoke detector

Warm-up and cool down methods

The warm-up and cool down feature supports three methods of initiating the warm-up and cool down mode: occupied command, schedule, optimal start.

Occupied command

When the occupancy status for a unit switches to occupied mode, the supply fan turns ON for a 5-minute stabilization period, after which the RAT sensor compares to the warm-up setpoint. If the value is equal to or below the warm-up setpoint, heating is controlled to the warm-up DAT setpoint. If the value is above the warm-up setpoint, the control goes into occupied mode. Warm-up stays active until the RAT sensor is above the warm-up setpoint for 5 minutes or the early start period expires. The control goes into occupied mode thereafter. Cool down operates opposite of warm-up, using cooling instead of heating stages.

Schedule

At the early start period, prior to the scheduled occupancy, the supply fan turns ON for a 5-minute stabilization period and then the RAT sensor is compared to the warm-up set point. If the value is equal to or below the warm-up setpoint, heating is controlled to the warm-up DAT setpoint. If the value is above the warm-up setpoint, the control goes into occupied mode. Cool down operates opposite of warm-up, using cooling instead of heating stages.

Optimal start

The optimal start control algorithm is a function of the difference between zone temperature and occupied temperature setpoint, the OAT, and the amount of time prior to scheduled occupancy.

When unoccupied, the controller calculates an early start time based on control temperature deviation from occupied temperature setpoint. This ensures the space is at conditioned levels when the occupied period starts.

Historical data determines when optimal start begins, but the early start time can be user limited. The optimal start time is always within the same calendar day. The warm-up or cool down DAT setpoints function until the demand is satisfied. The control uses the heating or cooling setpoint to determine when the demand is satisfied. The control goes into occupied mode thereafter.

Coast

When enabled, 1 hour (adjustable) prior to the transition from occupied to unoccupied, the operational cooling and heating setpoints begin to increase or decrease linearly at 1.0°F per hour (adjustable) towards unoccupied cooling and heating setpoints. The operational cooling and heating DAT setpoints also begin to increase or decrease linearly at 1.0°F per hour (adjustable). During this time, the fans continue to run and the ventilation sequence remains active.

Multiple unit staggered start

When enabled, the start-up delay utilizes the minimum OFF time plus a delay time. This is used to prevent all units on a site from restarting simultaneously after a power failure.

The delay time can be manually set or randomized between 0 and 60 seconds. If staggered, start override time is set to 0 seconds.

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Additional functionality includes applying a start-up delay when switching into the occupied mode. This only happens if the supply fan command is currently OFF when the occupancy mode switches into occupied. This staggers start-up for multiple rooftop units if all are commanded from the same occupied command. After the timer has expires, the rooftop unit can start.

Automated demand response methods

The controller is capable of three automated demand response methods: demand shed, load shed, and capacity limit.

Demand shed

This strategy operates by offsetting the operating cooling setpoint higher and offsetting the operating heating setpoint lower when the unit controller receives a demand shed signal from a binary hard wired input or BAS command. The offset is adjustable.

Load shed

This function shuts down all cooling and electric heat for an adjustable time period in response to a BAS command.

Capacity limit

This strategy operates by limiting total allowed mechanical cooling or electric heat capacity in proportion to the value of an analog BAS cooling/heating capacity limit signal.

Supply air system

The supply fan is used to circulate air to condition the temperature of the space and to provide ventilation to the space. Supply fan starts and operating hours are measured under all operating conditions. Two user-selectable supply air modes are available: MZVAV and SZVAV.

Multizone variable air volume (MZVAV)

Duct pressure control

When the fan energizes, the output from the controller maintains the supply duct pressure to the duct pressure setpoint. If the duct pressure is greater than the duct pressure setpoint, the supply fan output decreases.

If the duct pressure is below the duct pressure setpoint, the supply fan output increases. If the duct pressure reaches the duct pressure shutdown setpoint, the fan and all other outputs of the unit de-energize.

ⓘ **Note:** If the unit is in a heating mode, the controller continues to vary supply fan output to control duct pressure to the duct static pressure setpoint. Therefore, in any VAV heating mode, all VAV boxes must be commanded open far enough to get adequate airflow to support the heating function and to prevent the heat section high temperature limit switches from opening. A VAV box binary output on the customer terminal board energizes any time a MZVAV unit is in any heating mode.

DAT setpoint reset

The DAT setpoint reset feature provides five different methods of varying the DAT setpoint:

- fixed
- OAT
- zone and return air temperature (RAT)
- supply fan speed
- external control

Fixed

- The DAT setpoint is a fixed value and does not change in response to another signal. It can be user adjusted from the default value over a BAS or local UI.

OAT

- **Cooling -**The DAT setpoint is reset from cooling DAT upper setpoint to cooling DAT lower setpoint as the operating OAT varies from OAT lower setpoint to OAT upper setpoint.
- **Heating -** The DAT setpoint is reset from heating DAT lower setpoint to heating DAT upper setpoint as the operating OAT varies from OAT upper setpoint to OAT lower setpoint.

Zone and return air temperature

- **Cooling -** The DAT setpoint resets from cooling DAT upper setpoint to the cooling DAT lower setpoint as the zone and return air temperature varies from the zone and return air temperature lower setpoint to the upper zone and return air temperature setpoint.
- **Heating -** The DAT setpoint resets from heating DAT lower setpoint to the heating DAT upper setpoint as the zone and return air temperature varies from the zone and return air temperature upper setpoint to the lower zone and return air temperature setpoint.

  ⓘ **Note:** If zone temperature sensor becomes unreliable or is not installed, the operating zone temperature uses the RAT instead.

Supply fan speed

- **Cooling –** The cooling DAT setpoint is reset from DAT cooling upper setpoint to lower setpoint as the supply fan output varies from supply fan DAT lower threshold setpoint to supply fan DAT upper threshold setpoint.
- **Heating -** The heating DAT setpoint is reset from DAT heating lower setpoint to upper setpoint as the supply fan output varies from supply fan DAT lower threshold setpoint to supply fan DAT upper threshold setpoint.

External control

- The DAT setpoint is controlled directly by a third party - BACnet communication or voltage signal. For cooling mode, the hard-wired DAT setpoint varies from DAT upper setpoint to DAT lower setpoint as the input varies from low value to high value. For heating mode, the hard-wired DAT setpoint varies from DAT lower setpoint to DAT upper setpoint as the input varies from low value to high value. A customer terminal board must be installed to use external control.

Single zone variable air volume (SZVAV)

Mechanical cooling

Zone temperature control - The DAT setpoint resets between high and low cooling setpoints based on the zone cooling demand. Staged cooling command is based on the time and temperature differential that operating zone temperature has been operating above cooling setpoint. The unit controls the DAT by staging or modulating the compressors. The supply fan runs at the minimum cooling speed setpoint.

As the zone cooling demand increases and the DAT controls to the low cooling setpoint, the supply fan output resets between minimum cooling speed and 100% to maintain the zone temperature at cooling zone temperature setpoint.

Staged temperature control - The unit can be controlled by a standard two-stage cooling/heating thermostat. Thermostat connections are hard wired through the customer terminal board: G, Y1, Y2, W1, W2. Thermostat commands can also be communicated by the BAS. The fan operates at minimum or maximum speed in occupied/unoccupied mode based on the thermostat input.

Economizer

When free cooling is available and there is a call for cooling, the outside air (OA) damper modulates to maintain the DAT to the OprClgDAT-SP. During the free cooling mode, if the OA damper modulates to 100% open and cannot

maintain the cooling DAT setpoint, the compressors are staged or modulated to maintain the cooling DAT setpoint. The supply fan runs at the minimum cooling speed setpoint.

If the zone temperature exceeds the cooling zone temperature setpoint, the OA damper is 100% open, and all cooling stages are staged ON (or locked out due to compressor lockout), then the supply fan resets between minimum cooling speed and 100% to maintain zone temperature at the cooling zone temperature setpoint.

Satisfied

If the occupancy mode is occupied without a heating or cooling demand, the supply fan runs at the fan only minimum fan speed.

Modulated heating

The DAT setpoint resets between low and high heating setpoints based on the zone heating demand. The heating command is based on the time and temperature differential that the operating zone temperature has been operating below operating heating setpoint. The unit controls the DAT by modulating the heat (electric, gas, or hydronic). The supply fan runs at the minimum speed setpoint.

As the zone heating demand increases and the DAT controls to the high heating setpoint, the supply fan resets between heating minimum speed and 100% to maintain the zone temperature at heating zone temperature setpoint.

Staged heating

The DAT setpoint resets between low and high heating setpoints based on the zone heating demand. Staged heating command is based on the time and temperature differential that the operating zone temperature has been operating below operating heating setpoint. The unit controls the DAT by staging the heat (electric or gas). The supply fan runs at maximum capacity.

Unoccupied mode

If the occupancy mode is unoccupied, the unit does not operate in SZVAV mode but instead operates in the following manner:

A. Unoccupied cooling

- The unit controls to the unoccupied zone cooling setpoint.
- The cooling DAT setpoint is set to the cooling setpoint. The unit controls the DAT to the operating cooling DAT setpoint by staging or modulating the compressors. The supply fan runs at maximum capacity.

B. Unoccupied heating

- The unit controls the zone temperature to the unoccupied zone heating setpoint.
- The heating DAT setpoint is set to the high heating DAT setpoint. The unit controls the DAT to the operating heating DAT setpoint by staging or modulating the heat (electric, gas or hydronic). The supply fan runs at maximum capacity.

Exhaust air (EA) system

To control building pressure, three power exhaust control options are available: none, barometric damper, modulating exhaust fan, modulating EA damper with fan, and external control.

None

The unit does not have an exhaust option.

Barometric damper

A mechanical barometric damper relief damper is installed, however this damper is not controlled by the units controller.

Modulating exhaust fan VFD

If the building pressure is greater than the building pressure setpoint, the exhaust fan analog output increases. If the building pressure is less than the building pressure setpoint, the exhaust fan analog output decreases.

Variable speed exhaust fan command is energized any time the exhaust fan speed output is greater than exhaust fan speed on (adjustable) and the fan command is de-energized any time the exhaust fan speed output is less than exhaust fan speed off (adjustable). A minimum deadband between the on and off setpoints is enforced.

Modulating EA damper with fan (on/off)

The controller modulates the opening of the EA damper to maintain the building pressure setpoint. If the building pressure is greater than the building pressure setpoint, the EA damper output increases to open the EA damper. If the building pressure is less than the building pressure setpoint, the EA damper output decreases to close the EA damper.

Exhaust fan is energized when the exhaust damper is greater than exhaust damper position for exhaust fan to turn on (adjustable), the controller energizes the exhaust fan. If the exhaust damper is less than exhaust damper position for exhaust fan to turn off (adjustable), the controller de-energizes the exhaust fan. To reduce fan cycling, a minimum deadband is enforced between the fan start and fan stop setpoints.

External control

Exhaust fan speed or EA damper position is controlled directly by a third party (BACnet communication or voltage signal). Requires customer terminal board (CTB).

Return air (RA) system

Two return fan control options are available: return fan discharge pressure control and supply fan airflow tracking.

In either return fan mode, the controller modulates the opening of the EA damper to maintain the building pressure at setpoint. If the building pressure is above the building pressure setpoint, the EA damper output increases. If the building pressure is below the building pressure setpoint, the EA damper output decreases. In this mode, the EA damper position can alternatively be controlled directly by a third party (BAS communication or voltage signal).

Return fan discharge pressure

The controller modulates the speed of the return fan to maintain the return fan discharge pressure to a setpoint. As the supply fan speed increases or the RA or EA dampers open, the return fan discharge pressure decreases, and the return fan speed increases to maintain the pressure setpoint. As the supply fan speed decreases or the RA or EA dampers close, the return fan discharge pressure increases and the fan speed decreases to maintain the operating pressure setpoint. The operating pressure setpoint is a calculated value based on OA damper position and supply fan speed, fan pressure high and low setpoint.

Supply fan airflow tracking

When equipped with optional supply and return fan airflow measuring stations, the controller monitors the supply fan airflow and modulates the speed of the return fan to a return airflow setpoint. The return airflow setpoint is a calculated value based on the supply fan airflow, minus a return airflow differential (adjustable). If the return fan airflow decreases below the operating flow setpoint, the return fan speed increases. If the return fan airflow increases above the operating flow setpoint, the return fan speed decreases.

Cooling system

The controller supports both staged and variable speed direct expansion (DX) cooling.

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DX cooling

Capacity control

Constant speed compressors stage up or down with the staged cooling command parameter to control the DAT to operating cooling setpoint. During dehumidification control, the compressors switch to evaporator temperature control.

When equipped with a variable speed drive compressor, the capacity modulates via vernier control. The first stage on refrigeration circuit one is variable speed, while all other stages are constant speed. Start count equalization does not apply to the variable speed compressor. The variable speed compressor is always the first compressor ON and last compressor OFF, except in dehumidification mode.

Compressor staging algorithm

The controller employs patented algorithms to sequence the compressor stages as a method of quickly meeting cooling demand while reducing overshoot as DAT reaches operating cooling setpoint.

The controller excludes staging combinations that result in one refrigeration circuit having two or more compressors energized than the other refrigeration circuit.

Rapid start

To shorten the time it takes to get compressors running, the optimum stage up algorithm is used. It estimates the number of compressor steps required to meet the initial cooling demand and quickly starts the appropriate number of compressors. When the unit first starts up or after an unoccupied to occupied transition, if there are no compressors running and the economizer is not suitable, rapid start is active for the first 5 minutes (adjustable) of cooling operation. During rapid start, the inter-stage delay time between compressors reduces to 15 seconds.

Variable speed drive compressors

Envelope control keeps the variable speed drive compressor within the allowable range of saturated suction and saturated discharge temperature for the compressor. Oil management algorithms are designed to keep the oil level above the minimum on variable speed drive compressors. Overall cooling demand, oil management, saturated DAT, and saturated suction temperature all influence the allowable operational speed of the variable speed drive compressor. The controller monitors each of those requirements to provide the appropriate minimum and maximum speeds to the compressor.

Condensate overflow alarm

When the condensate overflow switch alarm is ON, the unit disables mechanical cooling. Supply fan operation remains enabled during this period. The alarm must be manually reset at the controller.

Condenser system

The rooftop unit condenser fan control is designed to control staged and modulating condenser fans based on the saturated liquid line temperature. Constant speed condenser fans are staged up or down based on the saturated liquid line temperature. Condenser fan start count equalization is used for fixed speed fans.

Saturated liquid line temperature control

After a stabilization period of 60 seconds during saturated liquid temperature control and after the first compressor is energized, condenser fans are staged ON or OFF to achieve stage up or down setpoint. If saturated liquid line temperature is above the stage up setpoint, an additional condenser fan is energized. If saturated liquid line temperature falls below the stage down setpoint, a condenser fan is de-energized.

The variable speed fan is the first ON and the last OFF when optionally equipped on the unit. The variable speed fan modulates condenser fan speed between 80.0°F and 110.0°F.

If saturated liquid line temperature becomes unreliable, the unit reverts to fail-safe mode.

Fail-safe mode

In fail-safe mode, compressor operation maybe limited below a user selected ambient temperature. Condenser fan operation is controlled by ambient temperature and compressor operation. If the saturated liquid line temperature is not reliable, one condenser fan is energized for every compressor that energizes, and the variable speed condenser fan runs at 100%.

When the saturated liquid line temperature becomes reliable, the unit reverts to saturated liquid line temperature control.

Low ambient mode

This functionality is only available during saturated liquid line temperature control. It is automatically enabled on a circuit with a modulating condenser fan.

When low ambient mode is NOT enabled on a circuit, the lower range of the OAT cooling enable setpoint is 45.0°F.

When low ambient mode IS enabled on a circuit, the lower range of the OAT cooling enable setpoint is -10.0°F.

Low ambient mode cannot be automatically enabled on a circuit unless there is a variable speed condenser fan and liquid line pressure sensor installed on that circuit.

Heating system

The controller supports multiple heating types including electric heat (staged, modulated) and gas heat (staged, modulated). The supported heating-related features include: warm-up, discharge air (DA) tempering, load shedding (electric heat), and runtime equalization. If the DAT is lower than the DAT setpoint, the heating demand increases and a heating stage is energized. If the DAT is greater than the DAT setpoint, the heating demand decreases and a heating stage is de-engergized.

Electric heat

The application supports up to ten stages of electric heat as well as modulated electric heat.

Staged electric heat

If the DAT is lower than the DAT setpoint, the heating demand increases and a heating stage is energized. If the DAT is greater than the DAT setpoint, the heating demand decreases and a heating stage is de-engergized.

Modulating electric heat

If the DAT is lower than the DAT heating setpoint, the heating demand increases. If the DAT is greater than the DAT heating setpoint, the heating demand decreases. The modulating heating stage is connected to a SCR controller. Additional stages are sequenced ON and OFF while the SCR stage automatically fills the gap between the step-controlled stages, providing full proportional control over the entire heater range. Both the SCR stage and the step-controlled stages are controlled by the heating demand. The modulating stage is the first ON and last OFF.

Runtime equalization

Runtime equalization only applies to equally sized, non-modulating heating stages. The modulating stage is first ON and last OFF. The controller records the number of starts and runtime statistics for each stage of electric heat.

At the initiation of each heating demand, the stage with the lowest total runtime energizes first. When runtime is equal, the staging is in numerical order. The stage with the next lowest total runtime energizes next and so on. At the termination of heating demand, the stages with the highest runtime stage OFF in reverse order.

Gas heating

The application supports up to ten stages in three furnace modules. The concept behind the staged and modulating furnace options is to offer multiple furnace modules, with each module being its own self-contained, fully functioning furnace.

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Staged gas heat

The heating section includes an induced draft furnace in two [four] [six] [eight] [ten] stages of heating capacity. [Optional high altitude kit is shipped loose from the factory.] [Optional liquid propane (LP) conversion kit is shipped loose from the factory.]

1. **Heat exchanger -** The heat exchanger is constructed of tubular aluminized steel [stainless steel] and flue assembly.
2. **Burner and ignition controls -** The burner includes a direct-driven induced-draft combustion fan with energy efficient direct spark ignition, redundant main gas valves with pressure regulator.
3. **Combustion air fan -** The inducer fan[s] maintains a positive flow of air through each tube to expel the flue gas and to maintain a negative pressure within the heat exchanger relative to the conditioned space.
4. **Safety devices -** A high limit controller with automatic reset to prevent the heat exchanger from operating at an excessive temperature is included. A centrifugal switch on the induced draft fan motor shaft prevents ignition until sufficient airflow is established through the heat exchanger. A rollout switch provides secondary airflow safety protection. The rollout switch discontinues furnace operation if the flue becomes restricted.
5. **Flue -** The furnace flue is shipped loose to protect it from damage during transit. The flue is field-mounted by the installing contractor. The flue outlet is located above the unit to help prevent recycling of combustion gases back through the heat exchanger.
6. **Agency certification -** Gas heating units are designed in conformance with ANSI Z83.8-2016/CSA 2.6-2016 standards and carry a CSA listing. All gas heating units have 81% steady state efficiency rated in accordance to 2023 Department of Energy Efficiency code. All gas heating units meet the requirement of AHRI CFRN Certification program and Code of Federal Regulations, 10 CFR Part 43, which references efficiency testing method in standard ANSI Z21.47.
7. **Valves -** A factory provided gas heater isolation valve is shipped loose for installation in the field by others. Punched holes are provided in the bottom [side] of the unit. The holes are capped for field to make suitable connection. A bottom [side] penetration option is provided with piping to extend out of the unit.

Modulating gas heat

To accomplish this, one furnace module is adapted for modulation. The selected furnace module is started and modulated, while the other ON/OFF furnace modules are staged, which allows a much broader modulation range. If the DAT is lower than the DAT heating setpoint, the heating demand increases. If the DAT is greater than the DAT heating setpoint, the heating demand decreases. Each gas heat module has a low fire and a high fire mode, which are individually energized in response to the heating demand. Low fire is always energized prior to high fire.

Freezestat alarm

The application supports a freezestat input that is normally closed. The input opens if:

- the OAT is greater than 40.0°F (adjustable), no action is taken and the unit operates normally.
- the OAT is 40.0°F or less (adjustable), the hot water valve opens 100%, the supply fan de-energizes, the economizer OA damper fully closes, and all other fans de-energize.

The control returns to normal if either

- Freezestat input closes
- the OAT rises above 40.0°F (adjustable).

Discharge air tempering

When the discharge air tempering is enabled, the unit must be in fan only or cooling mode when the OAT being brought in to ventilate the space causes the DAT to decrease below the DAT tempering setpoint. The air must be heated to prevent low temperature air from being delivered to the space. Discharge air tempering is available on both staged and modulated heating types. The compressors cannot start when discharge air tempering is active.

Economizer

When free cooling is available and there is a call for cooling, the outside air (OA) damper modulates to maintain the DAT to the OprClgDAT-SP. During the free cooling mode, if the OA damper modulates to 100% open and cannot maintain the cooling DAT setpoint, the compressors are staged or modulated to maintain the cooling DAT setpoint. The supply fan runs at the minimum cooling speed setpoint.

If the zone temperature exceeds the cooling zone temperature setpoint, the OA damper is 100% open, and all cooling stages are staged ON (or locked out due to compressor lockout), then the supply fan resets between minimum cooling speed and 100% to maintain zone temperature at the cooling zone temperature setpoint.

Changeover method

The unit can be equipped with one of three types of optional economizers: dry bulb, single enthalpy, or dual enthalpy. When the economizer selection variable is set to auto (default), the unit controller selects which economizer method to use based on which temperature and humidity sensors are present and reliable (see Table 135).

Table 135: Free cooling sensor requirements

	OAT	OAH	RAT	RAH
Dry bulb	X			
Single enthalpy	X	X		
Dual enthalpy	X	X	X	X

The order of economizer selection is dual enthalpy (all sensors reliable), single enthalpy (only OA sensors reliable), and dry bulb (only OAT sensor). The user can also manually select the economizer type when all required sensors are available. If economizer cooling alone is insufficient for the cooling load, the controller stages up compressors, one at a time, to meet demand.

Dry bulb

With the dry bulb economizer, the controller monitors the OAT only and compares it to a reference temperature setting. Outside air is deemed suitable for economizing when the OAT is less than the reference temperature setting. This method of economizing is effective, but it is prone to some changeover inefficiencies since it is based on sensible temperatures only and does not take outside air moisture content into consideration.

Single enthalpy

With the optional single enthalpy economizer, the controller monitors the OA enthalpy in addition to the OAT and compares it to a reference enthalpy setting and a reference temperature setting. Outside air is deemed suitable for economizing when the OA enthalpy is determined to be less than the reference enthalpy setting and the OAT is less than the reference temperature setting. This method of economizing allows the reference temperature setting to be set higher than the dry bulb economizer and is consequently a more efficient rooftop economizer.

Dual enthalpy

With the optional dual enthalpy economizer, the controller monitors and compares the OA and RA enthalpies in addition to comparing the OAT to the reference temperature setting. Outside air is deemed suitable for economizing when the OA enthalpy is determined to be less than the RA enthalpy and the OAT is less than the reference temperature setting. This method of economizing is the most accurate and provides the highest degree of energy efficiency for a rooftop economizer.

Auto

Auto selects the changeover method based on which sensors are present and reliable. If the OAT, RAT, OA humidity, and RA humidity values are reliable, then the dual enthalpy changeover method is used. If either of the RAT or RA humidity sensors is unreliable, then the single enthalpy changeover method is used. If the OA humidity sensor is unreliable, then the dry bulb changeover method is used.

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Table 136: Manufacturer fault detection and diagnostics (FDD)

Manufacturer fault	Description
Economizer - damper not modulating	Economizer damper actuator is inoperable or not responding to commands.
Economizer - not econ when available	Conditions are available for economizer operation but the unit does not use outside air for cooling.
Economizer - econ when not available	Conditions are not available for economizer operation but the unit uses outside air for cooling.
Economizer - excess outside air	Economizer damper is open greater than commanded position.

Fault detection and diagnostics (FDD)

As required per 2016 California Title 24 and ASHRAE 90.1-2022, the fault detection and diagnostics (FDD) system provides the alarms stated in Table 136.

