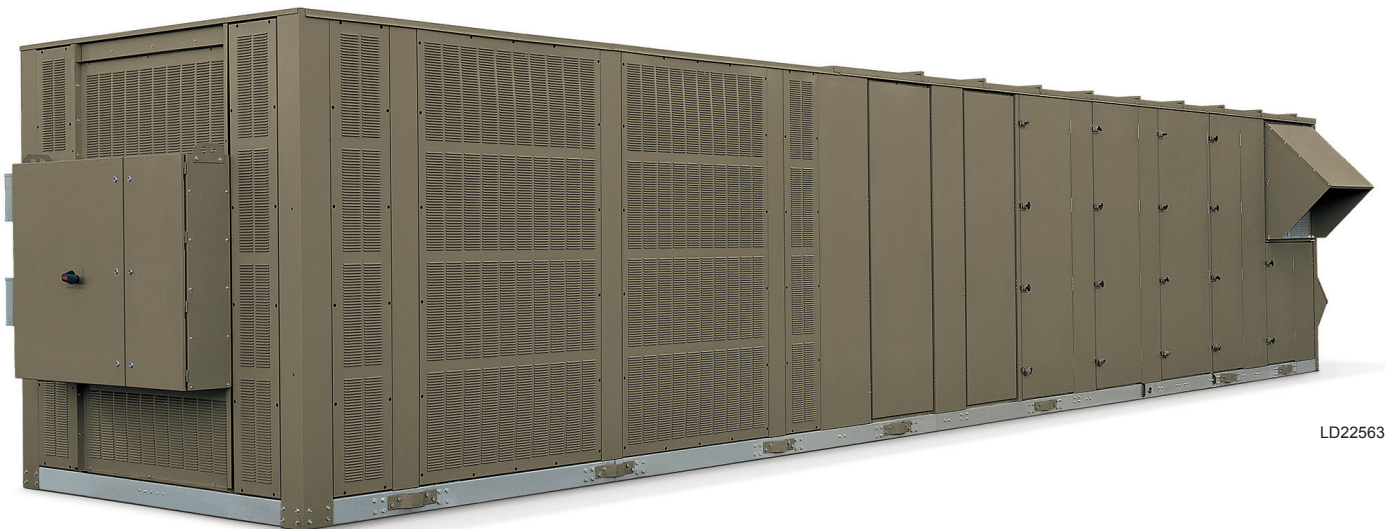


# YORK® SINGLE PACKAGE ROOFTOP UNITS ENGINEERING GUIDE

70–105 Tons  
Cooling and Heating (Gas, Electric, Water, and Steam)

R-410A

Mod G



LD22563



 **YORK®**  
INSTALL CONFIDENCE

[illegible]

## Approvals



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## Introduction

**The YORK® 70–105 Ton Single Package Rooftop Units – designed to meet the demands of the market for today and tomorrow.**

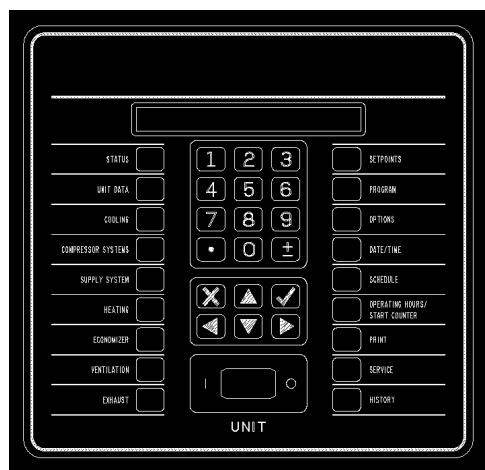
### Better Economy...

#### Lower total cost of ownership

- YORK provides a standard product offering that meets the latest ASHRAE 90.1 energy efficiency requirements.
- Fully modulating gas heat and greater steps of capacity control offer superior off-design performance while maintaining optimum occupant comfort.
- Accurate ventilation control ensures that no more than the proper amount of ventilation air is utilized. This avoids the energy cost of conditioning excess outside air and simultaneously monitors all other unit functions for maximized energy efficiency.
- Flexible design configurations simplify the design process and allows the YORK 70–105 ton rooftop unit to be applied to virtually any building application.
- Accessibility through double-wall access doors, spacious compartments and supportive floors improves serviceability.

### Better Ecology...

#### Indoor air quality features for the indoor environment



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The Single Package Unit User Interface uses microprocessor logic to optimize operation of the rooftop unit.

- A double-sloped stainless steel drain pan with a single drain connection ensures that all condensate is voided from the drain pan. It is also visible and accessible for periodic inspection and cleaning required by the ASHRAE 62 IAQ standard.
- Double-wall construction of the roof, floor, doors, and walls prevents insulation fibers from entering the conditioned air. The inner liner also facilitates periodic cleaning of the unit to prevent harmful build-up of bacteria or contaminants.
- The single package unit control center uses microprocessor logic to analyze and optimize ventilation decisions and perform demand ventilation, airflow compensation, and airflow measurement to maintain the air quality at a healthy level.

## Patents

For access to rooftop unit related patents, visit: <https://jcipat.com>

## Features and Benefits

### AIRFLOW CONFIGURATIONS

**Variable Air Volume (VAV)**— YORK® 70–105 ton rooftop units are available for variable air volume (VAV) applications. Control can be used with a zone sensor or building automation system. Supply fans are controlled to the supply duct static pressure setpoint, which can be reset via a building automation system (BAS) or through a 0–5VDC analog input on the unit controller for optimized duct static pressure control. The static pressure transducer is provided in the single package unit, and 5/16-inch or 1/4-inch plastic tubing and static pressure sensor must be supplied by others and installed approximately 3/4 down the longest duct run.

**Single Zone Variable Air Volume (SZVAV)** – The 70–105 ton rooftop units are available for single zone variable air volume (SZVAV) applications. Control can be used with a zone sensor or a BAS. Supply fans are controlled based on zone temperature.

### COOLING AND HEATING CONFIGURATIONS

**Cooling Only** – For applications where no heat is required, or heating is provided elsewhere within the building HVAC system, cooling only units include an empty discharge plenum. Supply duct connections are configurable for bottom, left or right discharge. The supply air temperature sensor is included and factory-installed.

**Staged Gas Heat** – For applications requiring gas heat for morning warm-up, or other heating needs, a staged natural gas furnace is available. The furnace is located in the discharge plenum, downstream of the supply fan. The supply air temperature sensor is located across the face of the supply duct opening in the unit. Furnaces are designed in 375 mbh modules with two stages in each. For 70–105 ton units, optional Propane Conversion Kits contain the necessary orifices and gas valve/parts to convert staged heat only (not modulating) from natural gas to propane. Ignition and safety controls are included and factory-wired. Units with staged gas heat are ETL listed.

**Modulating Gas Heat** – For applications requiring gas heat for morning warm-up, supply air tempering or other heating needs, a modulating natural gas furnace is available for finer temperature control. The furnace is located in the discharge plenum, downstream of the supply fan. The supply air temperature sensor is located across the face of the supply duct opening in the unit. Furnaces are designed in 375 mbh modules in 8:1 turndown increments. Three are available for the YPAL070–105 (8:1, 16:1 or 24:1 turndown). Ignition and safety controls are included and factory-wired. Units with modulating gas heat are ETL listed.

**Electric Resistance Heat** – For applications where electric heat is desired, a slip-in electric resistance heat element is available in sizes from 80–250 kW depending on the single package unit model size. The number of stages varies by size and voltage, but all have a minimum of two stages of capacity. Units with electric heat are ETL listed.

**Hot Water Heat** – For applications where hot water is available for heating, a hot water heating coil is available. A range of coil fin count selections are available to properly size the heating for the application. Units with hot water heat are ETL listed.

**Steam Heat** – For applications where steam is available for heating, a steam heating coil is available. A range of coil fin count selections are available to properly size the heating for the application. Units with steam heat are ETL listed.

## POWER OPTIONS

**Single-Point Supply with Terminal Block** – This configuration is standard, and includes three terminals for the incoming 3-phase power and is the standard configuration for the 70–105 ton rooftop product. It includes the enclosure, terminal-block, and interconnecting wiring to the compressors, heater and furnace controls, all fans, etc. In this configuration, code requires that a means of disconnect (not provided) must be installed at the site within line-of-sight of the equipment.

**Single-Point Supply with Non-Fused Disconnect Switch** – This option is the same as the single-point with terminal block option except it includes a unit-mounted through-the-door manual non-fused disconnect switch with an external, lockable handle (in compliance with Article 440-14 of N.E.C.). This option provides a means to isolate the unit power voltage for servicing. Others must supply separate external fusing which must comply with the National Electric Code and/or local codes.

**Dual-Point Supply with Terminal Block** – This option includes enclosure, terminal blocks circuited to the supply and exhaust fans and control transformer and a second set of terminal blocks with interconnecting wiring to the compressors, heat (if applicable) and condenser.

**Convenience Outlet** – This options includes a powered 115V GFCI convenience outlet that can be used for powering tools or lights for servicing. A protective cover plate is included while not in use. The outlet is located on the bottom left hand corner of the power panel.

## CONTROL FEATURES AND OPTIONS

**Microprocessor-Based Single Package Unit Controller** – All 70–105 ton rooftop units are equipped with a factory-installed, programmed and commissioned unit controller with all I/O capabilities and control sequences. The controls include all on-board diagnostic, safety and control features to operate the single package unit. A multimedia card interface is included for software upgrades and can be used for data logging to simplify equipment troubleshooting. Communication ports are included as standard with three alarm outputs, a shutdown contact, remote start/stop input, smoke ventilation controls, analog inputs for supply air temperature and duct static pressure rest, along with a variety of other capabilities.

**Standard Ambient** – Models operate down to 45.0°F as standard.

**Low Ambient on Circuits One, [One and Two], or [One, Two, and Three]** – This option includes low ambient control of the first [first and second] [first, second, and third] circuit(s) down to 0.0°F through the use of suction and discharge pressure transducers on the circuit(s).

**Pressure Transducers with Readout Capability** – This option includes suction and discharge pressure transducers on each circuit and provides pressure readout of all circuits at the unit control panel.

**Wall-Mount Zone Sensor** – A 10 kOhm thermister type III NTC zone sensor for wall mounting. This zone sensor is for sensing temperature only and does not include any setpoint adjustment features.



Zone Sensor

## COMMUNICATIONS

**BACnet® MS/TP (RS-485) Communications** – This communication option is standard on every rooftop unit. Communications to the unit are through a twisted pair, and the wire terminations are on the primary unit control board. See supplemental information for the available control points and PICS/BIBBs statements of conformity.



## Features and Benefits (Cont'd)

**Modbus™ RTU Communications** – This communication option is standard on every roof-top unit and can be used in lieu of the BACnet communications (only one can be used at a time). See supplemental information for the available control points.

### FILTER OPTIONS

**Filter Options** – Two-inch throwaway, cleanable, carbon coated MERV 8 or pleated MERV 8 filters in an angled rack are available. For higher filtration requirements, optional rigid filter racks are available with 12-inch 65% (MERV 11) or 95% (MERV 14) efficient rigid filters. Two-inch MERV 8 pre-filters are included with rigid filter options. The rigid filter rack option is available without filter media where field-supplied filters are required.

### OUTSIDE AIR DAMPER OPTIONS

**Manual Damper** – This option includes a manually adjustable outside air damper. It is manually adjustable at the unit by setting a mechanical stop between 0–100%.

**Two-Position** – This outside air damper option is controlled to a two positions, opened and closed. Determination of the damper position is based on the occupancy schedule. In the occupied mode, the outside air damper is positioned to the manually configured point (set by mechanical stop). In the unoccupied mode, the damper is fully closed.

**Modulating Economizer** – This option includes modulating outdoor air and return air dampers that are software interlocked and positioned by fully modulating, solid state damper actuators. Control of the damper is via a standard ambient outdoor air dry bulb sensor, or optional single or comparative enthalpy controls.

**Airflow Measurement** – Optional outside airflow measurement is available on units equipped with a Modulating Economizer.

**CO<sub>2</sub> Sensors** – Optional carbon dioxide sensors for occupied space that operate demand ventilation control opening outside air dampers to ventilate building. The CO<sub>2</sub> sensors can operate in a single or comparative control scheme.

**Rain Hoods on Outside Air Intakes** – For all options with outside air intake openings, rain hoods are provided as standard to keep moisture from entering the equipment. The rain hoods are an integral part of the unit and are rotated into place at the jobsite.

### RELIEF SYSTEM

**Barometric Relief** – This option does not include an exhaust or return fan, but rather uses barometric relief dampers to exhaust air from the building. The dampers will open relative to the building pressure. The opening pressure is adjustable via a spring tension adjustment.

**On/Off Powered Exhaust** – This option provides simple building pressure control. It can be controlled via a building pressure signal, or via outside air damper control. ***This option is not available for VAV units.***

**Modulating Powered Exhaust with Damper Control** – This option consists of a constant-speed exhaust fan with a discharge damper that is modulated to control the flow of exhaust air. The damper control logic is based on the building static pressure setpoint within the single package unit controller. The static pressure transducer is provided in the return plenum of the single package unit, and 5/16-inch or 1/4-inch plastic tubing and static pressure sensor must be supplied by others and installed in a representative location in the building.



**Modulating Powered Exhaust with a VFD** – This option consists of a VFD to modulate the speed of the exhaust fan to control the flow of exhaust air. The VFD control logic is based on the building static pressure setpoint within the single package unit controller. The static pressure transducer is provided in the return plenum of the single package unit, and 5/16-inch or 1/4-inch plastic tubing and static pressure sensor must be supplied by others and installed in a representative location in the building.

**Powered Return Fan with Exhaust** – This option uses single width, single inlet (SWSI) plenum fan(s) to control building pressure. The fan motors are driven by a VFD to maintain a constant return plenum pressure. An exhaust hood with a modulating control damper is used to maintain building pressure via the building static pressure. The static pressure transducer is provided in the return plenum of the single package unit, and 5/16-inch or 1/4-inch plastic tubing and static pressure sensor must be supplied by others and installed in a representative location in the building. The powered return fan is also available without the exhaust capabilities. For units with no exhaust capabilities, the HVAC system must provide alternate means of controlling building pressure.

**Belt Guards** – Belt guards shall be provided as a safeguard while servicing the fan section.

**Airflow Measurement** – Optional piezorings for exhaust/return fan airflow measurement are available for integration with field supplied controller.

## SUPPLY FAN OPTIONS

**Double Width, Double Inlet (DWDI) Forward-Curved Supply Fan** – The standard supply air blower in the YPAL070–80 models is a forward-curved supply fan. This fan is good for medium static pressures and high airflows.

**DWDI Airfoil Supply Fan** – The standard supply air blower in the YPAL090–105 is an airfoil blade supply fan. This fan is also available as an option on YPAL070–080 for higher static conditions. This fan offers higher efficiency and lower sound in certain applications.

**Fan Skid Isolation** – The entire supply fan assembly is isolated from the unit base with one- (standard) or two-inch deflection springs, or one (standard) or two-inch deflection springs with seismic restraints.

**Supply and Exhaust Fan Motors** – Premium efficiency ODP and premium efficiency TEFC motors are available all meeting the Energy Policy Act of 1992 (EPACT).

**Supply Fan VFD and Manual Bypass** – For VAV applications, VFDs are provided to modulate airflow. Optional manual bypass can also be provided to allow full airflow in the event of a VFD failure.

**Belt Guards** – Belt guards shall be provided as a safeguard on belt driven fan while servicing the fan section.

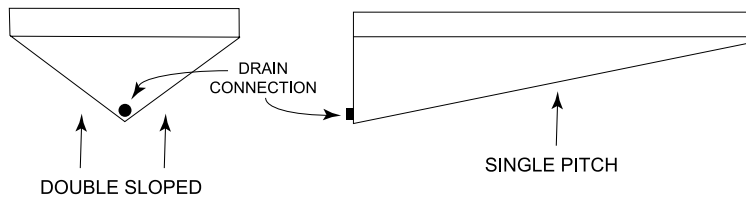
**Airflow Measurement** – Optional piezoring for supply fan airflow measurement in forward curved or airfoil fan is available for integration with field supplied controller.

**Direct Drive Plenum (DDP) Fan** – A direct drive plenum (DDP) supply fan provides outstanding reliability and efficiency, eliminating the possibility of conditioned air supply interruption due to a broken belt and the pollution of conditioned air with belt dust. The supply fan can be optionally equipped with a piezoring to precisely measure the amount of air delivered to the conditioned space. The speed of the supply fan is controlled by a VFD.

## Features and Benefits (Cont'd)

### EVAPORATOR SECTION

**Double Sloped Stainless Steel Drain Pan** – A stainless steel drain pan is factory-mounted and installed on every unit. A condensate drain trap is needed, and must be provided and installed in the field by others.



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**NOTE:** This is a visual reference only. Actual drain pan pitch will vary.

**FIGURE 1 - DRAIN PAN DETAIL**

**Double Wall Construction** – Double-wall construction is the standard construction of the 70–105 ton rooftop unit and incorporates powder coated outer panels and corner post for maximum exterior surface protection.

**Factory Shrink-wrap** – All 70–105 ton single package rooftop units are shipped from the factory with factory-fresh shrink-wrap packaging. No longer does the contractor need to worry about dirt and debris clogging up condenser coils or moisture leaking into the air handler on the units way to the job site or rigging yard.

**Copper Fins** – For more extreme climates that aggressively can attack aluminum, copper tube evaporator coils with copper fins are available. (This is not recommended for units in areas where they may be exposed to acid rain or environments where ammonia is present.)

### CONDENSER FEATURES AND OPTIONS

**Scroll Compressors** – Reliable, efficient, trouble-free operation is the true measure of a single package unit's value. That's why the 70–105 ton single package units use established scroll compressor technology to deliver dependable, economical performance in a wide range of applications. With the 70–105 ton single package units, you get the latest generation of compressor enhancements added to the scroll's inherent strengths. The simplicity of a hermetic scroll compressor allows the use of fewer moving parts to minimize breakdown.

**Multiple Compressor Staging** – Through the use of the scroll compressor, the unit has the ability to stage its cooling by enabling and disabling multiple single stage compressors on multiple circuits.

**Compressor Circuiting** – The rooftop unit is designed so that only two scroll compressors are in tandem within one refrigeration circuit. This means more reliable compressors, and less equipment down time. With multiple circuits, if a compressor should ever fail on one circuit, the other circuit(s) will remain operational to maintain occupied loads. In sizes 70–105 ton, the rooftop unit has three independent refrigeration circuits per unit.

**Condenser Fan Motors** – The condenser fan motors used on the unit are Totally Enclosed Air Over (TEAO) to provide maximum durability through any season.

**Hot Gas Bypass** – This options permits continuous, stable operation at capacities below the minimum step of unloading by introducing an artificial load on the evaporator. It is used on the lead circuit.

**Replaceable Core Liquid Line Driers** – Liquid line driers are standard on the rooftop unit. An option is provided for replaceable core driers.

**Post-Coated Fins** – Optional coil-coating used on condenser coils for seashore and other corrosive applications (with the exception of strong alkalis, oxidizers, wet bromide, chlorine and fluorine in concentrations greater than 100 ppm).

**Compressor Sound Blankets** – Optional compressor acoustic sound blankets are available for sound sensitive applications.

## ROOF CURBS

**Full perimeter roof curbs** – This option includes a knock-down 14-inch high roof curb for use with wood nailer (by others). Roof curb supports the entire perimeter of the unit.

**Partial perimeter roof curbs** – This option includes a knock-down 14-inch high roof curb for use with wood nailer (by others). Roof curb supports the air handling section with a separate support under the condenser end.

## CABINET FEATURES AND OPTIONS

**Double-Wall Access Doors** - Full-sized access doors provide easy access into the unit for routine maintenance and inspection. Solid wall liners encase insulation and prevent damage and erosion into the airstream.

**Diffuser Section** – An optional diffuser section is available downstream of the supply fan in the extended discharge plenum cabinet option. The diffuser section distributes the airflow from the fan evenly across the downstream filter bank to optimize filter life and effectiveness. The diffuser design is optimized to provide uniform flow at minimal airside pressure loss.