ERW

The ERW can run in both cooling and heating modes. In cooling mode, if the conditions are suitable for economizing, the ERW disables, and the bypass dampers fully open.

The ERW enables when the absolute value of the difference between the return air and the outside air is greater than the energy recovery setpoint. If the OA and RA humidity values are reliable, then enthalpy is compared; otherwise dry bulb temperature is compared.

When the ERW stops for extended periods, it energizes briefly for cleaning and blocking protection.

Single speed ERW

When enabled, the ERW runs at full speed and the ERW bypass dampers fully close. When the exhaust air temperature (EAT) drops below the energy recovery low limit setpoint, the ERW bypass dampers fully open to bypass the ERW.

Variable speed ERW

When enabled, the ERW runs at full speed and the ERW bypass dampers fully close. When the EAT drops below the energy recovery low limit setpoint, the ERW slows to maintain a minimum EAT to prevent freezing. If the minimum speed does not maintain the temperature setpoint, the bypass dampers fully open to bypass the ERW.

Ventilation

Minimum OA damper reset

Fixed minimum

When the control is in the occupied mode and the fan output energizes, the OA damper is positioned to the minimum position setpoint (adjustable) unless another function commands it open or closed. When the control is in the unoccupied mode, the minimum OA position is zero.

Supply fan speed

When the control is in the occupied mode, the fan output energizes, and the output reaches 100%, the OA damper position is the damper_min_pos_high_speed_fan setpoint.

When the VFD output reaches 50% (adjustable) or less, the OA damper position is the damper_min_pos_low_speed_fan setpoint.

When the VFD output is between 50% and 100% (adjustable), the OA damper positions proportionally between damper_min_pos_high_speed_fan setpoint and damper_min_pos_low_speed_fan setpoint.

ⓘ **Note:** Supply fan speed minimum OA damper reset is not available when demand control ventilation (DCV) is enabled.

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Outside airflow measurement

This control sequence provides for the dynamic determination of the minimum damper position that meets the ASHRAE building ventilation standards. If the outside airflow input is not reliable, then the damper is positioned based upon the default minimum position.

When the fresh air intake value falls below the fresh air intake setpoint, the OA damper position increases above its minimum position until the fresh air intake value equals the fresh air intake setpoint.

When the fresh air intake value rises above the fresh air intake setpoint, the OA damper position decreases until the fresh air intake value equals the fresh air intake setpoint or it reaches minimum position setpoint.

When DCV is enabled on a unit with an outdoor airflow measurement station installed, the fresh air intake setpoint resets upwards until the CO_2 level falls below the DCV setpoint.

ⓘ **Note:** The low ambient minimum position may force the damper position below the current setpoint and disable the air monitoring station reset.

External control

The OA damper is controlled directly by a third party (communication or voltage signal). External control takes priority over all other damper control except unit protection. A customer terminal board must be installed to use external control.

Low MAT limiting

When the control is in the occupied mode, the economizer is not active, the fan output is energized, and MAT is below the MAT cooling limit, the damper begins closing. When the MAT is equal to or above the MAT cooling limit, it exits the low MAT limiting mode.

Demand control ventilation (DCV)

If optional CO_2 sensors are connected to the unit, the controller can reset the minimum OA damper position based on demand. The controller has built-in sequences for indoor CO_2 and comparative CO_2. Demand ventilation remains active as long as the unit is in the occupied mode of operation.

Indoor CO_2

The controller monitors the CO_2 level within the building. If the CO_2 level rises above the CO_2 setpoint, the controller temporarily increases the minimum OA damper position or minimum outside airflow rate to increase ventilation. If the CO_2 level drops below the CO_2 setpoint, the controller decreases the minimum OA damper position or minimum outside airflow rate to decrease ventilation.

Comparative CO_2

If differential DCV is enabled and the outdoor air CO_2 level is greater than or equal to the indoor air CO_2 level by more than the demand ventilation differential setpoint, then the OA damper is overridden closed regardless of economizer suitability. Otherwise, the indoor CO_2 sequence is followed.

Pre-occupancy purge

When the unit is in internal schedule, if pre-occupancy purge is enabled, effective occupancy is unoccupied, the MAT reading is reliable, and the damper is not controlled by higher-priority logic, then pre-occupancy purge mode initiates immediately when the time until occupancy equals the pre-occupancy purge time. Pre-occupancy purge runs until the pre-occupancy purge timer expires or if any of the entry conditions required for pre-occupancy purge mode are violated.

Once in pre-occupancy purge mode, the VAV heat command relay turns on and the system continues to monitor the MAT. If MAT falls below MAT cooling limit, the system limits the outdoor air damper position until the MAT rises above MAT cooling limit. If the outdoor air damper fully opens, the system resumes regular pre-occupancy purge.

If using an indoor CO_2 sensor and low CO_2 control point is satisfied, then the mode terminates.

Continuous ventilation

When enabled, the supply fan runs continuously during occupied mode, even when no heating or cooling is required. When continuous ventilation is disabled, the supply fan cycles OFF when no heating or cooling is required.

Smoke control

If smoke control mode is in one of its active modes, the OA damper sets to 0% or 100%. If smoke control mode is in purge or pressurization mode, the OA damper is 100%. If smoke control mode is in de-pressurization, the OA damper is 0%.

The smoke control sequences are used whenever the safety binary inputs turn ON. It must be noted that the smoke control sequences are not normal operation for rooftop units and are only utilized when smoke or other airborne contaminants must be quickly removed from the conditioned space.

Whenever a smoke control sequence starts, all normal heating and cooling functions stop regardless of the control inputs. This includes all running compressors, condenser fans, heat stages, heating valves, and furnaces.

There are three safety binary inputs available on the customer terminal board. Each input is assigned one of the three sequences. This makes it possible to start and stop any of the three sequences at any time because there are three inputs available for the three sequences. To avoid problems when more than one input is active at the same time, each input has a priority. The sequence assigned to the active input with the highest priority is used over sequences assigned to inputs with a lower priority.

When either one of the safety input mode 1, 2, or 3 is ON, the smoke control mode is assigned one of the following states according to the binary input priorities and the sequence settings:

ⓘ **Note:** YORK rooftop units offer auxiliary smoke control points that are available for smoke purge, pressurization, and de-pressurization sequences. These sequences and functions are not part of a listed UL 864 UUKL Smoke Control System, nor are they intended to be a replacement for a listed UL 864 UUKL Smoke Control System. Johnson Controls does offer options for listed UL 864 Smoke Control Systems for example:

a) Metasys Release 8.1 UL cUL 864 10th Ed. UUKL / ORD-C100-13 UUKLC Smoke Control System; and

b) Simplex 4100ES Fire Control Units (Addressable Fire Detection and Control Basic Panel Modules and Accessories) which are listed to UL 864, Fire Detection and Control (UOJZ), Smoke Control Service (UUKL), and Releasing Device Service (SYZV).

Only listed smoke control equipment complying with UL 864 is typically considered acceptable to comply with the associated Sections of the Building Code, Mechanical Code and ANSI NFPA 92 / 92A / 92B requirements, and are intended to perform specific functions related to Smoke Control Systems. If a listed UL 864 Smoke Control System is required, please contact Johnson Controls for further information.

Depressurize

The depressurize mode evacuates, or negatively pressurizes, the building or space to draw air through the walls from adjacent spaces or outside the building envelope. When this sequence starts, the following occurs:

- Sets the supply fan output to OFF.
- Starts the return fan (exhaust fan output) if not already ON.
- Sets exhaust and return fan VFD to 100%.
- Sets OA damper position to 0%.
- Sets RA damper position to 100%.
- Sets EA damper position to 100%.

Pressurization

The pressurization mode pressurizes the building or space to force the air inside the space through the walls to adjacent spaces or outside the building envelope. When this sequence starts, the following occurs:

- Sets supply fan output to ON.
- If the unit type is MZVAV, the supply fan VFD speed maintains the active duct pressure setpoint and the VAV heat command relay turns ON.
- If the unit type is SZVAV, it sets the supply fan VFD speed to 100%.
- Sets exhaust fan output to OFF.
- Sets return fan output to OFF.
- Sets exhaust and return fan VFD to 0%.
- Sets OA damper position to 100%.
- Sets RA damper position to 0%.
- Sets EA damper position to 0%.

Purge

The purge mode displaces the air inside the space with fresh outside air. When this sequence starts, the following occurs:

- Sets supply fan output to ON.
- If the unit type is MZVAV, the supply fan VFD speed maintains the active duct pressure setpoint and the VAV heat command relay turns ON.
- If unit type is SZVAV, it sets the supply fan VFD speed to 100%.
- Starts the return fan (exhaust fan output) if not already ON.
- Sets exhaust and return fan VFD to 100%.
- Sets OA damper position to 100%.
- Sets RA damper position to 0%.
- Sets EA damper position to 100%.

Humidity control

Humidity sensor

The controller compares the humidity against a setpoint to determine whether to place the unit in dehumidification, humidification, or temperature control only mode. Selectable humidity sensors are zone, return, or external control (BAS communication).

Dehumidification

Modulating hot gas reheat (HGRH)

When dehumidification is enabled, the unit enters dehumidification mode if the humidity sensor rises above the dehumidification setpoint while the unit is in cooling or satisfied mode and the outside air temperature is greater than 55.0°F. The compressors are controlled based on humidity and the reheat device is controlled based on temperature. It also allows for dehumidification when the system is in mechanical cooling or when temperature requirements are satisfied.

When humidity requirements are satisfied, the HGRH status is off-idle and the HGRH valve is closed.

When HGRH status is ON, the staging of compressors is controlled so that the air leaving the evaporator coil is controlled to an evaporator temperature setpoint. This ensures that water condenses and is removed from the air. The HGRH valve is then modulated so that it reheats the discharge air to the HGRH temperature setpoint.

While the system is in mechanical cooling, the HGRH temperature setpoint is equal to the operational cooling DAT setpoint. This is necessary because the compressors can be controlled to an evaporator temperature setpoint lower than the operational cooling DAT setpoint to remove additional moisture content from the air. This strategy allows humidity to be removed from the air while attempting to maintain normal cooling DATs.

While the system is satisfied, the HGRH valve is controlled so that the HGRH temperature setpoint resets between the operational cooling DAT setpoint and the occupied cooling setpoint. This strategy attempts to remove humidity from the air without affecting the temperature of the space.

The controller uses the humidity sensor as the basis for the evaporator temperature setpoint. When the humidity first rises above setpoint, the evaporator temperature setpoint is equal to the low cooling DAT setpoint. As humidity continues to rise, the evaporator temperature setpoint is lowered to remove additional moisture from the air.

If the unit enters heating mode or the OAT falls below 54.0°F, dehumidification mode ends regardless of humidity.

A zone temperature sensor must be installed for dehumidification during unoccupied mode. Unoccupied dehumidification is not allowed when only a return air temperature sensor is installed.

HGRH bleed valve

The HGRH bleed valve is a solenoid valve that connects the HGRH coil to the suction line. The purpose of the bleed valve is to bleed off any remaining or trapped liquid in the HGRH coil when dehumidification mode is not active. When the unit enters HGRH on-normal command, the bleed valve opens. When the HGRH transitions to off-idle mode and after a 5-minute delay, the bleed valve closes.

Humidification output

The unit is placed in humidification mode, if the humidity sensor falls below the humidification setpoint and the unit is not in cooling mode. The humidifier is enabled, and the humidifier valve modulates to maintain the humidity setpoint as sensed by the humidity sensor. A humidity high limit overrides the output if necessary, to prevent the DA humidity from exceeding the DA humidity high limit setpoint. Humidification is not allowed in cooling mode.

Twinning

The application of having two or more separate rooftop units tied into one common main duct trunk line is known as twinning. The application is compatible with BACnet. The twinning process allows for redundancy with the cooling or heating load. All twinned units operate concurrently and are not sequenced based on the cooling or heating load. It allows for the user to design the system in an N+1 arrangement, in which three units are sized to handle the load and the fourth is available as a backup. The user is then able to shut down one of the running units and enable the backup via the BAS.

Each rooftop unit requires an isolation damper with an end switch to ensure the damper is fully open before the supply fan can start. Each rooftop unit in a twinning application also requires its own duct static pressure sensor to allow the rooftop units to run independently if one or more units are shut down for maintenance or BAS communication is lost. Each unit has a manual reset high duct pressure switch installed to prevent over pressurization of the duct.

In a twinning system, several features are synchronized while others can operate independently. The method used to synchronize these features is for each twinned unit in the group to broadcast the key values so it can be used by the other rooftop units in the group. The approach is referred to as independent twinning.

The idea is that if each unit has the exact same values, then each rooftop unit can execute the exact same control algorithm. This has the advantage of being more robust to communication errors or sensor failures and less complex than a manager and subordinate unit arrangement. If one unit fails or is manually shut down, the remaining units continue to run without interruption. In the manager and subordinate unit arrangement, if the manager unit disables, the failover logic to a different manager is more complicated and may result in a disruption in the system. Independent twinning prevents such disruptions or failures in the system.

The synchronized features include supply fan control, economizer suitability, occupancy, demand control ventilation, exhaust fan control, and smoke control.

The supply fan control must be synchronized to maintain DA static pressure between all units serving the same duct. This requires all reliable DA static pressure values from the rooftop units to be averaged before passing to the proportional-integral-derivative (PID). The static pressure setpoint must also be synchronized, and any change to one setpoint must be shared with the other rooftop units. This allows the PID in each rooftop unit to calculate the same output value and run all the supply fans at the same speed.

During start-up of a previously shutdown rooftop unit, the supply fan speed slowly ramps up until it matches the fan speeds of the rooftop units currently in operation. When the additional rooftop unit begins ramping, the static pressure increases, causing the other rooftop unit fans speeds to slow down to reach setpoint. Once the rooftop unit fan speed matches the existing rooftop units, it releases into control.

The economizer suitability must also be synchronized to allow all the units to use the OA damper for free cooling when available. This also avoids a situation where one unit is operating in economizer mode while another unit operates in mechanical cooling mode.

The occupancy for the twinned units must also be synchronized to allow all units to switch between occupied and unoccupied modes simultaneously. This includes the occupancy schedule and warm-up/cool down if enabled.

The DCV is synchronized to allow the OA damper minimum position to be reset equally between the units. This requires the indoor CO_2 values from the units to be shared and the maximum to be passed to the reset logic to ensure sufficient outside air is brought in for proper ventilation. The indoor CO_2 setpoint also synchronizes so the reset calculation is the same across all units.

The exhaust fan system must be synchronized to allow for proper building pressurization. This requires the building static pressure values from each unit to be averaged before passing to the PID. The building static pressure setpoint also synchronizes, and any change to one setpoint must be shared with the other rooftop units.

The smoke control feature is synchronized to ensure all units properly switch between the purge, pressurization, or depressurization modes. This requires the three safety binary inputs and their priorities on each unit to be shared so if any binary input is ON, all twinned units respond the same way.

The temperature control, return fan systems, and safety shutdowns can operate individually on each unit. The temperature setpoints synchronize to allow for similar operation between the units. The temperature loops are not required to be as tightly coupled as the supply and exhaust fan systems.

The twinning feature also has the following additional requirements:

- Customer terminal board required for twinning application
- VAV system types only
- All units must be the same tonnage
- Fan systems operate together based upon average duct static pressure
- External control not supported
- The same static pressure probe can be connected to all discharge pressure transducers
- The same static pressure probe can be connected to all building pressure transducers
- A supervisory device must be installed on the network
- Maximum of 4 twinned units on a single MSTP bus. Units can be twinned as one set of four or two sets of two
- Maximum of forty units are twinned on a BACnet IP trunk
- BACnet MSTP or BACnet IP only
- Twinning is not possible on wireless field bus networks or with RTUs that interface to the BAS using Modbus or N2
- Isolation dampers with end switches must be installed on each twinned unit.

Unit protection

The unit utilizes several system safeties to ensure unit protection, including low voltage, compressor system status monitoring, low and high pressure cutout monitoring, suction temperature monitoring, freeze protection, fan overload, shutdown, furnace limit, and MAT low limit.

Conditions that cause the unit to be locked out require user intervention. Refrigeration fault lockouts cannot be reset from the BAS. All other fault lockouts can be reset from network input or local UI.

Refrigerant detection system (RDS)

The RDS provides R-454B leak protection. The system is connected into the unit controls and automatically starts a sequence to dilute refrigerant gas. In addition, the system triggers an alarm when it senses the presence of refrigerant in the cabinet, indicating a leak equal to 25% of the Lower Flammability Limit. The RDS contains factory or field installed sensors that are located to ensure accurate and timely sensing of a leak.

Unit shutdown

Any time the normally closed contact opens, all relay outputs immediately de-energize and the unit shuts down. An alarm generates and displays on the unit controller.

Unit test

Start-up wizard

Field service technicians use the start-up wizard function to complete the unit configuration and start-up. It is a sequence of automatic self-tests and manually verified tests that are required for start-up documentation. For each test, a PASS/FAIL, date/time stamp, and relevant system data are recorded. After the testing sequence completes, a report with the recorded results is stored and downloadable via USB.

Air balancing wizard

The air balancing wizard is a grouping of configuration screens used for testing and calibrating airflow measuring stations, overriding damper positions, overriding fan speeds, and other functions to assist service technicians and air balancers.

Commissioning mode

Commissioning mode is a function used for manually operating the unit during a service call or commissioning demonstration. It allows for the unit components to be operated individually. The unit must not be operated in this mode for an extended period, therefore commissioning mode terminates automatically after 60 minutes unless extended at the local UI for another 60 minutes.

Cooling and heating is disabled unless the supply fan status is proven. Unit protection and safeties remain active and logged during commissioning mode.

Weights and dimensions

Weights - 90 ton to 150 ton unit

Figure 10: Standard cabinet unit sections

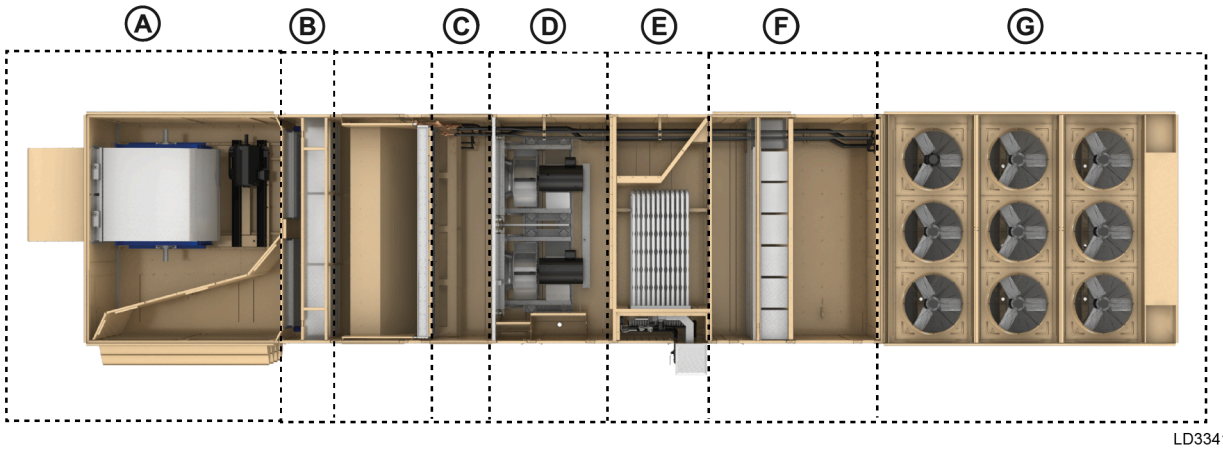

Table 137: Standard cabinet unit sections

Item	Description
A	Economizer cabinet
B	Draw-through filter cabinet
C	Evaporator cabinet
D	Supply fan cabinet
E	Heat and discharge cabinet[4]
F	Small post-evaporator blank cabinet, discharge plenum cabinet: upstream of condenser section
G	Condenser fan cabinet with compressors

Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
Base unit section weights - standard cabinet, see Figure 10					
Economizer cabinet[1]	1,518	1,518	1,674	1,674	1,674
Energy recovery wheel cabinet	4,516	4,545	5,383	5,400	5,400
Pre evap blank cabinet	792	792	792	792	792
Draw-through filter cabinet - vertical filter, 4-in.	258	258	258	258	258
Draw-through filter cabinet - angle, rigid, bag	450	450	450	450	450
Evaporator cabinet	1,022	1,022	1,550	1,550	1,550
Supply fan cabinet (60 in. section)[16]	2,681	2,681	2,684	2,684	2,684
Supply fan cabinet (74 in. section)[16]	2,816	2,816	2,819	2,819	2,819
Heat section cabinet (requires discharge plenum)[3]	1,587	1,587	1,446	1,446	1,446
Heat with (discharge through heat section)[4]	1,808	1,808	1,659	1,659	1,659
Small post-evaporator blank cabinet	571	571	900	900	900
Large post-evaporator blank cabinet	1,425	1,425	1,759	1,759	1,759
Discharge plenum cabinet	1,028	1,028	1,175	1,175	1,175
Motor-supply fan					
Direct drive plenum supply fan components					
Supply fan - 10 HP 230/460V ODP	1,156	1,156	—	—	—
Supply fan - 15 HP 230/460V ODP	1,372	1,372	—	—	—
Supply fan - 20 HP 230/460V ODP	1,332	1,332	1,432	1,432	1,432
Supply fan - 25 HP 230/460V ODP	1,588	1,588	1,688	1,688	1,688

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Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
Supply fan - 30 HP 230/460V ODP	1,582	1,582	1,682	1,682	1,682
Supply fan - 40 HP 230/460V ODP	1,668	1,668	1,768	1,768	1,768
Supply fan - 50 HP 230/460V ODP	1,820	1,820	1,920	1,920	1,920
Supply fan - 60 HP 230/460V ODP	—	—	2,211	2,211	2,211
Supply fan - 10 HP 230/460V TEFC	1,198	1,198	—	—	—
Supply fan - 15 HP 230/460V TEFC	1,420	1,420	—	—	—
Supply fan - 20 HP 230/460V TEFC	1,464	1,464	1,564	1,564	1,564
Supply fan - 25 HP 230/460V TEFC	1,668	1,668	1,768	1,768	1,768
Supply fan - 30 HP 230/460V TEFC	1,720	1,720	1,820	1,820	1,820
Supply fan - 40 HP 230/460V TEFC	2,046	2,046	2,146	2,146	2,146
Supply fan - 50 HP 230/460V TEFC	2,178	2,178	2,278	2,278	2,278
Supply fan - 60 HP 230/460V TEFC	—	—	2,799	2,799	2,799
Supply fan - 10 HP 575V ODP	1,135	1,135	—	—	—
Supply fan - 15 HP 575V ODP	1,303	1,303	—	—	—
Supply fan - 20 HP 575V ODP	1,357	1,357	1,457	1,457	1,457
Supply fan - 25 HP 575V ODP	1,520	1,520	1,620	1,620	1,620
Supply fan - 30 HP 575V ODP	1,553	1,553	1,653	1,653	1,653
Supply fan - 40 HP 575V ODP	1,677	1,677	1,777	1,777	1,777
Supply fan - 50 HP 575V ODP	1,810	1,810	1,840	1,840	1,840
Supply fan - 60 HP 575V ODP	—	—	1,910	1,910	1,910
Supply fan - 10 HP 575V TEFC	1,210	1,210	—	—	—
Supply fan - 15 HP 575V TEFC	1,388	1,388	—	—	—
Supply Fan - 20 HP 575V TEFC	1,463	1,463	1,563	1,563	1,563
Supply fan - 25 HP 575V TEFC	1,624	1,624	1,724	1,724	1,724
Supply fan - 30 HP 575V TEFC	1,711	1,711	1,811	1,811	1,811
Supply fan - 40 HP 575V TEFC	2,031	2,031	2,131	2,131	2,131
Supply fan - 50 HP 575V TEFC	2,270	2,270	2,247	2,247	2,247
Supply fan - 60 HP 575V TEFC	—	—	2,811	2,811	2,811
Exhaust/Return/Outside air economizer section					
Exhaust fan	1,000	1,500	1,500	1,700	1,700
Economizer - no fan	883	883	1,001	1,001	1,001
Economizer with exhaust fan	3,203	3,730	4,007	4,225	4,225
Economizer - vertical return fan	2,141	2,123	2,552	2,530	2,530
Economizer - horizontal return fan	2,552	2,544	3,008	2,998	2,998
Energy Recovery Wheel (ERW)					
Low CFM	786	786	1,301	1,301	1,301
High CFM	1,290	1,290	1,492	1,492	1,492
Motor-exhaust/Return fan					
Vertical Return Fan with Motor Asm 10 HP 1200 208-230/460V ODP	1,214	1,434	1,434	1,698	1,698
Vertical Return Fan with Motor Asm 15 HP 1200 208-230/460V ODP	1,315	1,535	1,535	1,799	1,799
Vertical return fan with motor Asm 20 HP 1200 208-230/460V ODP	1,383	1,603	1,603	1,867	1,867
Vertical return fan with motor Asm 25 HP 1200 208-230/460V ODP	1,451	1,671	1,671	1,935	1,935
Vertical return fan with motor Asm 30 HP 1200 208-230/460V ODP	1,514	1,734	1,734	1,998	1,998
Vertical return fan with motor Asm 40 HP 1200 208-230/460V ODP	1,743	1,963	1,963	2,227	2,227
Vertical return fan with motor Asm 50 HP 1200 208-230/460V ODP	—	1,995	1,995	2,259	2,259
Vertical return fan with motor Asm 60 HP 1200 208-230/460V ODP	—	—	2,153	2,417	2,417
Vertical return fan with motor Asm 75 HP 1200 208-230/460V ODP	—	—	—	2,449	2,449
Vertical return fan with motor Asm 10 HP 1200 208-230/460V TEFC	1,238	1,458	1,458	1,722	1,722
Vertical return fan with motor Asm 15 HP 1200 208-230/460V TEFC	1,392	1,612	1,612	1,876	1,876
Vertical return fan with motor Asm 20 HP 1200 208-230/460V TEFC	1,437	1,657	1,657	1,921	1,921
Vertical return fan with motor Asm 25 HP 1200 208-230/460V TEFC	1,543	1,763	1,763	2,027	2,027
Vertical return fan with motor Asm 30 HP 1200 208-230/460V TEFC	1,589	1,809	1,809	2,073	2,073
Vertical return fan with motor Asm 40 HP 1200 208-230/460V TEFC	1,889	2,109	2,109	2,373	2,373

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Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
Vertical return fan with motor Asm 50 HP 1200 208-230/460V TEFC		2,109	2,109	2,373	2,373
Vertical return fan with motor Asm 60 HP 1200 208-230/460V TEFC	—	—	2,359	2,623	2,623
Vertical return fan with motor Asm 75 HP 1200 208-230/460V TEFC	—	—	—	2,674	2,674
Vertical return fan with motor Asm 10 HP 1200 575V ODP	1,214	1,434	1,434	1,698	1,698
Vertical return fan with motor Asm 15 HP 1200 575V ODP	1,315	1,535	1,535	1,799	1,799
Vertical return fan with motor Asm 20 HP 1200 575V ODP	1,383	1,603	1,603	1,867	1,867
Vertical return fan with motor Asm 25 HP 1200 575V ODP	1,468	1,672	1,672	1,952	1,952
Vertical return fan with motor Asm 30 HP 1200 575V ODP	1,516	1,736	1,736	2,000	2,000
Vertical return fan with motor Asm 40 HP 1200 575V ODP	1,743	1,963	1,963	2,227	2,227
Vertical return fan with motor Asm 50 HP 1200 575V ODP	—	1,995	1,995	2,259	2,259
Vertical return fan with motor Asm 60 HP 1200 575V ODP	—	—	2,153	2,417	2,417
Vertical return fan with motor Asm 75 HP 1200 575V ODP	—	—	—	2,449	2,449
Vertical return fan with motor Asm 10 HP 1200 575V TEFC	1,237	1,457	1,457	1,721	1,721
Vertical return fan with motor Asm 15 HP 1200 575V TEFC	1,390	1,610	1,610	1,874	1,874
Vertical return fan with motor Asm 20 HP 1200 575V TEFC	1,435	1,655	1,655	1,919	1,919
Vertical return fan with motor Asm 25 HP 1200 575V TEFC	1,558	1,778	1,778	2,042	2,042
Vertical return fan with motor Asm 30 HP 1200 575V TEFC	1,587	1,807	1,807	2,071	2,071
Vertical return fan with motor Asm 40 HP 1200 575V TEFC	1,886	2,106	2,106	2,370	2,370
Vertical return fan with motor Asm 50 HP 1200 575V TEFC	—	2,106	2,106	2,370	2,370
Vertical return fan with motor Asm 60 HP 1200 575V TEFC	—	—	2,353	2,617	2,617
Vertical return fan with motor Asm 75 HP 1200 575V TEFC	—	—	—	2,669	2,669
Horizontal return fan with motor Asm 10 HP 1200 208-230/460V ODP	1,214	1,309	1,309	1,551	1,551
Horizontal return fan with motor Asm 15 HP 1200 208-230/460V ODP	1,315	1,410	1,410	1,652	1,652
Horizontal return fan with motor Asm 20 HP 1200 208-230/460V ODP	1,383	1,478	1,478	1,720	1,720
Horizontal return fan with motor Asm 25 HP 1800 208-230/460V ODP	1,451	1,546	1,546	1,788	1,788
Horizontal return fan with motor Asm 30 HP 1800 208-230/460V ODP	1,514	1,609	1,609	1,851	1,851
Horizontal return fan with motor Asm 40 HP 1800 208-230/460V ODP	1,743	1,838	1,838	2,080	2,080
Horizontal return fan with motor Asm 50 HP 1200 208-230/460V ODP	—	1,870	1,870	2,112	2,112
Horizontal return fan with motor Asm 60 HP 1200 208-230/460V ODP	—	—	2,028	2,270	2,270
Horizontal return fan with motor Asm 75 HP 1200 208-230/460V ODP	—	—	—	2,302	2,302
Horizontal return fan with motor Asm 10 HP 1200 208-230/460V TEFC	1,238	1,333	1,333	1,575	1,575
Horizontal return fan with motor Asm 15 HP 1200 208-230/460V TEFC	1,392	1,487	1,487	1,729	1,729
Horizontal return fan with motor Asm 20 HP 1200 208-230/460V TEFC	1,437	1,532	1,532	1,774	1,774
Horizontal return fan with motor Asm 25 HP 1800 208-230/460V TEFC	1,543	1,638	1,638	1,880	1,880
Horizontal return fan with motor Asm 30 HP 1800 208-230/460V TEFC	1,589	1,684	1,684	1,926	1,926
Horizontal return fan with motor Asm 40 HP 1800 208-230/460V TEFC	1,889	1,984	1,984	2,226	2,226
Horizontal return fan with motor Asm 50 HP 1200 208-230/460V TEFC	—	1,984	1,984	2,226	2,226

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Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
Horizontal return fan with motor Asm 60 HP 1200 208-230/460V TEFC	—	—	2,234	2,476	2,476
Horizontal return fan with motor Asm 75 HP 1200 208-230/460V TEFC	—	—	—	2,527	2,527
Horizontal return fan with motor Asm 10 HP 1200 575V ODP	1,214	1,309	1,309	1,551	1,551
Horizontal return fan with motor Asm 15 HP 1200 575V ODP	1,315	1,410	1,410	1,652	1,652
Horizontal return fan with motor Asm 20 HP 1200 575V ODP	1,383	1,477	1,477	1,719	1,719
Horizontal return fan with motor Asm 25 HP 1800 575V ODP	1,468	1,547	1,547	1,789	1,789
Horizontal return fan with motor Asm 30 HP 1800 575V ODP	1,516	1,611	1,611	1,853	1,853
Horizontal return fan with motor Asm 40 HP 1800 575V ODP	1,743	1,838	1,838	2,080	2,080
Horizontal return fan with motor Asm 50 HP 1200 575V ODP	—	1,868	1,868	2,112	2,112
Horizontal return fan with motor Asm 60 HP 1200 575V ODP	—	—	2,026	2,270	2,270
Horizontal return fan with motor Asm 75 HP 1200 575V ODP	—	—	—	2,302	2,302
Horizontal return fan with motor Asm 10 HP 1200 575V TEFC	1,237	1,332	1,332	1,574	1,574
Horizontal return fan with motor Asm 15 HP 1200 575V TEFC	1,390	1,485	1,485	1,727	1,727
Horizontal return fan with motor Asm 20 HP 1200 575V TEFC	1,435	1,530	1,530	1,772	1,772
Horizontal return fan with motor Asm 25 HP 1800 575V TEFC	1,558	1,653	1,653	1,895	1,895
Horizontal return fan with motor Asm 30 HP 1800 575V TEFC	1,587	1,682	1,682	1,924	1,924
Horizontal return fan with motor Asm 40 HP 1800 575V TEFC	1,886	1,981	1,981	2,223	2,223
Horizontal return fan with motor Asm 50 HP 1200 575V TEFC	—	1,981	1,981	2,223	2,223
Horizontal return fan with motor Asm 60 HP 1200 575V TEFC	—	—	2,228	2,470	2,470
Horizontal return fan with motor Asm 75 HP 1200 575V TEFC	—	—	—	2,522	2,522
ERW fan with 5 HP motor 208-230/460V ODP	1,137	1,639	1,643	1,843	1,843
ERW fan with 7.5 HP motor 208-230/460V ODP	1,168	1,670	1,674	1,874	1,874
ERW fan with 10 HP motor 208-230/460V ODP	1,181	1,683	1,687	1,887	1,887
ERW fan with 15 HP motor 208-230/460V ODP	1,304	1,806	1,810	2,010	2,010
ERW fan with 20 HP motor 208-230/460V ODP	1,304	1,806	1,810	2,010	2,010
ERW fan with 25 HP motor 208-230/460V ODP	1,409	1,910	1,914	2,114	2,114
ERW fan with 30 HP motor 208-230/460V ODP	1,437	1,938	1,942	2,142	2,142
ERW fan with 40 HP motor 208-230/460V ODP	1,464	1,965	1,969	2,169	2,169
ERW fan with 50 HP motor 208-230/460V ODP	1,541	2,042	2,046	2,246	2,246
ERW fan with 60 HP motor 208-230/460V ODP	—	—	2,207	2,407	2,407
ERW fan with 75 HP motor 208-230/460V ODP	—	—	2,338	2,538	2,538
ERW fan with 5 HP motor 208-230/460V TEFC	1,146	1,648	1,652	1,852	1,852
ERW fan with 7.5 HP motor 208-230/460V TEFC	1,204	1,706	1,710	1,910	1,910
ERW fan with 10 HP motor 208-230/460V TEFC	1,215	1,717	1,721	1,921	1,921
ERW fan with 15 HP motor 208-230/460V TEFC	1,324	1,826	1,830	2,030	2,030
ERW fan with 20 HP motor 208-230/460V TEFC	1,363	1,865	1,869	2,069	2,069
ERW fan with 25 HP motor 208-230/460V TEFC	1,497	1,997	2,001	2,201	2,201
ERW fan with 30 HP motor 208-230/460V TEFC	1,497	1,997	2,001	2,201	2,201
ERW fan with 40 HP motor 208-230/460V TEFC	1,664	2,165	2,169	2,369	2,369
ERW fan with 50 HP motor 208-230/460V TEFC	1,716	2,217	2,221	2,421	2,421
ERW fan with 60 HP motor 208-230/460V TEFC	—	—	2,500	2,700	2,700
ERW fan with 75 HP motor 208-230/460V TEFC	—	—	2,544	2,744	2,744
ERW fan with 5 HP motor 575V ODP	1,145	1,647	1,651	1,851	1,851
ERW fan with 7.5 HP motor 575V ODP	1,183	1,685	1,689	1,889	1,889
ERW fan with 10 HP motor 575V ODP	1,185	1,687	1,691	1,891	1,891
ERW fan with 15 HP motor 575V ODP	1,266	1,768	1,772	1,972	1,972
ERW fan with 20 HP motor 575V ODP	1,304	1,806	1,810	2,010	2,010
ERW fan with 25 HP motor 575V ODP	1,390	1,890	1,894	2,094	2,094
ERW fan with 30 HP motor 575V ODP	1,437	1,938	1,942	2,142	2,142
ERW fan with 40 HP motor 575V ODP	1,468	1,969	1,973	2,173	2,173
ERW fan with 50 HP motor 575V ODP	1,534	2,034	2,038	2,238	2,238

Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
ERW fan with 60 HP motor 575V ODP	—	—	2,203	2,403	2,403
ERW fan with 75 HP motor 575V ODP	—	—	2,317	2,517	2,517
ERW fan with 5 HP motor 575V TEFC	1,142	1,644	1,648	1,848	1,848
ERW fan with 7.5 HP motor 575V TEFC	1,204	1,706	1,710	1,910	1,910
ERW fan with 10 HP motor 575V TEFC	1,218	1,720	1,724	1,924	1,924
ERW fan with 15 HP motor 575V TEFC	1,312	1,814	1,818	2,018	2,018
ERW fan with 20 HP motor 575V TEFC	1,347	1,849	1,853	2,053	2,053
ERW fan with 25 HP motor 575V TEFC	1,495	1,995	1,999	2,199	2,199
ERW fan with 30 HP motor 575V TEFC	1,483	1,983	1,987	2,187	2,187
ERW fan with 40 HP motor 575V TEFC	1,643	2,144	2,148	2,348	2,348
ERW fan with 50 HP motor 575V TEFC	1,712	2,213	2,217	2,417	2,417
ERW fan with 60 HP motor 575V TEFC	—	—	2,507	2,707	2,707
ERW fan with 75 HP motor 575V TEFC	—	—	2,543	2,743	2,743
5 HP motor 230/460V ODP	137	137	143	143	143
7.5 HP motor 230/460V ODP	168	168	174	174	174
10 HP motor 230/460V ODP	181	181	187	187	187
15 HP motor 230/460V ODP	304	304	310	310	310
20 HP motor 230/460V ODP	304	304	310	310	310
25 HP motor 230/460V ODP	410	410	414	414	414
30 HP motor 230/460V ODP	438	438	442	442	442
40 HP motor 230/460V ODP	465	465	469	469	469
50 HP motor 230/460V ODP	541	541	546	546	546
60 HP motor 230/460V ODP	701	701	707	707	707
75 HP motor 230/460V ODP	832	832	838	838	838
5 HP motor 230/460V TEFC	146	146	152	152	152
7.5 HP motor 230/460V TEFC	204	204	210	210	210
10 HP motor 230/460V TEFC	215	215	221	221	221
15 HP motor 230/460V TEFC	324	324	330	330	330
20 HP motor 230/460V TEFC	363	363	369	369	369
25 HP motor 230/460V TEFC	497	497	501	501	501
30 HP motor 230/460V TEFC	497	497	501	501	501
40 HP motor 230/460V TEFC	664	664	669	669	669
50 HP motor 230/460V TEFC	716	716	721	721	721
60 HP motor 230/460V TEFC	994	994	1,000	1,000	1,000
75 HP motor 230/460V TEFC	1,038	1,038	1,044	1,044	1,044
5 HP motor 575V ODP	145	145	151	151	151
7.5 HP motor 575V ODP	183	183	189	189	189
10 HP motor 575V ODP	185	185	191	191	191
15 HP motor 575V ODP	266	266	272	272	272
20 HP motor 575V ODP	304	304	310	310	310
25 HP motor 575V ODP	390	390	394	394	394
30 HP motor 575V ODP	437	437	442	442	442
40 HP motor 575V ODP	468	468	473	473	473
50 HP motor 575V ODP	534	534	538	538	538
60 HP motor 575V ODP	697	697	703	703	703
75 HP motor 575V ODP	811	811	817	817	817
5 HP motor 575V TEFC	142	142	148	148	148
7.5 HP motor 575V TEFC	204	204	210	210	210
10 HP motor 575V TEFC	218	218	224	224	224
15 HP motor 575V TEFC	312	312	318	318	318
20 HP motor 575V TEFC	347	347	353	353	353
25 HP motor 575V TEFC	495	495	499	499	499
30 HP motor 575V TEFC	483	483	487	487	487

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Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
40 HP motor 575V TEFC	643	643	648	648	648
50 HP motor 575V TEFC	712	712	717	717	717
60 HP motor 575V TEFC	1,001	1,001	1,007	1,007	1,007
75 HP motor 575V TEFC	989	989	995	995	995
Add 1 in.	24	24	24	24	24
2 in.	24	24	24	24	24
2 in. seismic	39	39	39	39	39
Inlet guard	14	14	16	16	16
Belt guard	94	110	129	129	129
Shaft grounding ring	2	2	2	2	2
Extended grease lines	2	2	2	2	2
Draw-through filters					
Angled filter rack - 2 in. throwaway filters	263	263	263	263	263
Angled filter rack - 2 in. MERV 8 filters	269	269	269	269	269
MERV 15 bag final filters with 2 in. pre filters	379	379	299	299	299
MERV 14 rigid final filters with 2 in. pre filters	447	447	428	428	428
Vertical filter rack - 4 in. MERV 8 filters	228	228	218	218	218
Final filters					
MERV 15 bag final filters with 2 in. pre filters	375	375	367	367	367
MERV 14 rigid final filters with 2 in. pre filters	439	439	416	416	416
MERV 17 HEPA final filters with 2 in. pre filters	1,293	1,293	1,293	1,293	1,293
Gas heat - stage or modulating, aluminized or stainless steel					
1000 MBH	644	644	—	—	—
1500 MBH	917	917	938	938	938
2000 MBH	1,210	1,210	1,233	1,233	1,233
2500 MBH	—	—	1,499	1,499	1,499
Electric heat [10]					
Low heat	1,168	1,168	1,202	1,202	1,202
High heat	1,226	1,226	1,256	1,256	1,256
Hot water heat					
Low heat with valves	265	265	286	286	358
High heat with valves	381	381	372	372	372
Steam heat					
Low heat with valves	307	307	331	331	354
High heat with valves	354	354	281	281	281
Refrigeration system					
Standard efficiency cooling system	5978	5987	9266	9186	9470
High capacity cooling system	5991	6234	9563	9779	9889
High efficiency cooling system	5845	6040	8894	9142	9623
Hot gas reheat (HGRH) coil	99	99	142	142	142
Copper fin - evaporator coil	988	1250	2720	2720	2890
Louver hail guard	376	376	491	491	491
Miscellaneous options					
Humidifier	317	317	403	403	403
Air blender	269	269	276	276	276
UV lights	30	30	50	50	50
Sound attenuator	1,128	1,128	1,128	1,128	1,128
Internal lights	7	7	7	7	7
Smoke detector	11	11	11	11	11
Split unit (2 split)	100	100	100	100	100
Split unit (3 split)	200	200	200	200	200
Redundant return fan VFD 7.5-15 HP	53	53	53	53	53
Redundant return fan VFD 20-25 HP	104	104	104	104	104

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Table 138: Weight data (lb) - 90 ton to 150 ton unit

Model	90 ton	105 ton	120 ton	130 ton	150 ton
Redundant return fan VFD 30-40 HP	104	104	104	104	104
Redundant return fan VFD 50-60 HP	0	158	158	158	158
Redundant return fan VFD 75 HP	0	0	158	158	158

Notes:

1. Economizer cabinet weight must be included in all 90 ton to 150 ton units.
2. Pre-evaporator blank can be a blank section or include an air blender.
3. Heat section cabinet option for any of the following:
   - Top or right discharge
   - Discharge filters, humidifier or sound attenuator, or blank post-evaporator section
   - Requires discharge plenum. Discharge can be bottom, left, right, or top
4. Heat and discharge through heat option is used unless any of the following are included:
   - Discharge filters
   - Humidifier, sound attenuator, or blank post-evaporator section
   - Top or right discharge
   - Discharge plenum
5. Small post-evaporator blank can contain blank or final filter or humidifier or sound attenuator.
6. Large post-evaporator blank can contain blank or sound attenuator and final filter or sound attenuator and humidifier or humidifier or sound attenuator.
7. Discharge plenum is required with all units that are cooling only.
8. Supply fan weights include both supply fans, both motors, isolators, both inlet guards, both shaft grounding rings, variable frequency drive (VFD), disconnect, and VFD bypass.
9. Economizer with belt driven exhaust fan includes the weight of the fan, isolator, shaft grounding rings, extended lube lines, and inlet guards. For direct driven return fan, weight includes return fan and motor, isolators, shaft grounding ring, VFD. Return fan redundant VFD weight included under miscellaneous options.
10. All sizes of electric heat (460 / 575 V).
11. A transformer is required if convenience oulet, gas heat, internal lights, or advanced display are selected.
12. Roof curb weight is not included with this table.
13. For standard cooling unit configuration, the refrigeration system weight includes condenser fan, compressor, piping, condenser coil, refrigerant, wire guards, condenser sheetmetal, condenser end control panel Assy (90 ton to 150 ton) and evaporator coil.
14. For units that are shipped split, contact your local sales office or use Selection Navigator to get the individual air handler and condenser unit weights.
15. Supply fan cabinet includes, cabinet structure weight, fan wall weight, fan mounting weight, and control panel weight.
16. Cooling only units with no post evaporator blank, a small empty post evaporator blank, a large empty post evaporator blank, or a large post evaporator blank equipped with a humidifier or final filter have a 60 in. fan section length, all other units have a 74 in. fan section length.