**Downstream Final Filter Rack** – An optional 90–95% efficient MERV 14 12-inch rigid filter rack and filters is available downstream of the supply fan and diffuser segment for hospital applications. A magnehelic pressure gauge is included and visible from the outside of the unit for servicing and code compliance.

**Blank Section** – An optional blank section is available downstream of the supply fan and diffuser section.

## ACCESSORIES

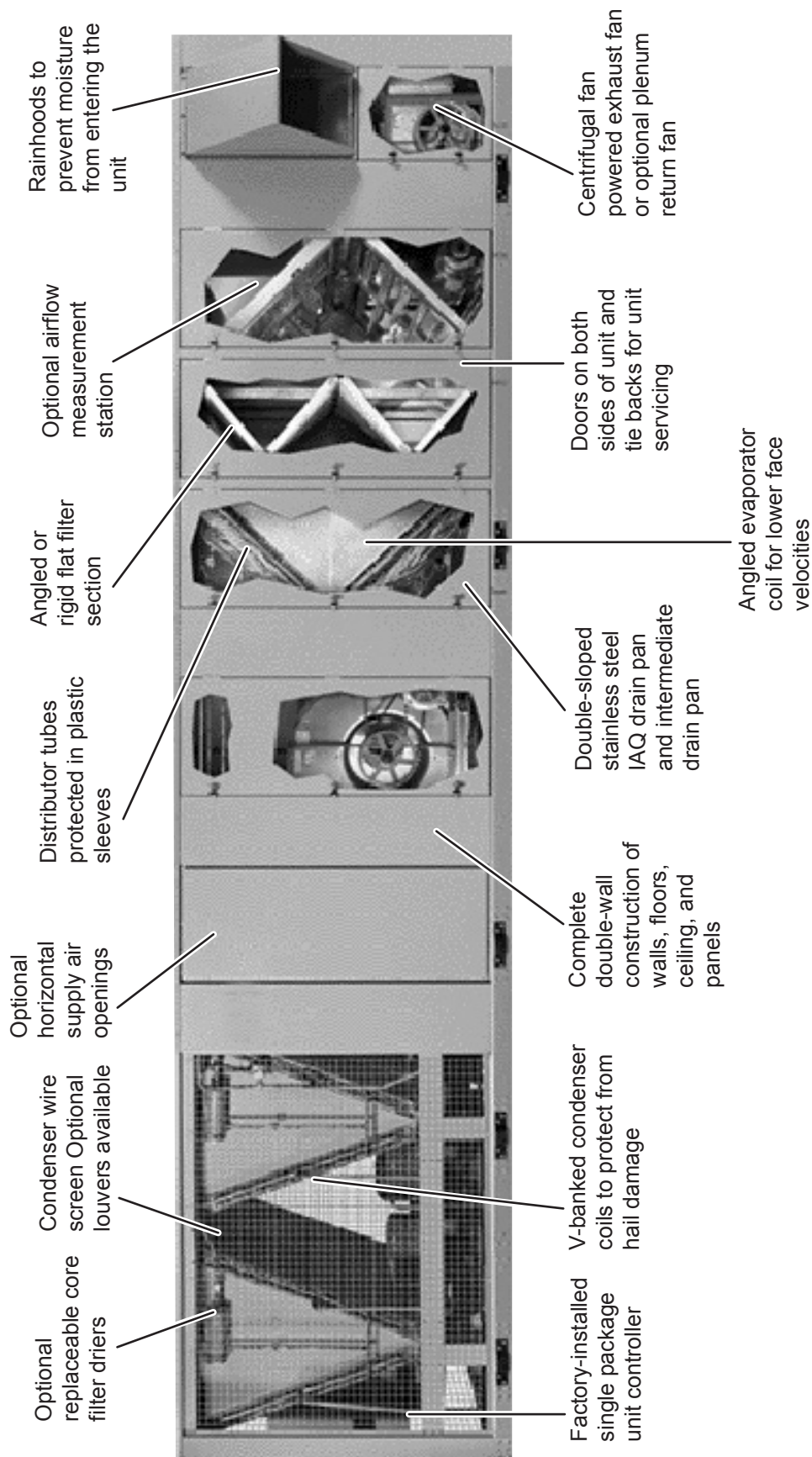
**Seismic Certification** – For applications requiring seismic certification, the rooftop unit shall be tested and certified to meet the seismic standards of the 2012 International Building Code and ASCE 7-06.

**Filter Switch** – An optional dirty filter alarm is available on the upstream and downstream filter racks that will provide an alarm when the filters require cleaning.

**Magnehelic Filter Pressure Gauge** – On units equipped with downstream filtration, a standard magnehelic gauge is included and an option is provided for upstream filtration. The gauge is mounted on the exterior of the unit. The filter gauge measures the air pressure drop across the filter bank to indicate when replacement is required.

## Features and Benefits (Cont'd)

### YPAL070-105 MODEL



00567V/P

# Application Data

## GENERAL

The YORK® 70–105 ton single package rooftop units are designed for outdoor installation. When selecting a site for installation, be guided by the following conditions:

- Unit must be installed on a level surface.
- For the outdoor location of the unit, select a place having a minimum sun exposure and an adequate supply of fresh air for the condenser.
- Also avoid locations beneath windows or between structures.
- Optional condenser coil protection should be used for seashore locations or other harsh environments.
- The unit should be installed on a roof that is structurally strong enough to support the weight of the unit with a minimum of deflection. It is recommended that the unit(s) be installed not more than 15 feet from a main support beam to provide proper structural support and to minimize the transmission of sound and vibration. Ideally, the center of gravity should be located over a structural support or building column.
- Location of unit(s) should also be away from building flue stacks or exhaust ventilators to prevent possible reintroduction of contaminated air through the outside air intakes.
- Be sure the supporting structures will not obstruct the duct, gas or wiring connections.
- Proper service clearance space of 6 feet around the perimeter of the unit, 8 feet on one side for coil servicing, and 12 feet to any adjacent units is required to eliminate cross contamination of exhaust and outdoor air, and for maintenance tasks such as coil pull and cleaning. No obstructions should be above the condensing unit section.

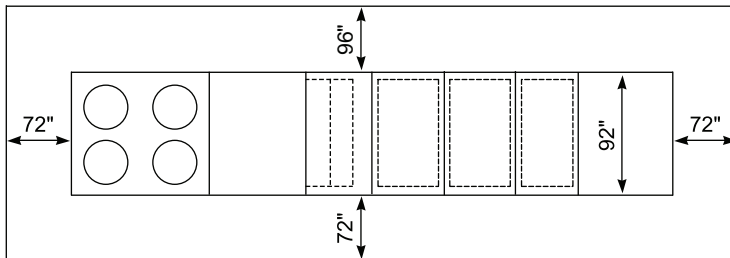
## LOCATION

Of the many factors that can effect the location of equipment, some of the most important to consider are Structural, Acoustical and Service clearances. Proper attention should be made at the design stage to ensure proper structural support. In cases where equipment is being replaced, be aware of building design to insure support is adequate for the application.

The next most important consideration in applying single package units equipment is that of sound from the equipment. Special care should be made to keep the single package unit away from sound sensitive areas such as conference rooms, auditoriums and executive offices and any other room that may have potential for tenant occupancy. Possible locations could be above hallways, mechanical or utility rooms.

Finally, service clearances should be maintained in single package unit design to insure safe access to the unit. Unit clearances are designed so that technicians have enough space between units, building walls, and edges of building to gain access safely. In cases where space is limited, please call your local YORK representative for additional information.

## Application Data (Cont'd)



LD08044

### NOTES

1. Under certain conditions these clearances may be encroached upon.
2. This is a visual reference for all YORK 70–105 ton rooftop units.

### RIGGING

Proper rigging and handling of the equipment is mandatory during unloading and setting it into position to retain warranty status.

Spreader bars must be used by cranes to prevent damage to the unit casing. All lifting lugs must be used when lifting the single package unit. Fork lifts will damage the single package unit and are not recommended.

Care must be taken to keep the unit in the upright position during rigging and to prevent damage to the watertight seams in the unit casing. Avoid unnecessary jarring or rough handling.

### UNIT PLACEMENT

- **Elevated** – Elevated roof curbs or dunnage steel can be used to support the unit in order to raise it to specific heights. When this type of placement is required, be sure to 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. Please check with local officials to ensure the application conforms to local codes and regulations.
- **Ground Level Locations** – It is important that the units be installed on a substantial base that will not settle, causing strain on the refrigerant lines and sheet metal and resulting in possible leaks. A one-piece concrete slab with footers extended below the frost line is highly recommended. Additionally, the slab should be isolated from the main building foundation to prevent noise and vibration transmission to the building structure.

For ground level installations, precautions should be taken to protect the unit from tampering by, or injury to, unauthorized persons. Erecting a fence around the unit is common practice.

- **Roof curb** – YORK offers optional roof curbs designed specifically for the 70–105 ton rooftop unit footprint. These curbs come in full perimeter or open condenser models and are shipped disassembled and require field assembly and installation. For bottom supply and return openings, the curbs have matching connections to ease installation. A pipe chase that matches the single package unit pipe chase is also included in the curb footprint for through-the-curb utility connections.

The curb should be located according to the location recommendations above, and properly sealed to prevent moisture and air leakage into and out of the duct system. Flexible collars should be used when connecting the duct work to prevent unit noise transmission and vibration into the building.

Duct work should be supported independently of the unit.



**TABLE 1 - SUPPLY AIR DUCT CONNECTION CONFIGURATIONS**

| UNIT CONFIGURATION |                    | SUPPLY AIR |      |       |
|--------------------|--------------------|------------|------|-------|
|                    |                    | BOTTOM     | LEFT | RIGHT |
| YPAL<br>070–105    | STANDARD CABINET   |            |      |       |
|                    | Cooling only       | X          | X    | X     |
|                    | Cool/gas heat      | X          | X    |       |
|                    | Cool/electric heat | X          |      |       |
|                    | Cool/hydronic heat | X          |      |       |
|                    | EXTENDED CABINET   |            |      |       |
|                    | Cooling only       | X          | X    | X     |
|                    | Cool/hydronic heat | X          | X    | X     |

**TABLE 2 - RETURN AIR DUCT CONNECTION CONFIGURATIONS**

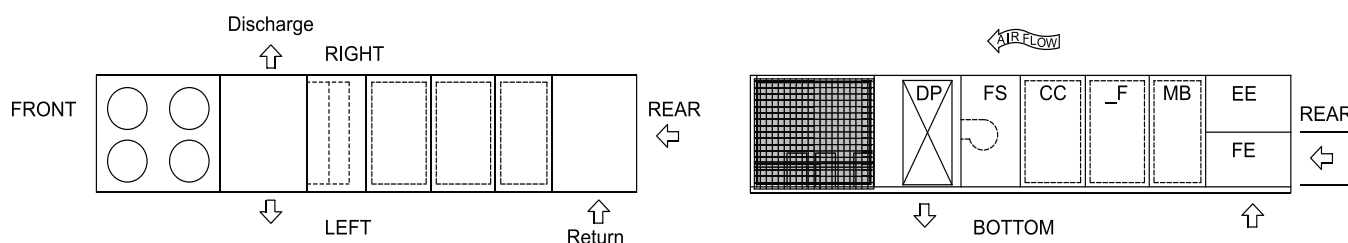
| UNIT CONFIGURATION |                                 | RETURN AIR |      |       |       |
|--------------------|---------------------------------|------------|------|-------|-------|
|                    |                                 | BOTTOM     | LEFT | RIGHT | FRONT |
| YPAL<br>070–105    | No exhaust                      | X          | X    | X     | X     |
|                    | Barometric relief damper        | X          | X    | X     |       |
|                    | Powered exhaust fan (all types) | X          | X    | X     |       |
|                    | Powered return fan              | X          |      |       |       |

### UNIT ORIENTATION

For applications with multiple single package units located in close proximity on the roof, the orientation of the unit may be important to reduce the potential for re-entrainment of outside airflow. Regardless of the outside air and exhaust air openings on a unit, all single package unit applications can permit recirculation of exhaust air to the return, if applied improperly.

### HORIZONTAL APPLICATIONS

The spectrum of applications for single package units in today's market is continuing to grow wider by the day. Flexibility in unit design and construction is a must in today's market in order to insure safe and sound applications of HVAC equipment. If the application calls for horizontal supply and return air, YORK can ship it from the factory as a horizontal unit. This option eliminates the need for field modification of equipment saving time and money. The 70–105 ton rooftop unit can support a left discharge on all units and/or right discharge on all cooling only units and hydronic heat units with an extended cabinet. Return air can be brought through the end or side return air inlet making the unit specific to building needs.



### NOTE

This diagram is provided as a visual reference of the 70–105 ton rooftop unit discharge & return air openings & locations for all sizes. Please refer to the dimensional data for exact size & location of panels and openings.



## Application Data (Cont'd)

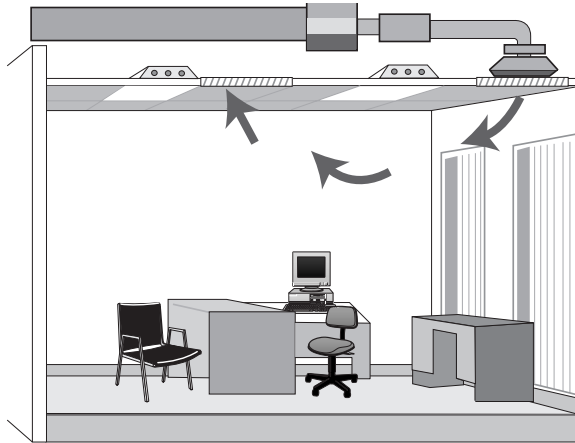
### ECONOMIZER

The economizer section is used to maintain indoor air quality, and also to reduce energy consumption by using outdoor air cooling in lieu of mechanical cooling. If outdoor air is appropriate for cooling, but not sufficient for the cooling demand, mechanical cooling will stage on as necessary until the cooling load is met.

Dual (comparative or differential) enthalpy operation is the most accurate and efficient means of economizer operation. The IPU controller monitors the return and outside air energy content, and selects the lower of the two for operation.

### VAV SUPPLY AIR PRESSURE CONTROL

Traditional packaged single package unit systems use inlet guide vanes (IGVs) for duct static pressure control. These control supply duct pressure by modulating dampers (introducing losses and inefficiencies) on the inlet of the fan, open and closed. YORK variable frequency drives (VFDs) offer superior fan speed control and quieter, energy efficient operation.



**FIGURE 2 - TRADITIONAL OVERHEAD VAV AIR DELIVERY SYSTEM**

For VAV applications, the rooftop unit uses a VFD to modulate fan speed and maintain a constant duct static pressure. VFDs offer superior control over the operation of the unit at part load, and offer the additional benefits of quieter and more efficient operation when compared to IGV.

### BUILDING PRESSURE CONTROL SYSTEMS

Building pressure control systems are often necessary when economizers are used to bring in outdoor air. Without proper building exhaust, the building may become over pressurized. The pressure control system maintains the proper building pressure by expelling the appropriate amount of air from the building.

**Return fans** – For high return static applications, such as buildings with ducted return systems, a powered return fan may be necessary to maintain building pressure control. YORK 70–105 ton rooftop units offer a powered return fan that is located in the return plenum. This fan operates coincidentally with the supply fan and draws return air back through the return ductwork and into a pressurized plenum. A control damper modulates to exhaust air out of the building and maintain the building pressure. A second control damper modulates to provide return air from the ductwork to the unit air mixing section.

The return fan configuration is available in two forms: with and without an exhaust damper. The option with the exhaust damper provides a means of building exhaust at the unit. In some applications, the exhaust system is located elsewhere and the unit is not required to provide building exhaust. In these situations, the rooftop unit can be offered without the exhaust damper to help reduce installed costs.

**Exhaust/relief fans** – In this application, a powered exhaust fan may be suitable, however careful consideration of the fan type is necessary. YORK offers a centrifugal powered exhaust fan to perform this function. Some manufacturers use a propeller exhaust fan, which cannot handle the static pressure requirements.

For systems with moderate to low return static pressure, an exhaust fan is recommended. The benefit of the exhaust fan is that it does not run all of the time, and may facilitate compliance with the ASHRAE 90.1 fan motor horsepower requirement.

The exhaust fan operates in parallel with the supply fan. In this arrangement, the supply fan handles the full static pressure requirements of the system. For normal building pressure control, the exhaust fan operates to draw air from the return plenum and exhaust it out of the building.

The exhaust fan configuration is available in two forms, modulating and non-modulating. Modulating is the most common and recommended for the majority of applications, while non-modulating should be used only in certain circumstances.

In the modulating exhaust system, the volume of airflow exhausted from the building is proportional to the entering volume of outside air. Control is accomplished via either a discharge damper or a VFD. YORK recommends the use of a VFD to reduce energy consumption, sound levels and improved reliability due to fewer moving parts.

In the non-modulating exhaust system, the exhaust airflow is constant whenever the exhaust fan is operating. This type of control should only be used to either assist a smoke purge system or when a system requires a constant volume of exhaust airflow.

## ACOUSTICAL CONSIDERATIONS

The unit is designed for lower sound levels than competitive units by using flexible fan connections, fan spring isolators, double-wall construction, multiple fan options, and lower speed and horsepower fans. For VAV applications, VFDs are used instead of inlet guide vanes. Additional sound attenuation can be obtained using compressor sound blankets when necessary.

Even with these equipment design features, the acoustical characteristics of the entire installation must never be overlooked. Additional steps for the acoustical characteristics of a single package unit installation should be addressed during the design phase of a project to avoid costly alterations after the installation of the equipment. During the design phase of a project, the designing engineer should consider, at a minimum, the impact of the equipment location, single package unit installation, building structure, and duct work.