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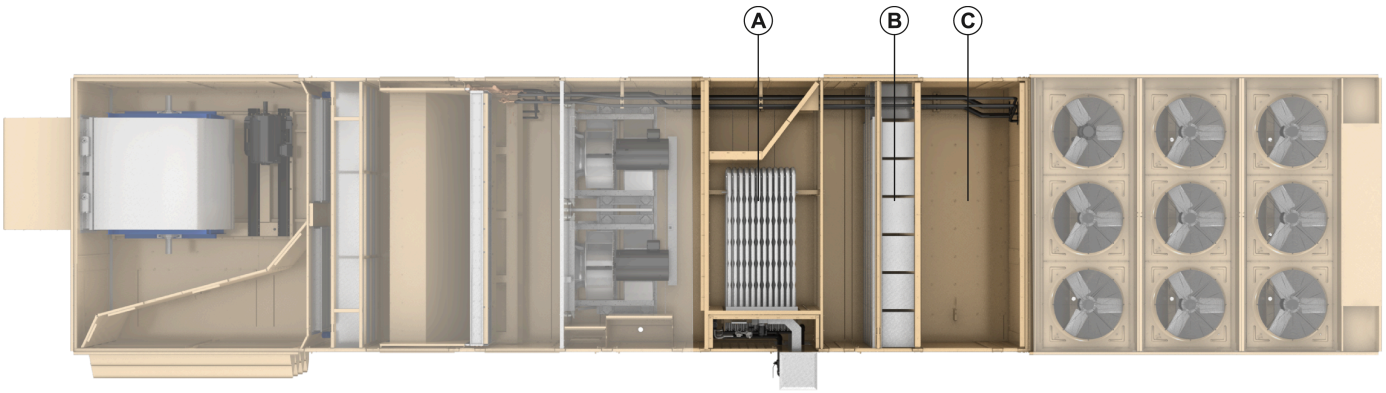
Dimensions - 90 ton to 150 ton unit

Figure 11: Rooftop unit component locations - 90 ton to 150 ton unit



Item	Description
A	Heat section
B	Post-evaporator blank section (small post-evaporator blank shown)
C	Discharge plenum (top, bottom, left, right)

Figure 12: 90 ton to 150 ton dimensional drawing - example shown is a 90 ton unit

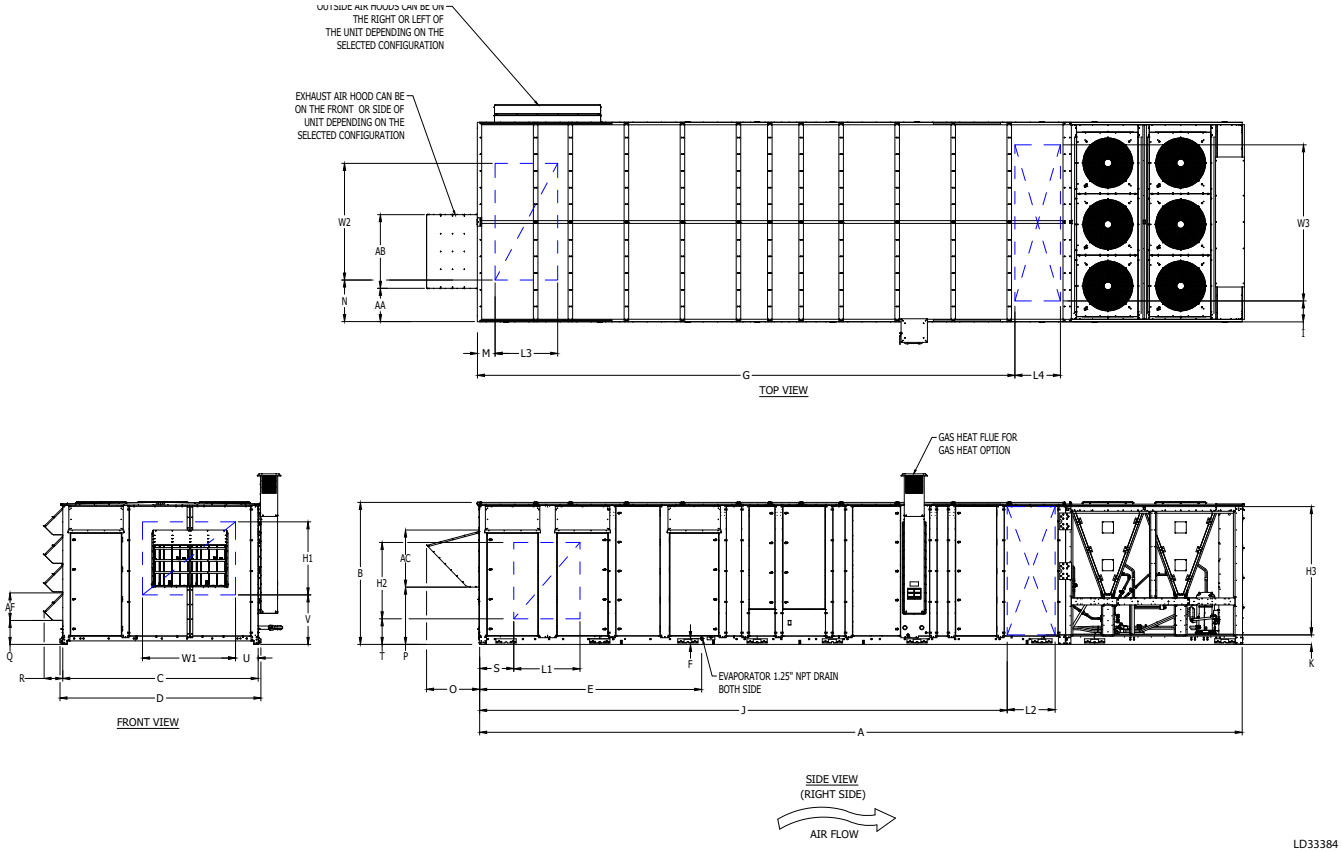


Table 139: 90 ton unit dimensions (in.) for return options with ERW

Unit configuration	If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	121.05	72.63	65.44	68.67	31.07	35.51	17.15	14.01
Bottom return, right OA, front exhaust	121.05	72.63	65.44	68.67	31.07	35.51	17.15	14.01

Table 140: 90 ton unit dimensions (in.) for return options with fan and without ERW

Unit configuration	If unit has a return fan with modulating damper								If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	17.27	55.00	54.36	63.68	49.91	26.10	17.15	14.01	17.27	75.41	91.39	42.71	31.07	35.51	17.15	14.01
Bottom return, right OA, front exhaust	17.27	55.00	54.36	63.68	49.91	26.10	17.15	14.01	17.27	75.41	91.39	42.71	31.07	35.51	17.15	14.01
Bottom return, left OA, side exhaust	17.27	55.00	54.36	21.45	49.91	26.10	17.15	14.01	17.27	75.41	91.39	5.39	31.07	35.51	17.15	14.01
Bottom return, left OA, front exhaust	17.27	55.00	54.36	21.45	49.91	26.10	17.15	14.01	17.27	75.41	91.39	5.39	31.07	35.51	17.15	14.01
Top return, right OA, side exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	40.28	31.07	35.51	17.15	14.01
Top return, right OA, front exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	40.28	31.07	35.51	17.15	14.01
Top return, left OA, side exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	4.30	31.07	35.51	17.15	14.01
Top return, left OA, front exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	4.30	31.07	35.51	17.15	14.01
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	R
Left return, right OA, front exhaust	21.26	54.84	53.84	12.81	49.91	26.10	17.15	14.01	6.42	84.46	90.13	7.35	31.07	35.51	17.15	14.01
Right return, left OA, front exhaust	21.26	54.84	53.84	12.81	49.91	26.10	17.15	14.01	6.43	84.46	90.13	7.35	31.07	35.51	17.15	14.01
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**
Front return, left OA, right exhaust	21.26	54.84	53.84	12.81	49.91	26.10	17.15	14.01	6.43	84.46	90.13	7.35	31.07	35.51	17.15	14.01
Front return, right OA, left exhaust	63.40	54.84	53.84	12.81	49.91	26.10	17.15	14.01	48.61	84.46	90.13	7.35	31.07	35.51	17.15	14.01

Table 141: 90 ton unit dimensions (in.) for return options without fan and ERW

Unit configuration	If unit has no fan and barometric damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	9.67	58.00	89.89	44.21	49.77	26.43	17.15	14.01
Bottom return, right OA, front exhaust	9.67	58.00	89.89	44.21	49.77	26.43	17.15	14.01
Bottom return, left OA, side exhaust	9.67	58.00	89.89	5.39	49.77	26.43	17.15	14.01
Bottom return, left OA, front exhaust	9.67	58.00	89.89	5.39	49.77	26.43	17.15	14.01
Bottom return, no OA, no exhaust	9.67	58.00	89.89	44.21	—	—	—	—
Top Return, Right OA, Side Exhaust	4.13	65.81	72	63.19	49.77	26.43	17.15	14.01
Top Return, Right OA, Front Exhaust	4.13	65.81	72	63.19	49.77	26.43	17.15	14.01
Top Return, Left OA, Side Exhaust	4.13	65.81	72	4.30	49.77	26.43	17.15	14.01
Top Return, Left OA, Front Exhaust	4.13	65.81	72	4.30	49.77	26.43	17.15	14.01
Top Return, No OA, No EA	4.13	65.81	72	63.19	—	—	—	—
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**
Left return, right OA, front exhaust	6.42	59.46	90.13	7.35	49.77	26.43	17.15	14.01
Left return, no OA, no exhaust	6.42	59.46	90.13	7.35	—	—	—	—
Right Return, Left OA, Front Exhaust	6.43	59.46	90.13	7.35	49.77	26.43	17.15	14.01
Right Return, No OA, No EA	6.43	59.46	90.13	7.35	—	—	—	—
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**
Front Return, Left OA, Right Exhaust	6.43	59.46	90.13	7.35	49.77	26.43	17.15	14.01
Front Return, Right OA, Left Exhaust	73.61	59.46	90.13	7.35	49.77	26.43	17.15	14.01
Front Return, No OA, No EA	73.61	59.46	90.13	7.35	—	—	—	—

Table 142: 105 ton unit dimensions (in.) for return options with ERW

Unit configuration	if unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	121.05	72.63	65.44	68.67	37.82	40.94	17.15	14.01
Bottom return, right OA, front exhaust	121.05	72.63	65.44	68.67	37.82	40.94	17.15	14.01

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Table 143: 105 ton unit dimensions (in.) for return options with fan and without ERW

Unit configuration	If unit has a return fan with modulating damper								If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	17.27	55.00	58.86	61.43	49.91	26.10	17.15	14.01	17.27	75.41	91.39	42.71	37.82	40.94	17.15	14.01
Bottom return, right OA, front exhaust	17.27	55.00	58.86	61.43	49.91	26.10	17.15	14.01	17.27	75.41	91.39	42.71	37.82	40.94	17.15	14.01
Bottom return, left OA, side exhaust	17.27	55.00	58.86	19.20	49.91	26.10	17.15	14.01	17.27	75.41	91.39	5.39	37.82	40.94	17.15	14.01
Bottom return, left OA, front exhaust	17.27	55.00	58.86	19.20	49.91	26.10	17.15	14.01	17.27	75.41	91.39	5.39	37.82	40.94	17.15	14.01
Top Return, Right OA, Side Exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	40.28	37.82	40.94	17.15	14.01
Top Return, Right OA, Front Exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	40.28	37.82	40.94	17.15	14.01
Top Return, Left OA, Side Exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	4.30	37.82	40.94	17.15	14.01
Top Return, Left OA, Front Exhaust	—	—	—	—	—	—	—	—	4.13	56.67	94.91	4.30	37.82	40.94	17.15	14.01
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**
Left Return, Right OA, Front Exhaust	19.01	59.34	58.34	12.80	49.91	26.10	17.15	14.01	6.42	84.46	90.13	7.35	37.82	40.94	17.15	14.01
Right Return, Left OA, Front Exhaust	19.01	59.34	58.34	12.80	49.91	26.10	17.15	14.01	6.43	84.46	90.13	7.35	37.82	40.94	17.15	14.01
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**
Front return, left OA, right exhaust	19.01	59.34	58.34	12.80	49.91	26.10	17.15	14.01	6.43	84.46	90.13	7.35	37.82	40.94	17.15	14.01
Front return, right OA, left exhaust	61.15	59.34	58.34	12.80	49.91	26.10	17.15	14.01	48.61	84.46	90.13	7.35	37.82	40.94	17.15	14.01

Table 144: 105 ton unit dimensions (in.) for return options without fan and ERW

Unit configuration	If unit has no fan and barometric damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	9.67	58.00	89.89	44.21	49.77	26.43	17.15	14.01
Bottom return, right OA, front exhaust	9.67	58.00	89.89	44.21	49.77	26.43	17.15	14.01
Bottom return, left OA, side exhaust	9.67	58.00	89.89	5.39	49.77	26.43	17.15	14.01
Bottom return, left OA, front exhaust	9.67	58.00	89.89	5.39	49.77	26.43	17.15	14.01
Bottom return, no OA, no exhaust	9.67	58.00	89.89	44.21	—	—	—	—
Top Return, Right OA, Side Exhaust	4.134	65.81	72	63.19	49.774	26.429	17.146	14.011
Top Return, Right OA, Front Exhaust	4.134	65.81	72	63.19	49.774	26.429	17.146	14.011
Top Return, Left OA, Side Exhaust	4.134	65.81	72	4.298	49.774	26.429	17.146	14.011
Top Return, Left OA, Front Exhaust	4.134	65.81	72	4.298	49.774	26.429	17.146	14.011
Top Return, No OA, No EA	4.13	65.81	72	63.19	N/A	N/A	N/A	N/A
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**
Left return, right OA, front exhaust	6.42	59.46	90.13	7.35	49.77	26.43	17.15	14.01
Left return, no OA, no exhaust	6.42	59.46	90.13	7.35	—	—	—	—
Right Return, Left OA, Front Exhaust	6.425	59.457	90.125	7.353	49.774	26.429	17.146	14.011
Right Return, No OA, No EA	6.425	59.457	90.125	7.353	N/A	N/A	N/A	N/A
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**
Front Return, Left OA, Right Exhaust	6.425	59.456	90.125	7.353	49.774	26.429	17.146	14.011
Front Return, Right OA, Left Exhaust	73.605	59.456	90.125	7.353	49.774	26.429	17.146	14.011
Front Return, No OA, No EA	73.605	59.458	90.125	7.353	N/A	N/A	N/A	N/A

Table 145: 120 ton unit dimensions (in.) for return options with ERW

Unit configuration	if unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom Return, Right OA, Side Exhaust	144.05	99.63	66.03	68.08	37.82	40.94	17.15	14.01
Bottom Return, Right OA, Front Exhaust	144.05	99.63	66.03	68.08	37.82	40.94	17.15	14.01

Table 146: 120 ton unit dimensions (in.) for return options with fan and without ERW

Unit configuration	If unit has a return fan with modulating damper									If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**P1**	**Q**	**R**	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	18.52	59.82	59.18	61.47	36.02	12.81	54.768	17.15	14.01	18.34	94.34	91.39	42.71	37.85	40.94	17.15	14.01
Bottom return, right OA, front exhaust	18.52	59.82	59.18	61.47	36.02	12.81	54.768	17.15	14.01	18.34	94.34	91.39	42.71	37.85	40.94	17.15	14.01
Bottom return, left OA, side exhaust	18.52	59.82	59.18	18.84	36.02	12.81	54.768	17.15	14.01	18.34	94.34	91.39	5.39	37.85	40.94	17.15	14.01
Bottom return, left OA, front exhaust	18.52	59.82	59.18	18.84	36.02	12.81	54.768	17.15	14.01	18.34	94.34	91.39	5.39	37.85	40.94	17.15	14.01
Top Return, Right OA, Side Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	40.28	37.86	40.94	17.15	14.01
Top Return, Right OA, Front Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	40.28	37.86	40.94	17.15	14.01
Top Return, Left OA, Side Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	4.30	37.86	40.94	17.15	14.01
Top Return, Left OA, Front Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	4.30	37.86	40.94	17.15	14.01
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**P1**	**Q**	**R**	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**

Table 146: 120 ton unit dimensions (in.) for return options with fan and without ERW

Unit configuration	If unit has a return fan with modulating damper									If unit has an exhaust fan with backdraft damper or modulating damper							
Left return, right OA, front exhaust	19.01	59.34	58.34	12.80	36.02	12.81	54.77	17.15	14.01	6.42	84.46	90.13	7.35	37.85	40.94	17.15	14.01
Right Return, Left OA, Front Exhaust	19.00	59.34	58.34	12.80	36.02	12.81	54.77	17.15	14.01	6.43	84.46	90.13	7.35	37.86	40.94	17.15	14.01
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**P1**	**Q**	**R**	**U**	**W1**	**H1**	**V**	**O**	**P**	**Q**	**R**
Front Return, Left OA, Right Exhaust	19.00	59.34	58.34	12.80	36.02	12.81	54.77	17.15	14.01	6.43	84.46	90.12	7.36	37.86	40.94	17.15	14.01
Front Return, Right OA, Left Exhaust	61.15	59.34	58.34	12.80	36.02	12.81	54.77	17.15	14.01	48.61	84.46	90.12	7.36	37.86	40.94	17.15	14.01

Table 147: 120 ton unit dimensions (in.) for return options without fan and ERW

Unit configuration	If unit has no fan and barometric damper								
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**P1**	**Q**	**R**
Bottom return, right OA, side exhaust	9.67	75.00	89.89	44.21	34.25	13.93	54.93	17.15	14.01
Bottom return, right OA, front exhaust	9.67	75.00	89.89	44.21	34.25	13.93	54.93	17.15	14.01
Bottom return, left OA, side exhaust	9.67	75.00	89.89	5.39	34.25	13.93	54.93	17.15	14.01
Bottom return, left OA, front exhaust	9.67	75.00	89.89	5.39	34.25	13.93	54.93	17.15	14.01
Bottom return, no OA, no exhaust	9.67	75.00	89.89	44.21	—	—	—	—	—
Top Return, Right OA, Side Exhaust	4.13	72.06	84.23	50.96	34.25	13.93	54.92	17.15	14.01
Top Return, Right OA, Front Exhaust	4.13	72.06	84.23	50.96	34.25	13.93	54.92	17.15	14.01
Top Return, Left OA, Side Exhaust	4.13	72.06	84.23	4.30	34.25	13.93	54.92	17.15	14.01
Top Return, Left OA, Front Exhaust	4.13	72.06	84.23	4.30	34.25	13.93	54.92	17.15	14.01
Top Return, No OA, No EA	4.13	72.06	84.23	50.96	—	—	—	—	—
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**P1**	**Q**	**R**
Left return, right OA, front exhaust	6.42	76.46	90.13	7.35	34.25	13.93	54.92	17.15	14.01
Left return, no OA, no exhaust	6.42	76.46	90.13	7.35	—	—	—	—	—
Right Return, Left OA, Front Exhaust	6.43	76.46	90.13	7.35	34.25	13.93	54.92	17.15	14.01
Right Return, No OA, No EA	6.43	76.46	90.13	7.35	—	—	—	—	—
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**P1**	**Q**	**R**
Front Return, Left OA, Right Exhaust	6.43	76.46	90.13	7.36	34.25	13.93	54.92	17.15	14.01
Front Return, Right OA, Left Exhaust	56.61	76.46	90.13	7.36	34.25	13.93	54.92	17.15	14.01
Front Return, No OA, No EA	56.61	76.46	90.13	7.36	—	—	—	—	—

Table 148: 130 ton to 150 ton unit dimensions (in.) for return options with ERW

Unit configuration	If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom Return, Right OA, Side Exhaust	144.05	99.63	66.03	68.08	40.73	44.32	17.15	14.01
Bottom Return, Right OA, Front Exhaust	144.05	99.63	66.03	68.08	40.73	44.32	17.15	14.01

Table 149: 130 ton to 150 ton unit dimensions (in.) for return options with fan and without ERW

Unit configuration	If unit has a return fan with modulating damper									If unit has an exhaust fan with backdraft damper or modulating damper							
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**P1**	**Q**	**R**	**M**	**L3**	**W2**	**N**	**O**	**P**	**Q**	**R**
Bottom return, right OA, side exhaust	18.52	59.82	63.68	59.22	36.02	12.81	54.77	17.15	14.01	18.34	94.34	91.39	42.71	40.73	44.32	17.15	14.01
Bottom return, right OA, front exhaust	18.52	59.82	63.68	59.22	36.02	12.81	54.77	17.15	14.01	18.34	94.34	91.39	42.71	40.73	44.32	17.15	14.01
Bottom return, left OA, side exhaust	18.52	59.82	63.68	16.59	36.02	12.81	54.77	17.15	14.01	18.34	94.34	91.39	5.39	40.73	44.32	17.15	14.01
Bottom return, left OA, front exhaust	18.52	59.82	63.68	16.59	36.02	12.81	54.77	17.15	14.01	18.34	94.34	91.39	5.39	40.73	44.32	17.15	14.01
Top Return, Right OA, Side Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	40.28	40.73	44.32	17.15	14.01
Top Return, Right OA, Front Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	40.28	40.73	44.32	17.15	14.01
Top Return, Left OA, Side Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	4.30	40.73	44.32	17.15	14.01
Top Return, Left OA, Front Exhaust	—	—	—	—	—	—	—	—	—	4.13	72.06	94.92	4.30	40.73	44.32	17.15	14.01
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**P1**	**Q**	**R**	**S**	**L1**	**H2**	**T**	**O**	**P**	**Q**	**R**
Left return, right OA, front exhaust	16.76	63.84	62.84	12.80	36.02	12.81	54.77	17.15	14.01	6.42	84.46	90.13	7.35	40.73	44.32	17.15	14.01
Right Return, Left OA, Front Exhaust	16.76	63.84	62.84	12.80	36.02	12.81	54.77	17.15	14.01	6.43	84.46	90.13	7.35	40.73	44.32	17.15	14.01

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Table 150: 130 ton to 150 ton unit dimensions (in.) for return options without fan and ERW

Unit configuration	If unit has no fan and barometric damper								
Dimension set	**M**	**L3**	**W2**	**N**	**O**	**P**	**P1**	**Q**	**R**
Bottom return, right OA, side exhaust	9.67	75.00	89.89	44.21	34.25	13.93	54.92	17.15	14.01
Bottom return, right OA, front exhaust	9.67	75.00	89.89	44.21	34.25	13.93	54.92	17.15	14.01
Bottom return, left OA, side exhaust	9.67	75.00	89.89	5.39	34.25	13.93	54.92	17.15	14.01
Bottom return, left OA, front exhaust	9.67	75.00	89.89	5.39	34.25	13.93	54.92	17.15	14.01
Bottom return, no OA, no EA	9.67	75.00	89.89	44.21	—	—	—	—	—
Top Return, Right OA, Side Exhaust	4.13	72.06	84.23	50.96	34.25	13.93	54.92	17.15	14.01
Top Return, Right OA, Front Exhaust	4.13	72.06	84.23	50.96	34.25	13.93	54.92	17.15	14.01
Top Return, Left OA, Side Exhaust	4.13	72.06	84.23	4.30	34.25	13.93	54.92	17.15	14.01
Top Return, Left OA, Front Exhaust	4.13	72.06	84.23	4.30	34.25	13.93	54.92	17.15	14.01
Top Return, No OA, No EA	4.13	72.06	84.23	50.96	N/A	N/A	N/A	N/A	N/A
Dimension set	**S**	**L1**	**H2**	**T**	**O**	**P**	**P1**	**Q**	**R**
Left return, right OA, front exhaust	6.42	76.46	90.13	7.35	34.25	13.93	54.92	17.15	14.01
Left return, no OA, no exhaust	6.42	76.46	90.13	7.35	—	—	—	—	—
Right Return, Left OA, Front Exhaust	6.43	76.46	90.13	7.35	34.25	13.93	54.92	17.15	14.01
Right Return, No OA, No EA	6.43	76.46	90.13	7.35	—	—	—	—	—
Dimension set	**U**	**W1**	**H1**	**V**	**O**	**P**	**P1**	**Q**	**R**
Front Return, Left OA, Right Exhaust	6.43	76.46	90.13	7.36	34.25	13.93	54.92	17.15	14.01
Front Return, Right OA, Left Exhaust	56.61	76.46	90.13	7.36	34.25	13.93	54.92	17.15	14.01
Front Return, No OA, No EA	56.61	76.46	90.13	7.36	—	—	—	—	—

Table 151: 90 to 105 ton unit dimensions (in.)