# Physical Data

TABLE 3 - PHYSICAL DATA – MODELS 70–105

| MODEL SIZE   | 70            | 75            | 80            | 90            | 105           |
|--|---------------|---------------|---------------|---------------|---------------|
| <b>COMPRESSOR DATA</b>                                 |               |               |               |               |               |
| Quantity/Size (Nominal HP)                             | 6x10          | 4x11, 2x13    | 4x13, 2x11    | 4x15, 2x13    | 3x20, 3x15    |
| Type   | Scroll        | Scroll        | Scroll        | Scroll        | Scroll        |
| Capacity Steps (Qty x %)                               | 6x16          | 4x16, 2x18    | 4x17, 2x15    | 4x18, 2x15    | 3x14, 3x19    |
| <b>SUPPLY FAN AND DRIVE</b>                            |               |               |               |               |               |
| Quantity   | 1             | 1             | 1             | 1/1           | 1/1           |
| Type   | FC            | FC            | FC            | AF            | AF            |
| Size   | 28-25         | 28-25         | 28-25         | 32            | 32            |
| Motor Size Range (min. to max. HP)                     | 10–50         | 10–50         | 10–50         | 10–50         | 10–50         |
| Airflow Range (min. to max. CFM)                       | 14,000–29,000 | 15,550–29,000 | 15,000–32,000 | 17,500–36,000 | 21,000–36,000 |
| Static Pressure Range (min. to max. ESP)               | 0–4 inches    | 0–4 inches    | 0–4 inches    | 0–6 inches    | 0–6 inches    |
| <b>OPTIONAL AIRFOIL SUPPLY FAN</b>                     |               |               |               |               |               |
| Quantity   | 1/1           | 1/1           | 1/1           | 1/1           | 1/1           |
| Type   | AF            | AF            | AF            | AF            | AF            |
| Size   | 32            | 32            | 32            | 32            | 32            |
| Motor Size Range (min. to max. HP)                     | 15–50         | 15–50         | 15–50         | 15–50         | 15–50         |
| Airflow Range (min. to max. CFM)                       | 14,000–29,000 | 15,550–29,000 | 15,000–32,000 | 17,500–36,000 | 21,000–36,000 |
| Static Pressure Range (min. to max. ESP)               | 0–6 inches    | 0–6 inches    | 0–6 inches    | 0–6 inches    | 0–6 inches    |
| <b>OPTIONAL DIRECT DRIVE PLENUM (DDP) SUPPLY FAN</b>   |               |               |               |               |               |
| Quantity   | 1             | 1             | 1             | 1             | 1             |
| Type   | DDP           | DDP           | DDP           | DDP           | DDP           |
| Size   | 402-9-100/120 | 402-9-100/120 | 402-9-100/120 | 402-9-100/120 | 402-9-100/120 |
| Motor Size Range (min. to max. HP)                     | 10–75         | 10–75         | 10–75         | 10–75         | 10–75         |
| Airflow Range (min. to max. CFM)                       | 14,000–29,000 | 15,550–29,000 | 15,000–32,000 | 17,500–36,000 | 21,000–36,000 |
| Static Pressure Range (min. to max. ESP)               | 1–8 inches    | 1–8 inches    | 1–8 inches    | 1–8 inches    | 1–8 inches    |
| <b>EXHAUST FAN</b>                                     |               |               |               |               |               |
| Quantity   | 2             | 2             | 2             | 2             | 2             |
| Type   | FC            | FC            | FC            | FC            | FC            |
| Size   | 18-18         | 18-18         | 18-18         | 18-18         | 18-18         |
| Motor Size Range (min. to max. HP)                     | 10–20         | 10–20         | 10–20         | 10–20         | 10–20         |
| Airflow Range (min. to max. CFM)                       | 4,000–32,000  | 4,000–32,000  | 4,000–32,000  | 4,000–32,000  | 4,000–32,000  |
| Static Pressure Range (min. to max. ESP)               | 0–2 inches    | 0–2 inches    | 0–2 inches    | 0–2 inches    | 0–2 inches    |
| <b>OPTIONAL EXHAUST FAN</b>                            |               |               |               |               |               |
| Quantity   | 2/1           | 2/1           | 2/1           | 2/1           | 2/1           |
| Type   | FC            | FC            | FC            | FC            | FC            |
| Size   | 20-18         | 20-18         | 20-18         | 20-18         | 20-18         |
| Motor Size Range (min. to max. HP, total for two fans) | 5–30          | 5–30          | 5–30          | 5–30          | 5–30          |
| Airflow Range (min. to max. CFM)                       | 4,000–36,000  | 4,000–36,000  | 4,000–36,000  | 4,000–36,000  | 4,000–36,000  |
| Static Pressure Range (min. to max. iwvg)              | 0–2 inches    | 0–2 inches    | 0–2 inches    | 0–2 inches    | 0–2 inches    |
| <b>OPTIONAL RETURN FAN</b>                             |               |               |               |               |               |
| Quantity   | 2/2           | 2/2           | 2/2           | 2/2           | 2/2           |
| Type   | Plenum        | Plenum        | Plenum        | Plenum        | Plenum        |
| Size   | 270           | 270           | 270           | 270           | 270           |
| Motor Size Range (min. to max. HP, total for two fans) | 10–30         | 10–30         | 10–30         | 10–40         | 10–40         |
| Airflow Range (min. to max. CFM)                       | 4,000–32,000  | 4,000–32,000  | 4,000–32,000  | 4,000–36,000  | 4,000–36,000  |
| Static Pressure Range (min. to max. iwvg)              | 0–3 inches    | 0–3 inches    | 0–3 inches    | 0–3 inches    | 0–3 inches    |

**TABLE 3 - PHYSICAL DATA – MODELS 70–105 (CONT'D)**

| <b>MODEL SIZE</b>   | <b>70</b>             | <b>75</b>             | <b>80</b>             | <b>90</b>         | <b>105</b>        |
|---|-----------------------|-----------------------|-----------------------|-------------------|-------------------|
| <b>EVAPORATOR COIL</b>  |                       |                       |                       |                   |                   |
| Size (square feet)  | 56.9                  | 56.9                  | 56.9                  | 56.9              | 56.9              |
| Number of Rows/Fins per Inch  | 4/17                  | 3/17                  | 3/17                  | 3/17              | 5/17              |
| Tube Diameter   | 3/8 inch              | 3/8 inch              | 3/8 inch              | 3/8 inch          | 3/8 inch          |
| <b>CONDENSER COIL (R-410A)</b>  |                       |                       |                       |                   |                   |
| Size (square feet)  | 164                   | 164                   | 164                   | 164               | 164               |
| Number of Rows/Fins per Inch  | 1/21                  | 1/21                  | 1/21                  | 1/21              | 1/21              |
| Tube Diameter/Surface   | 1mm micro channel     | 1mm micro channel     | 1mm micro channel     | 1mm micro channel | 1mm micro channel |
| <b>CONDENSER FANS</b>   |                       |                       |                       |                   |                   |
| Quantity  | 6                     | 6                     | 6                     | 6                 | 6                 |
| Type  | Prop.                 | Prop.                 | Prop.                 | Prop.             | Prop.             |
| Diameter (inch)   | 36                    | 36                    | 36                    | 36                | 36                |
| Power (HP each)   | 2                     | 2                     | 2                     | 2                 | 2                 |
| <b>FILTERS - 2-INCH THROWAWAY (PRE-FILTER POSITION)</b>                                   |                       |                       |                       |                   |                   |
| Quantity  | 10/15                 | 10/15                 | 10/15                 | 12/18             | 12/18             |
| Size (length x width) (inch)  | 25x16/25x20           | 25x16/25x20           | 25x16/25x20           | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 77.1                  | 77.1                  | 77.1                  | 92.5              | 92.5              |
| <b>FILTERS - 2-INCH CLEANABLE (PRE-FILTER POSITION)</b>                                   |                       |                       |                       |                   |                   |
| Quantity  | 10/15                 | 10/15                 | 10/15                 | 12/18             | 12/18             |
| Size (length x width) (inch)  | 25x16/25x20           | 25x16/25x20           | 25x16/25x20           | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 77.1                  | 77.1                  | 77.1                  | 92.5              | 92.5              |
| <b>FILTERS - 2-INCH PLEATED, 30% EFFICIENT (PRE-FILTER POSITION) (MERV 8)</b>             |                       |                       |                       |                   |                   |
| Quantity  | 10/15                 | 10/15                 | 10/15                 | 12/18             | 12/18             |
| Size (length x width) (in.)   | 25x16/25x20           | 25x16/25x20           | 25x16/25x20           | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 77.1                  | 77.1                  | 77.1                  | 92.5              | 92.5              |
| <b>FILTERS - 12-INCH RIGID 65%, 2-INCH 30% PRE-FILTER (PRE-FILTER POSITION) (MERV 11)</b> |                       |                       |                       |                   |                   |
| Quantity  | 2/8/9                 | 2/8/9                 | 2/8/9                 | 8/12              | 8/12              |
| Size (length x width) (inch)  | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 55.8                  | 55.8                  | 55.8                  | 61.6              | 61.6              |
| <b>FILTERS - 12-INCH RIGID 95%, 2-INCH 30% PRE-FILTER (PRE-FILTER POSITION) (MERV 14)</b> |                       |                       |                       |                   |                   |
| Quantity  | 2/8/9                 | 2/8/9                 | 2/8/9                 | 8/12              | 8/12              |
| Size (length x width) (inch)  | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 55.8                  | 55.8                  | 55.8                  | 61.6              | 61.6              |
| <b>FILTERS - 2-INCH CARBON (PRE-FILTER POSITION) (MERV8)</b>                              |                       |                       |                       |                   |                   |
| Quantity  | 10/15                 | 10/15                 | 10/15                 | 12/18             | 12/18             |
| Size (length x width) (inch)  | 16x20/25x16/<br>25x20 | 25x16/25x20           | 25x16/25x20           | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 77.1                  | 77.1                  | 77.1                  | 92.5              | 92.5              |
| <b>FILTERS - 12-INCH RIGID 95% IN POST-FILTER POSITION (MERV 14)</b>                      |                       |                       |                       |                   |                   |
| Quantity  | 2/7/9                 | 2/7/9                 | 2/7/9                 | 7/12              | 7/12              |
| Size (length x width) (inch)  | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 16x20/25x16/<br>25x20 | 25x16/25x20       | 25x16/25x20       |
| Total Filter Face Area (square feet)  | 55.1                  | 55.1                  | 55.1                  | 61.1              | 61.1              |

## Physical Data (Cont'd)

**TABLE 3 - PHYSICAL DATA – MODELS 70–105 (CONT'D)**

| MODEL SIZE  |         | 70                                 | 75           | 80            | 90            | 105           |
|---|---------|------------------------------------|--------------|---------------|---------------|---------------|
| <b>GAS FURNACE</b>                                |         |                                    |              |               |               |               |
| Staged Furnace Sizes<br>(input/output/stages)     |         | 375 mbh / 300 mbh / 2 stages       |              |               |               |               |
|   |         | 750 mbh / 600 mbh / 4 stages       |              |               |               |               |
|   |         | 1125 mbh / 900 mbh / 6 stages      |              |               |               |               |
| Gas Pressure Range<br>(min. to max. iwg)          | Natural | 4.5–10.5                           | 4.5–10.5     | 4.5–10.5      | 4.5–10.5      | 4.5–10.5      |
|   | Propane | 11.0–13.0                          | 11.0–13.0    | 11.0–13.0     | 11.0–13.0     | 11.0–13.0     |
| Airflow Range (min. to max. CFM)                  |         | 6,950–36,000                       | 6,950–36,000 | 11,150–36,000 | 15,150–36,000 | 15,150–36,000 |
| Modulating Furnace Sizes<br>(input/output/stages) |         | 375 MBH / 300 MBH / 8:1 turndown   |              |               |               |               |
|   |         | 750 MBH / 600 MBH / 16:1 turndown  |              |               |               |               |
|   |         | 1125 MBH / 900 MBH / 24:1 turndown |              |               |               |               |
| Gas Pressure Range<br>(min. to max. iwg)          | Natural | 4.5–10.5                           | 4.5–10.5     | 4.5–10.5      | 4.5–10.5      | 4.5–10.5      |
|   | Propane | 11.0–13.0                          | 11.0–13.0    | 11.0–13.0     | 11.0–13.0     | 11.0–13.0     |
| Airflow Range (min. to max. CFM)                  |         | 8,250–36,000                       | 8,250–36,000 | 11,150–36,000 | 15,150–36,000 | 15,150–36,000 |
| <b>ELECTRIC HEATERS</b>                           |         |                                    |              |               |               |               |
| Size Range (min. to max. kW)                      |         | 80–200                             | 80–200       | 108–250       | 108–250       | 108–250       |
| Heating Steps <sup>1</sup>                        |         | 2-6                                | 2-6          | 2-6           | 2-6           | 2-6           |
| <b>MINIMUM OA TEMP. FOR MECH. CIG.</b>            |         | 45                                 | 45           | 45            | 45            | 45            |
| <b>LOW AMBIENT OPTION MIN. OA TEMP.</b>           |         | 0                                  | 0            | 0             | 0             | 0             |

**NOTES**

1. Electric heat steps and airflow range depends on voltage and size. Consult *Table 13 on page 50* for minimum allowable airflow. Consult *Table 33 on page 60* for the number of steps for a given voltage and unit size.

Weights are for components only and need to be added to the extended cabinet weights. The diffuser is required in the extended cabinet for any unit with hot water or final filter option.

**TABLE 4 - REFRIGERANT CHARGE DATA**

|   | 70   | 75   | 80   | 90   | 105  |
|---|------|------|------|------|------|
| <b>REFRIGERANT CHARGE (R-410A STD CABINET)</b>  |      |      |      |      |      |
| SYS 1 - LB                                      | 44.3 | 38   | 38   | 41.5 | 45.4 |
| SYS 2 - LB                                      | 38.5 | 32.4 | 35.3 | 32   | 39.6 |
| SYS 3 - LB                                      | 42.4 | 33   | 33   | 36.2 | 45.4 |
| <b>REFRIGERANT CHARGE (R-410A EXTD CABINET)</b> |      |      |      |      |      |
| SYS 1 - LB                                      | 47   | 40.7 | 40.7 | 44.2 | 48.1 |
| SYS 2 - LB                                      | 41.2 | 35.1 | 38   | 34.7 | 42.3 |
| SYS 3 - LB                                      | 45.4 | 35.7 | 35.7 | 38.9 | 48.1 |

# Weight Data

**TABLE 5 - APPROXIMATE BASE OPERATING WEIGHTS (LBS)**

| MODEL SIZE              | 70    | 75    | 80    | 90    | 105   |
|-------------------------|-------|-------|-------|-------|-------|
| Approximate Unit Weight | 10461 | 10433 | 10449 | 10799 | 10935 |

**NOTES**

- Unit base weights include the following features: sheet metal, control panels, refrigerant, compressors, condenser assemblies, minimum capacity supply fan, and 2-inch throwaway filter.
- Base weights shown represent approximate operating weights and have a  $\pm 10\%$  accuracy. To calculate weight for a specific configuration, contact a YORK sales representative.

**TABLE 6 - COMPONENT WEIGHTS (LBS)**

| MODEL SIZE   | 70            | 75   | 80   | 90   | 105   |
|--|---------------|------|------|------|-------|
| CABINET  |               |      |      |      |       |
| Sheet Metal  | 6994          | 6994 | 6994 | 6913 | 6913  |
| Control Panel  | 200           | 200  | 200  | 200  | 200   |
| REFRIGERANT  |               |      |      |      |       |
| Refrigerant Charge (R-410A)                            | 125           | 103  | 106  | 110  | 130.4 |
| COMPRESSORS  |               |      |      |      |       |
| Compressor 1   | 159           | 135  | 135  | 227  | 146   |
| Compressor 2   | 159           | 135  | 135  | 227  | 320   |
| Compressor 3   | 159           | 135  | 135  | 227  | 146   |
| Compressor 4   | 159           | 135  | 135  | 227  | 320   |
| Compressor 5   | 159           | 143  | 143  | 227  | 146   |
| Compressor 6   | 159           | 143  | 143  | 227  | 320   |
| CONDENSER ASSEMBLY                                     |               |      |      |      |       |
| Coils  |               |      |      |      |       |
| Condenser Coils <sup>1</sup>                           | 616           | 616  | 616  | 616  | 616   |
| Condenser Motors/Fans                                  |               |      |      |      |       |
| Condenser Motors, 2HP 460/208-230                      | 300           | 300  | 300  | 300  | 300   |
| Condenser Fans   | 60            | 60   | 60   | 60   | 60    |
| Condenser Fan Grilles                                  | 60            | 60   | 60   | 60   | 60    |
| SUPPLY FAN   |               |      |      |      |       |
| Comefri 28-25 FC Class II                              | 496           | 496  | 496  | —    | —     |
| Comefri 32 AF Class I                                  | 649           | 649  | 649  | 649  | 649   |
| Comefri 32 AF Class II                                 | 694           | 694  | 694  | 694  | 694   |
| Isolators  | 20            | 20   | 20   | 20   | 20    |
| DUAL DIRECT DRIVE PLENUM (DDP) FAN SKIDS WITHOUT MOTOR |               |      |      |      |       |
| Frame 215T DDP 402-9-100/120                           | 386.04/397.92 |      |      |      |       |
| Frame 254T DDP 402-9-100/120                           |               |      |      |      |       |
| Frame 256T DDP 402-9-100/120                           |               |      |      |      |       |
| Frame 284T DDP 402-9-100/120                           | 394.55/406.43 |      |      |      |       |
| Frame 286T DDP 402-9-100/120                           |               |      |      |      |       |
| Frame 324T DDP 402-9-100/120                           | 412.35/424.22 |      |      |      |       |
| Frame 326T DDP 402-9-100/120                           |               |      |      |      |       |
| Frame 364T DDP 402-9-100/120                           | 444.85/456.73 |      |      |      |       |
| Frame 365T DDP 402-9-100/120                           |               |      |      |      |       |
| WEG MOTOR (SUPPLY/EXHAUST/RETURN)                      |               |      |      |      |       |
| 5HP  | 81            | 81   | 81   | 81   | 81    |
| 7.5HP  | 121           | 121  | 121  | 121  | 121   |
| 10HP   | 128           | 128  | 128  | 128  | 128   |
| 15HP   | 212           | 212  | 212  | 212  | 212   |
| 20HP   | 243           | 243  | 243  | 243  | 243   |
| 25HP   | 411           | 411  | 411  | 411  | 411   |

## Weight Data (Cont'd)

**TABLE 6 – COMPONENT WEIGHTS (LBS) (CONT'D)**

| MODEL SIZE  | 70   | 75   | 80   | 90   | 105  |
|---|------|------|------|------|------|
| <b>WEG MOTOR (SUPPLY/EXHAUST/RETURN) (CONT'D)</b> |      |      |      |      |      |
| 30HP  | 449  | 449  | 449  | 449  | 449  |
| 40HP  | 577  | 577  | 577  | 577  | 577  |
| 50HP  | 599  | 599  | 599  | 599  | 599  |
| 60HP  | 921  | 921  | 921  | 921  | 921  |
| 75HP  | 938  | 938  | 938  | 938  | 938  |
| 100HP   | 1169 | 1169 | 1169 | 1169 | 1169 |
| <b>BALDOR MOTOR (SUPPLY/EXHAUST/RETURN)</b>       |      |      |      |      |      |
| 5HP   | 107  | 107  | 107  | 107  | 107  |
| 7.5HP   | 151  | 151  | 151  | 151  | 151  |
| 10HP  | 165  | 165  | 165  | 165  | 165  |
| 15HP  | 255  | 255  | 255  | 255  | 255  |
| 20HP  | 286  | 286  | 286  | 286  | 286  |
| 25HP  | 379  | 379  | 379  | 379  | 379  |
| 30HP  | 437  | 437  | 437  | 437  | 437  |
| 40HP  | 578  | 578  | 578  | 578  | 578  |
| 50HP  | 700  | 700  | 700  | 700  | 700  |
| 60HP  | 885  | 885  | 885  | 885  | 885  |
| 75HP  | 930  | 930  | 930  | 930  | 930  |
| 100HP   | 1225 | 1225 | 1225 | 1225 | 1225 |
| <b>SUPPLY/RETURN/EXHAUST FAN VFD</b>              |      |      |      |      |      |
| 5–10 HP   | 22   | 22   | 22   | 22   | 22   |
| 15–25 HP  | 51   | 51   | 51   | 51   | 51   |
| 30–40 HP  | 66   | 66   | 66   | 66   | 66   |
| 50–60 HP  | 106  | 106  | 106  | 106  | 106  |
| 75 HP   | 290  | 290  | 290  | 290  | 290  |
| <b>SUPPLY MTR BASE, 364T FRAME</b>                |      |      |      |      |      |
| Supply Motor and Fan Drive                        | 20   | 20   | 20   | 20   | 20   |
| Evaporator Coil Top and Bottom                    | 716  | 640  | 640  | 540  | 990  |
| <b>FILTERS</b>                                    |      |      |      |      |      |
| 2-inch Throwaway                                  | 25   | 25   | 25   | 25   | 25   |
| 2-inch Cleanable                                  | 25   | 25   | 25   | 25   | 25   |
| 2-inch Pleated                                    | 25   | 25   | 25   | 25   | 25   |
| 2-inch Carbon                                     | 25   | 25   | 25   | 25   | 25   |
| RF - Rack only                                    | 297  | 297  | 297  | 327  | 327  |
| RF - 2-inch Throwaway                             | 322  | 322  | 322  | 352  | 352  |
| RF - 12-inch 60–65%                               | 535  | 535  | 535  | 565  | 565  |
| RF - 12-inch 90–95%                               | 535  | 535  | 535  | 565  | 565  |
| <b>ECONOMIZER</b>                                 |      |      |      |      |      |
| OA Damper (30 x 84)                               | 110  | 110  | 110  | 120  | 120  |
| RA Damper (30 x 84)                               | 110  | 110  | 110  | 120  | 120  |
| Right Side OA Hood                                | 46   | 46   | 46   | 54   | 54   |
| Left Side OA Hood                                 | 46   | 46   | 46   | 54   | 54   |
| Rear OA Hood                                      | 82   | 82   | 82   | 82   | 82   |
| Tray & Liner                                      | 181  | 181  | 181  | 198  | 198  |
| OA Filters Back Top                               | 8    | 8    | 8    | 8    | 8    |
| OA Filters Back Btm                               | 8    | 8    | 8    | 8    | 8    |



**TABLE 6 – COMPONENT WEIGHTS (LBS) (CONT'D)**

| MODEL SIZE                    | 70  | 75  | 80  | 90  | 105 |
|-------------------------------|-----|-----|-----|-----|-----|
| <b>ECONOMIZER (CONT'D)</b>    |     |     |     |     |     |
| OA Filters Right Top          | 2   | 2   | 2   | 2   | 2   |
| OA Filters Right Btm          | 2   | 2   | 2   | 2   | 2   |
| OA Filters Left Top           | 2   | 2   | 2   | 2   | 2   |
| OA Filters Left Btm           | 2   | 2   | 2   | 2   | 2   |
| <b>POWER EXHAUST</b>          |     |     |     |     |     |
| Exhaust Mtr Base, 256 T Frame | 30  | 30  | 30  | 30  | 30  |
| Exhaust Fan                   |     |     |     |     |     |
| Comefri 15-15 FC Class R      | 194 | 194 | 194 | 194 | 194 |
| Comefri 15-15 FC Class II     | 280 | 280 | 280 | 280 | 280 |
| Comefri 18-18 FC Class R      | 306 | 306 | 306 | 306 | 306 |
| Comefri 18-18 FC Class II     | 396 | 396 | 396 | 396 | 396 |
| Return Fan                    | 490 | 490 | 490 | 490 | 490 |
| <b>EXHAUST FAN MOTOR</b>      |     |     |     |     |     |
| 5HP                           | 87  | 87  | 87  | 87  | 87  |
| 7.5HP                         | 120 | 120 | 120 | 120 | 120 |
| 10HP                          | 144 | 144 | 144 | 144 | 144 |
| 15HP                          | 217 | 217 | 217 | 217 | 217 |
| 20HP                          | 237 | 237 | 237 | 237 | 237 |
| 25HP                          | 330 | 330 | 330 | 330 | 330 |
| 30HP                          | 372 | 372 | 372 | 372 | 372 |
| <b>RETURN FAN MOTOR</b>       |     |     |     |     |     |
| 5HP                           | 87  | 87  | 87  | 87  | 87  |
| 7.5HP                         | 120 | 120 | 120 | 120 | 120 |
| 10HP                          | 144 | 144 | 144 | 144 | 144 |
| 15HP                          | 217 | 217 | 217 | 217 | 217 |
| 20HP                          | 237 | 237 | 237 | 237 | 237 |
| 25HP                          | 330 | 330 | 330 | 330 | 330 |
| 30HP                          | 372 | 372 | 372 | 372 | 372 |
| 40HP                          | 474 | 474 | 474 | 474 | 474 |
| <b>EXHAUST FAN VFD</b>        |     |     |     |     |     |
| 5–10 HP                       | 22  | 22  | 22  | 22  | 22  |
| 15–25 HP                      | 51  | 51  | 51  | 51  | 51  |
| 30–40 HP                      | 66  | 66  | 66  | 66  | 66  |
| <b>EXHAUST DAMPER</b>         |     |     |     |     |     |
| Barometric, (24 x 76)         | 45  | 45  | 45  | 55  | 55  |
| Modulating, (24 x 76)         | 75  | 75  | 75  | 90  | 90  |
| Fan skid                      | 46  | 46  | 46  | 49  | 49  |
| Exhaust Hood                  | 91  | 91  | 91  | 102 | 102 |
| <b>HEATING OPTIONS</b>        |     |     |     |     |     |
| Electric Heat - 80kW (Max)    | 430 | 430 | 430 | 430 | 430 |
| Electric Heat - 108kW (Max)   | 450 | 450 | 450 | 450 | 450 |
| Electric Heat - 150kW (Max)   | 470 | 470 | 470 | 470 | 470 |
| Electric Heat - 200kW (Max)   | 490 | 490 | 490 | 490 | 490 |
| Electric Heat - 250kW (Max)   | 510 | 510 | 510 | 510 | 510 |
| Gas Heat - 375 MBH (Max)      | 162 | 162 | 162 | 162 | 162 |
| Gas Heat - 750 MBH (Max)      | 324 | 324 | 324 | 324 | 324 |
| Gas Heat - 1125 MBH (Max)     | 486 | 486 | 486 | 486 | 486 |
| Hot Water Coil                | 318 | 318 | 318 | 318 | 318 |
| Steam Coil                    | 236 | 236 | 236 | 236 | 236 |

## Weight Data (Cont'd)

**TABLE 6 – COMPONENT WEIGHTS (LBS) (CONT'D)**

| MODEL SIZE                    | 70   | 75   | 80   | 90   | 105  |
|-------------------------------|------|------|------|------|------|
| <b>MISC.</b>                  |      |      |      |      |      |
| Open Perimeter Curb           | 577  | 577  | 577  | 615  | 615  |
| Enclosed Perimeter Curb       | 1020 | 1020 | 1020 | 1040 | 1040 |
| Condenser Section Sheet Metal | 2767 | 2767 | 2767 | 2767 | 2767 |
| 0–100% AMS <sup>2</sup>       | 125  | 125  | 125  | 140  | 140  |
| Condenser Section Wire Guards | 102  | 102  | 102  | 102  | 102  |
| Louvered Panel Guard          | 465  | 465  | 465  | 465  | 465  |

### NOTES

1. The weight given is the total weight of all eight aluminum coils and all eight copper coils, respectively. Indicates that particular option is not available with that model size.
2. The 0–100% AMS option needs some predetermined minimum airflow rate to work.

# Cooling Performance Data – 70 Ton Model

TABLE 7 - COOLING PERFORMANCE DATA\* – 70 TON MODEL

## 75°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 14,000 | 75      | 895                   | 581  | 894  | 540  | 894  | 498  | 894  | 456  | 893  | 416  | 892  | 375  | 895  | 331  |      |      |      |      |      |      |
|        | 71      | 840                   | 646  | 840  | 605  | 840  | 563  | 840  | 521  | 840  | 479  | 841  | 437  | 841  | 395  | 841  | 353  | 841  | 311  |      |      |
|        | 67      | 788                   | 701  | 788  | 659  | 788  | 617  | 789  | 576  | 789  | 536  | 789  | 497  | 789  | 456  | 789  | 414  | 789  | 373  | 789  | 331  |
|        | 62      | 746                   | 746  | 740  | 713  | 734  | 680  | 727  | 647  | 728  | 608  | 728  | 568  | 728  | 550  | 728  | 533  | 728  | 515  | 728  | 498  |
| 15,500 | 75      | 914                   | 613  | 913  | 567  | 913  | 521  | 913  | 475  | 912  | 429  | 911  | 383  | 914  | 338  |      |      |      |      |      |      |
|        | 71      | 859                   | 679  | 859  | 633  | 859  | 587  | 859  | 542  | 859  | 496  | 860  | 451  | 859  | 405  | 859  | 360  | 862  | 310  |      |      |
|        | 67      | 806                   | 742  | 806  | 696  | 807  | 651  | 807  | 605  | 807  | 561  | 807  | 517  | 807  | 471  | 807  | 426  | 807  | 380  | 809  | 332  |
|        | 62      | 776                   | 776  | 766  | 746  | 755  | 716  | 745  | 686  | 745  | 641  | 745  | 597  | 745  | 563  | 746  | 530  | 746  | 496  | 748  | 321  |
| 17,000 | 75      | 933                   | 644  | 932  | 594  | 932  | 544  | 932  | 494  | 931  | 442  | 930  | 391  | 932  | 345  |      |      |      |      |      |      |
|        | 71      | 878                   | 711  | 878  | 661  | 878  | 612  | 879  | 562  | 878  | 514  | 878  | 466  | 878  | 416  | 878  | 366  | 878  | 316  |      |      |
|        | 67      | 824                   | 783  | 824  | 734  | 825  | 684  | 825  | 635  | 825  | 586  | 826  | 537  | 826  | 487  | 826  | 438  | 826  | 388  | 826  | 339  |
|        | 62      | 806                   | 806  | 791  | 778  | 777  | 751  | 762  | 724  | 762  | 675  | 763  | 625  | 763  | 576  | 763  | 527  | 764  | 477  | 764  | 428  |
| 18,500 | 75      | 945                   | 672  | 945  | 618  | 944  | 564  | 944  | 510  | 943  | 455  | 942  | 401  | 944  | 349  |      |      |      |      |      |      |
|        | 71      | 889                   | 746  | 890  | 692  | 890  | 638  | 890  | 584  | 890  | 531  | 890  | 479  | 890  | 425  | 890  | 372  | 890  | 318  |      |      |
|        | 67      | 841                   | 811  | 840  | 761  | 839  | 712  | 837  | 662  | 837  | 609  | 838  | 555  | 838  | 502  | 838  | 448  | 838  | 395  | 838  | 341  |
|        | 62      | 828                   | 828  | 811  | 802  | 794  | 775  | 778  | 749  | 776  | 700  | 775  | 651  | 775  | 598  | 775  | 544  | 776  | 490  | 776  | 437  |
| 20,000 | 75      | 957                   | 700  | 957  | 642  | 957  | 584  | 957  | 527  | 956  | 469  | 955  | 411  | 956  | 354  |      |      |      |      |      |      |
|        | 71      | 901                   | 781  | 901  | 722  | 902  | 664  | 902  | 605  | 902  | 548  | 902  | 492  | 902  | 435  | 902  | 377  | 902  | 320  |      |      |
|        | 67      | 859                   | 838  | 856  | 788  | 852  | 739  | 849  | 689  | 849  | 631  | 850  | 574  | 850  | 517  | 850  | 459  | 850  | 402  | 850  | 344  |
|        | 62      | 850                   | 850  | 831  | 825  | 812  | 800  | 794  | 775  | 790  | 726  | 786  | 677  | 787  | 619  | 787  | 561  | 788  | 503  | 788  | 445  |
| 21,500 | 75      | 969                   | 728  | 969  | 666  | 969  | 604  | 969  | 543  | 968  | 482  | 967  | 421  | 968  | 358  |      |      |      |      |      |      |
|        | 71      | 913                   | 816  | 913  | 753  | 914  | 690  | 914  | 627  | 914  | 566  | 914  | 505  | 914  | 444  | 914  | 383  | 914  | 322  |      |      |
|        | 67      | 876                   | 866  | 871  | 816  | 866  | 766  | 861  | 715  | 861  | 654  | 861  | 593  | 862  | 531  | 862  | 470  | 862  | 408  | 862  | 347  |
|        | 62      | 872                   | 872  | 851  | 848  | 830  | 824  | 809  | 800  | 804  | 752  | 798  | 703  | 799  | 641  | 799  | 579  | 800  | 516  | 800  | 454  |
| 23,000 | 75      | 981                   | 756  | 981  | 690  | 981  | 625  | 981  | 559  | 980  | 495  | 980  | 431  | 980  | 362  |      |      |      |      |      |      |
|        | 71      | 924                   | 850  | 925  | 783  | 925  | 716  | 926  | 648  | 926  | 583  | 925  | 518  | 926  | 453  | 926  | 389  | 926  | 324  |      |      |
|        | 67      | 894                   | 894  | 887  | 843  | 880  | 793  | 873  | 742  | 873  | 677  | 873  | 611  | 874  | 546  | 874  | 480  | 874  | 415  | 874  | 350  |
|        | 62      | 894                   | 894  | 871  | 871  | 848  | 848  | 825  | 825  | 818  | 777  | 810  | 729  | 811  | 663  | 811  | 596  | 812  | 529  | 812  | 463  |
| 24,500 | 75      | 989                   | 782  | 989  | 712  | 989  | 643  | 989  | 574  | 988  | 505  | 987  | 437  | 988  | 365  |      |      |      |      |      |      |
|        | 71      | 933                   | 878  | 933  | 808  | 933  | 738  | 933  | 668  | 933  | 600  | 933  | 532  | 933  | 463  | 933  | 394  | 933  | 324  |      |      |
|        | 67      | 910                   | 910  | 900  | 862  | 890  | 814  | 880  | 766  | 881  | 698  | 881  | 630  | 881  | 561  | 881  | 491  | 882  | 422  | 882  | 353  |
|        | 62      | 910                   | 910  | 887  | 887  | 863  | 863  | 839  | 839  | 828  | 796  | 817  | 752  | 818  | 683  | 818  | 613  | 819  | 543  | 819  | 473  |
| 26,000 | 75      | 996                   | 808  | 996  | 735  | 996  | 661  | 996  | 588  | 995  | 515  | 994  | 442  | 996  | 368  |      |      |      |      |      |      |
|        | 71      | 942                   | 905  | 942  | 833  | 942  | 760  | 941  | 687  | 941  | 617  | 941  | 546  | 941  | 472  | 941  | 398  | 941  | 325  |      |      |
|        | 67      | 926                   | 926  | 913  | 881  | 901  | 836  | 888  | 791  | 888  | 720  | 888  | 649  | 889  | 576  | 889  | 502  | 889  | 429  | 890  | 356  |
|        | 62      | 926                   | 926  | 902  | 902  | 878  | 878  | 854  | 854  | 839  | 815  | 825  | 776  | 825  | 703  | 826  | 630  | 826  | 557  | 827  | 484  |
| 27,500 | 75      | 1004                  | 834  | 1004 | 757  | 1004 | 680  | 1004 | 603  | 1002 | 525  | 1001 | 448  | 1004 | 371  |      |      |      |      |      |      |
|        | 71      | 951                   | 933  | 950  | 858  | 950  | 782  | 949  | 707  | 949  | 634  | 949  | 560  | 949  | 482  | 949  | 403  | 949  | 325  |      |      |
|        | 67      | 942                   | 942  | 927  | 900  | 911  | 857  | 895  | 815  | 896  | 741  | 896  | 668  | 896  | 591  | 897  | 513  | 897  | 436  | 897  | 359  |
|        | 62      | 942                   | 942  | 917  | 917  | 893  | 893  | 868  | 868  | 850  | 833  | 832  | 799  | 832  | 723  | 833  | 647  | 833  | 570  | 834  | 494  |
| 29,000 | 75      | 1012                  | 860  | 1012 | 779  | 1012 | 698  | 1012 | 617  | 1010 | 535  | 1008 | 454  | 1012 | 374  |      |      |      |      |      |      |
|        | 71      | 960                   | 960  | 959  | 882  | 958  | 805  | 957  | 727  | 956  | 650  | 956  | 574  | 956  | 491  | 957  | 408  | 957  | 325  |      |      |
|        | 67      | 958                   | 958  | 940  | 919  | 921  | 879  | 903  | 839  | 903  | 763  | 904  | 687  | 904  | 606  | 904  | 524  | 905  | 443  | 905  | 362  |
|        | 62      | 958                   | 958  | 933  | 933  | 907  | 907  | 882  | 882  | 861  | 852  | 839  | 822  | 840  | 743  | 840  | 663  | 841  | 584  | 841  | 505  |

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

# Cooling Performance Data – 70 Ton Model (Cont'd)

TABLE 7 – COOLING PERFORMANCE DATA\* – 70 TON MODEL (CONT'D)

## 85°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 14,000 | 75      | 866                   | 571  | 866  | 529  | 866  | 488  | 866  | 446  | 866  | 405  | 865  | 364  | 867  | 321  |      |      |      |      |      |      |
|        | 71      | 812                   | 633  | 813  | 592  | 813  | 550  | 813  | 508  | 813  | 466  | 814  | 423  | 814  | 381  | 1339 | 339  | 814  | 297  |      |      |
|        | 67      | 761                   | 688  | 761  | 647  | 762  | 605  | 762  | 564  | 762  | 524  | 763  | 484  | 763  | 442  | 763  | 400  | 763  | 359  | 763  | 317  |
|        | 62      | 726                   | 726  | 723  | 704  | 720  | 683  | 717  | 661  | 710  | 608  | 702  | 554  | 703  | 525  | 703  | 496  | 703  | 467  | 703  | 438  |
| 15,500 | 75      | 884                   | 601  | 884  | 555  | 884  | 510  | 884  | 464  | 884  | 419  | 883  | 373  | 885  | 327  |      |      |      |      |      |      |
|        | 71      | 830                   | 666  | 831  | 621  | 831  | 575  | 831  | 530  | 832  | 476  | 832  | 422  | 832  | 382  | 1348 | 342  | 834  | 300  |      |      |
|        | 67      | 778                   | 730  | 779  | 684  | 779  | 638  | 779  | 592  | 780  | 548  | 780  | 503  | 780  | 457  | 780  | 412  | 781  | 366  | 782  | 321  |
|        | 62      | 755                   | 755  | 745  | 732  | 735  | 709  | 725  | 686  | 722  | 634  | 719  | 582  | 719  | 543  | 719  | 504  | 720  | 464  | 721  | 355  |
| 17,000 | 75      | 902                   | 631  | 902  | 581  | 902  | 532  | 902  | 482  | 902  | 433  | 901  | 383  | 903  | 334  |      |      |      |      |      |      |
|        | 71      | 848                   | 700  | 849  | 650  | 849  | 601  | 849  | 552  | 850  | 486  | 850  | 420  | 850  | 382  | 1357 | 344  | 850  | 306  |      |      |
|        | 67      | 796                   | 771  | 796  | 721  | 796  | 671  | 797  | 621  | 797  | 572  | 798  | 522  | 798  | 473  | 798  | 423  | 798  | 373  | 799  | 324  |
|        | 62      | 784                   | 784  | 767  | 760  | 750  | 735  | 734  | 711  | 735  | 661  | 735  | 610  | 736  | 561  | 736  | 511  | 737  | 462  | 737  | 412  |
| 18,500 | 75      | 914                   | 658  | 914  | 605  | 914  | 552  | 914  | 500  | 925  | 450  | 935  | 401  | 915  | 339  |      |      |      |      |      |      |
|        | 71      | 860                   | 733  | 861  | 680  | 861  | 626  | 861  | 573  | 862  | 493  | 862  | 414  | 862  | 379  | 1243 | 343  | 862  | 308  |      |      |
|        | 67      | 815                   | 796  | 813  | 747  | 811  | 698  | 809  | 649  | 809  | 573  | 809  | 496  | 810  | 454  | 810  | 412  | 810  | 370  | 811  | 327  |
|        | 62      | 806                   | 806  | 788  | 782  | 769  | 758  | 751  | 734  | 749  | 685  | 747  | 636  | 748  | 582  | 748  | 529  | 749  | 476  | 749  | 423  |
| 20,000 | 75      | 925                   | 686  | 926  | 629  | 926  | 573  | 926  | 517  | 948  | 468  | 969  | 419  | 927  | 343  |      |      |      |      |      |      |
|        | 71      | 872                   | 766  | 873  | 709  | 873  | 652  | 873  | 594  | 874  | 501  | 874  | 408  | 874  | 375  | 1128 | 343  | 875  | 310  |      |      |
|        | 67      | 834                   | 821  | 829  | 774  | 825  | 726  | 820  | 678  | 821  | 574  | 821  | 470  | 821  | 435  | 822  | 401  | 822  | 366  | 823  | 331  |
|        | 62      | 828                   | 828  | 808  | 804  | 788  | 781  | 768  | 757  | 764  | 709  | 759  | 661  | 759  | 604  | 760  | 547  | 760  | 491  | 761  | 434  |
| 21,500 | 75      | 937                   | 713  | 938  | 653  | 938  | 594  | 938  | 534  | 971  | 486  | 1003 | 438  | 939  | 348  |      |      |      |      |      |      |
|        | 71      | 884                   | 800  | 884  | 738  | 885  | 677  | 885  | 616  | 886  | 509  | 886  | 401  | 886  | 372  | 1013 | 342  | 887  | 313  |      |      |
|        | 67      | 853                   | 847  | 846  | 800  | 839  | 753  | 832  | 706  | 832  | 575  | 832  | 444  | 833  | 417  | 834  | 390  | 835  | 362  | 835  | 335  |
|        | 62      | 850                   | 850  | 828  | 826  | 807  | 803  | 786  | 780  | 778  | 733  | 771  | 687  | 771  | 626  | 772  | 565  | 772  | 505  | 773  | 444  |
| 23,000 | 75      | 949                   | 740  | 950  | 677  | 950  | 614  | 951  | 551  | 994  | 504  | 1036 | 456  | 951  | 352  |      |      |      |      |      |      |
|        | 71      | 896                   | 833  | 896  | 768  | 897  | 702  | 897  | 637  | 897  | 516  | 898  | 395  | 898  | 368  | 899  | 341  | 899  | 315  |      |      |
|        | 67      | 872                   | 872  | 863  | 826  | 853  | 780  | 844  | 734  | 844  | 576  | 844  | 418  | 845  | 398  | 846  | 378  | 847  | 359  | 847  | 339  |
|        | 62      | 871                   | 871  | 849  | 849  | 826  | 826  | 803  | 803  | 793  | 757  | 783  | 712  | 783  | 648  | 784  | 584  | 784  | 519  | 785  | 455  |
| 24,500 | 75      | 956                   | 767  | 956  | 700  | 957  | 632  | 957  | 565  | 989  | 509  | 1021 | 453  | 958  | 355  |      |      |      |      |      |      |
|        | 71      | 905                   | 858  | 905  | 791  | 904  | 724  | 904  | 657  | 904  | 546  | 904  | 436  | 905  | 396  | 905  | 355  | 906  | 315  |      |      |
|        | 67      | 887                   | 887  | 875  | 843  | 862  | 800  | 850  | 757  | 851  | 619  | 851  | 481  | 852  | 446  | 853  | 411  | 853  | 376  | 854  | 342  |
|        | 62      | 886                   | 886  | 863  | 863  | 840  | 840  | 816  | 816  | 803  | 775  | 789  | 734  | 790  | 667  | 790  | 599  | 791  | 531  | 791  | 464  |
| 26,000 | 75      | 962                   | 794  | 963  | 722  | 963  | 650  | 964  | 578  | 985  | 514  | 1006 | 450  | 965  | 357  |      |      |      |      |      |      |
|        | 71      | 914                   | 883  | 913  | 814  | 912  | 745  | 910  | 676  | 911  | 577  | 911  | 477  | 911  | 423  | 912  | 369  | 912  | 315  |      |      |
|        | 67      | 901                   | 901  | 887  | 861  | 872  | 820  | 857  | 780  | 857  | 662  | 858  | 545  | 859  | 494  | 859  | 444  | 860  | 394  | 860  | 344  |
|        | 62      | 901                   | 901  | 877  | 877  | 853  | 853  | 829  | 829  | 813  | 793  | 796  | 757  | 797  | 686  | 797  | 615  | 797  | 544  | 798  | 472  |
| 27,500 | 75      | 969                   | 821  | 970  | 745  | 970  | 668  | 970  | 592  | 981  | 519  | 991  | 447  | 972  | 360  |      |      |      |      |      |      |
|        | 71      | 923                   | 907  | 921  | 837  | 919  | 766  | 917  | 696  | 917  | 607  | 918  | 518  | 918  | 450  | 918  | 382  | 919  | 315  |      |      |
|        | 67      | 916                   | 916  | 899  | 878  | 881  | 841  | 863  | 803  | 864  | 705  | 865  | 608  | 866  | 543  | 866  | 477  | 866  | 412  | 867  | 347  |
|        | 62      | 916                   | 916  | 891  | 891  | 867  | 867  | 843  | 843  | 823  | 811  | 803  | 779  | 803  | 705  | 803  | 630  | 804  | 556  | 804  | 481  |
| 29,000 | 75      | 976                   | 848  | 976  | 767  | 977  | 686  | 977  | 605  | 977  | 525  | 976  | 444  | 979  | 362  |      |      |      |      |      |      |
|        | 71      | 932                   | 932  | 929  | 860  | 926  | 788  | 923  | 715  | 924  | 637  | 925  | 559  | 925  | 478  | 925  | 396  | 925  | 314  |      |      |
|        | 67      | 931                   | 931  | 911  | 896  | 890  | 861  | 870  | 826  | 871  | 749  | 872  | 671  | 872  | 591  | 873  | 510  | 873  | 430  | 873  | 349  |
|        | 62      | 931                   | 931  | 906  | 906  | 881  | 881  | 856  | 856  | 833  | 829  | 810  | 802  | 810  | 724  | 810  | 646  | 810  | 568  | 810  | 490  |