Unit configuration			Unit length (A)	Unit height (B)	Unit width (C)	Unit width lifting lug to lifting lug (D)	Evaporator drain length (E)	Evaporator drain height (F)
Basic economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	380.9	101.5	139.49	143.5	116.81	4.2
		SU with discharge plenum (B,L,R,T)	397.9	101.5	139.49	143.5	133.81	4.2
		SU with small post-evap blank, discharge plenum (B,L,R,T)	445.9	101.5	139.49	143.5	133.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	493.9	101.5	139.49	143.5	133.81	4.2
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	459.9	101.5	139.49	143.5	133.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	507.9	101.5	139.49	143.5	133.81	4.2
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	409.9	101.5	139.49	143.5	116.81	4.2
		SU, discharge through heat section (B,L)	426.9	101.5	139.49	143.5	133.81	4.2
		SU with heat, discharge plenum (R, T)	472.4	101.5	139.49	143.5	133.81	4.2
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	520.4	101.5	139.49	143.5	133.81	4.2
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	568.4	101.5	139.49	143.5	133.81	4.2
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	405.9	101.5	139.49	143.5	141.81	4.2
		SU with discharge plenum (B,L,R,T)	422.9	101.5	139.49	143.5	158.81	4.2
		SU with small post-evap blank, discharge plenum (B,L,R,T)	470.9	101.5	139.49	143.5	158.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	518.9	101.5	139.49	143.5	158.81	4.2
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	484.9	101.5	139.49	143.5	158.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	532.9	101.5	139.49	143.5	158.81	4.2
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	434.9	101.5	139.49	143.5	141.81	4.2
		SU, discharge through heat section (B,L)	451.9	101.5	139.49	143.5	158.81	4.2
		SU with heat, discharge plenum (R,T)	497.4	101.5	139.49	143.5	158.81	4.2
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	545.4	101.5	139.49	143.5	158.81	4.2
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	593.4	101.5	139.49	143.5	158.81	4.2

Table 152: 90 to 105 ton unit dimensions (in.) with left and right discharge

Unit configuration			Left discharge				Right discharge			
			J	L2	K	H3	J	L2	K	H3
Basic economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	211.86	36.11	7.35	90.12	211.86	36.11	7.35	90.12
		SU with discharge plenum (B,L,R,T)	228.86	36.11	7.35	90.12	228.86	36.11	7.35	90.12
		SU with small post-evap blank, discharge plenum (B,L,R,T)	276.86	36.11	7.35	90.12	276.86	36.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	324.86	36.11	7.35	90.12	324.86	36.11	7.35	90.12
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	290.86	36.11	7.35	90.12	290.86	36.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	338.86	36.11	7.35	90.12	338.86	36.11	7.35	90.12
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	225.86	51.11	17.59	64.35	—	—	—	—
		SU, discharge through heat section (B,L)	242.86	51.11	17.59	64.35	—	—	—	—
		SU with heat, discharge plenum (R,T)	303.36	36.11	7.35	90.12	303.36	36.11	7.35	90.12
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	351.36	36.11	7.35	90.12	351.36	36.11	7.35	90.12
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	399.36	36.11	7.35	90.12	399.36	36.11	7.35	90.12
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	236.86	36.11	7.35	90.12	236.86	36.11	7.35	90.12
		SU with discharge plenum (B,L,R,T)	253.86	36.11	7.35	90.12	253.86	36.11	7.35	90.12
		SU with small post-evap blank, discharge plenum (B,L,R,T)	301.86	36.11	7.35	90.12	301.86	36.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	349.86	36.11	7.35	90.12	349.86	36.11	7.35	90.12
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	315.86	36.11	7.35	90.12	315.86	36.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	363.86	36.11	7.35	90.12	363.86	36.11	7.35	90.12
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	250.86	51.11	17.59	64.35	—	—	—	—
		SU, discharge through heat section (B,L)	267.86	51.11	17.59	64.35	—	—	—	—
		SU with heat, discharge plenum (R,T)	328.36	36.11	7.35	90.12	328.36	36.11	7.35	90.12
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	376.36	36.11	7.35	90.12	376.36	36.11	7.35	90.12
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	424.36	36.11	7.35	90.12	424.36	36.11	7.35	90.12

Table 153: 90 to 105 ton unit dimensions (in.) with bottom and top discharge

Unit configuration			Bottom discharge				Top discharge			
			G	L4	I	W3	J	L2	K	H3
Basic economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	209.94	39.28	17.24	105	209.94	39.28	17.24	105
		SU with discharge plenum (B,L,R,T)	226.94	39.28	17.24	105	226.94	39.28	17.24	105
		SU with small post-evap blank, discharge plenum (B,L,R,T)	274.94	39.28	17.24	105	274.94	39.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	322.94	39.28	17.24	105	322.94	39.28	17.24	105
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	288.94	39.28	17.24	105	288.94	39.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	336.94	39.28	17.24	105	336.94	39.28	17.24	105
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	226.14	50.71	33.47	64.35	—	—	—	—
		SU, discharge through heat section (B,L)	243.14	50.71	33.47	64.35	—	—	—	—
		SU with heat, discharge plenum (R,T)	301.44	39.28	17.24	105	301.44	39.28	17.24	105
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	349.44	39.28	17.24	105	349.44	39.28	17.24	105
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	397.44	39.28	17.24	105	397.44	39.28	17.24	105
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	234.94	39.28	17.24	105	234.94	39.28	17.24	105
		SU with discharge plenum (B,L,R,T)	251.94	39.28	17.24	105	251.94	39.28	17.24	105
		SU with small post-evap blank, discharge plenum (B,L,R,T)	299.94	39.28	17.24	105	299.94	39.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	347.94	39.28	17.24	105	347.94	39.28	17.24	105
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	313.94	39.28	17.24	105	313.94	39.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	361.94	39.28	17.24	105	361.94	39.28	17.24	105
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	251.14	50.71	33.47	64.35	—	—	—	—
		SU, discharge through heat section (B,L)	268.14	50.71	33.47	64.35	—	—	—	—
		SU with heat, discharge plenum (R,T)	326.44	39.28	17.24	105	326.44	39.28	17.24	105
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	374.44	39.28	17.24	105	374.44	39.28	17.24	105
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	422.44	39.28	17.24	105	422.44	39.28	17.24	105

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Table 154: 120 to 150 ton unit dimensions (in.)

Unit configuration			Unit length (A)	Unit height (B)	Unit width (C)	Unit width lifting lug to lifting lug (D)	Evaporator drain length (E)	Evaporator drain height (F)
Basic Economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	497.94	101.5	139.49	143.5	133.81	4.2
		SU with discharge plenum (B,L,R,T)	514.94	101.5	139.49	143.5	150.81	4.2
		SU with small post-evap blank, discharge plenum (B,L,R,T)	562.94	101.5	139.49	143.5	150.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	610.94	101.5	139.49	143.5	150.81	4.2
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	576.94	101.5	139.49	143.5	150.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	624.94	101.5	139.49	143.5	150.81	4.2
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	516.94	101.5	139.49	143.5	133.81	4.2
		SU, discharge through heat section (B,L)	533.94	101.5	139.49	143.5	150.81	4.2
		SU with heat, discharge plenum (R,T)	589.44	101.5	139.49	143.5	150.81	4.2
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	637.44	101.5	139.49	143.5	150.81	4.2
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	685.44	101.5	139.49	143.5	150.81	4.2
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	525.94	101.5	139.49	143.5	161.81	4.2
		SU with discharge plenum (B,L,R,T)	542.94	101.5	139.49	143.5	178.81	4.2
		SU with small post-evap blank, discharge plenum (B,L,R,T)	590.94	101.5	139.49	143.5	178.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	638.94	101.5	139.49	143.5	178.81	4.2
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	604.94	101.5	139.49	143.5	178.81	4.2
		SU with large post-evap blank, discharge plenum (B,L,R,T)	652.94	101.5	139.49	143.5	178.81	4.2
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	544.94	101.5	139.49	143.5	178.81	4.2
		SU, discharge through heat section (B,L)	561.94	101.5	139.49	143.5	178.81	4.2
		SU with heat, discharge plenum (R,T)	617.44	101.5	139.49	143.5	178.81	4.2
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	665.44	101.5	139.49	143.5	178.81	4.2
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	713.44	101.5	139.49	143.5	178.81	4.2

Table 155: 120 to 150 ton unit dimensions (in.) with left and right discharge

Unit configuration			Left discharge				Right discharge			
			J	L2	K	H3	J	L2	K	H3
Basic Economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	266.86	46.11	7.35	90.12	266.86	46.11	7.35	90.12
		SU with discharge plenum (B,L,R,T)	283.86	46.11	7.35	90.12	283.86	46.11	7.35	90.12
		SU with small post-evap blank, discharge plenum (B,L,R,T)	331.86	46.11	7.35	90.12	331.86	46.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	379.86	46.11	7.35	90.12	379.86	46.11	7.35	90.12
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	345.86	46.11	7.35	90.12	345.86	46.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	393.86	46.11	7.35	90.12	393.86	46.11	7.35	90.12
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	280.86	51.11	9.41	86	—	—	—	—
		SU, discharge through heat section (B,L)	297.86	51.11	9.41	86	—	—	—	—
		SU with heat, discharge plenum (R,T)	358.36	46.11	7.35	90.12	358.36	46.11	7.35	90.12
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	406.36	46.11	7.35	90.12	406.36	46.11	7.35	90.12
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	454.36	46.11	7.35	90.12	454.36	46.11	7.35	90.12
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	294.86	46.11	7.35	90.12	294.86	46.11	7.35	90.12
		SU with discharge plenum (B,L,R,T)	311.86	46.11	7.35	90.12	311.86	46.11	7.35	90.12
		SU with small post-evap blank, discharge plenum (B,L,R,T)	359.86	46.11	7.35	90.12	359.86	46.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	407.86	46.11	7.35	90.12	407.86	46.11	7.35	90.12
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	373.86	46.11	7.35	90.12	373.86	46.11	7.35	90.12
		SU with large post-evap blank, discharge plenum (B,L,R,T)	421.86	46.11	7.35	90.12	421.86	46.11	7.35	90.12
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	308.86	51.11	9.41	86	—	—	—	—
		SU, discharge through heat section (B,L)	325.86	51.11	9.41	86	—	—	—	—
		SU with heat, discharge plenum (R,T)	386.36	46.11	7.35	90.12	386.36	46.11	7.35	90.12
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	434.36	46.11	7.35	90.12	434.36	46.11	7.35	90.12
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	482.36	46.11	7.35	90.12	482.36	46.11	7.35	90.12

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Table 156: 120 to 150 ton unit dimensions (in.) with bottom and top discharge

Unit configuration			Bottom discharge				Top discharge			
			G	L4	I	W3	J	L2	K	H3
Basic Economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	264.94	49.28	17.24	105	264.94	49.28	17.24	105
		SU with discharge plenum (B,L,R,T)	281.94	49.28	17.24	105	281.94	49.28	17.24	105
		SU with small post-evap blank, discharge plenum (B,L,R,T)	329.94	49.28	17.24	105	329.94	49.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	377.94	49.28	17.24	105	377.94	49.28	17.24	105
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	343.94	49.28	17.24	105	343.94	49.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	391.94	49.28	17.24	105	391.94	49.28	17.24	105
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	281.14	50.71	20.92	86	—	—	—	—
		SU, discharge through heat section (B,L)	298.14	50.71	20.92	86	—	—	—	—
		SU with heat, discharge plenum (R,T)	356.44	49.28	17.24	105	356.44	49.28	17.24	105
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	404.44	49.28	17.24	105	404.44	49.28	17.24	105
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	452.44	49.28	17.24	105	452.44	49.28	17.24	105
Standard economizer	No heat - 60 in. supply fan	SU with vertical filter rack, discharge plenum (B,L,R,T)	292.94	49.28	17.24	105	292.94	49.28	17.24	105
		SU with discharge plenum (B,L,R,T)	309.94	49.28	17.24	105	309.94	49.28	17.24	105
		SU with small post-evap blank, discharge plenum (B,L,R,T)	357.94	49.28	17.24	105	357.94	49.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	405.94	49.28	17.24	105	405.94	49.28	17.24	105
	No heat - 74 in. supply fan	SU with small post-evap blank, discharge plenum (B,L,R,T)	371.94	49.28	17.24	105	371.94	49.28	17.24	105
		SU with large post-evap blank, discharge plenum (B,L,R,T)	419.94	49.28	17.24	105	419.94	49.28	17.24	105
	Heat	SU with vertical filter rack, discharge through heat section (B,L)	309.14	50.71	20.92	86	—	—	—	—
		SU, discharge through heat section (B,L)	326.14	50.71	20.92	86	—	—	—	—
		SU with heat, discharge plenum (R,T)	384.44	49.28	17.24	105	384.44	49.28	17.24	105
		SU with heat, small post-evap blank, discharge plenum (B,L,R,T)	432.44	49.28	17.24	105	432.44	49.28	17.24	105
		SU with heat, large post-evap blank, discharge plenum (B,L,R,T)	480.44	49.28	17.24	105	480.44	49.28	17.24	105

Note:

1. A SU includes length for economizer, draw-through filter, cooling coil, supply fan, and condenser. A SU includes a draw-through (pre-evaporator) filter with 2 in. angle filter or 2 in. + 12 in. (or 18 in.) filter. Units with a vertical 4 in. draw-through filter in place of the standard 2 in. angle or 2 in. + 12 in. (or 18 in.) filter are listed as *SU with Vertical Filter Rack.* Basic economizer unit does not include an exhaust fan or return fan option.
2. The heat section includes either gas or electric.
3. SU = Standard Unit, DP = Discharge Plenum, B = Bottom Discharge, L = Left Discharge, R = Right Discharge.
4. Dimensions are ± 1 in.
5. For units that are shipped split, please contact your local sales office or use the Selection Navigator to get the individual air handler and condenser unit lengths.

Table 157: Blank sections

Post-evaporator blank options		Pre-evaporator blank options
Small blank	Large blank	
Empty	Empty	Empty
Humidifier	Humidifier	Air blender
Sound attenuator	Sound attenuator	—
Final filter	Final filter	—
—	Sound attenuator and final filter	—
—	Sound attenuator and humidifier	—

Example to determine unit length

Table 158: Example model number

GZ	K	A	C	4	A	1	G	A	1	A	6	0	D	C	2	2	1	A	H	0	A	0	G	2	B	0	A	0	A	A	A	A	0	1	3	0	1	A	0	0	0	W	E	G	0	0	1
1,2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49

Note: The first row displays the example model number. The second row displays the corresponding digit.

Table 159: Model nomenclature description

Digit	Option	Description
3	K	Capacity 90 ton
5	C	Heat source: staged gas stainless steel
11	1	Discharge location: bottom discharge
12	A	Supply configuration (small or large post evaporator blank sections): none
19	1	Barometric damper
27	B	Draw-through filter options: angled filter rack, 2 in. throwaway filters
30	0	Energy recovery options: none
41	0	Pre-evap options (pre-evap blank section): none

Using the model number given as an example above, determine the unit length from Table .

Unit length = [tonnage of the unit (90 ton) + economizer + draw-through filter (2 in.) + cooling coil + supply fan + condenser]* + no ERW (refer to the no ERW section of the dimensions tables) + no pre-evap blank

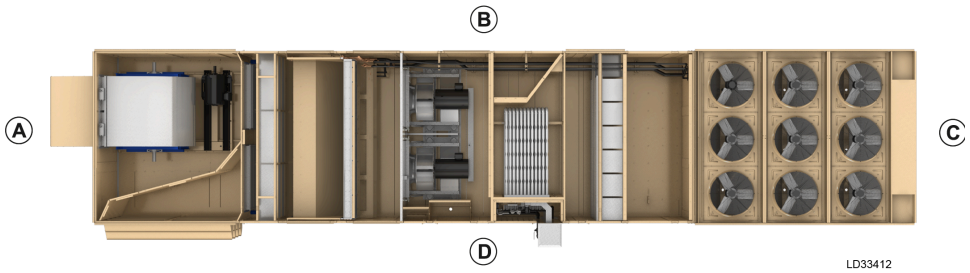
Note:

A standard unit includes length for economizer, draw-through filter, cooling coil, supply fan, and condenser. A standard unit includes a draw-through (pre-evaporator) filter with 2 in. angle filter or 2 in. + 12 in. (or 18 in.) filter. Units with a vertical 4 in. draw-through filter in place of the standard 2 in. angle or 2 in. + 12 in. (or 18 in.) filter are listed as SU with vertical filter 4 in.

Based on the unit options selected, the configuration is a standard unit with heat, discharge plenum (B, L, R). For this example, the length of the unit is 472.40 in.

Supply and return air duct configurations

Figure 13: Air duct configurations



Callout	Description
A	Front
B	Left
C	Rear
D	Right

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Table 160: 90 to 150 ton supply and return air duct configurations

Unit configuration	Supply air				Return air					Outside air		Exhaust air	
	Bottom	Left	Right	Top	Bottom	Left	Right	Top	Front	Left	Right	Side*	Front
Cooling only	Yes	Yes	Yes	Yes	—	Yes	—	—	—	—	Yes	—	Yes
	Yes	Yes	Yes	Yes	—	—	—	—	—	—	—	—	—
	Yes	Yes	Yes	Yes	Yes	—	—	Yes	—	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	—	—	—	—	—	—	—	—	—
Cooling with discharge through heat section	Yes	Yes	—	—	—	Yes	—	—	—	—	Yes	—	Yes
	Yes	Yes	—	—	—	—	—	—	—	—	—	—	—
	Yes	Yes	—	—	Yes	—	—	Yes	—	Yes	Yes	Yes	Yes
	Yes	Yes	—	—	—	—	—	—	—	—	—	—	—
Cooling with heat and discharge plenum	Yes	Yes	Yes	Yes	—	Yes	—	—	—	—	Yes	—	Yes
	Yes	Yes	Yes	Yes	—	—	—	—	—	—	—	—	—
Cooling with downstream section and discharge plenum	Yes	Yes	Yes	Yes	Yes	—	—	Yes	—	Yes	Yes	Yes	Yes
	Yes	Yes	Yes	Yes	—	—	—	—	—	—	—	—	—
Cooling with ERW and discharge through heat section	Yes	Yes	—	—	Yes	—	—	—	—	—	Yes	Yes	Yes
Cooling with heat with ERW with downstream section and discharge plenum	Yes	Yes	Yes	Yes	Yes	—	—	—	—	—	Yes	Yes	Yes

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Roof curb dimensions - 90 ton to 150 ton unit

Figure 14: 90 ton to 150 ton roof curbs: left bottom return opening and bottom supply opening

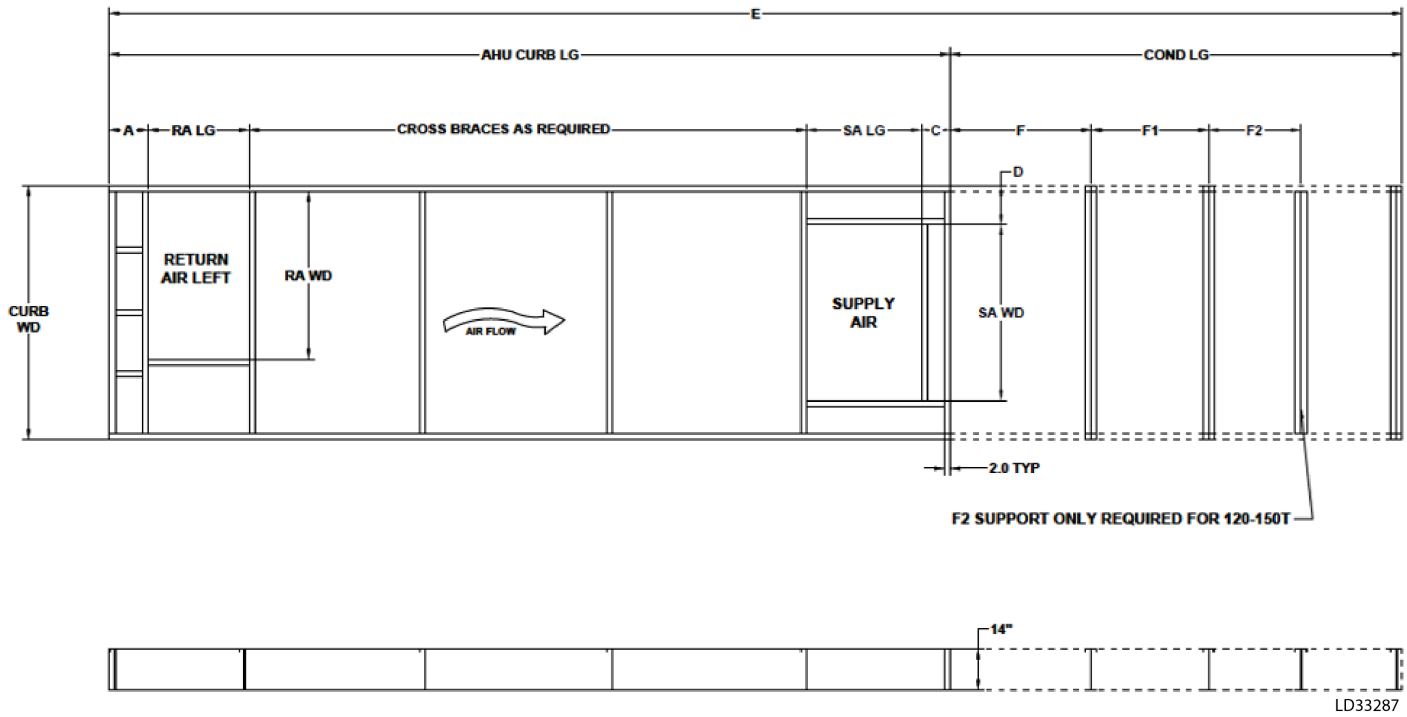

Figure 15: 90 ton to 150 ton roof curbs: right bottom return opening and bottom supply opening

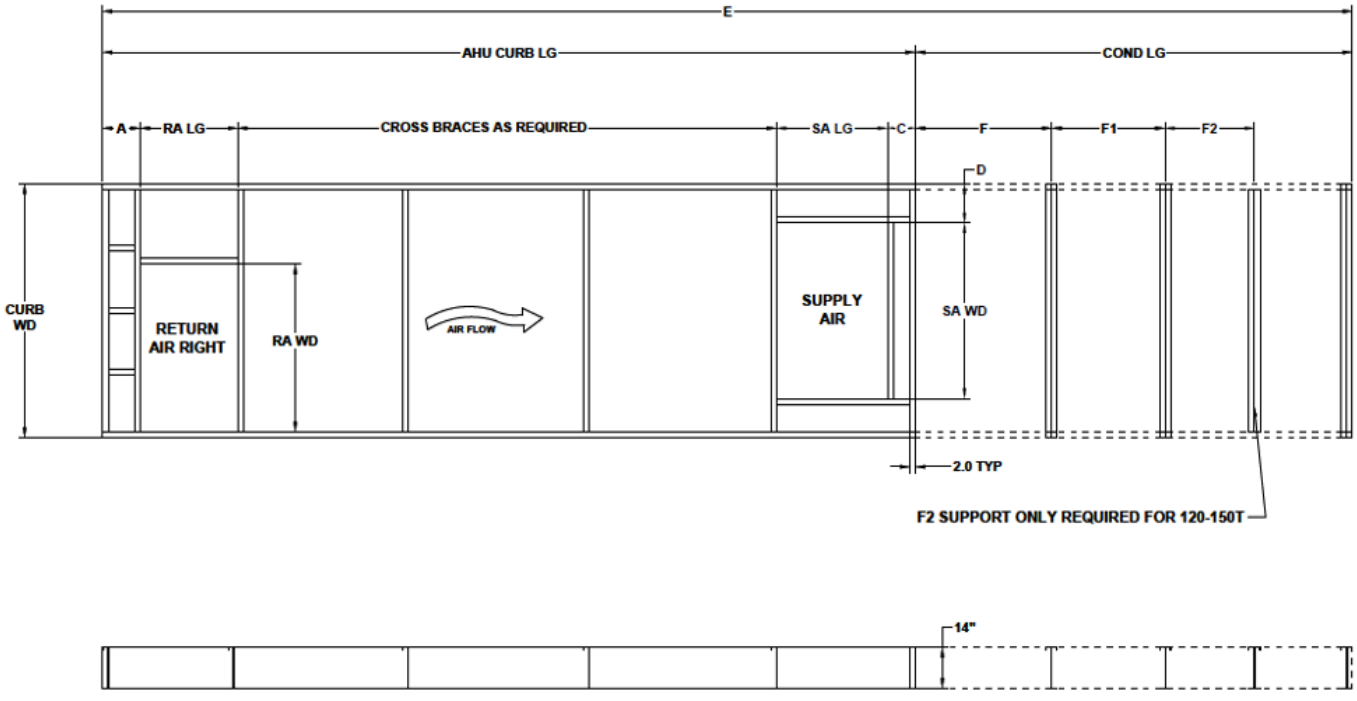

Table 161: 90 ton to 105 ton left and right bottom return opening with bottom supply opening (in.) without ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
No heat 60 in. SU	SU with vertical filter rack, DP (B, L, R, T) with basic eco	254.40	139.49	254.40	132.69	126.50	380.90	9.66
	SU with vertical filter rack, DP (B, L, R, T) with std eco	279.40	139.49	279.40	132.69	126.50	405.90	17.27
	SU with DP (B, L, R, T) with basic eco	271.40	139.49	271.40	132.69	126.50	397.90	9.66
	SU with DP (B, L, R, T) with std eco	296.40	139.49	296.40	132.69	126.50	422.90	17.27
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	385.40	139.5	385.40	132.7	126.50	511.90	9.66
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	410.40	139.5	410.40	132.7	126.50	536.90	17.27
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	433.40	139.5	433.40	132.7	126.50	559.90	9.66
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	458.40	139.5	458.40	132.7	126.50	584.90	17.27
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	319.40	139.49	319.40	132.69	126.50	445.90	9.66
	SU with small post-evap blank, DP (B, L, R, T) with std eco	344.40	139.49	344.40	132.69	126.50	470.90	17.27
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	367.40	139.5	367.40	132.7	126.50	493.90	9.66
	SU with large post-evap blank, DP (B, L, R, T) with std eco	392.40	139.5	392.40	132.7	126.50	518.90	17.27
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	399.40	139.5	399.40	132.7	126.50	525.90	9.66
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	424.40	139.5	424.40	132.7	126.50	550.90	17.27
	SU with pre-evap blank, large post-evap blank, DP (B,L,R,T) with basic eco	447.40	139.5	447.40	132.7	126.50	573.90	9.66
	SU with pre-evap blank, large post-evap blank, DP (B,L,R,T) with Std Eco	472.40	139.5	472.40	132.7	126.50	598.90	17.27
	SU with small post-evap blank, DP (B, L, R,T) with basic eco	333.40	139.49	333.40	132.69	126.50	459.90	9.66
	SU with small post-evap blank, DP (B, L, R, T) with std eco	358.40	139.49	358.40	132.69	126.50	484.90	17.27
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	381.40	139.5	381.40	132.7	126.50	507.90	9.66
	SU with large post-evap blank, DP (B, L, R, T) with std eco	406.40	139.5	406.40	132.7	126.50	532.90	17.27