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

TABLE 7 –COOLING PERFORMANCE DATA\* – 70 TON MODEL (CONT'D)

## 95°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 14,000 | 75      | 837                   | 561  | 838  | 519  | 838  | 478  | 838  | 436  | 838  | 394  | 839  | 352  | 839  | 311  |      |      |      |      |      |      |
|        | 71      | 785                   | 620  | 785  | 578  | 786  | 537  | 786  | 495  | 786  | 452  | 787  | 409  | 787  | 367  | 1837 | 325  | 788  | 284  |      |      |
|        | 67      | 734                   | 675  | 734  | 634  | 735  | 593  | 735  | 551  | 736  | 511  | 736  | 471  | 737  | 429  | 737  | 387  | 737  | 345  | 738  | 302  |
|        | 62      | 706                   | 706  | 706  | 695  | 706  | 685  | 706  | 675  | 692  | 608  | 677  | 541  | 677  | 501  | 678  | 460  | 678  | 419  | 679  | 378  |
| 15,500 | 75      | 854                   | 590  | 854  | 544  | 855  | 499  | 855  | 453  | 855  | 409  | 856  | 364  | 856  | 317  |      |      |      |      |      |      |
|        | 71      | 802                   | 654  | 802  | 609  | 803  | 564  | 803  | 518  | 804  | 455  | 804  | 392  | 804  | 358  | 1837 | 324  | 807  | 290  |      |      |
|        | 67      | 750                   | 717  | 751  | 671  | 751  | 625  | 752  | 579  | 752  | 534  | 753  | 489  | 753  | 443  | 754  | 397  | 754  | 351  | 755  | 310  |
|        | 62      | 734                   | 734  | 725  | 718  | 715  | 703  | 706  | 687  | 699  | 627  | 692  | 568  | 693  | 523  | 693  | 478  | 694  | 433  | 695  | 389  |
| 17,000 | 75      | 871                   | 618  | 871  | 569  | 871  | 520  | 872  | 471  | 872  | 423  | 873  | 375  | 873  | 323  |      |      |      |      |      |      |
|        | 71      | 819                   | 688  | 820  | 639  | 820  | 590  | 820  | 541  | 821  | 458  | 822  | 375  | 822  | 349  | 1837 | 322  | 822  | 296  |      |      |
|        | 67      | 767                   | 759  | 768  | 708  | 768  | 658  | 769  | 607  | 769  | 557  | 769  | 508  | 770  | 458  | 770  | 408  | 771  | 358  | 771  | 309  |
|        | 62      | 762                   | 762  | 743  | 741  | 724  | 720  | 706  | 699  | 707  | 647  | 708  | 595  | 708  | 545  | 709  | 496  | 709  | 446  | 710  | 397  |
| 18,500 | 75      | 882                   | 647  | 882  | 593  | 882  | 539  | 883  | 486  | 883  | 434  | 884  | 382  | 884  | 327  |      |      |      |      |      |      |
|        | 71      | 830                   | 721  | 830  | 668  | 830  | 616  | 831  | 563  | 832  | 484  | 833  | 404  | 833  | 369  | 1594 | 333  | 833  | 298  |      |      |
|        | 67      | 787                   | 781  | 784  | 732  | 782  | 683  | 779  | 634  | 779  | 580  | 780  | 527  | 780  | 473  | 781  | 420  | 781  | 366  | 782  | 313  |
|        | 62      | 783                   | 783  | 763  | 761  | 743  | 740  | 723  | 718  | 721  | 669  | 718  | 620  | 719  | 567  | 720  | 514  | 720  | 460  | 721  | 407  |
| 20,000 | 75      | 893                   | 675  | 893  | 617  | 893  | 559  | 893  | 501  | 894  | 445  | 895  | 389  | 896  | 331  |      |      |      |      |      |      |
|        | 71      | 840                   | 753  | 841  | 697  | 841  | 641  | 842  | 586  | 842  | 510  | 843  | 434  | 844  | 389  | 1351 | 344  | 844  | 300  |      |      |
|        | 67      | 806                   | 802  | 801  | 755  | 795  | 708  | 790  | 660  | 790  | 603  | 790  | 546  | 791  | 489  | 791  | 431  | 792  | 374  | 793  | 317  |
|        | 62      | 803                   | 803  | 783  | 781  | 762  | 759  | 741  | 737  | 735  | 692  | 729  | 646  | 730  | 589  | 730  | 531  | 731  | 474  | 731  | 417  |
| 21,500 | 75      | 904                   | 703  | 904  | 641  | 904  | 578  | 904  | 516  | 905  | 456  | 906  | 396  | 907  | 335  |      |      |      |      |      |      |
|        | 71      | 850                   | 785  | 851  | 726  | 852  | 667  | 852  | 608  | 853  | 536  | 854  | 463  | 854  | 409  | 1109 | 355  | 855  | 301  |      |      |
|        | 67      | 826                   | 824  | 817  | 778  | 809  | 733  | 800  | 687  | 800  | 626  | 800  | 565  | 801  | 504  | 802  | 443  | 803  | 382  | 804  | 321  |
|        | 62      | 824                   | 824  | 802  | 802  | 780  | 779  | 759  | 757  | 749  | 714  | 740  | 672  | 740  | 611  | 741  | 549  | 741  | 488  | 742  | 427  |
| 23,000 | 75      | 914                   | 732  | 915  | 665  | 915  | 598  | 915  | 531  | 916  | 467  | 917  | 404  | 918  | 340  |      |      |      |      |      |      |
|        | 71      | 861                   | 818  | 861  | 755  | 862  | 693  | 863  | 630  | 864  | 561  | 865  | 493  | 865  | 430  | 866  | 366  | 866  | 303  |      |      |
|        | 67      | 845                   | 845  | 834  | 801  | 822  | 758  | 811  | 714  | 811  | 649  | 811  | 584  | 812  | 519  | 813  | 455  | 814  | 390  | 814  | 326  |
|        | 62      | 844                   | 844  | 822  | 822  | 799  | 799  | 776  | 776  | 763  | 737  | 750  | 698  | 751  | 632  | 751  | 567  | 752  | 502  | 753  | 436  |
| 24,500 | 75      | 921                   | 758  | 921  | 687  | 922  | 617  | 922  | 547  | 923  | 479  | 924  | 411  | 925  | 342  |      |      |      |      |      |      |
|        | 71      | 871                   | 839  | 871  | 776  | 870  | 712  | 870  | 648  | 871  | 577  | 872  | 506  | 872  | 438  | 873  | 371  | 873  | 303  |      |      |
|        | 67      | 860                   | 860  | 846  | 819  | 832  | 779  | 818  | 738  | 818  | 670  | 818  | 602  | 819  | 533  | 820  | 465  | 820  | 397  | 821  | 328  |
|        | 62      | 859                   | 859  | 836  | 836  | 813  | 813  | 790  | 790  | 774  | 754  | 758  | 719  | 758  | 650  | 759  | 582  | 759  | 514  | 759  | 446  |
| 26,000 | 75      | 927                   | 784  | 928  | 710  | 928  | 636  | 929  | 562  | 930  | 491  | 931  | 419  | 932  | 345  |      |      |      |      |      |      |
|        | 71      | 882                   | 861  | 880  | 796  | 879  | 731  | 877  | 667  | 878  | 593  | 879  | 519  | 879  | 447  | 879  | 375  | 880  | 303  |      |      |
|        | 67      | 874                   | 874  | 858  | 837  | 841  | 800  | 824  | 763  | 825  | 691  | 826  | 620  | 826  | 548  | 827  | 475  | 827  | 403  | 828  | 331  |
|        | 62      | 874                   | 874  | 850  | 850  | 827  | 827  | 803  | 803  | 784  | 771  | 766  | 739  | 766  | 668  | 766  | 598  | 766  | 527  | 766  | 456  |
| 27,500 | 75      | 934                   | 810  | 934  | 733  | 935  | 655  | 936  | 578  | 937  | 502  | 938  | 427  | 939  | 347  |      |      |      |      |      |      |
|        | 71      | 893                   | 882  | 890  | 817  | 887  | 751  | 884  | 685  | 885  | 608  | 886  | 532  | 886  | 456  | 886  | 380  | 887  | 304  |      |      |
|        | 67      | 889                   | 889  | 870  | 855  | 850  | 821  | 831  | 788  | 832  | 713  | 833  | 638  | 833  | 562  | 834  | 486  | 834  | 410  | 835  | 334  |
|        | 62      | 888                   | 888  | 864  | 864  | 840  | 840  | 816  | 816  | 795  | 788  | 773  | 760  | 773  | 687  | 773  | 613  | 773  | 539  | 772  | 466  |
| 29,000 | 75      | 940                   | 837  | 941  | 756  | 942  | 675  | 942  | 594  | 944  | 514  | 945  | 435  | 946  | 350  |      |      |      |      |      |      |
|        | 71      | 904                   | 904  | 900  | 837  | 895  | 770  | 890  | 703  | 892  | 624  | 893  | 544  | 893  | 464  | 893  | 384  | 893  | 304  |      |      |
|        | 67      | 903                   | 903  | 881  | 873  | 860  | 843  | 838  | 812  | 839  | 734  | 840  | 656  | 841  | 576  | 841  | 496  | 841  | 416  | 842  | 337  |
|        | 62      | 903                   | 903  | 879  | 879  | 854  | 854  | 830  | 830  | 805  | 805  | 781  | 781  | 781  | 705  | 780  | 628  | 780  | 552  | 779  | 475  |

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

# Cooling Performance Data – 70 Ton Model (Cont'd)

TABLE 7 – COOLING PERFORMANCE DATA\* – 70 TON MODEL (CONT'D)

## 105°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 14,000 | 75      | 800                   | 547  | 800  | 508  | 801  | 469  | 802  | 429  | 802  | 383  | 802  | 337  | 803  | 297  |      |      |      |      |      |      |
|        | 71      | 749                   | 602  | 749  | 566  | 750  | 531  | 751  | 495  | 751  | 444  | 751  | 394  | 751  | 353  | 1277 | 312  | 752  | 271  |      |      |
|        | 67      | 699                   | 660  | 700  | 618  | 700  | 577  | 701  | 536  | 702  | 509  | 702  | 483  | 702  | 434  | 703  | 385  | 703  | 337  | 703  | 288  |
|        | 62      | 680                   | 680  | 672  | 664  | 665  | 648  | 657  | 633  | 651  | 579  | 644  | 524  | 644  | 483  | 645  | 442  | 645  | 401  | 645  | 360  |
| 15,500 | 75      | 815                   | 576  | 815  | 532  | 816  | 488  | 817  | 443  | 817  | 395  | 818  | 348  | 818  | 303  |      |      |      |      |      |      |
|        | 71      | 765                   | 638  | 765  | 596  | 766  | 553  | 766  | 511  | 767  | 452  | 767  | 393  | 767  | 354  | 1284 | 314  | 770  | 273  |      |      |
|        | 67      | 717                   | 696  | 717  | 652  | 717  | 608  | 716  | 564  | 717  | 530  | 717  | 497  | 718  | 445  | 718  | 394  | 718  | 342  | 720  | 292  |
|        | 62      | 707                   | 707  | 693  | 689  | 680  | 671  | 667  | 653  | 660  | 606  | 653  | 559  | 655  | 512  | 656  | 465  | 658  | 418  | 660  | 370  |
| 17,000 | 75      | 830                   | 605  | 831  | 556  | 831  | 506  | 832  | 457  | 833  | 408  | 833  | 358  | 834  | 308  |      |      |      |      |      |      |
|        | 71      | 780                   | 674  | 781  | 625  | 781  | 576  | 782  | 527  | 783  | 460  | 783  | 392  | 784  | 354  | 1291 | 316  | 784  | 278  |      |      |
|        | 67      | 736                   | 732  | 735  | 685  | 733  | 639  | 732  | 592  | 732  | 552  | 733  | 511  | 733  | 457  | 733  | 403  | 734  | 348  | 734  | 294  |
|        | 62      | 733                   | 733  | 714  | 713  | 695  | 693  | 676  | 672  | 669  | 633  | 662  | 594  | 665  | 540  | 668  | 487  | 671  | 434  | 674  | 380  |
| 18,500 | 75      | 841                   | 633  | 841  | 579  | 842  | 526  | 843  | 472  | 843  | 419  | 844  | 365  | 845  | 313  |      |      |      |      |      |      |
|        | 71      | 790                   | 707  | 791  | 653  | 792  | 599  | 792  | 545  | 793  | 479  | 794  | 414  | 794  | 369  | 1175 | 324  | 794  | 279  |      |      |
|        | 67      | 755                   | 752  | 751  | 708  | 747  | 664  | 742  | 620  | 743  | 574  | 743  | 527  | 744  | 470  | 744  | 412  | 744  | 355  | 745  | 298  |
|        | 62      | 753                   | 753  | 733  | 733  | 713  | 712  | 693  | 691  | 684  | 654  | 675  | 616  | 677  | 560  | 680  | 504  | 682  | 447  | 685  | 391  |
| 20,000 | 75      | 851                   | 660  | 852  | 602  | 853  | 545  | 853  | 487  | 854  | 429  | 855  | 372  | 856  | 317  |      |      |      |      |      |      |
|        | 71      | 800                   | 739  | 801  | 680  | 802  | 621  | 802  | 562  | 804  | 499  | 805  | 436  | 805  | 384  | 1059 | 332  | 805  | 280  |      |      |
|        | 67      | 775                   | 773  | 768  | 731  | 760  | 690  | 753  | 648  | 753  | 595  | 754  | 542  | 754  | 482  | 754  | 422  | 755  | 362  | 755  | 302  |
|        | 62      | 773                   | 773  | 753  | 752  | 732  | 731  | 711  | 709  | 699  | 674  | 688  | 639  | 690  | 580  | 691  | 520  | 693  | 461  | 695  | 401  |
| 21,500 | 75      | 862                   | 688  | 863  | 626  | 863  | 564  | 864  | 501  | 865  | 440  | 866  | 379  | 866  | 321  |      |      |      |      |      |      |
|        | 71      | 811                   | 772  | 811  | 708  | 812  | 644  | 813  | 580  | 814  | 518  | 815  | 457  | 816  | 398  | 943  | 339  | 816  | 280  |      |      |
|        | 67      | 794                   | 793  | 784  | 754  | 774  | 715  | 763  | 676  | 764  | 617  | 764  | 558  | 765  | 495  | 765  | 432  | 765  | 369  | 765  | 306  |
|        | 62      | 793                   | 793  | 772  | 772  | 750  | 750  | 729  | 728  | 715  | 695  | 700  | 662  | 702  | 599  | 703  | 537  | 704  | 474  | 705  | 412  |
| 23,000 | 75      | 873                   | 716  | 873  | 649  | 874  | 583  | 875  | 516  | 876  | 451  | 877  | 386  | 877  | 325  |      |      |      |      |      |      |
|        | 71      | 821                   | 804  | 821  | 735  | 822  | 666  | 823  | 597  | 825  | 538  | 826  | 479  | 826  | 413  | 826  | 347  | 827  | 281  |      |      |
|        | 67      | 814                   | 814  | 801  | 777  | 787  | 741  | 774  | 704  | 774  | 639  | 775  | 573  | 775  | 508  | 775  | 442  | 776  | 376  | 776  | 310  |
|        | 62      | 814                   | 814  | 791  | 791  | 769  | 769  | 746  | 746  | 730  | 715  | 713  | 685  | 714  | 619  | 714  | 553  | 715  | 488  | 716  | 422  |
| 24,500 | 75      | 878                   | 742  | 878  | 672  | 879  | 602  | 880  | 532  | 882  | 463  | 883  | 394  | 883  | 328  |      |      |      |      |      |      |
|        | 71      | 832                   | 820  | 831  | 753  | 830  | 687  | 829  | 620  | 830  | 556  | 832  | 492  | 832  | 422  | 832  | 353  | 832  | 283  |      |      |
|        | 67      | 827                   | 827  | 812  | 793  | 796  | 759  | 780  | 725  | 780  | 657  | 781  | 589  | 781  | 520  | 781  | 451  | 781  | 382  | 781  | 313  |
|        | 62      | 827                   | 827  | 804  | 804  | 781  | 781  | 759  | 759  | 739  | 729  | 720  | 699  | 721  | 632  | 721  | 565  | 721  | 498  | 721  | 431  |
| 26,000 | 75      | 883                   | 768  | 884  | 694  | 885  | 621  | 886  | 547  | 887  | 475  | 888  | 402  | 889  | 331  |      |      |      |      |      |      |
|        | 71      | 844                   | 836  | 841  | 772  | 838  | 707  | 835  | 643  | 836  | 574  | 838  | 505  | 837  | 431  | 837  | 358  | 837  | 285  |      |      |
|        | 67      | 840                   | 840  | 822  | 809  | 805  | 777  | 787  | 745  | 787  | 675  | 787  | 606  | 787  | 533  | 787  | 460  | 787  | 387  | 787  | 315  |
|        | 62      | 840                   | 840  | 817  | 817  | 794  | 794  | 771  | 771  | 749  | 742  | 728  | 713  | 727  | 645  | 727  | 576  | 727  | 508  | 727  | 440  |
| 27,500 | 75      | 887                   | 794  | 889  | 717  | 890  | 640  | 892  | 562  | 893  | 486  | 894  | 410  | 894  | 334  |      |      |      |      |      |      |
|        | 71      | 856                   | 852  | 851  | 790  | 846  | 728  | 841  | 666  | 842  | 592  | 843  | 517  | 843  | 440  | 843  | 363  | 843  | 287  |      |      |
|        | 67      | 854                   | 854  | 833  | 825  | 813  | 795  | 793  | 766  | 793  | 694  | 792  | 622  | 792  | 545  | 792  | 469  | 792  | 393  | 792  | 317  |
|        | 62      | 853                   | 853  | 830  | 830  | 806  | 806  | 783  | 783  | 759  | 755  | 735  | 728  | 734  | 658  | 734  | 588  | 733  | 518  | 732  | 448  |
| 29,000 | 75      | 892                   | 820  | 894  | 739  | 896  | 659  | 897  | 578  | 898  | 498  | 900  | 418  | 900  | 337  |      |      |      |      |      |      |
|        | 71      | 868                   | 868  | 861  | 808  | 854  | 748  | 847  | 689  | 848  | 609  | 849  | 530  | 849  | 449  | 848  | 369  | 848  | 288  |      |      |
|        | 67      | 867                   | 867  | 844  | 840  | 822  | 814  | 799  | 787  | 799  | 712  | 798  | 638  | 798  | 558  | 798  | 478  | 798  | 399  | 798  | 319  |
|        | 62      | 867                   | 867  | 843  | 843  | 819  | 819  | 795  | 795  | 769  | 769  | 742  | 742  | 741  | 671  | 740  | 600  | 739  | 528  | 738  | 457  |