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Table 161: 90 ton to 105 ton left and right bottom return opening with bottom supply opening (in.) without ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
Heat	SU with vertical filter rack, discharge through heat section (B, L) with basic eco	283.40	139.49	283.40	132.69	126.50	409.90	9.66
	SU with vertical filter rack, Discharge through heat section (B, L) with std eco	308.40	139.49	308.40	132.69	126.50	434.90	17.27
	SU with discharge through heat section (B, L) with basic eco	300.40	139.49	300.40	132.69	126.50	426.90	9.66
	SU with discharge through heat section (B, L) with std eco	325.40	139.49	325.40	132.69	126.50	451.90	17.27
	SU with heat, DP (R, T) with basic eco	345.90	139.49	345.90	132.69	126.50	472.40	9.66
	SU with heat, DP (R, T) with std eco	370.90	139.49	370.90	132.69	126.50	497.40	17.27
	SU with pre-evap blank, discharge through heat section (B, L) with basic eco	366.40	139.5	366.40	132.7	126.50	492.90	9.66
	SU with pre-evap blank, discharge through heat section (B, L) with std eco	391.40	139.5	391.40	132.7	126.50	517.90	17.27
	SU with pre-evap blank, heat, DP (R, T) with basic eco	411.90	139.5	411.90	132.7	126.50	538.40	9.66
	SU with pre-evap blank, heat, DP (R, T) with std eco	436.90	139.5	436.90	132.7	126.50	563.40	17.27
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with basic eco	459.90	139.5	459.90	132.7	126.50	586.40	9.66
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with std eco	484.90	139.5	484.90	132.7	126.50	611.40	17.27
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with basic eco	507.90	139.5	507.90	132.7	126.50	634.40	9.66
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with std eco	532.90	139.5	532.90	132.7	126.50	659.40	17.27
	SU with heat, small post-evap blank, DP (B, L, R, T) with basic eco	393.90	139.49	393.90	132.69	126.50	520.40	9.66
	SU with heat, small post-evap blank, DP (B, L, R, T) with std eco	418.90	139.49	418.90	132.69	126.50	545.40	17.27
	SU with heat, large post-evap blank, DP (B, L, R, T) with basic eco	441.90	139.5	441.90	132.7	126.50	568.40	9.66
	SU with heat, large post-evap blank, DP (B, L, R, T) with std eco	466.90	139.5	466.90	132.7	126.50	593.40	17.27

Table 162: 90 ton to 105 ton left and right bottom return opening with bottom supply opening (in.) without ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1
No heat 60 in. SU	SU with vertical filter rack, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with vertical filter rack, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50

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Table 162: 90 ton to 105 ton left and right bottom return opening with bottom supply opening (in.) without ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1
Heat	SU with vertical filter rack, discharge through heat section (B, L) with basic eco	47.70	89.89	58.00	6.55	38.27	50.71	64.35	52.50
	SU with vertical filter rack, Discharge through heat section (B, L) with std eco	47.70	91.39	75.41	6.55	38.27	50.71	64.35	52.50
	SU with discharge through heat section (B, L) with basic eco	47.70	89.89	58.00	6.55	38.27	50.71	64.35	52.50
	SU with discharge through heat section (B, L) with std eco	47.70	91.39	75.41	6.55	38.27	50.71	64.35	52.50
	SU with heat, DP (R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with heat, DP (R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, discharge through heat section (B, L) with basic eco	47.70	89.89	58.00	6.55	38.27	50.71	64.35	52.50
	SU with pre-evap blank, discharge through heat section (B, L) with std eco	47.70	91.39	75.41	6.55	38.27	50.71	64.35	52.50
	SU with pre-evap blank, heat, DP (R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, DP (R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with heat, small post-evap blank, DP (B, L, R) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with heat, small post-evap blank, DP (B, L, R) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50
	SU with heat, large post-evap blank, DP (B, L, R, T) with basic eco	47.70	89.89	58.00	5.18	13.84	39.28	105.00	52.50
	SU with heat, large post-evap blank, DP (B, L, R, T) with std eco	47.70	91.39	75.41	5.18	13.84	39.28	105.00	52.50

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Table 163: 120 ton to 150 ton left and right bottom return opening with bottom supply opening (in.) without ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
No heat 60 in. SU	SU with vertical filter rack, DP (B, L, R, T) with basic eco	319.40	139.49	319.40	132.69	178.54	497.94	9.66
	SU with vertical filter rack, DP (B, L, R, T) with std eco	347.40	139.49	347.40	132.69	178.54	525.94	18.34
	SU with DP (B, L, R, T) with basic eco	336.40	139.49	336.40	132.69	178.54	514.94	9.66
	SU with DP (B, L, R, T) with std eco	364.40	139.49	364.40	132.69	178.54	542.94	18.34
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	450.40	139.5	450.40	132.69	178.5	628.9	9.66
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	478.40	139.5	478.40	132.69	178.5	656.9	18.34
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	498.40	139.5	498.40	132.69	178.5	676.9	9.66
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	526.40	139.5	526.40	132.69	178.5	704.9	18.34
	SU with small post-evap blank, DP (B, L, R) with basic eco	384.40	139.49	384.40	132.69	178.54	562.94	9.66
	SU with small post-evap blank, DP (B, L, R) with std eco	412.40	139.49	412.40	132.69	178.54	590.94	18.34
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	432.40	139.5	432.40	132.69	178.5	610.9	9.66
	SU with large post-evap blank, DP (B, L, R, T) with std eco	460.40	139.5	460.40	132.69	178.5	638.9	18.34
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	464.40	139.5	464.40	132.69	178.5	642.9	9.66
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	492.40	139.5	492.40	132.69	178.5	670.9	18.34
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	512.40	139.5	512.40	132.69	178.5	690.9	9.66
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	540.40	139.5	540.40	132.69	178.5	718.9	18.34
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	398.40	139.49	398.40	132.69	178.54	576.94	9.66
	SU with small post-evap blank, DP (B, L, R, T) with std eco	426.40	139.49	426.40	132.69	178.54	604.94	18.34
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	446.40	139.5	446.40	132.69	178.5	624.9	9.66
	SU with large post-evap blank, DP (B, L, R, T) with std eco	474.40	139.5	474.40	132.69	178.5	652.9	18.34

Table 163: 120 ton to 150 ton left and right bottom return opening with bottom supply opening (in.) without ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
Heat	SU with vertical filter rack, discharge through heat section (B, L) with basic eco	338.40	139.49	338.40	132.69	178.54	516.94	9.66
	SU with vertical filter rack, discharge through heat section (B, L) with std eco	366.40	139.49	366.40	132.69	178.54	544.94	18.34
	SU with discharge through heat section (B, L) with basic eco	355.40	139.49	355.40	132.69	178.54	533.94	9.66
	SU with discharge through heat section (B, L) with std eco	383.40	139.49	383.40	132.69	178.54	561.94	18.34
	SU with heat, DP (R, T) with basic eco	410.90	139.49	410.90	132.69	178.54	589.44	9.66
	SU with heat, DP (R, T) with std eco	438.90	139.49	438.90	132.69	178.54	617.44	18.34
	SU with pre-evap blank, discharge through heat section (B, L) with basic eco	421.40	139.5	421.40	132.69	178.5	599.9	9.66
	SU with pre-evap blank, discharge through heat section (B, L) with std eco	449.40	139.5	449.40	132.69	178.5	627.9	18.34
	SU with pre-evap blank, heat, DP (R, T) with basic eco	476.90	139.5	476.90	132.69	178.5	655.4	9.66
	SU with pre-evap blank, heat, DP (R, T) with std eco	504.90	139.5	504.90	132.69	178.5	683.4	18.34
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with basic eco	524.90	139.5	524.90	132.69	178.5	703.4	9.66
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with std eco	552.90	139.5	552.90	132.69	178.5	731.4	18.34
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with basic eco	572.90	139.5	572.90	132.69	178.5	751.4	9.66
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with std eco	600.90	139.5	600.90	132.69	178.5	779.4	18.34
	SU with heat, small post-evap blank, DP (B, L, R, T) with basic eco	458.90	139.49	458.90	132.69	178.54	637.44	9.66
	SU with heat, small post-evap blank, DP (B, L, R, T) with std eco	486.90	139.49	486.90	132.69	178.54	665.44	18.34
	SU with heat, large post-evap blank, DP (B, L, R, T) with basic eco	506.90	139.5	506.90	132.69	178.5	685.4	9.66
	SU with heat, large post-evap blank, DP (B, L, R, T) with std eco	534.90	139.5	534.90	132.69	178.5	713.4	18.34

Table 164: 120 ton to 150 ton left and right bottom return opening with bottom supply opening (in.) without ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1	F2
No heat 60 in. SU	SU with vertical filter rack, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with vertical filter rack, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50

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Table 164: 120 ton to 150 ton left and right bottom return opening with bottom supply opening (in.) without ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1	F2
Heat	SU with vertical filter rack, discharge through heat section (B, L) with basic eco	49.70	89.89	75.00	6.55	29.17	50.71	86.00	50.00	52.50
	SU with vertical filter rack, discharge through heat section (B, L) with std eco	49.70	91.39	94.34	6.55	29.17	50.71	86.00	50.00	52.50
	SU with discharge through heat section (B, L) with basic eco	49.70	89.89	75.00	6.55	29.17	50.71	86.00	50.00	52.50
	SU with discharge through heat section (B, L) with std eco	49.70	91.39	94.34	6.55	29.17	50.71	86.00	50.00	52.50
	SU with heat, DP (R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with heat, DP (R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, discharge through heat section (B, L) with basic eco	49.70	89.89	75.00	6.55	29.17	50.71	86.00	50.00	52.50
	SU with pre-evap blank, discharge through heat section (B, L) with std eco	49.70	91.39	94.34	6.55	29.17	50.71	86.00	50.00	52.50
	SU with pre-evap blank, heat, DP (R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, heat, DP (R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with heat, small post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with heat, small post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50
	SU with heat, large post-evap blank, DP (B, L, R, T) with basic eco	49.70	89.89	75.00	5.18	13.84	49.28	105.00	50.00	52.50
	SU with heat, large post-evap blank, DP (B, L, R, T) with std eco	49.70	91.39	94.34	5.18	13.84	49.28	105.00	50.00	52.50

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Table 165: 90 ton to 105 ton left bottom return opening with bottom supply opening (in.) with ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
No heat 60 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	510.40	139.49	510.40	132.69	126.50	636.90	121.05
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	558.40	139.49	558.40	132.69	126.50	684.90	121.05
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	444.40	139.49	444.40	132.69	126.50	570.90	121.05
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	492.40	139.49	492.40	132.69	126.50	618.90	121.05
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	524.40	139.49	524.40	132.69	126.50	650.90	121.05
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	572.40	139.49	572.40	132.69	126.50	698.90	121.05
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	458.40	139.49	458.40	132.69	126.50	584.90	121.05
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	506.40	139.49	506.40	132.69	126.50	632.90	121.05
Heat	SU with discharge through heat section (B, L) with ext eco	425.40	139.49	425.40	132.69	126.50	551.90	121.05
	SU with heat, DP (R, T) with ext eco	470.90	139.49	470.90	132.69	126.50	597.40	121.05
	SU with pre-evap blank, discharge through heat section (B, L) with ext eco	491.40	139.49	491.40	132.69	126.50	617.90	121.05
	SU with pre-evap blank, heat, DP (R, T) with ext eco	536.90	139.49	536.90	132.69	126.50	663.40	121.05
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with ext eco	584.90	139.49	584.90	132.69	126.50	711.40	121.05
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with ext eco	632.90	139.49	632.90	132.69	126.50	759.40	121.05
	SU with heat, small post-evap blank, DP (B, L, R, T) with ext eco	518.90	139.49	518.90	132.69	126.50	645.40	121.05
	SU with heat, large post-evap blank, DP (B, L, R, T) with ext eco	566.90	139.49	566.90	132.69	126.50	693.40	121.05

Table 166: 90 ton to 105 ton left bottom return opening with bottom supply opening (in.) with ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1
No heat 60 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50

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Table 166: 90 ton to 105 ton left bottom return opening with bottom supply opening (in.) with ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
Heat	SU with discharge through heat section (B, L) with ext eco	47.70	64.24	72.63	6.55	38.27	50.71	64.35	52.50
	SU with heat, DP (R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, discharge through heat section (B, L) with ext eco	47.70	64.24	72.63	6.55	38.27	50.71	64.35	52.50
	SU with pre-evap blank, heat, DP (R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with heat, small post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50
	SU with heat, large post-evap blank, DP (B, L, R, T) with ext eco	47.70	64.24	72.63	5.18	13.84	39.28	105.00	52.50

Table 167: 120 ton to 150 ton left bottom return opening with bottom supply opening (in.) with ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
No heat 60 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	608.40	139.49	608.40	132.69	178.54	786.94	144.05
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	656.40	139.49	656.40	132.69	178.54	834.94	144.05
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	542.40	139.49	542.40	132.69	178.54	720.94	144.05
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	590.40	139.49	590.40	132.69	178.54	768.94	144.05
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	622.40	139.49	622.40	132.69	178.54	800.94	144.05
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	670.40	139.49	670.40	132.69	178.54	848.94	144.05
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	556.40	139.49	556.40	132.69	178.54	734.94	144.05
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	604.40	139.49	604.40	132.69	178.54	782.94	144.05

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Table 167: 120 ton to 150 ton left bottom return opening with bottom supply opening (in.) with ERW

Unit configuration		AHU LG	Unit WD	AHU Curb LG	Curb WD	Cond LG	Total LG (E)	A
Heat	SU with discharge through heat section (B, L) with ext eco	513.40	139.49	513.40	132.69	178.54	691.94	144.05
	SU with heat, DP (R, T) with ext eco	568.90	139.49	568.90	132.69	178.54	747.44	144.05
	SU with pre-evap blank, discharge through heat section (B, L) with ext eco	579.40	139.49	579.40	132.69	178.54	757.94	144.05
	SU with pre-evap blank, heat, DP (R, T) with ext eco	634.90	139.49	634.90	132.69	178.54	813.44	144.05
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with ext eco	682.90	139.49	682.90	132.69	178.54	861.44	144.05
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with ext eco	730.90	139.49	730.90	132.69	178.54	909.44	144.05
	SU with heat, small post-evap blank, DP (B, L, R, T) with ext eco	616.90	139.49	616.90	132.69	178.54	795.44	144.05
	SU with heat, large post-evap blank, DP (B, L, R, T) with ext eco	664.90	139.49	664.90	132.69	178.54	843.44	144.05

Table 168: 120 ton to 150 ton left bottom return opening with bottom supply opening (in.) with ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1	F2
No heat 60 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
No heat 74 in. SU	SU with pre-evap blank, small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with pre-evap blank, large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5

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Table 168: 120 ton to 150 ton left bottom return opening with bottom supply opening (in.) with ERW - additional data

Unit configuration		F	RA WD	RA LG	C	D	SA LG	SA WD	F1	F2
Heat	SU with discharge through heat section (B, L) with ext eco	49.7	64.8	99.6	6.55	29.2	50.7	86.0	50.0	52.5
	SU with heat, DP (R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with pre-evap blank, discharge through heat section (B, L) with ext eco	49.7	64.8	99.6	6.55	29.2	50.7	86.0	50.0	52.5
	SU with pre-evap blank, heat, DP (R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with pre-evap blank, heat, small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with pre-evap blank, heat, large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with heat, small post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5
	SU with heat, large post-evap blank, DP (B, L, R, T) with ext eco	49.7	64.8	99.6	5.18	13.8	49.3	105.0	50.0	52.5

Note:

- The standard economizer is available with the exhaust and return fan
- AHU = Air handling unit, LG = Length, WD = Width, Cond = Condenser, RA = Return air, RAR = RA right, RAL = RA left, SA = Supply air, SU = Standard unit, DP = Discharge plenum, B = Bottom, L = Left
- The 60 in. SU is applicable for a cooling-only unit with no heat, no post-evaporator blank sections
- The 60 in. SU is also applicable for a cooling-only unit with an empty post-evaporator blank section

Field piping

Table 169: Field piping - unit connection sizes

Field piping (NPT) in.	25 to 30 ton	40 to 50 ton	60 ton unit	70 to 80 ton unit	90 to 105 ton unit	120 to 150 ton unit
Condensate drain	1.25	1.25	1.25	1.25	1.25	1.25
Gas heat 250 MBH	0.75	—	—	—	—	—
Gas heat 500 MBH	1.00	1.00	1.00	1.00	—	—
Gas heat 750 MBH	1.00	1.00	—	—	—	—
Gas heat 1000 MBH	—	—	1.25	1.25	1.25	—
Gas heat 1250 MBH	—	1.25	—	—	—	—
Gas heat 1500 MBH	—	—	1.50	1.50	1.50	1.50
Gas heat 2000 MBH	—	—	—	—	2.00	2.00
Gas heat 2500 MBH	—	—	—	—	—	2.00
Humidifier inlet	1.00	1.00	1.25	1.50	2.00	2.00
Humidifier drain	1.25	1.25	1.25	1.25	1.25	1.25
Hot water supply (high heat)	2.50	3.00	3.00	3.00	3.00	3.00
Hot water return (high heat)	2.50	3.00	3.00	3.00	3.00	3.00
Hot water supply (low heat)	1.50	2.00	2.50	2.50	2.50	3.00
Hot water return (low heat)	1.50	2.00	2.50	2.50	2.50	3.00
Steam supply (low heat)	2.00	2.00	2.00	2.00	2.00 x 2.00	2.00 x 2.00
Steam return (low heat)	1.50	1.50	1.50	1.50	1.50	1.50
Steam supply (high heat)	2.00	2.00	2.00	2.00	2.00 x 2.00	2.00
Steam supply (high heat)	1.50	1.50	1.50	1.50	1.50	1.50

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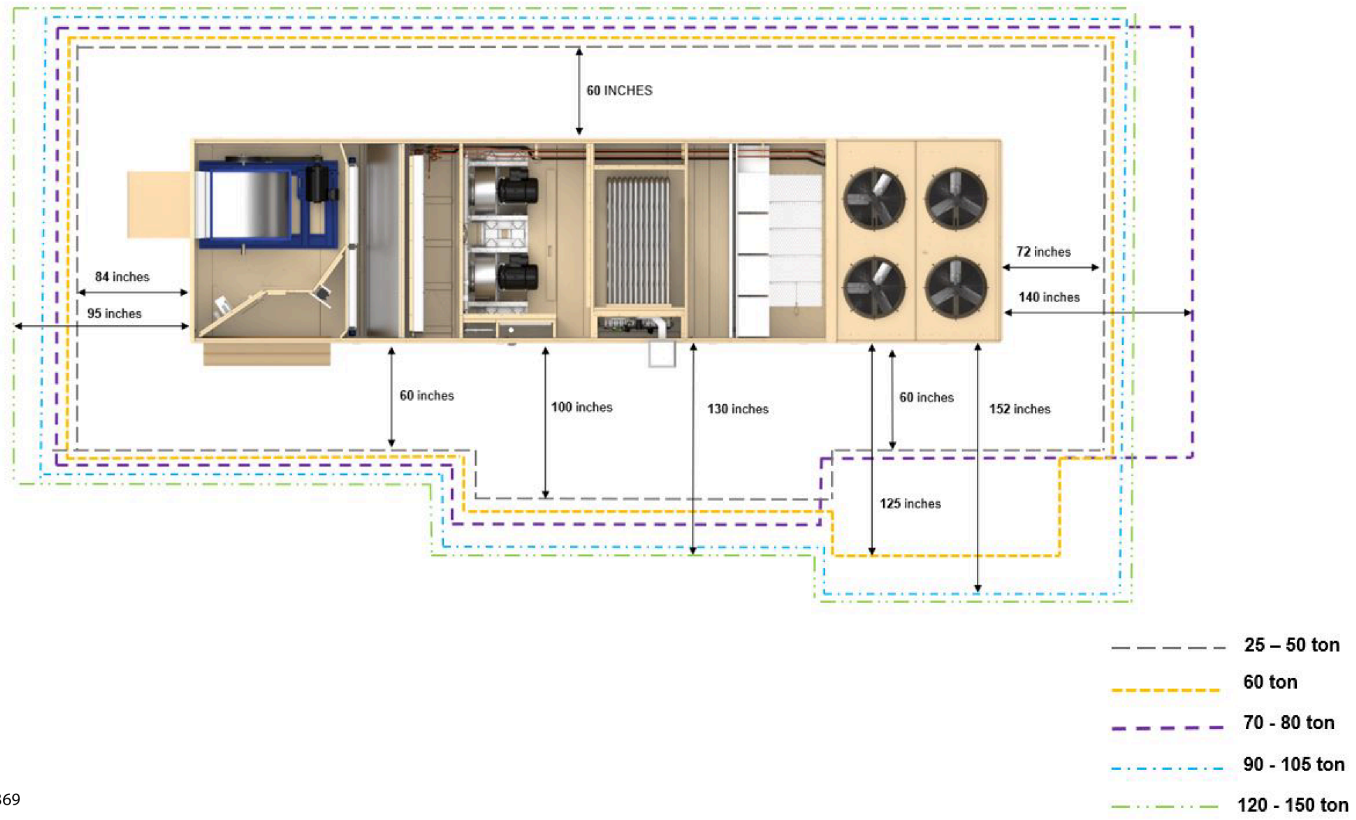
Unit clearances

The Sun Premier units are designed for outdoor installation. When selecting a site for installation, consider the following conditions:

- The unit must be installed on a level surface.
- For units located outside, select a place with minimum sun exposure and an adequate supply of fresh air for the condenser.
- Avoid locations beneath windows or between structures.
- Select optional condenser coil protection for locations in proximity to salt water or other harsh environments.
- Install the unit on a roof that is structurally strong enough to support the weight of the unit with minimal deflection. It is recommended that the unit(s) be installed no more than 15 ft from a main support beam to provide proper structural support and to minimize the transmission of sound and vibration. Ideally, the center of gravity must be located over a structural support or building column.
- Locate units away from building flue stacks or exhaust ventilators to prevent possible reintroduction of contaminated air through the outside air intakes.
- Ensure the supporting structures do not obstruct the duct, gas, or wiring connections.
- Proper operational and service clearance space around the perimeter of the unit, on one side for coil servicing, and to any adjacent units is required to ensure unit performance, eliminate cross contamination of exhaust and outside air, and for maintenance tasks, such as coil pull and cleaning. There must be no obstructions above the condensing unit section.
- As shown, condenser clearance varies based on unit tonnage and coil arrangements.

Figure 16: Unit clearances



Note:

1. 10 ft clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12 ft clearance required to adjacent units.

Location

Of the many factors that can affect the location of equipment, some of the most important to consider are structural, acoustical, and service clearances. Give proper attention during the design stage to ensure proper structural support. In cases where equipment is being replaced, be aware of building design to ensure support is adequate for the application.

Sound from the equipment is an important consideration when applying the unit equipment to a space. Ensure the unit is kept away from sound sensitive areas, such as conference rooms, auditoriums, executive offices, and any other rooms that may potentially occupy tenants. Possible locations to install a single package unit could include above hallways or mechanical or utility rooms. Refer to the *Sound from Rooftop Units Application Guide.*

Unit placement

The unit can be placed at ground level or an elevated location.

Elevated locations

Elevated roof curbs or dunnage steel can be used to support the unit in order to raise it to specific heights. The rooftop unit must be supported around the entire perimeter to ensure unit integrity. When this type of placement is required, keep unit access in mind. Cat walks or other forms of unit access may be required to one or both sides of the unit depending on your area of the country and the local codes that are enforced.

Ground level locations

It is important that the units are installed on a substantial base that does not settle or cause strain on the refrigerant lines and sheet metal that could result in possible leaks. A one-piece concrete slab with footers extended below the frost line is highly recommended. Additionally, isolate the slab from the main building foundation to prevent noise and vibration transmission to the building structure.

For ground level installations, take precautions to protect the unit from tampering by or injury to unauthorized persons. Make accommodations that allow for the correct depths of the drain pan trap and humidifier trap. Service clearances must be maintained at all times. For further details, refer to the *Roof Curbs for YORK® Sun™ Premier Rooftop Units Application Guide* .

Guide specifications

General

Available options are shown in brackets.([])

Scope

The requirements of the General Conditions, Supplementary Conditions, Division 1, and drawings apply to all work herein.

Provide specifications for the following features:

- Microprocessor controlled, multiple-scroll compressor.
- Air-cooled, double wall outdoor packaged rooftop air conditioning units.
- Components of the scheduled capacities and performance, as shown and indicated on the drawings, including but not limited to: factory-single packaged air conditioner; charge of refrigerant and oil; roof curb; field duct; power and control connections; and utility connections.

Quality assurance

All units are tested, rated, or certified, as applicable, in accordance with the following standards, guidelines, and codes:

1. All units meet ASHRAE 90.1-2022 minimum energy efficiency ratio/integrated energy efficiency ratio (EER/IEER).
2. All units comply with ASHRAE 189.1-2014 EER/IEER efficiency requirements.
3. All units meet the latest ASHRAE 62 requirements for ventilation and indoor air quality (IAQ).
4. All units are rated in accordance with the AHRI Standard 340/360.
5. All units are certified to UL 60335-2-40.
6. All units meet the 2023 Department of Energy efficiency code.
7. All gas heating units are designed in conformance to ANSI Z83.8-2016/CSA 2.6-2016 standards and carry a CSA listing.

Manufacturers

The design shown on the drawing is based upon products of the scheduled manufacturer. Alternate equipment manufacturers are acceptable if equipment meets the scheduled performance and complies with these specifications. If equipment supplied by manufacturer other than that scheduled is utilized, then the mechanical contractor is responsible for coordinating with the general contractor and all affected subcontractors to ensure proper provisions for installation of the furnished unit. This coordination includes, but is not limited to, the following:

1. Structural supports for units.
2. A prefabricated, heavy gauge galvanized steel mounting curb, designed and supplied by the unit manufacturer, is provided for field assembly on the roof decking prior to unit shipment. The roof curb is a partial perimeter type with complete perimeter support of the air handling section and rail support of the condensing section. Supply and return opening duct frames are provided as part of the curb structure, allowing duct connections to be made directly to the curb prior to unit arrival. The curb is a minimum of 14 in. high and include a nominal 2 in. × 4 in. wood nailing strip. Gasket is provided for field mounting between the unit base and roof curb.
3. Piping size and connection or header locations.
4. Electrical power requirements and wire or conduit and overcurrent protection sizes.
5. All costs incurred to modify the building provisions to accept the furnished units.

Warranty

Unit warranty

The manufacturer warrants all equipment and material of its manufacture against defects in workmanship and material for a period of 12 months from start-up or 18 months from date of shipment ,whichever occurs first. Extended warranty is provided to cover the unit for [24] [60] months from the date of shipment.

- The warranty includes parts [and labor] during this period only.
- The warranty does not include parts associated with routine maintenance, such as belts, air filters, etc.

Compressor warranty

The manufacturer warrants all compressors against defects in workmanship and material for a period of 12 [60] months from date of shipment.

- The warranty includes parts [and labor] during this period only.
- The warranty does not include parts associated with routine maintenance.

Gas heat exchanger warranty [optional]

The manufacturer warrants all stainless steel gas heat exchangers against defects in workmanship and material for a period of 120 months from date of shipment.

- The warranty includes parts during this period only.
- The warranty does not include parts associated with routine maintenance.

Delivery and handling

1. The unit is delivered to the job site fully assembled, wired, and charged with refrigerant and oil by the manufacturer.
2. ***Split ship [optional]:*** The unit is factory tested and delivered to the job site split in either two segments; air handling and condenser section, or three segments; economizer air handling, evaporator air handling, and condenser section, for field assembly and installation. Unit segments ship with valves on each end to recouple the unit and pre-charged with R-454B refrigerant to minimize field setup time. An electrical box is provided in the condensing section to seamlessly integrate power to the unit. The contractor covers the cost of refrigerant, evacuation and charge time for units that are not pre-charged with refrigerant.
3. All handling and storage procedures are per the manufacturer’s recommendations.

Submittals

Shop drawings

Shop drawing submittals include, but are not limited to, the following: drawings indicating components, dimensions, weights, required clearances, location, type and size of field connections, and power and control wiring connections.

Product data

Product data includes dimensions, weights, capacities, ratings, fan performance, motor electrical characteristics, and gauges and finishes of materials.

Documentation

1. Fan curves with specified operating point clearly plotted are provided.
2. Product data of filter media, filter performance data, filter assembly, and filter frames is provided.
3. Electrical requirements for power supply wiring, including wiring diagrams for interlock and control wiring are supplied. Factory and field-installed wiring are clearly indicated.

Equipment

Product specification

Summary

Completely factory assembled, unitized construction [delivered to the job site split in two segments], single packaged air conditioning unit including a factory-mounted and wired unit controller and sensors; single point power with terminal block [dual point power with terminal block] [a non-fused electrical disconnect] [a fused electrical disconnect], for main unit power is factory-installed 460 V[575 V] power supply, outside air handling section with return and supply openings, discharge air (DA) plenum, direct-expansion refrigerant condensing section. 5 kA [65 kA] short-circuit current rating (SCCR).

Phase monitor

A phase monitor is provided on unit designed to protect 3 phase equipment from phase loss, reversal, imbalance, and low voltage. The phase monitor fault condition is indicated at the unit control panel, and the unit is placed into an emergency stop condition.

Internal lights [optional]

A 115 V circuit of centrally located marine LED lights is provided with individual wiring run from the single switch located in the low voltage power supply panel common wall. At a minimum lights are provided in the [pre-evaporator blank] [post-evaporator blank] economizer, evaporator coil, and supply fan sections.

Factory test

1. On factory-assembled or split ship units, the refrigerant circuit is pressure-tested, evacuated, and fully charged with refrigerant and oil.
2. On factory-assembled or split ship units, the unit controller is configured and run tested at the factory to minimize field setup time.
3. If the unit is not configured and tested, then the manufacturer provides field start-up and testing to ensure that the controller is functioning correctly.
4. Record test reports include end of line quality test report to be sent out to the customer.

Unit construction

Base rail - The unit includes an integral design base rail with lifting points clearly marked and visible on the base rail and a 1 1/4 in. female pipe thread (FPT) connection for condensate drainage. The unit base is designed with a recessed curb mounting location. The recessed curb mounting surface provides a continuous surface for field application of curb gasketing to create a weather-tight seal between the curb and unit.

Unit casing - Unit casing has a double wall insulation with injected foam. Insulation application meets NFPA 90 requirements. The insulation system is resistant to mold growth in accordance with UL 181 and ASTM C1338 standardized test methods.

Paint - Exterior champagne color painted surfaces are designed to withstand a minimum of 750 salt spray hours when tested in accordance with ASTM B-117.

Markings and diagrams - All necessary tags and decals to aid in the service or indicating caution areas are provided. Electrical ladder wiring diagrams are attached to the control panel access door.

Documentation - Installation and maintenance manuals are supplied with each unit.

Access doors - Double wall access doors are provided in the fan, (discharge) coil, filter, and inlet sections. Doors are double wall construction with a solid liner and a minimum thickness of 1 in. Doors are attached to the unit with stainless steel hinges. A minimum of four 5/16 in. hex-drive, 90° opening standard finger pull latches are provided. (Viewports are provided in the supply fan, economizer, and cooling coil sections.) (Latches are single handle rotary type with minimum three point contact and an adjustable height handle. Padlockable handle is provided.)

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Panels and doors are completely gasketed with a closed-cell, neoprene gasket. Door tiebacks are provided for all doors to secure them while servicing. Doors that provide access to positive pressure segments include a safety latch. The safety latch relieves pressure if inadvertently opened during unit operation. (Doors that provide access to the ultraviolet (UV) light section include an electrical switch that disables UV light operation when the door is opened.)

Burglar bars [optional] - Burglar bars are mounted in the (supply) (return) (supply and return) opening to prevent entry into the building through the ductwork. Burglar bars are provided for accessible sections with a bottom opening.

Economizer section

Note: Select either no outside air or economizer.

1. **No outside air -** The unit has no provisions for outside ventilation air.
2. **Modulating economizer -** The economizer segment is designed to use outside air for cooling, ventilation, and provides a means of exhausting air from the air handling unit. The segment consists of parallel-acting ultra low leak dampers. The outside air (OA) and exhaust air (EA) dampers are sized for 100% of nominal unit airflow. The EA damper assembly has a factory-installed, foldable rain hood permanently attached to the cabinet to prevent windblown precipitation from entering the unit. The rain hood is rotated into the cabinet and secured for shipment so that upon installation, they can be rotated upwards and screwed into place.

OA inlet openings are covered by a factory-installed foldable rain hood permanently attached to the cabinet to prevent windblown precipitation from entering the unit. The rain hoods on the left and right sides of the unit are rotated into the cabinet and secured for shipment so that upon installation they can be rotated upwards and screwed into place. The OA hood contains a removable and cleanable filter with an efficiency rating of 50% based on ASHRAE 52-76. Damper blades are fabricated from a minimum of 16-gauge galvanized steel. Damper shafts are fabricated from solid steel and mounted in the frame with bronze bearings.

Economizer ultra low leakage dampers - Damper assemblies are ultra low leak design. Damper blades are fabricated from a minimum of 16-gauge galvanized steel. Blade edges are covered with vinyl seals. Damper assemblies have a maximum leakage rate of 4 CFM/sq. ft at 1.0 in. of water gauge (iwg) when tested in accordance with AMCA Standard 500, and have a longevity of 60,000 damper opening and closing cycles. The unit provided economizer meets the damper leakage and life cycle requirements for ASHRAE 90.1-2019, 2018 International Energy Conservation Code® (IECC), and 2016 California Title 24 standards.

Outside airflow measurement [optional] - Fresh air is introduced into the unit via an outside airflow measurement station for full airflow measurement from 0–100% outside airflow. The airflow measurement station is designed into the unit and includes all controls, dampers, and components to monitor airflow accurately.

Economizer with fault detection and diagnostics (FDD) - Economizer with FDD is provided when economizer is selected. As required per ASHRAE 90.1-2022 and California Title 24, FDD system provides alarms for:

- Damper not modulating.
- Economizer not available for suitable outside air conditions.
- Economizer available for unfavorable outside air conditions.
- Excess outside air.
- Temperature sensor failure and fault.

ERW - optional

1. ERW performance is AHRI 1060 certified and bears the AHRI certified label. Components that are independently tested or rated in accordance with are not acceptable. Manufacturer membership in AHRI is not an acceptable substitute. Certified components must be listed as active in the AHRI directory, see http://www.ahridirectory.org.

2. The energy recovery cassette is a UL recognized component for fire and electrical safety and bear the UR mark. recognized components are listed in the UL directory, see http://database.ul.com.
3. The energy recovery cassette complies with NFPA 90A standard by virtue of UL 1812 and UL 900 standards for fire tests to determine flammability and smoke density.
4. The energy recovery cassette incorporates a rotary wheel in an insulated cassette frame complete with removable energy transfer media, seals, drive motor, and drive belt. Cassette frame and structural components are constructed of G90 galvanized steel for corrosion resistance.
5. Wheel structure consists of a welded hub, spoke, and continuous rolled rim assembly of stainless steel, and is self-supporting without energy transfer segments present. Wheel structure is connected to the shaft by means of taper lock bushings.
6. Wheel bearings are permanently sealed and selected for a minimum 30 year L10 life of 400,000 hours. Bearings requiring external grease fittings or periodic maintenance are not acceptable.
7. Energy transfer media is constructed of a durable synthetic lightweight polymer. Media is wound continuously with one flat and one structural layer in an ideal parallel plate geometry. Airflow across heat exchanger surface remains laminar. Energy transfer media does not exceed 3 in. in depth. Energy transfer media is suitable for use in corrosive, marine, or coastal environments without the need for additional coatings. Energy transfer media is capable of repeated washings without significant degradation of the desiccant bond as documented by an independent third party.
8. Desiccant is either silica gel or molecular sieve and permanently bonded to the energy transfer media without the use of binders or adhesives, which may degrade desiccant performance. Desiccants not permanently bonded are not acceptable due to potential delamination or erosion of the desiccant from the energy transfer media. Desiccant is non-migrating nor does it dissolve or deliquesce in the presence of water or high humidity.
9. Wheels are provided with removable energy transfer segments. The unit is designed to facilitate side serviceable ERW. Side service allows for all ERW segments to be pulled for removal. Segments are removable without the use of tools to facilitate maintenance and cleaning. Energy recovery segments are cleanable outside of the cabinet with detergent or alkaline coil cleaner and water. Energy transfer segments are capable of submersion in a cleaning solution. Submersion is capable of restoring latent performance to within AHRI certified performance limits.
10. All diameter and perimeter seals are provided as part of the cassette assembly and are factory set. Seals are non-contact nylon pile brush seal oriented in a labyrinth style configuration. Diameter seals are fully adjustable and easily accessible. Perimeter seals are permanently mounted to the wheel rim and not require adjustment. Seals that mount to the frame are not acceptable.
11. The wheel drive motor is a UL recognized component and is mounted in the cassette frame and supplied with a service connector or junction box. Three-phase motors are suitable for use in both standard and inverter rated applications.
12. The unit has 2 in. MERV 8 replaceable filters for the outside air and exhaust air to help keep the wheel clean and reduce maintenance. The ERW is energized briefly for cleaning and blocking protection if it has not been operated for extended periods.
13. The ERW has a bypass damper. The bypass damper has two positions, ON or OFF, according to the heating or cooling demand.
14. The rooftop unit provides frost protection for the ERW. The controller varies the speed of the wheel, by starting and stopping, to prevent frost condition.

Building pressure control

ⓘ **Note:** Select one of the following types of building pressure control.

1. **No building exhaust or relief -** The unit has no provisions to exhaust building return air.

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2. **Barometric relief damper -** Building air exhaust is accomplished through barometric relief dampers installed in the return air (RA) plenum. The dampers open relative to the building pressure. The opening pressure is adjustable.
3. **Powered exhaust with modulating DA damper -** A double width, double inlet (DWDI) forward-curved centrifugal exhaust fan is provided to exhaust building return air to relieve building static pressure. The fans operates at a constant volume and based on building static pressure. Exhaust airflow is modulated via a parallel-acting control damper. The EA dampers are sized for 100% of the exhaust airflow. An access door is provided on at least one side of the unit for fan and motor access.
4. **Powered exhaust with VFD -** A DWDI forward-curved centrifugal exhaust fan is provided to exhaust building return air to relieve building static pressure. Exhaust airflow is modulated via a factory-installed and commissioned VFD with the same nameplate horsepower as the exhaust fan motor. An access door is provided on at least one side of the unit for fan and motor access.
5. **Power return fan with VFD and exhaust -** A SWSI direct drive plenum fan is provided to draw return air from the building to the rooftop unit. An access door is provided on at least one side of the unit for fan and motor access. The return fan operates to maintain a constant pressure within the RA plenum. An EA damper is provided to modulate building exhaust. The damper is controlled via building pressure. The RA damper and OA damper independently modulate volumes of return and outside airflows.
6. **Exhaust fan VFD manual bypass [optional] -** A two contactor manual bypass is provided to permit fan operation in the event of a fan failure.
7. **Redundant VFD -** Direct drive plenum (DDP) return fans are provided with a 100% redundant VFD. Redundant VFD automatically operates in the event that the primary VFD fails.
8. **Airflow measurement station [optional] -** Installed on the return fan. Return fan airflow is viewable on the control panel and able to be communicated across the Building Automation System (BAS).
9. **Return [exhaust] fan VFD reactor [optional] -** A 3% impedance AC line reactor is provided for return [exhaust] fan VFD.
10. **Belt guards [optional on belt driven fans] -** These are provided to enclose the drive and sheave package on return [exhaust] fan.

ⓘ **Note:** All VFDs are factory tested and matched with each unit.

For powered exhaust or return fan options above, use the following:

1. **Exhaust or return fan motor -** Fan motors are National Electrical Manufacturers Association (NEMA) design ball-bearing types with electrical characteristics and horsepower as specified. [Shaft grounding rings on motors are provided to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground, increasing the motor longevity.] Motors are nominal 1,800 RPM [or 1,200 RPM], open drip-proof (ODP) type [total enclosed fan-cooled (TEFC) type]. The motor is located within the unit on an adjustable base.
2. **Mountings -** Fan and fan motor are internally mounted and isolated on a full width isolator support channel using 1 in. [2 in.] springs [and seismic restraint]. The fan is connected to the fan cabinet using a flexible connection to insure vibration-free operation.
3. **Bearings and drives [option on belt driven fans] -** Fan bearings are self-aligning, pillow block, or flanged type regreaseable ball bearings and are designed for an average life L50 of at least 200,000 hours. All bearings are factory lubricated and equipped with standard hydraulic grease fittings [and lube lines extended to the motor side of the fan]. Fan drives are selected for a 1.5 service factor and anti-static belts are furnished. [Optional spare belts are shipped loose from the factory.] All drives are fixed pitch. Fan shafts are selected to operate well below the first critical speed and each shaft is factory coated after assembly with an anti-corrosion coating.

Air blender - optional

1. Multiple-blade, air-mixer assembly mix air to prevent stratification.

2. Air blenders have a rotary turbulating design consisting of radially extending blades. Units are completely fixed devices with no moving parts.
3. Static air mixers material are 0.080 in., 5052 H34 alloy aluminum. Static air mixers are welded.
4. Simple mixing devices that do not produce expanding discharge with counter rotational mixing are not acceptable.

Filter section

Draw-through filters

Note: Select a filter rack, filter media, and transducer if desired.

1. **Angled filter rack -** 2 in. filters are provided by others [2 in. throwaway filters are provided in an angled filter rack] [2 in. (MERV 8) pleated filters are provided in an angled filter rack]. Filter efficiencies are rated in accordance with ASHRAE Standard 52.2. All filter holding frames consist of heavy duty galvanized steel designed for industrial applications. All filters are side accessible with access doors provided on both sides of the filter section.
2. **Rigid filter rack -** 2 in. and 12 in. filters are provided by others [12 in. (MERV 14) rigid filters with 2 in. (MERV 8) pleated pre-filters are provided] [18 in. (MERV 15) bag filters with 2 in. (MERV 8) pleated pre-filters are provided]. Filter efficiencies are rated in accordance with ASHRAE Standard 52.2. All filter holding frames consist of heavy duty galvanized steel designed for industrial applications. All filters are side accessible with access doors provided on both sides of the filter section.
3. **Vertical filter rack -** 4 in. filters are provided by others. [4 in. (MERV 8) pleated filters are provided.] Filter efficiencies are rated in accordance with ASHRAE Standard 52.2. All filter holding frames consist of heavy duty galvanized steel designed for industrial applications. All filters are side accessible with access doors provided on both sides of the filter section.
4. **Filter transducer -** A filter transducer is provided and wired to the rooftop's control panel. The unit controller displays the pressure drop across the filter[s]. A single transducer is provided to measure pressure drop across both filter banks. [Transducers are provided to measure pressure drop across each filter bank.]
5. **Differential pressure gauge -** A flush mounted, factory-installed differential pressure gauge is provided to measure pressure drop across both filter banks. [Flush mounted, factory-installed differential pressure gauges are provided to measure pressure drops across each filter bank.] The manufacturer provides fully functional gauges complete with tubing.

Final filters

Note: Select a filter rack, filter media, and transducer if wanted.

1. **Rigid filter rack -** 2 in. and 12 in. filters are provided by others [12 in. (MERV 14) rigid filters with 2 in. (MERV 8) pleated pre-filters] [18 in. (MERV 15) bag filters with 2 in. (MERV 8) pleated pre-filters are provided]. Filter efficiencies are rated in accordance with ASHRAE Standard 52.2. All filter holding frames consist of heavy duty galvanized steel designed for industrial applications. All filters are side accessible with access doors provided on both sides of the filter section.
2. **High efficiency particulate air** (***HEPA) filter rack -*** 2 in. and 12 in. filters are provided by others [12 in. (MERV 17) HEPA filters with 2 in. (MERV 8) pleated pre-filters are provided]. Filter efficiencies are rated in accordance with ASHRAE Standard 52.2. All filter holding frames consist of heavy duty galvanized steel designed for industrial applications. All filters are front loading with access doors provided on both sides of the filter section.
3. **Filter transducer -** A filter transducer is provided and wired to the rooftop's control panel. The unit controller displays the pressure drop across the filter[s]. A single transducer is provided to measure pressure drop across both filter banks. [Transducers are provided to measure pressure drop across each filter bank.]

4. **Differential pressure gauge -** A flush mounted, factory-installed differential pressure gauge is provided to measure pressure drop across both filter banks. [Flush mounted, factory-installed differential pressure gauges are provided to measure pressure drops across each filter bank.] The manufacturer provides fully functional gauges complete with tubing.

Evaporator section

1. **Cooling coil -** Evaporator coils are a direct expansion type with interlaced circuiting to assure complete coil face activity during part-load operation. Coil tubes are copper with internally enhanced tubes. Tubes are enhanced mechanically and expanded to bond with the aluminum [copper fins]. All coils are pressure-tested at a minimum of 450 psig. [Evaporator coils are protected by the E-Coat 10-1 four coat process. Coils are dipped in a phenolic coating, that provides substantial resistance to corrosion of aluminum and copper. E-Coat coils are rated to exceed 6000 hours salt spray in accordance with ASTM B117 / DIN 53167.]
2. **IAQ drain pan -** The main coil drain pan is double-sloped with a condensate connection through the base rail of the unit. Drain pans for cooling coils [and humidifier] meet the requirements of ASHRAE 62.1. Drain pans are constructed of stainless steel. [Provide a condensate overflow switch in the primary drain pan.]
3. **Intermediate drain pan -** Coils with finned height greater than 48 in. have an intermediate drain pan extending the entire finned length of the coil. The intermediate pans have drop tubes to guide condensate to the main drain pan.
4. **UV lights [optional] -** UVC lights provide fly-by virus deactivation and surface decontamination of the coil and drain pan. The UV lights are installed in the downstream side of the evaporator coil or drain pan. UVC lights provide a minimum of 1500 µJ/cm2. UVC lights have a minimum 9,000 hours of service. The UV lights, tubes, are shipped loose in protective packaging for installation by the contractor.

Supply fan section

1. **Fan -** The fan section is equipped with a SWSI airfoil plenum wheel. Plenum fan is direct drive. An access door is provided on the opposite side of the control panel for fan/motor access. [Dual SWSI supply fans are connected to a single VFD.] An access door is provided on the opposite side of the control panel for fan/motor access.]
2. **Fan motor -** Fan motors are NEMA design ball-bearing types with electrical characteristics and horsepower as specified. Motors are nominal 1,800 RPM, ODP type [TEFC type].
3. **Mountings -** Fan and fan motor are internally mounted and isolated on a full width isolator support channel using 1 in. [2 in.] springs [and seismic restraint].
4. **Variable air volume (VAV) fan control** - VAV supply fan control is accomplished by using [a] VFD[s] and supply fan motor combination matched with supply fan to generate design performance at appropriate fan speed. The VFD[s] includes an integral DC line reactor to reduce harmonic distortion in the incoming and outgoing power feeds. If a DC line reactor is not provided, an AC line reactor[s] is provided.
5. **Single zone VAV (SZVAV)** - In cooling mode, refrigeration capacity or compressor stages are cycled ON or OFF to maintain DA temperature (DAT). In heating mode, additional stages are cycled ON or modulated to maintain DAT setpoint. The supply fan speed is modulated to maintain zone temperature setpoint. The unit uses either a BAS signal, RA temperature (RAT), or a zone temperature sensor to determine zone temperature and deviation from setpoint.
6. **Redundant VFD -** Dual DDP supply fans are provided with dual VFDs. [VFDs are supplied to independently operate the two supply fan motors.]
7. **VFD reactor [optional] -** A 3% impedance AC line reactor is provided for the supply fan VFD[s].
8. All VFDs are factory tested and matched with each unit.
9. **Shaft grounding rings [optional] -** On motors are provided to prevent electrical bearing fluting damage by safely diverting harmful shaft voltages and bearing currents to ground, increasing the motor longevity.
10. **Inlet guards [optional] -** are provided on inlet of supply fan.