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

TABLE 7 –COOLING PERFORMANCE DATA\* – 70 TON MODEL (CONT'D)

## 115°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 14,000 | 75      | 762                   | 533  | 763  | 496  | 764  | 460  | 765  | 423  | 765  | 372  | 765  | 321  | 766  | 283  |      |      |      |      |      |      |
|        | 71      | 713                   | 584  | 714  | 554  | 715  | 524  | 716  | 494  | 716  | 437  | 715  | 379  | 716  | 339  | 841  | 353  | 717  | 258  |      |      |
|        | 67      | 664                   | 644  | 665  | 603  | 666  | 561  | 667  | 520  | 667  | 507  | 668  | 494  | 668  | 439  | 789  | 414  | 669  | 329  | 669  | 274  |
|        | 62      | 654                   | 654  | 639  | 633  | 624  | 612  | 609  | 590  | 610  | 549  | 611  | 507  | 611  | 466  | 728  | 533  | 611  | 384  | 612  | 342  |
| 15,500 | 75      | 776                   | 563  | 777  | 520  | 778  | 476  | 779  | 433  | 779  | 382  | 780  | 331  | 780  | 289  |      |      |      |      |      |      |
|        | 71      | 727                   | 622  | 728  | 583  | 729  | 543  | 730  | 504  | 730  | 449  | 730  | 394  | 730  | 349  | 859  | 360  | 733  | 256  |      |      |
|        | 67      | 684                   | 674  | 683  | 632  | 682  | 591  | 681  | 549  | 682  | 527  | 682  | 505  | 682  | 448  | 807  | 426  | 683  | 334  | 684  | 273  |
|        | 62      | 679                   | 679  | 662  | 659  | 645  | 639  | 627  | 618  | 621  | 584  | 614  | 550  | 617  | 501  | 746  | 530  | 622  | 402  | 626  | 351  |
| 17,000 | 75      | 789                   | 592  | 790  | 543  | 791  | 493  | 792  | 444  | 793  | 392  | 794  | 341  | 794  | 294  |      |      |      |      |      |      |
|        | 71      | 741                   | 660  | 742  | 611  | 743  | 562  | 744  | 513  | 744  | 461  | 745  | 410  | 745  | 360  | 878  | 366  | 746  | 261  |      |      |
|        | 67      | 705                   | 705  | 702  | 662  | 698  | 620  | 695  | 577  | 696  | 546  | 696  | 515  | 696  | 456  | 826  | 438  | 697  | 338  | 697  | 279  |
|        | 62      | 705                   | 705  | 685  | 685  | 666  | 666  | 646  | 646  | 632  | 620  | 617  | 593  | 622  | 536  | 763  | 527  | 633  | 421  | 639  | 364  |
| 18,500 | 75      | 798                   | 619  | 799  | 566  | 800  | 513  | 801  | 459  | 802  | 404  | 803  | 349  | 803  | 297  |      |      |      |      |      |      |
|        | 71      | 751                   | 690  | 751  | 637  | 752  | 585  | 753  | 533  | 753  | 478  | 754  | 423  | 754  | 369  | 890  | 372  | 754  | 262  |      |      |
|        | 67      | 723                   | 723  | 717  | 684  | 710  | 644  | 704  | 604  | 705  | 565  | 705  | 525  | 705  | 465  | 838  | 448  | 706  | 343  | 706  | 282  |
|        | 62      | 723                   | 723  | 703  | 703  | 683  | 683  | 663  | 663  | 648  | 635  | 633  | 607  | 637  | 549  | 775  | 544  | 644  | 432  | 648  | 374  |
| 20,000 | 75      | 807                   | 647  | 809  | 589  | 810  | 532  | 811  | 475  | 811  | 416  | 812  | 358  | 812  | 301  |      |      |      |      |      |      |
|        | 71      | 760                   | 719  | 761  | 664  | 761  | 608  | 762  | 553  | 763  | 494  | 763  | 436  | 763  | 378  | 902  | 377  | 763  | 263  |      |      |
|        | 67      | 742                   | 742  | 732  | 705  | 722  | 668  | 713  | 632  | 714  | 584  | 714  | 536  | 714  | 473  | 850  | 459  | 714  | 348  | 715  | 286  |
|        | 62      | 741                   | 741  | 721  | 721  | 700  | 700  | 680  | 680  | 664  | 651  | 649  | 622  | 651  | 562  | 787  | 561  | 655  | 444  | 657  | 384  |
| 21,500 | 75      | 816                   | 674  | 818  | 613  | 819  | 552  | 820  | 490  | 821  | 428  | 822  | 366  | 822  | 304  |      |      |      |      |      |      |
|        | 71      | 770                   | 749  | 770  | 690  | 770  | 632  | 771  | 573  | 772  | 511  | 773  | 448  | 773  | 387  | 914  | 383  | 772  | 264  |      |      |
|        | 67      | 760                   | 760  | 747  | 726  | 734  | 693  | 722  | 659  | 723  | 603  | 723  | 546  | 723  | 482  | 862  | 470  | 723  | 354  | 723  | 289  |
|        | 62      | 760                   | 760  | 738  | 738  | 717  | 717  | 696  | 696  | 681  | 666  | 665  | 636  | 665  | 575  | 799  | 579  | 666  | 455  | 666  | 395  |
| 23,000 | 75      | 826                   | 702  | 827  | 636  | 828  | 571  | 829  | 506  | 830  | 440  | 831  | 374  | 831  | 307  |      |      |      |      |      |      |
|        | 71      | 779                   | 779  | 779  | 717  | 779  | 655  | 780  | 593  | 781  | 527  | 782  | 461  | 782  | 396  | 926  | 389  | 781  | 266  |      |      |
|        | 67      | 778                   | 778  | 762  | 748  | 746  | 717  | 731  | 687  | 732  | 622  | 733  | 557  | 732  | 491  | 874  | 480  | 732  | 359  | 732  | 293  |
|        | 62      | 778                   | 778  | 756  | 756  | 735  | 735  | 713  | 713  | 697  | 682  | 681  | 650  | 679  | 589  | 811  | 596  | 676  | 466  | 675  | 405  |
| 24,500 | 75      | 830                   | 727  | 832  | 658  | 833  | 589  | 835  | 520  | 836  | 450  | 837  | 381  | 837  | 312  |      |      |      |      |      |      |
|        | 71      | 792                   | 792  | 790  | 732  | 788  | 673  | 785  | 613  | 787  | 544  | 788  | 475  | 787  | 406  | 933  | 394  | 787  | 267  |      |      |
|        | 67      | 791                   | 791  | 774  | 763  | 756  | 734  | 738  | 705  | 738  | 639  | 738  | 572  | 738  | 503  | 881  | 491  | 738  | 364  | 738  | 295  |
|        | 62      | 791                   | 791  | 769  | 769  | 747  | 747  | 725  | 725  | 706  | 694  | 687  | 663  | 685  | 601  | 818  | 613  | 682  | 476  | 680  | 413  |
| 26,000 | 75      | 835                   | 752  | 837  | 679  | 839  | 607  | 840  | 534  | 842  | 461  | 843  | 388  | 842  | 316  |      |      |      |      |      |      |
|        | 71      | 805                   | 805  | 800  | 748  | 796  | 691  | 791  | 633  | 792  | 561  | 794  | 488  | 793  | 415  | 941  | 398  | 792  | 269  |      |      |
|        | 67      | 804                   | 804  | 785  | 778  | 765  | 751  | 746  | 724  | 745  | 656  | 744  | 588  | 744  | 515  | 889  | 502  | 743  | 370  | 743  | 297  |
|        | 62      | 804                   | 804  | 782  | 782  | 759  | 759  | 737  | 737  | 714  | 707  | 692  | 677  | 690  | 613  | 826  | 630  | 687  | 486  | 686  | 422  |
| 27,500 | 75      | 840                   | 777  | 842  | 701  | 844  | 625  | 846  | 548  | 847  | 471  | 849  | 395  | 848  | 320  |      |      |      |      |      |      |
|        | 71      | 818                   | 818  | 811  | 763  | 804  | 709  | 797  | 654  | 798  | 578  | 800  | 502  | 799  | 425  | 949  | 403  | 797  | 271  |      |      |
|        | 67      | 817                   | 817  | 796  | 792  | 775  | 768  | 754  | 743  | 752  | 673  | 750  | 604  | 750  | 528  | 897  | 513  | 749  | 376  | 749  | 299  |
|        | 62      | 817                   | 817  | 794  | 794  | 771  | 771  | 749  | 749  | 723  | 719  | 698  | 690  | 696  | 625  | 833  | 647  | 693  | 495  | 691  | 430  |
| 29,000 | 75      | 845                   | 803  | 847  | 722  | 849  | 642  | 852  | 562  | 853  | 482  | 854  | 402  | 854  | 324  |      |      |      |      |      |      |
|        | 71      | 831                   | 831  | 822  | 779  | 812  | 726  | 803  | 674  | 804  | 595  | 805  | 515  | 805  | 435  | 957  | 408  | 803  | 273  |      |      |
|        | 67      | 830                   | 830  | 807  | 807  | 784  | 784  | 761  | 761  | 759  | 690  | 756  | 620  | 755  | 540  | 904  | 524  | 754  | 381  | 754  | 302  |
|        | 62      | 830                   | 830  | 807  | 807  | 784  | 784  | 761  | 761  | 732  | 732  | 703  | 703  | 701  | 637  | 840  | 663  | 698  | 505  | 697  | 439  |

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



# Cooling Performance Data – 75 Ton Model

TABLE 8 - COOLING PERFORMANCE DATA\* – 75 TON MODEL

## 75°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,500 | 75      | 1007                  | 614  | 1006 | 574  | 1006 | 534  | 1005 | 494  | 1005 | 442  | 1005 | 389  | 1005 | 359  |      |      |      |      |      |      |
|        | 71      | 941                   | 689  | 941  | 644  | 940  | 599  | 940  | 554  | 939  | 516  | 938  | 479  | 938  | 429  | 938  | 379  | 938  | 329  |      |      |
|        | 67      | 878                   | 763  | 878  | 713  | 878  | 664  | 877  | 614  | 877  | 569  | 876  | 524  | 875  | 479  | 875  | 434  | 875  | 389  | 874  | 344  |
|        | 62      | 820                   | 838  | 814  | 793  | 809  | 748  | 803  | 703  | 803  | 659  | 803  | 614  | 802  | 570  | 801  | 527  | 800  | 483  | 800  | 439  |
| 17,000 | 75      | 1029                  | 657  | 1029 | 632  | 1028 | 607  | 1027 | 583  | 1027 | 494  | 1026 | 405  | 1349 | 489  |      |      |      |      |      |      |
|        | 71      | 963                   | 731  | 962  | 736  | 962  | 741  | 961  | 746  | 960  | 613  | 960  | 479  | 959  | 430  | 959  | 381  | 959  | 332  |      |      |
|        | 67      | 900                   | 804  | 899  | 754  | 899  | 704  | 898  | 653  | 897  | 603  | 897  | 553  | 896  | 503  | 896  | 452  | 895  | 402  | 895  | 351  |
|        | 62      | 852                   | 903  | 843  | 851  | 833  | 799  | 824  | 747  | 823  | 692  | 823  | 637  | 822  | 587  | 821  | 537  | 820  | 487  | 819  | 437  |
| 18,500 | 75      | 1045                  | 686  | 1045 | 650  | 1044 | 615  | 1043 | 580  | 1042 | 496  | 1041 | 413  | 1283 | 459  |      |      |      |      |      |      |
|        | 71      | 979                   | 763  | 978  | 750  | 977  | 737  | 977  | 723  | 976  | 607  | 975  | 490  | 975  | 436  | 974  | 382  | 974  | 329  |      |      |
|        | 67      | 916                   | 847  | 915  | 792  | 914  | 737  | 913  | 682  | 913  | 627  | 912  | 573  | 911  | 518  | 910  | 463  | 910  | 408  | 909  | 353  |
|        | 62      | 878                   | 959  | 865  | 901  | 852  | 842  | 839  | 783  | 838  | 725  | 837  | 667  | 836  | 613  | 835  | 558  | 834  | 504  | 833  | 450  |
| 20,000 | 75      | 1061                  | 715  | 1060 | 669  | 1059 | 623  | 1059 | 577  | 1058 | 499  | 1057 | 420  | 1218 | 429  |      |      |      |      |      |      |
|        | 71      | 994                   | 796  | 994  | 764  | 993  | 733  | 992  | 701  | 991  | 601  | 990  | 501  | 990  | 442  | 989  | 384  | 989  | 326  |      |      |
|        | 67      | 933                   | 890  | 931  | 830  | 930  | 771  | 929  | 711  | 928  | 651  | 927  | 592  | 926  | 533  | 925  | 474  | 924  | 415  | 924  | 356  |
|        | 62      | 904                   | 1016 | 887  | 950  | 871  | 885  | 855  | 820  | 853  | 759  | 852  | 697  | 851  | 639  | 850  | 580  | 849  | 521  | 848  | 463  |
| 21,500 | 75      | 1077                  | 744  | 1076 | 687  | 1075 | 630  | 1074 | 574  | 1073 | 501  | 1072 | 428  | 1153 | 399  |      |      |      |      |      |      |
|        | 71      | 1010                  | 829  | 1009 | 779  | 1009 | 728  | 1008 | 678  | 1007 | 595  | 1006 | 511  | 1005 | 448  | 1004 | 386  | 1004 | 323  |      |      |
|        | 67      | 949                   | 932  | 947  | 868  | 946  | 804  | 944  | 740  | 943  | 676  | 942  | 611  | 941  | 548  | 940  | 485  | 939  | 421  | 938  | 358  |
|        | 62      | 929                   | 1072 | 909  | 1000 | 890  | 928  | 870  | 856  | 868  | 792  | 866  | 727  | 865  | 664  | 864  | 601  | 863  | 539  | 862  | 476  |
| 23,000 | 75      | 1093                  | 773  | 1092 | 706  | 1091 | 638  | 1090 | 571  | 1089 | 503  | 1087 | 435  | 1087 | 369  |      |      |      |      |      |      |
|        | 71      | 1026                  | 862  | 1025 | 793  | 1024 | 724  | 1024 | 655  | 1022 | 589  | 1021 | 522  | 1020 | 455  | 1020 | 387  | 1019 | 320  |      |      |
|        | 67      | 966                   | 975  | 963  | 906  | 961  | 837  | 959  | 768  | 958  | 700  | 957  | 631  | 956  | 563  | 955  | 495  | 954  | 428  | 953  | 360  |
|        | 62      | 955                   | 1128 | 932  | 1050 | 909  | 971  | 885  | 893  | 883  | 825  | 881  | 757  | 880  | 690  | 878  | 623  | 877  | 556  | 876  | 489  |
| 24,500 | 75      | 1103                  | 802  | 1102 | 730  | 1101 | 658  | 1100 | 586  | 1098 | 513  | 1097 | 440  | 1097 | 369  |      |      |      |      |      |      |
|        | 71      | 1036                  | 901  | 1035 | 828  | 1034 | 755  | 1033 | 682  | 1032 | 610  | 1031 | 539  | 1030 | 467  | 1029 | 396  | 1028 | 324  |      |      |
|        | 67      | 982                   | 1020 | 977  | 946  | 973  | 873  | 969  | 799  | 968  | 726  | 967  | 653  | 962  | 579  | 956  | 505  | 951  | 431  | 945  | 357  |
|        | 62      | 974                   | 1182 | 949  | 1100 | 924  | 1017 | 900  | 934  | 895  | 861  | 891  | 788  | 885  | 713  | 880  | 638  | 874  | 564  | 868  | 489  |
| 26,000 | 75      | 1113                  | 830  | 1112 | 754  | 1111 | 677  | 1110 | 600  | 1108 | 522  | 1106 | 444  | 1106 | 369  |      |      |      |      |      |      |
|        | 71      | 1046                  | 941  | 1045 | 863  | 1044 | 786  | 1043 | 708  | 1042 | 632  | 1040 | 556  | 1040 | 480  | 1039 | 404  | 1038 | 328  |      |      |
|        | 67      | 998                   | 1064 | 992  | 986  | 985  | 908  | 979  | 829  | 978  | 752  | 977  | 675  | 967  | 595  | 957  | 514  | 947  | 434  | 938  | 354  |
|        | 62      | 992                   | 1236 | 966  | 1149 | 940  | 1063 | 914  | 976  | 907  | 897  | 900  | 818  | 890  | 736  | 881  | 654  | 871  | 572  | 861  | 489  |
| 27,500 | 75      | 1123                  | 859  | 1122 | 778  | 1121 | 697  | 1120 | 615  | 1118 | 532  | 1116 | 449  | 1116 | 369  |      |      |      |      |      |      |
|        | 71      | 1057                  | 980  | 1056 | 898  | 1054 | 817  | 1053 | 735  | 1052 | 654  | 1050 | 574  | 1049 | 493  | 1048 | 413  | 1047 | 332  |      |      |
|        | 67      | 1014                  | 1109 | 1006 | 1026 | 997  | 943  | 989  | 860  | 988  | 779  | 986  | 697  | 972  | 611  | 958  | 524  | 944  | 437  | 930  | 350  |
|        | 62      | 1011                  | 1290 | 984  | 1199 | 956  | 1108 | 929  | 1017 | 919  | 933  | 910  | 849  | 896  | 759  | 882  | 669  | 868  | 579  | 854  | 490  |
| 29,000 | 75      | 1133                  | 888  | 1132 | 802  | 1131 | 716  | 1130 | 630  | 1128 | 542  | 1126 | 454  | 1125 | 370  |      |      |      |      |      |      |
|        | 71      | 1067                  | 1019 | 1066 | 933  | 1064 | 848  | 1063 | 762  | 1062 | 676  | 1060 | 591  | 1059 | 506  | 1058 | 421  | 1057 | 336  |      |      |
|        | 67      | 1030                  | 1154 | 1020 | 1066 | 1009 | 978  | 999  | 891  | 997  | 805  | 996  | 720  | 978  | 627  | 959  | 533  | 941  | 440  | 923  | 347  |
|        | 62      | 1030                  | 1344 | 1001 | 1249 | 972  | 1154 | 943  | 1059 | 931  | 969  | 920  | 879  | 901  | 782  | 883  | 685  | 865  | 587  | 847  | 490  |