11. **Supply airflow measurement [optional] -** capability is provided. Supply fan airflow is viewable on the control panel and readable across the BAS.

Discharge air plenum

Note: Select one of the following heat or no heat configurations.

Cooling only

The DAT sensor is located in the DA plenum, such that it accurately measures the DAT.

Staged gas heat

The heating section includes an induced draft furnace in two [four] [six] [eight] [ten] stages of heating capacity. [Optional high altitude kit is shipped loose from the factory.] [Optional liquid propane (LP) conversion kit is shipped loose from the factory.]

1. **Heat exchanger -** The heat exchanger is constructed of tubular aluminized steel [stainless steel] and flue assembly.
2. **Burner and ignition controls -** The burner includes a direct-driven induced-draft combustion fan with energy efficient direct spark ignition, redundant main gas valves with pressure regulator.
3. **Combustion air fan -** The inducer fan[s] maintains a positive flow of air through each tube to expel the flue gas and to maintain a negative pressure within the heat exchanger relative to the conditioned space.
4. **Safety devices -** A high limit controller with automatic reset to prevent the heat exchanger from operating at an excessive temperature is included. A centrifugal switch on the induced draft fan motor shaft prevents ignition until sufficient airflow is established through the heat exchanger. A rollout switch provides secondary airflow safety protection. The rollout switch discontinues furnace operation if the flue becomes restricted.
5. **Flue -** The furnace flue is shipped loose to protect it from damage during transit. The flue is field-mounted by the installing contractor. The flue outlet is located above the unit to help prevent recycling of combustion gases back through the heat exchanger.
6. **Agency certification -** Gas heating units are designed in conformance with ANSI Z83.8-2016/CSA 2.6-2016 standards and carry a CSA listing. All gas heating units have 81% steady state efficiency rated in accordance to 2023 Department of Energy Efficiency code. All gas heating units meet the requirement of AHRI CFRN Certification program and Code of Federal Regulations, 10 CFR Part 43, which references efficiency testing method in standard ANSI Z21.47.
7. **Valves -** A factory provided gas heater isolation valve is shipped loose for installation in the field by others. Punched holes are provided in the bottom [side] of the unit. The holes are capped for field to make suitable connection. A bottom [side] penetration option is provided with piping to extend out of the unit.

Modulating gas heat

For applications requiring gas heat for morning warm-up, supply air (SA) tempering, or other heating needs, a modulating natural gas furnace is available for finer temperature control. The furnace is located in the DA plenum, downstream of the supply fan. The DAT sensor is located across the face of the supply duct opening in the unit. [Optional high altitude kit is shipped loose from the factory.] [Optional LP conversion kit is shipped loose from the factory.]

1. **Heat exchanger -** The heat exchanger is constructed of tubular stainless steel and flue assembly.
2. **Burner and ignition controls -** The burner includes a direct-driven induced-draft combustion fan with energy efficient direct spark ignition, redundant main gas valves with pressure regulator.
3. **Combustion air fan -** The inducer fan[s] maintains a positive flow of air through each tube to expel the flue gas and to maintain a negative pressure within the heat exchanger relative to the conditioned space.

4. **Safety devices -** A high limit controller with automatic reset to prevent the heat exchanger from operating at an excessive temperature is included. A centrifugal switch on the induced draft fan motor shaft prevents ignition until sufficient airflow is established through the heat exchanger. A rollout switch provides secondary airflow safety protection. The rollout switch discontinues furnace operation if the flue becomes restricted.
5. **Flue -** The furnace flue is shipped loose to protect it from damage during transit. The flue is field-mounted by the installing contractor. The flue outlet is located above the unit to help prevent recycling of combustion gases back through the heat exchanger.
6. **Agency certification -** Gas heating units are designed in conformance with ANSI Z83.8-2016/CSA 2.6-2016 standards and carry a CSA listing. All gas heating units have 81% steady state efficiency rated in accordance to 2023 Department of Energy Efficiency code. All gas heating units meet the requirement of AHRI CFRN Certification Program and Code of Federal Regulations, 10 CFR Part 431, which references efficiency testing method in standard ANSI Z21.47.
7. **Valves -** A factory provided gas heater isolation valve is shipped loose for installation in the field by others. Punched holes are provided in the bottom [side] of the unit. The holes are capped for field to make suitable connection. A bottom [side] penetration option is provided with piping to extend out of the unit.

Electric heat

An electric slip-in heater is installed within the rooftop unit DA plenum to provide the heating requirements per the schedule shown on the plans. The electric heater is wired in such a manner as to provide three [four] [six] [eight] [ten] steps of capacity control. Heating element branch circuits are individually fused to maximum of 48 Amps per National Electrical Code (NEC) requirements. Unit are provided with staged [modulating 0 VDC to 10 VDC silicon controlled rectifier (SCR)] electric heat.

1. **Heat element -** The heating element is an industrial grade design using an open coil made of the highest grade resistance wire containing 80% nickel and 20% chromium. The resistance coils are adequately supported in the air stream using ceramic bushings in the supporting framework. Terminals of the coil are stainless steel with high temperature ceramic bushings.
2. **Safety devices -** The primary high temperature protection is an auto reset type thermal cut out. Secondary protection is provided by a manual reset type thermal cut out.
3. **Agency certification -** The operation of the electric heater is an integral part of the rooftop's control system. Power connection to the heater is through the power panel of the unit. Electric heat is tested and certified in accordance with UL 60335-2-40.

Hot water heat

A hot water coil is installed in the rooftop DA plenum.

1. **Construction -** 1.The hot water coil has one as well as two rows depending upon level of heat and capacity requirement along with 5/8" tube. The structural galvanized steel casing protects the coil. The coil is circuited to provide free draining and venting through one vent and drain. Freezestat is provided to prevent coil freeze up. Access doors are provided for convenient access to valve for maintenance and inspection.
2. **Testing -** Completed coil including headers, connections, and return bends are tested with 325 pounds compressed air under water. Coils are designed for operation at 350 psig design working pressure.
3. **Valves -** Factory [field] provides three-way modulating control valve and spring return valve actuator capable of receiving 0–10 VDC signal. The valve actuator is controlled by factory-installed main unit controller. [Field-provided valve matches specifications/ratings as recommended by unit manufacturer.] Unit have hole markings for field to drill holes through the base or side of the unit.

Steam heat

A steam heating coil is installed in the rooftop DA plenum.

1. **Construction -** The steam coil shall be constructed in the non-freeze style. The steam coil shall have one row. Tube shall be 1 in. as well as 5/8 in. OD depending on heat level and capacity requirement. Coils having seamless copper tubing with a minimum wall thickness of 0.049 inch and expanded into fin collars for maximum fin tube bond. Inner distributing tubes shall be 5/8 in. or 1 in. OD seamless copper tubing with a minimum wall thickness of 0.049 in. or 0.025 in. All header connections shall be of red brass, with male pipe threads and silver braze to headers. Casing shall be galvanized steel. The core shall be pitched in the direction of the condensate connection for proper drainage. Freezestat shall be provided to prevent coil freeze up. Access doors shall be provided for convenient access to the valve for maintenance and inspection.
2. **Testing -** The completed coil, including headers and connections, are tested underwater with 325 pounds compressed air to ensure a leak-free coil.
3. **Valves -** Factory [field] provides two-way modulating control valve and non-spring return valve actuator capable of receiving 0–10 VDC signal. Steam valve is designed for operation at 2 psig minimum and 15 psig maximum steam pressure. Valve actuator is controlled by factory-installed main unit controller. [Field provided valve must match specifications and ratings as recommended by the unit manufacturer.] The unit has hole markings for field to drill holes through the base or side of the unit.

Humidifier [optional]

Humidifier steam manifold and dispersion panel - Short absorption manifold is designed to distribute pressurized steam from a facility steam boiler, to directly inject the steam into air for humidification.

1. Absorption distance characteristic prevents water accumulation on duct surfaces beyond 12 in. downstream of the steam dispersion panel.
2. Steam dispersion panel consisting of a (one) horizontal 304 stainless steel round header supplying steam to a bank of closely spaced vertical tubes, as necessary to meet absorption distance requirements, and to reduce condensation losses. The spacing is as follows:

Unit (ton)	Spacing (in.)
90 to 105	3
120 to 150	3

3. Steam inlet and condensate return are located on the same side and at the bottom of the header to allow single point entry and floor mounting.
4. Vertical stainless steel distribution tubes provide condensate evacuation. Horizontal distributor tubes are not acceptable.
5. Distribution tubes include threaded standoffs for trouble free attachment to factory-supplied support bracket.
6. All steam tubes are 304 stainless steel construction. 409 stainless steel header and distribution tubes are not acceptable.
7. Stainless steel nozzle inserts ensure condensate free steam is discharged from the center of the distribution tubes. Systems without nozzle inserts, or other than stainless steel, are not acceptable.
8. Stainless steel nozzle inserts have metered orifices, sized to provide even distribution of the discharged steam, spaced for optimum steam absorption.
9. The header functions as an internal steam separator, therefore an external steam separator is not required.
10. Manufacturer provides adjustable 304 stainless steel mounting frame.
11. Tubes and headers accommodate field retrofit of insulation for increased energy efficiency.

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Shipped loose items

1. The manufacturer provides steam control valve with electrical actuator normally closed, spring return (24 V), steam control valve with equal percent flow characteristics and positive shut off against steam. The control valve is compliant with EN 13547 standard and ANSI B1.20.1 (NPT) end connection standard. The temperature rating is compliant with ANSI 16.104/FCI 70.2 and for control shut off leakage ANSI/ISA-75.11 flow characteristics standards. The steam control valve has a brass forged body with stainless steel ball and stem assembly.
2. The manufacturer provides cast iron steam traps and iron wye strainer

Sound attenuator [optional]

1. Sound attenuator, or silencer, segments are provided as shown on drawings. Silencers are rectangular sound attenuators as indicated on drawings and equipment schedule. See following table for sound attenuator length.

Unit (ton)	length (in.)
90 to 105	36
120 to 150	36

2. Outer casings of rectangular silencers are made of 22 gauge type G60 galvanized steel.
3. Interior partitions for rectangular silencers are not less than 26 gauge type G60 galvanized perforated steel.
4. The filler material is inorganic glass fiber of a proper density to obtain the specified acoustic performance and is packed under not less than 5% compression to eliminate voids due to vibration and settling. The material is inert, vermin-proof, and moisture-proof.

Condenser section

1. **Condenser fans -** Condenser fans are matched up with compressors to optimize system control. Condenser fans are propeller type with aluminum blades, directly driven by permanently lubricated three-phase motor.
2. **Condenser coil -** Microchannel condenser coils are constructed of parallel flow aluminum alloy tubes metallurgically brazed to enhanced aluminum alloy fins. Condenser cleaning hatches are provided for access to condenser coil without the removal of condenser fans.
3. **Low ambient [optional] -** Compressors operate down to -10.0°F and resume cooling at -7.0°F by monitoring the refrigeration system liquid line pressure and adjusting condenser airflow to maintain the proper liquid line pressure to protect unit operation. Airflow adjustment occurs through a combination of VFD driven condenser fans and fan cycling. Liquid line pressure transducers are included to provide the pressure information on the unit control display.
4. **Shut-off valves -** Discharge suction and liquid shut-off valves are included to provide a means of isolating the refrigerant charge in the system so that the refrigeration system is serviced without removing the charge in the unit.
5. **Sight glasses -** are accessible without having to open air handler section access doors or remove panels.
6. **Fixed speed compressors -** Units use hermetic scroll compressors, piped and charged with oil and R-454B refrigerant. Each compressor is protected from over-temperature and over-current conditions. Compressors are vibration-isolated from the unit, and installed in an easily accessible area of the unit. All compressor-to-pipe connections are brazed to minimize potential for leaks. Units are designed to minimize leaving air temperature changes when varying capacity. Steps of capacity control do not exceed 23% of unit capacity when modulating from minimum to maximum. Hot gas bypass operation are not used to meet maximum modulation steps of control. Variable speed drive compressors are used if unit is not capable of meeting the maximum modulation percentage of step capacity.

7. **Variable speed drive compressors [optional] -** Units use variable speed drive scroll compressor, piped and charged with oil and R-454B refrigerant. Units have a minimum capacity of 15% of full load. Each compressor is protected from over-temperature and over-current conditions. Compressors are vibration-isolated from the unit and installed in an easily accessible area of the unit. All compressor-to-pipe connections are brazed to minimize potential for leaks. Variable speed drive scroll compressors are matched and factory tested with VFD. All high efficiency units deliver Tier 2 efficiency levels of the Consortium of Energy Efficiency (CEE) for 2024.
8. **Modulating hot gas reheat (HGRH) [optional] -** Modulating hot gas reheat (HGRH) is provided. The unit includes a three-way stepper motor driven modulating valve and controller, a HGRH coil mounted downstream of evaporator coil, and all associated refrigerant piping. The unit controller modulates the three-way HGRH valve to control the amount of compressor discharge gas to the HGRH coil.
9. **Replaceable core filter driers -** The replaceable core filter drier on the unit provides a convenient means for maintaining and optimizing the unit's refrigeration system.
10. **Condenser enclosure -** The condenser section is enclosed by a wire grill condenser enclosure on the three exposed sides. Paint finish matches the salt spray specifications of the unit exterior.
11. **Compressor sound treatment [optional] -** Compressor sound blankets with heat shield are provided to attenuate radiated sound from the compressors.

Controls

1. **Enclosure -** The unit is factory configured, installed, wired, and tested with a rooftop unit controller housed in a rain and dust-tight, powder painted, steel cabinet behind hinged, latched, and gasket-sealed door. VFD control keypads are located in the control cabinet for accessibility and servicing while the unit is operating.
2. **115 V convenience outlet [optional] -** A duplex ground fault circuit interrupt (GFCI) receptacle is factory-mounted in a weatherproof enclosure and wired for a 15 amp load. Electrical power is de-energized to the convenience outlet when the optional unit mounted disconnect has been turned OFF. Unit powered convenience outlet includes transformer to step down to 115 V.
3. **Basic controls -** Control includes automatic start, stop, operating, and protection sequences across the range of scheduled conditions and transients. The rooftop unit controller provides automatic control of compressor start/stop, energy saver delay and anti-recycle timers, condenser fans, and unit alarms. Automatic reset to normal operation after power failure. Software and user programmed setpoints are stored in nonvolatile memory for the 20-year expected life of the microprocessor. The real time clock (RTC) information is retained for a minimum of 72 hours during power loss with a super capacitor-backed circuit.
4. **Smart equipment control -** The unit is supplied with the Smart Equipment control system. All units are factory commissioned, configured, and run tested.
5. **Standard display -** The display is organic light-emitting diode (OLED) with green characters on black background providing high visibility. The display provides a minimum of 175 characters in total with 35 characters × 5 lines. The OLED display is a 256 × 64 dot matrix. The display shows animated text, symbols, and descriptions down to -40.0°F (-40.0°C) without noticeable degradation of contrast or display response time. Numeric data is provided in imperial or metric units. A sealed, membrane style keypad with 20 keys is used to navigate the unit controller and enter data. Specific keys are individually assigned to allow quick selections. The software on the user interface (UI) is upgradable in the field.
6. **Touchscreen display -** The display is a 10 in. WXGA type color wide screen, thin film transistor (TFT) with multi-touch capacitive touchscreen and 1280 × 800 resolution. The screen details all operations and parameters, using an interactive graphical representation of the rooftop unit and its major components. The display does not require a laptop or mobile display to access complete functionality. The display is able to integrate with multiple controllers connected on a common BACnet MS/TP communication bus. The display shows animated text, symbols, and descriptions down to -4.0°F (-20.0°C) without noticeable degradation of contrast or display response time. Numeric data is provided in imperial or metric units. Specific icons are individually assigned to allow quick selections. The software on the UI is upgradable in the field.

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7. The following display information is available based on selected unit options:
   a. Unit summary with serial, model number, language, unit status, and enable. Controller hardware, firmware, and network inputs.
   b. Sensor information for all devices connected to the unit and setpoints.
   c. Commissioning menu has options to view key parameters such as occupancy, cooling, heating, economizer, morning warm-up, staggered start, safety setup, low ambient and demand control ventilation (DCV).
   d. Start-up, air balancing and commissioning wizards are provided for field technicians to complete unit configuration and start-up.
   e. Occupied, unoccupied, coast modes.
   f. Date, time, time zone, schedules.
   g. Cooling enable, status, setpoints, stages, compressor capacity, runtime, anti-short cycle time, rapid start, and morning cool down.
   h. Heating mode, enable, status, stages, capacity, runtime, setpoints, valve commands, and morning warm-up.
   i. Supply fan, return/exhaust fan status, command, air proving switch, VFD speed, runtime, and faults.
   j. Condenser fan staged and modulating command, low ambient.
   k. Economizer mode, damper position, airflow, fresh air, and alarms for economizer FDD.
   l. HGRH status, enable, humidification setpoint, and valve command.
   m. Smoke control modes, sensor inputs, smoke detector shutdown.
   n. Unit alarms such as safety switch, phase monitor, compressor safety, filter differential pressure, carbon dioxide (CO_2), low pressure, high pressure, freezestat, and condensate switch. Alarms mode with up to 5 current alarms and 25 previous alarms with time and date.
8. **Adjustable height display interface -** The display interface has up to three different installation height locations within the panel. The display interface is installed on a hinge with a magnetic catch to allow wiring and electronics behind the display to be easily accessed.
9. **Diagnostics -** Upon start-up of the unit controller, the unit controller runs through a self-diagnostic check to verify proper operation and sequence loading. The rooftop unit controller continually monitors all input and output points to maintain proper operation. The unit continues to operate in a trouble mode or shut down as necessary to prevent an unsafe condition for the building occupants or to prevent damage to the equipment. In the event of a unit shutdown or alarm, the operating conditions, date, and time are stored in the shutdown history to facilitate service and troubleshooting. A minimum of 10 error histories are recorded.
10. **Compressor capacity modulation -** Staging of the multiple fixed [fixed and variable] speed compressors is used to control refrigeration capacity. Upon entering cooling mode from other modes, the unit controller estimates the cooling requirement and match it closely to the capacity in order to reduce the time required to satisfy the cooling requirements. After the initial calculation, the unit controller adds or reduces stage as necessary to establish a balance between the unit capacity and the space cooling load.
11. **Demand control ventilation (DCV) [optional] -** CO_2 sensors are connected to the unit. The unit controller resets the minimum OA damper position based on demand. DCV remains active as long as the unit is in occupied mode. The unit controller has built-in sequences for indoor CO_2 and comparative CO_2.
12. **Smoke detector [optional] -** The supply [return] [supply and return] smoke detector[s] are provided with the unit. A smoke detector ON signal shuts down the unit.
13. **Refrigerant detection system (RDS) -** The RDS has integrated sensors providing R-454B leak detection. The RDS is connected into unit controls and automatically starts a sequence to dilute refrigerant gas as well as raising an alarm when it senses the presence of refrigerant in the cabinet, indicating a leak equal to 25% of the Lower Flammability Limit. The RDS contains factory-installed sensors that are located to ensure accurate and timely sensing of a leak.

14. **Safety inputs -** The smoke control sequences are available through BAS communication [and hard wired connections using the Customer Terminal board]. The smoke control sequences are used whenever the smoke control binary inputs are turned ON to remove, exhaust, or ventilate smoke, fumes, or other airborne contaminates from the occupied space. The unit controller includes purge, pressurization, and evacuation sequences of operation. Smoke control inputs are assigned a higher priority over smoke detector and override a smoke detector shutdown. These sequences and functions are not part of a listed UL 864 UUKL Smoke Control System.
15. **Twinning -** enables control of multiple rooftop units sharing a common supply duct. The control algorithm provides independent logic unit control. The independent logic unit control system does not require switchover of primary logic in case of rooftop unit failure. The unit provides quick response time, shared data for sensors and setpoints, simple configuration, and easy setup. Twinning configuration is available through BACnet. No additional control or communication wiring is required.
16. The control is installed and tested at the factory where the equipment is assembled. The following controls features are available based on selected unit options:
    a. The control uses a wall sensor that has a means of overriding the unoccupied mode for a programmable amount of time.
    b. The unoccupied override time is programmed in minutes up to 4 hours.
    c. The control has a SA sensor as standard.
    d. The control has a RA sensor as standard.
    e. The control has an outside air temperature (OAT) sensor as standard.
    f. The control uses the RA sensor in place of the space sensor if the space sensor fails for any reason.
    g. The control has a 365 day real time clock (RTC).
    h. The control has an occupancy schedule that allows two different occupied schedules per day for each of the seven days of the week individually.
    i. The control has 20 holiday schedules, each capable of 99 days. The control's holiday schedules has a start time associated with each schedule.
    j. The control is capable of operating the economizer using dry bulb, single enthalpy, or dual enthalpy.
    k. The control has the ability to do demand ventilation control using two CO_2 sensors.
    l. The control has a programmable maximum OA damper position for IAQ operation.
    m. The control has the ability to temper the ventilation air during times when heating or cooling is not required.
    n. The control must be able to lock out cooling below a programmable OAT setpoint.
    o. The control is able to lock out heating above a programmable OAT setpoint.
    p. The control is able to do a pre-occupancy purge.
    q. The control has purge, de-pressurization, and pressurization sequence for smoke control.
    r. The control has the ability to read pressure across two filter banks.
    s. The control has the capability of reading a fan proving switch.
    t. The control has an intelligent recovery function that brings the space to the occupied setpoint just before or at the beginning of the first occupied schedule each day. The control learns and applies the minimum runtime required to heat or cool the space to setpoint for the first occupied period of a day. The unit controller is capable of compensating start time based on OAT.
    u. The control satisfies cooling demand using unequal compressor staging combinations.
    v. The control monitors the outside airflow.
    w. The control provides a low ambient cooling operation.
    x. The control enables dehumidification, or temperature cool-only mode based on humidity setpoint.
    y. The control has compressor safety monitoring.

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z. The control has FDD alarm monitoring for economizer operation.
aa. The control monitors exhaust air and return airflow.
ab. The control provides rapid start.
ac. The control is capable of initiating warm-up and cool down mode using either occupied command, optimal start or schedule.
ad. The control provides staggered start and coast mode.
ae. The control provides condensate overflow switch alarm.

BAS communications

The unit has BACnet MS/TP, Modbus, N2 [BACnet IP] communication protocol integral to the unit controller. The controller is certified for BACnet communication protocol by BACnet Testing Laboratory (BTL) to meet the requirements of the advanced application control profile. A control points list, BACnet interoperability building blocks (BIBBs), and protocol implementation conformance statement (PICS) is provided by the manufacturer to facilitate communications programming with the BAS.

1. **Smart Equipment connectivity** - Connected Workflow Converter (**CWCVT**) is a pocket-sized Bluetooth module that provides a wireless mobile UI to Smart Equipment and manufacturer-branded system controllers and thermostats by means of the Connected Workflow app (CWA).
2. **Customer terminal board [optional]** - A customer terminal board is supplied on all units requiring twinning, smoke control sequences, humidifier, or hydronic heat.
3. **Verasys and Metasys Communication interface** - The BAS provides the owner with a simple user experience and configurable controls. The system consists of Smart Equipment technology and is able to interface with Verasys and Metasys systems.

Installation

General

The installing contractor installs the rooftop unit(s), including components and controls required for operation, in accordance with the rooftop unit manufacturer's written instructions and recommendations. Rooftop units are installed as specified.

- All size or shape equipment including electrical components, especially those not built with weatherproof enclosures, VFDs, and end devices are effectively covered for protection against rain, snow, wind, dirt, sun fading, road salt/chemicals, rust, and corrosion during shipping cycle. Equipment remains clean and dry.

Location

Locate the rooftop unit as indicated on drawings, including cleaning and service maintenance clearance per manufacturer instructions. Adjust and level the rooftop unit on the support structure.

Inspection and start-up supervision - optional

A factory-trained service representative of the manufacturer supervises the unit start-up and application specific calibration of control components.