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

TABLE 8 – COOLING PERFORMANCE DATA\* – 75 TON MODEL (CONT'D)

## 85°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,500 | 75      | 972                   | 606  | 971  | 561  | 970  | 516  | 969  | 471  | 969  | 427  | 969  | 382  | 969  | 344  |      |      |      |      |      |      |
|        | 71      | 908                   | 674  | 907  | 629  | 907  | 584  | 906  | 539  | 906  | 498  | 905  | 458  | 1389 | 410  | 1387 | 362  | 904  | 314  |      |      |
|        | 67      | 847                   | 741  | 847  | 693  | 846  | 646  | 846  | 599  | 845  | 554  | 845  | 509  | 859  | 471  | 874  | 434  | 889  | 397  | 904  | 359  |
|        | 62      | 797                   | 823  | 790  | 781  | 782  | 738  | 774  | 696  | 774  | 647  | 774  | 599  | 789  | 562  | 805  | 525  | 820  | 488  | 835  | 452  |
| 17,000 | 75      | 992                   | 642  | 992  | 604  | 991  | 566  | 990  | 529  | 989  | 460  | 989  | 391  | 1150 | 406  |      |      |      |      |      |      |
|        | 71      | 928                   | 716  | 928  | 693  | 927  | 670  | 926  | 647  | 925  | 556  | 924  | 464  | 1399 | 414  | 1398 | 364  | 924  | 314  |      |      |
|        | 67      | 867                   | 789  | 867  | 739  | 866  | 689  | 866  | 639  | 865  | 588  | 864  | 538  | 863  | 487  | 863  | 437  | 862  | 387  | 862  | 337  |
|        | 62      | 828                   | 891  | 817  | 838  | 805  | 784  | 794  | 731  | 793  | 677  | 793  | 624  | 792  | 574  | 791  | 524  | 790  | 474  | 789  | 424  |
| 18,500 | 75      | 1007                  | 671  | 1007 | 626  | 1006 | 581  | 1005 | 536  | 1004 | 467  | 1003 | 399  | 1124 | 393  |      |      |      |      |      |      |
|        | 71      | 943                   | 752  | 943  | 718  | 942  | 683  | 941  | 649  | 940  | 563  | 939  | 478  | 1295 | 423  | 1294 | 369  | 938  | 315  |      |      |
|        | 67      | 884                   | 832  | 883  | 777  | 881  | 723  | 880  | 668  | 879  | 613  | 878  | 558  | 878  | 503  | 877  | 449  | 876  | 394  | 875  | 340  |
|        | 62      | 853                   | 947  | 838  | 887  | 824  | 827  | 809  | 767  | 808  | 710  | 806  | 653  | 805  | 598  | 804  | 544  | 803  | 489  | 802  | 435  |
| 20,000 | 75      | 1023                  | 701  | 1022 | 648  | 1021 | 596  | 1020 | 543  | 1019 | 475  | 1018 | 406  | 1099 | 380  |      |      |      |      |      |      |
|        | 71      | 958                   | 788  | 958  | 742  | 957  | 697  | 956  | 651  | 955  | 571  | 954  | 492  | 1191 | 433  | 1190 | 374  | 952  | 315  |      |      |
|        | 67      | 900                   | 875  | 898  | 816  | 896  | 757  | 894  | 698  | 894  | 638  | 893  | 579  | 892  | 520  | 891  | 461  | 890  | 402  | 889  | 343  |
|        | 62      | 878                   | 1003 | 860  | 937  | 842  | 870  | 824  | 804  | 822  | 743  | 820  | 682  | 819  | 623  | 818  | 564  | 817  | 504  | 816  | 445  |
| 21,500 | 75      | 1038                  | 730  | 1037 | 670  | 1036 | 610  | 1035 | 550  | 1033 | 482  | 1032 | 414  | 1073 | 366  |      |      |      |      |      |      |
|        | 71      | 973                   | 824  | 973  | 767  | 972  | 710  | 971  | 653  | 970  | 579  | 968  | 506  | 1086 | 442  | 1086 | 379  | 967  | 315  |      |      |
|        | 67      | 917                   | 918  | 914  | 855  | 911  | 791  | 909  | 728  | 908  | 663  | 907  | 599  | 906  | 536  | 905  | 472  | 904  | 409  | 903  | 346  |
|        | 62      | 903                   | 1059 | 882  | 986  | 861  | 913  | 840  | 841  | 837  | 776  | 834  | 711  | 833  | 647  | 832  | 583  | 830  | 520  | 829  | 456  |
| 23,000 | 75      | 1053                  | 760  | 1052 | 692  | 1051 | 625  | 1049 | 557  | 1048 | 490  | 1047 | 422  | 1047 | 353  |      |      |      |      |      |      |
|        | 71      | 988                   | 860  | 988  | 791  | 987  | 723  | 986  | 655  | 984  | 587  | 983  | 520  | 982  | 452  | 981  | 383  | 981  | 315  |      |      |
|        | 67      | 933                   | 962  | 930  | 894  | 926  | 825  | 923  | 757  | 922  | 689  | 922  | 620  | 920  | 552  | 919  | 484  | 918  | 416  | 917  | 349  |
|        | 62      | 927                   | 1115 | 903  | 1036 | 879  | 957  | 855  | 877  | 852  | 808  | 848  | 740  | 847  | 671  | 845  | 603  | 844  | 535  | 842  | 466  |
| 24,500 | 75      | 1062                  | 788  | 1061 | 717  | 1059 | 645  | 1058 | 573  | 1057 | 500  | 1055 | 428  | 1055 | 355  |      |      |      |      |      |      |
|        | 71      | 998                   | 896  | 997  | 823  | 996  | 751  | 995  | 678  | 993  | 606  | 992  | 534  | 991  | 461  | 990  | 389  | 989  | 316  |      |      |
|        | 67      | 949                   | 1007 | 944  | 933  | 938  | 859  | 932  | 786  | 931  | 713  | 930  | 640  | 927  | 567  | 923  | 494  | 920  | 421  | 916  | 348  |
|        | 62      | 945                   | 1168 | 920  | 1085 | 895  | 1001 | 869  | 918  | 863  | 843  | 857  | 769  | 853  | 694  | 850  | 620  | 846  | 546  | 842  | 472  |
| 26,000 | 75      | 1071                  | 817  | 1069 | 741  | 1068 | 665  | 1067 | 588  | 1065 | 511  | 1064 | 434  | 1063 | 356  |      |      |      |      |      |      |
|        | 71      | 1007                  | 932  | 1006 | 855  | 1005 | 778  | 1003 | 701  | 1002 | 625  | 1000 | 548  | 999  | 471  | 998  | 394  | 997  | 317  |      |      |
|        | 67      | 966                   | 1051 | 958  | 972  | 949  | 893  | 941  | 814  | 940  | 737  | 939  | 660  | 933  | 582  | 928  | 503  | 922  | 425  | 916  | 347  |
|        | 62      | 963                   | 1221 | 936  | 1133 | 910  | 1046 | 884  | 958  | 875  | 878  | 866  | 798  | 860  | 717  | 854  | 637  | 848  | 557  | 842  | 477  |
| 27,500 | 75      | 1079                  | 846  | 1078 | 765  | 1077 | 684  | 1076 | 604  | 1074 | 521  | 1072 | 439  | 1072 | 358  |      |      |      |      |      |      |
|        | 71      | 1016                  | 968  | 1015 | 887  | 1014 | 806  | 1012 | 725  | 1011 | 643  | 1009 | 562  | 1008 | 480  | 1007 | 399  | 1006 | 318  |      |      |
|        | 67      | 982                   | 1096 | 971  | 1012 | 961  | 927  | 950  | 843  | 949  | 761  | 948  | 680  | 940  | 596  | 932  | 513  | 924  | 429  | 916  | 346  |
|        | 62      | 980                   | 1274 | 953  | 1182 | 926  | 1090 | 898  | 999  | 886  | 913  | 874  | 827  | 866  | 740  | 858  | 654  | 850  | 568  | 842  | 482  |
| 29,000 | 75      | 1088                  | 875  | 1087 | 790  | 1086 | 704  | 1085 | 619  | 1083 | 532  | 1081 | 445  | 1080 | 360  |      |      |      |      |      |      |
|        | 71      | 1026                  | 1004 | 1024 | 919  | 1023 | 833  | 1021 | 748  | 1020 | 662  | 1018 | 575  | 1017 | 490  | 1015 | 405  | 1014 | 319  |      |      |
|        | 67      | 998                   | 1141 | 985  | 1051 | 972  | 961  | 959  | 871  | 958  | 786  | 956  | 700  | 946  | 611  | 936  | 522  | 926  | 433  | 916  | 344  |
|        | 62      | 998                   | 1327 | 969  | 1231 | 941  | 1135 | 913  | 1039 | 898  | 947  | 883  | 856  | 873  | 763  | 863  | 671  | 852  | 579  | 842  | 487  |

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

# Cooling Performance Data – 75 Ton Model (Cont'd)

TABLE 8 – COOLING PERFORMANCE DATA\* – 75 TON MODEL (CONT'D)

## 95°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,500 | 75      | 936                   | 599  | 935  | 549  | 935  | 499  | 934  | 449  | 933  | 412  | 933  | 374  | 933  | 329  |      |      |      |      |      |      |
|        | 71      | 875                   | 659  | 874  | 614  | 874  | 569  | 873  | 524  | 872  | 480  | 872  | 437  | 1839 | 391  | 1837 | 345  | 871  | 299  |      |      |
|        | 67      | 816                   | 718  | 816  | 674  | 815  | 629  | 815  | 584  | 814  | 539  | 813  | 494  | 843  | 464  | 873  | 434  | 903  | 404  | 933  | 374  |
|        | 62      | 775                   | 808  | 765  | 768  | 755  | 728  | 746  | 689  | 745  | 636  | 745  | 584  | 777  | 554  | 808  | 524  | 840  | 494  | 871  | 464  |
| 17,000 | 75      | 955                   | 627  | 954  | 576  | 954  | 525  | 953  | 474  | 952  | 425  | 951  | 376  | 952  | 323  |      |      |      |      |      |      |
|        | 71      | 894                   | 701  | 893  | 650  | 892  | 599  | 892  | 548  | 890  | 498  | 889  | 448  | 1839 | 398  | 1837 | 347  | 889  | 297  |      |      |
|        | 67      | 835                   | 773  | 834  | 723  | 834  | 674  | 833  | 624  | 832  | 573  | 831  | 522  | 831  | 472  | 830  | 422  | 829  | 372  | 828  | 322  |
|        | 62      | 804                   | 880  | 791  | 825  | 777  | 769  | 764  | 714  | 763  | 662  | 762  | 611  | 761  | 561  | 760  | 511  | 759  | 462  | 758  | 412  |
| 18,500 | 75      | 969                   | 656  | 968  | 601  | 967  | 546  | 966  | 491  | 962  | 436  | 958  | 381  | 965  | 327  |      |      |      |      |      |      |
|        | 71      | 907                   | 737  | 906  | 682  | 906  | 626  | 905  | 571  | 901  | 516  | 896  | 460  | 1610 | 406  | 1611 | 352  | 901  | 298  |      |      |
|        | 67      | 851                   | 817  | 849  | 762  | 848  | 707  | 846  | 652  | 842  | 596  | 838  | 540  | 839  | 486  | 840  | 432  | 840  | 379  | 841  | 325  |
|        | 62      | 828                   | 935  | 811  | 874  | 795  | 812  | 779  | 751  | 774  | 694  | 769  | 636  | 770  | 583  | 770  | 529  | 770  | 475  | 770  | 422  |
| 20,000 | 75      | 982                   | 686  | 981  | 626  | 980  | 567  | 980  | 508  | 972  | 447  | 965  | 386  | 977  | 330  |      |      |      |      |      |      |
|        | 71      | 921                   | 772  | 920  | 713  | 919  | 653  | 918  | 594  | 911  | 533  | 904  | 472  | 1382 | 414  | 1385 | 356  | 914  | 298  |      |      |
|        | 67      | 867                   | 861  | 865  | 801  | 862  | 741  | 859  | 681  | 852  | 620  | 845  | 559  | 847  | 501  | 849  | 443  | 851  | 385  | 853  | 327  |
|        | 62      | 851                   | 991  | 832  | 923  | 813  | 856  | 793  | 788  | 785  | 725  | 776  | 662  | 778  | 604  | 779  | 547  | 781  | 489  | 782  | 431  |
| 21,500 | 75      | 996                   | 715  | 995  | 652  | 994  | 588  | 993  | 525  | 982  | 458  | 972  | 390  | 990  | 334  |      |      |      |      |      |      |
|        | 71      | 934                   | 808  | 933  | 744  | 933  | 681  | 932  | 617  | 921  | 550  | 911  | 484  | 1153 | 422  | 1158 | 361  | 927  | 299  |      |      |
|        | 67      | 883                   | 905  | 880  | 839  | 876  | 774  | 872  | 709  | 862  | 643  | 852  | 577  | 856  | 515  | 859  | 454  | 862  | 392  | 865  | 330  |
|        | 62      | 874                   | 1046 | 852  | 972  | 830  | 899  | 808  | 825  | 796  | 756  | 783  | 687  | 786  | 626  | 789  | 564  | 792  | 503  | 794  | 441  |
| 23,000 | 75      | 1009                  | 744  | 1008 | 677  | 1007 | 609  | 1006 | 542  | 992  | 469  | 978  | 395  | 1003 | 338  |      |      |      |      |      |      |
|        | 71      | 948                   | 844  | 947  | 776  | 946  | 708  | 945  | 640  | 931  | 567  | 918  | 495  | 925  | 430  | 932  | 365  | 939  | 300  |      |      |
|        | 67      | 900                   | 948  | 895  | 878  | 890  | 808  | 885  | 737  | 872  | 666  | 859  | 595  | 864  | 530  | 869  | 464  | 873  | 399  | 878  | 333  |
|        | 62      | 898                   | 1102 | 873  | 1022 | 848  | 942  | 823  | 862  | 807  | 787  | 790  | 713  | 794  | 647  | 798  | 582  | 802  | 516  | 806  | 451  |
| 24,500 | 75      | 1018                  | 774  | 1017 | 702  | 1016 | 630  | 1015 | 558  | 1004 | 482  | 993  | 406  | 1011 | 341  |      |      |      |      |      |      |
|        | 71      | 957                   | 880  | 956  | 808  | 955  | 735  | 954  | 663  | 943  | 587  | 932  | 511  | 937  | 441  | 942  | 371  | 947  | 300  |      |      |
|        | 67      | 916                   | 993  | 909  | 918  | 901  | 842  | 894  | 766  | 884  | 691  | 874  | 617  | 877  | 546  | 880  | 476  | 883  | 406  | 885  | 335  |
|        | 62      | 915                   | 1154 | 889  | 1070 | 864  | 985  | 838  | 901  | 821  | 822  | 804  | 743  | 807  | 672  | 809  | 601  | 812  | 530  | 814  | 459  |
| 26,000 | 75      | 1027                  | 803  | 1026 | 727  | 1024 | 651  | 1023 | 575  | 1015 | 495  | 1007 | 416  | 1019 | 344  |      |      |      |      |      |      |
|        | 71      | 966                   | 916  | 965  | 840  | 963  | 763  | 962  | 687  | 954  | 607  | 947  | 528  | 950  | 452  | 952  | 377  | 955  | 301  |      |      |
|        | 67      | 933                   | 1038 | 923  | 957  | 913  | 876  | 902  | 794  | 895  | 716  | 888  | 638  | 889  | 563  | 891  | 488  | 892  | 413  | 893  | 337  |
|        | 62      | 932                   | 1206 | 905  | 1118 | 879  | 1029 | 853  | 941  | 836  | 856  | 818  | 772  | 819  | 696  | 820  | 620  | 821  | 544  | 822  | 468  |
| 27,500 | 75      | 1035                  | 833  | 1034 | 752  | 1033 | 672  | 1032 | 591  | 1027 | 509  | 1022 | 426  | 1027 | 347  |      |      |      |      |      |      |
|        | 71      | 975                   | 952  | 973  | 872  | 972  | 791  | 971  | 710  | 966  | 627  | 961  | 544  | 962  | 463  | 963  | 382  | 963  | 302  |      |      |
|        | 67      | 950                   | 1084 | 937  | 997  | 924  | 910  | 911  | 823  | 907  | 741  | 902  | 659  | 902  | 579  | 902  | 499  | 901  | 419  | 901  | 340  |
|        | 62      | 949                   | 1258 | 922  | 1166 | 895  | 1073 | 868  | 980  | 850  | 891  | 832  | 802  | 832  | 721  | 831  | 639  | 831  | 558  | 830  | 476  |
| 29,000 | 75      | 1044                  | 863  | 1043 | 778  | 1042 | 693  | 1040 | 608  | 1038 | 522  | 1036 | 437  | 1034 | 350  |      |      |      |      |      |      |
|        | 71      | 984                   | 989  | 982  | 904  | 981  | 819  | 979  | 734  | 977  | 647  | 976  | 560  | 974  | 474  | 973  | 388  | 971  | 302  |      |      |
|        | 67      | 966                   | 1129 | 951  | 1036 | 935  | 944  | 920  | 851  | 918  | 766  | 917  | 680  | 915  | 596  | 913  | 511  | 911  | 426  | 909  | 342  |
|        | 62      | 966                   | 1311 | 938  | 1214 | 910  | 1116 | 883  | 1019 | 864  | 926  | 846  | 832  | 844  | 745  | 842  | 658  | 840  | 571  | 838  | 484  |

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

TABLE 8 – COOLING PERFORMANCE DATA\* – 75 TON MODEL (CONT'D)

## 105°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,500 | 75      | 894                   | 584  | 893  | 536  | 893  | 489  | 892  | 442  | 891  | 400  | 890  | 358  | 891  | 314  |      |      |      |      |      |      |
|        | 71      | 836                   | 653  | 835  | 605  | 834  | 557  | 833  | 509  | 833  | 461  | 832  | 413  | 1315 | 370  | 1314 | 327  | 831  | 284  |      |      |
|        | 67      | 779                   | 732  | 779  | 680  | 778  | 628  | 778  | 576  | 777  | 524  | 776  | 471  | 791  | 436  | 805  | 400  | 820  | 365  | 835  | 329  |
|        | 62      | 727                   | 835  | 722  | 781  | 716  | 728  | 711  | 674  | 711  | 625  | 710  | 576  | 726  | 537  | 741  | 498  | 756  | 458  | 771  | 419  |
| 17,000 | 75      | 912                   | 611  | 911  | 560  | 910  | 509  | 909  | 459  | 908  | 409  | 907  | 360  | 907  | 307  |      |      |      |      |      |      |
|        | 71      | 853                   | 684  | 852  | 633  | 851  | 583  | 851  | 533  | 849  | 482  | 848  | 432  | 1323 | 381  | 1322 | 331  | 847  | 281  |      |      |
|        | 67      | 797                   | 756  | 796  | 706  | 795  | 656  | 794  | 607  | 793  | 556  | 793  | 505  | 792  | 455  | 791  | 405  | 790  | 355  | 789  | 305  |
|        | 62      | 775                   | 867  | 760  | 810  | 744  | 752  | 728  | 695  | 727  | 644  | 726  | 593  | 725  | 543  | 724  | 493  | 723  | 443  | 722  | 393  |
| 18,500 | 75      | 924                   | 641  | 924  | 586  | 923  | 531  | 922  | 476  | 921  | 422  | 919  | 367  | 920  | 310  |      |      |      |      |      |      |
|        | 71      | 866                   | 720  | 865  | 665  | 864  | 610  | 863  | 556  | 862  | 501  | 861  | 446  | 1216 | 391  | 1215 | 336  | 859  | 282  |      |      |
|        | 67      | 814                   | 801  | 812  | 746  | 809  | 691  | 807  | 635  | 806  | 581  | 805  | 526  | 804  | 471  | 803  | 416  | 802  | 361  | 801  | 307  |
|        | 62      | 798                   | 921  | 780  | 858  | 762  | 796  | 744  | 733  | 741  | 677  | 738  | 621  | 737  | 567  | 736  | 512  | 735  | 458  | 733  | 404  |
| 20,000 | 75      | 937                   | 671  | 936  | 611  | 935  | 552  | 934  | 493  | 933  | 434  | 932  | 375  | 932  | 313  |      |      |      |      |      |      |
|        | 71      | 879                   | 756  | 878  | 697  | 877  | 638  | 876  | 578  | 875  | 519  | 873  | 460  | 1110 | 401  | 1109 | 342  | 871  | 283  |      |      |
|        | 67      | 832                   | 845  | 827  | 785  | 823  | 725  | 819  | 664  | 818  | 605  | 817  | 547  | 816  | 487  | 815  | 428  | 814  | 368  | 813  | 309  |
|        | 62      | 821                   | 975  | 800  | 907  | 780  | 839  | 760  | 771  | 755  | 710  | 750  | 649  | 749  | 591  | 748  | 532  | 746  | 473  | 745  | 414  |
| 21,500 | 75      | 950                   | 701  | 949  | 637  | 948  | 573  | 947  | 509  | 945  | 446  | 944  | 383  | 944  | 317  |      |      |      |      |      |      |
|        | 71      | 892                   | 792  | 891  | 729  | 890  | 665  | 889  | 601  | 887  | 538  | 886  | 474  | 1004 | 411  | 1002 | 347  | 883  | 283  |      |      |
|        | 67      | 849                   | 890  | 843  | 825  | 837  | 759  | 832  | 693  | 831  | 630  | 830  | 568  | 828  | 503  | 827  | 439  | 826  | 375  | 824  | 311  |
|        | 62      | 843                   | 1030 | 821  | 956  | 798  | 882  | 775  | 808  | 769  | 743  | 763  | 678  | 761  | 615  | 759  | 551  | 758  | 488  | 756  | 425  |
| 23,000 | 75      | 963                   | 731  | 962  | 663  | 961  | 594  | 960  | 526  | 958  | 459  | 956  | 391  | 956  | 320  |      |      |      |      |      |      |
|        | 71      | 905                   | 828  | 903  | 760  | 902  | 692  | 901  | 624  | 900  | 556  | 898  | 489  | 897  | 421  | 896  | 352  | 895  | 284  |      |      |
|        | 67      | 866                   | 935  | 859  | 864  | 851  | 793  | 844  | 722  | 843  | 655  | 842  | 589  | 840  | 520  | 839  | 451  | 837  | 382  | 836  | 313  |
|        | 62      | 866                   | 1084 | 841  | 1005 | 816  | 925  | 791  | 846  | 783  | 776  | 775  | 706  | 773  | 639  | 771  | 571  | 770  | 503  | 768  | 435  |
| 24,500 | 75      | 970                   | 760  | 969  | 687  | 968  | 615  | 967  | 543  | 965  | 470  | 963  | 398  | 962  | 324  |      |      |      |      |      |      |
|        | 71      | 913                   | 865  | 912  | 792  | 910  | 719  | 909  | 647  | 907  | 574  | 905  | 502  | 904  | 429  | 903  | 357  | 902  | 284  |      |      |
|        | 67      | 882                   | 979  | 872  | 903  | 862  | 826  | 851  | 750  | 850  | 678  | 849  | 607  | 847  | 534  | 846  | 461  | 844  | 388  | 842  | 315  |
|        | 62      | 881                   | 1137 | 856  | 1053 | 830  | 969  | 805  | 885  | 794  | 809  | 782  | 733  | 780  | 661  | 778  | 589  | 776  | 516  | 774  | 444  |
| 26,000 | 75      | 978                   | 789  | 977  | 712  | 975  | 635  | 974  | 559  | 972  | 482  | 970  | 405  | 969  | 327  |      |      |      |      |      |      |
|        | 71      | 922                   | 901  | 920  | 824  | 918  | 746  | 916  | 669  | 914  | 592  | 913  | 515  | 911  | 438  | 910  | 361  | 908  | 284  |      |      |
|        | 67      | 898                   | 1023 | 885  | 942  | 872  | 860  | 859  | 778  | 858  | 702  | 856  | 625  | 854  | 548  | 852  | 471  | 850  | 394  | 849  | 317  |
|        | 62      | 897                   | 1190 | 871  | 1101 | 845  | 1013 | 819  | 924  | 804  | 842  | 790  | 761  | 788  | 683  | 786  | 606  | 783  | 529  | 781  | 452  |
| 27,500 | 75      | 985                   | 818  | 984  | 737  | 983  | 656  | 982  | 575  | 979  | 493  | 977  | 412  | 976  | 331  |      |      |      |      |      |      |
|        | 71      | 930                   | 937  | 928  | 855  | 926  | 773  | 923  | 692  | 922  | 610  | 920  | 529  | 918  | 447  | 916  | 366  | 915  | 284  |      |      |
|        | 67      | 913                   | 1068 | 898  | 980  | 882  | 893  | 867  | 806  | 865  | 725  | 863  | 644  | 861  | 563  | 859  | 481  | 857  | 400  | 855  | 319  |
|        | 62      | 913                   | 1242 | 886  | 1149 | 859  | 1056 | 833  | 963  | 815  | 876  | 798  | 788  | 795  | 706  | 793  | 624  | 790  | 542  | 788  | 461  |
| 29,000 | 75      | 993                   | 847  | 991  | 762  | 990  | 676  | 989  | 591  | 986  | 505  | 984  | 419  | 982  | 335  |      |      |      |      |      |      |
|        | 71      | 939                   | 973  | 936  | 887  | 933  | 800  | 931  | 714  | 929  | 628  | 927  | 542  | 925  | 456  | 923  | 370  | 921  | 284  |      |      |
|        | 67      | 929                   | 1112 | 910  | 1019 | 892  | 927  | 874  | 835  | 872  | 748  | 871  | 662  | 868  | 577  | 866  | 491  | 864  | 406  | 861  | 321  |
|        | 62      | 928                   | 1295 | 901  | 1198 | 874  | 1100 | 847  | 1003 | 826  | 909  | 805  | 815  | 802  | 728  | 800  | 642  | 797  | 556  | 795  | 469  |

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

# Cooling Performance Data – 75 Ton Model (Cont'd)

TABLE 8 – COOLING PERFORMANCE DATA\* – 75 TON MODEL (CONT'D)

## 115°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,500 | 75      | 852                   | 569  | 851  | 524  | 850  | 479  | 850  | 434  | 848  | 388  | 847  | 342  | 848  | 299  |      |      |      |      |      |      |
|        | 71      | 796                   | 647  | 796  | 596  | 795  | 545  | 794  | 494  | 793  | 442  | 792  | 389  | 792  | 349  | 791  | 309  | 791  | 269  |      |      |
|        | 67      | 742                   | 745  | 742  | 686  | 741  | 628  | 740  | 569  | 739  | 508  | 738  | 448  | 738  | 407  | 737  | 366  | 737  | 325  | 736  | 284  |
|        | 62      | 679                   | 863  | 678  | 795  | 677  | 727  | 677  | 659  | 676  | 614  | 676  | 569  | 675  | 520  | 674  | 471  | 673  | 423  | 672  | 374  |
| 17,000 | 75      | 868                   | 594  | 867  | 544  | 866  | 494  | 865  | 443  | 864  | 393  | 863  | 343  | 863  | 291  |      |      |      |      |      |      |
|        | 71      | 812                   | 666  | 811  | 617  | 810  | 567  | 810  | 517  | 808  | 466  | 807  | 415  | 807  | 365  | 806  | 315  | 806  | 264  |      |      |
|        | 67      | 759                   | 739  | 758  | 689  | 757  | 639  | 756  | 589  | 755  | 538  | 754  | 488  | 753  | 437  | 752  | 387  | 751  | 337  | 750  | 287  |
|        | 62      | 747                   | 854  | 729  | 795  | 710  | 735  | 692  | 676  | 691  | 625  | 690  | 575  | 689  | 524  | 688  | 474  | 687  | 424  | 686  | 374  |
| 18,500 | 75      | 879                   | 624  | 878  | 569  | 877  | 514  | 876  | 460  | 875  | 405  | 874  | 351  | 874  | 294  |      |      |      |      |      |      |
|        | 71      | 823                   | 703  | 822  | 648  | 822  | 594  | 821  | 540  | 819  | 485  | 818  | 429  | 817  | 375  | 817  | 320  | 816  | 265  |      |      |
|        | 67      | 777                   | 784  | 773  | 729  | 770  | 674  | 766  | 619  | 765  | 563  | 764  | 508  | 768  | 455  | 772  | 402  | 775  | 349  | 779  | 297  |
|        | 62      | 768                   | 907  | 748  | 844  | 728  | 780  | 709  | 716  | 705  | 660  | 701  | 603  | 704  | 550  | 707  | 498  | 710  | 445  | 713  | 392  |
| 20,000 | 75      | 891                   | 654  | 889  | 594  | 888  | 535  | 887  | 476  | 886  | 417  | 884  | 358  | 884  | 297  |      |      |      |      |      |      |
|        | 71      | 835                   | 739  | 834  | 680  | 833  | 621  | 832  | 563  | 830  | 503  | 829  | 443  | 828  | 384  | 827  | 325  | 826  | 267  |      |      |
|        | 67      | 795                   | 830  | 789  | 769  | 783  | 709  | 777  | 648  | 776  | 588  | 775  | 528  | 783  | 472  | 791  | 417  | 799  | 361  | 807  | 306  |
|        | 62      | 789                   | 961  | 767  | 893  | 746  | 824  | 725  | 756  | 718  | 694  | 712  | 632  | 719  | 576  | 726  | 521  | 733  | 466  | 741  | 410  |
| 21,500 | 75      | 902                   | 683  | 901  | 620  | 900  | 556  | 898  | 492  | 897  | 429  | 895  | 366  | 894  | 301  |      |      |      |      |      |      |
|        | 71      | 846                   | 775  | 845  | 712  | 844  | 649  | 843  | 586  | 841  | 521  | 840  | 457  | 839  | 394  | 838  | 331  | 836  | 268  |      |      |
|        | 67      | 813                   | 876  | 805  | 810  | 796  | 743  | 788  | 677  | 787  | 613  | 786  | 548  | 798  | 490  | 811  | 432  | 823  | 373  | 835  | 315  |
|        | 62      | 809                   | 1015 | 787  | 942  | 764  | 868  | 741  | 795  | 732  | 728  | 722  | 660  | 734  | 602  | 745  | 544  | 757  | 486  | 768  | 428  |
| 23,000 | 75      | 913                   | 713  | 912  | 645  | 911  | 577  | 910  | 509  | 907  | 441  | 905  | 373  | 905  | 304  |      |      |      |      |      |      |
|        | 71      | 858                   | 811  | 857  | 743  | 855  | 676  | 854  | 609  | 852  | 540  | 850  | 471  | 849  | 403  | 848  | 336  | 847  | 269  |      |      |
|        | 67      | 831                   | 922  | 820  | 850  | 810  | 778  | 799  | 706  | 798  | 637  | 796  | 569  | 813  | 507  | 830  | 446  | 847  | 385  | 864  | 324  |
|        | 62      | 830                   | 1068 | 806  | 991  | 782  | 913  | 757  | 835  | 745  | 762  | 733  | 689  | 749  | 628  | 764  | 567  | 780  | 507  | 796  | 446  |
| 24,500 | 75      | 920                   | 743  | 919  | 670  | 918  | 598  | 916  | 525  | 914  | 452  | 912  | 380  | 911  | 308  |      |      |      |      |      |      |
|        | 71      | 867                   | 847  | 865  | 775  | 863  | 703  | 861  | 630  | 859  | 557  | 857  | 484  | 856  | 412  | 854  | 340  | 853  | 268  |      |      |
|        | 67      | 846                   | 965  | 833  | 888  | 820  | 811  | 806  | 734  | 805  | 661  | 804  | 587  | 815  | 520  | 827  | 453  | 839  | 385  | 851  | 318  |
|        | 62      | 845                   | 1121 | 821  | 1038 | 796  | 956  | 771  | 873  | 756  | 794  | 741  | 716  | 752  | 649  | 763  | 582  | 774  | 515  | 784  | 448  |
| 26,000 | 75      | 927                   | 772  | 926  | 695  | 925  | 618  | 923  | 541  | 921  | 464  | 919  | 387  | 917  | 312  |      |      |      |      |      |      |
|        | 71      | 876                   | 884  | 873  | 807  | 871  | 729  | 868  | 652  | 866  | 574  | 864  | 497  | 863  | 421  | 861  | 344  | 859  | 267  |      |      |
|        | 67      | 861                   | 1008 | 845  | 926  | 829  | 844  | 814  | 762  | 812  | 684  | 811  | 606  | 818  | 533  | 825  | 459  | 832  | 386  | 839  | 312  |
|        | 62      | 860                   | 1174 | 835  | 1086 | 810  | 998  | 784  | 910  | 766  | 827  | 749  | 743  | 755  | 670  | 761  | 597  | 767  | 523  | 773  | 450  |
| 27,500 | 75      | 934                   | 802  | 933  | 721  | 932  | 639  | 930  | 558  | 928  | 476  | 925  | 394  | 924  | 316  |      |      |      |      |      |      |
|        | 71      | 885                   | 921  | 882  | 838  | 878  | 756  | 875  | 673  | 873  | 592  | 871  | 510  | 869  | 429  | 867  | 348  | 865  | 267  |      |      |
|        | 67      | 876                   | 1052 | 858  | 964  | 839  | 877  | 821  | 790  | 819  | 708  | 818  | 625  | 820  | 545  | 822  | 466  | 824  | 386  | 827  | 306  |
|        | 62      | 875                   | 1227 | 849  | 1134 | 823  | 1041 | 797  | 948  | 777  | 859  | 756  | 771  | 758  | 691  | 759  | 611  | 761  | 532  | 762  | 452  |
| 29,000 | 75      | 942                   | 832  | 940  | 746  | 939  | 660  | 937  | 574  | 935  | 487  | 932  | 400  | 930  | 319  |      |      |      |      |      |      |
|        | 71      | 894                   | 958  | 890  | 870  | 886  | 782  | 882  | 694  | 880  | 609  | 878  | 524  | 876  | 438  | 874  | 352  | 871  | 266  |      |      |
|        | 67      | 891                   | 1095 | 870  | 1003 | 849  | 910  | 828  | 818  | 826  | 731  | 825  | 644  | 822  | 558  | 819  | 472  | 817  | 386  | 814  | 300  |
|        | 62      | 890                   | 1280 | 864  | 1182 | 837  | 1084 | 811  | 986  | 787  | 892  | 764  | 798  | 761  | 712  | 758  | 626  | 754  | 540  | 751  | 454  |

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

# Cooling Performance Data – 80 Ton Model

TABLE 9 - COOLING PERFORMANCE DATA\* – 80 TON MODEL

|        |         | 75°F OUTDOOR AMBIENT TEMPERATURE |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|----------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | ENTERING AIR DRY BULB            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|        |         | 95°F                             |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                             | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,000 | 75      | 1031                             | 623  | 1031 | 579  | 1031 | 536  | 892  | 442  | 1030 | 449  | 1030 | 406  | 1030 | 362  |      |      |      |      |      |      |
|        | 71      | 964                              | 710  | 963  | 666  | 963  | 623  | 833  | 509  | 962  | 529  | 961  | 478  | 961  | 435  | 961  | 391  | 962  | 348  |      |      |
|        | 67      | 899                              | 753  | 898  | 710  | 898  | 666  | 778  | 576  | 897  | 579  | 897  | 536  | 897  | 492  | 897  | 449  | 897  | 406  | 896  | 362  |
|        | 62      | 834                              | 840  | 830  | 797  | 827  | 753  | 711  | 674  | 823  | 659  | 822  | 608  | 822  | 565  | 821  | 521  | 820  | 478  | 820  | 435  |
| 17,000 | 75      | 1064                             | 668  | 1064 | 618  | 1065 | 569  | 909  | 459  | 1063 | 468  | 1062 | 417  | 1062 | 368  |      |      |      |      |      |      |
|        | 71      | 996                              | 744  | 995  | 693  | 994  | 643  | 851  | 533  | 993  | 543  | 993  | 492  | 941  | 421  | 889  | 349  | 838  | 277  |      |      |
|        | 67      | 930                              | 818  | 930  | 767  | 929  | 717  | 794  | 607  | 928  | 616  | 927  | 566  | 927  | 516  | 927  | 466  | 927  | 416  | 927  | 366  |
|        | 62      | 872                              | 918  | 866  | 864  | 859  | 810  | 728  | 695  | 851  | 707  | 851  | 657  | 850  | 606  | 850  | 556  | 849  | 505  | 848  | 455  |
| 19,000 | 75      | 1085                             | 708  | 1085 | 652  | 1085 | 596  | 922  | 476  | 1083 | 484  | 1082 | 427  | 1082 | 372  |      |      |      |      |      |      |
|        | 71      | 1016                             | 792  | 1016 | 736  | 1015 | 679  | 863  | 556  | 1014 | 567  | 1013 | 511  | 974  | 439  | 935  | 367  | 896  | 295  |      |      |
|        | 67      | 952                              | 875  | 951  | 819  | 950  | 763  | 807  | 635  | 948  | 650  | 947  | 594  | 947  | 538  | 947  | 482  | 946  | 426  | 946  | 371  |
|        | 62      | 907                              | 991  | 896  | 930  | 884  | 868  | 744  | 733  | 871  | 750  | 870  | 694  | 869  | 638  | 869  | 582  | 868  | 525  | 867  | 469  |
| 21,000 | 75      | 1105                             | 748  | 1105 | 686  | 1105 | 624  | 934  | 493  | 1103 | 500  | 1102 | 438  | 1103 | 377  |      |      |      |      |      |      |
|        | 71      | 1037                             | 840  | 1036 | 778  | 1035 | 716  | 876  | 578  | 1034 | 592  | 1033 | 530  | 1007 | 457  | 981  | 385  | 955  | 313  |      |      |
|        | 67      | 975                              | 933  | 973  | 870  | 971  | 808  | 819  | 664  | 968  | 684  | 967  | 622  | 967  | 561  | 966  | 499  | 966  | 437  | 965  | 375  |
|        | 62      | 941                              | 1065 | 926  | 995  | 910  | 926  | 760  | 771  | 891  | 794  | 889  | 731  | 888  | 669  | 888  | 607  | 887  | 545  | 886  | 483  |
| 23,000 | 75      | 1126                             | 788  | 1126 | 720  | 1125 | 652  | 947  | 509  | 1123 | 516  | 1122 | 448  | 1123 | 382  |      |      |      |      |      |      |
|        | 71      | 1058                             | 888  | 1057 | 820  | 1056 | 752  | 889  | 601  | 1054 | 616  | 1053 | 549  | 1040 | 476  | 1027 | 403  | 1014 | 330  |      |      |
|        | 67      | 997                              | 990  | 994  | 922  | 991  | 854  | 832  | 693  | 988  | 718  | 987  | 650  | 987  | 583  | 986  | 515  | 985  | 447  | 985  | 379  |
|        | 62      | 976                              | 1138 | 955  | 1061 | 935  | 984  | 775  | 808  | 911  | 838  | 908  | 769  | 907  | 701  | 906  | 633  | 905  | 565  | 905  | 498  |
| 25,000 | 75      | 1147                             | 828  | 1146 | 754  | 1145 | 680  | 960  | 526  | 1143 | 532  | 1143 | 459  | 1143 | 386  |      |      |      |      |      |      |
|        | 71      | 1078                             | 937  | 1077 | 863  | 1077 | 789  | 901  | 624  | 1075 | 641  | 1074 | 567  | 1073 | 494  | 1073 | 421  | 1073 | 348  |      |      |
|        | 67      | 1019                             | 1048 | 1016 | 974  | 1012 | 900  | 844  | 722  | 1008 | 752  | 1007 | 678  | 1006 | 605  | 1006 | 531  | 1005 | 457  | 1004 | 384  |
|        | 62      | 1011                             | 1212 | 985  | 1127 | 960  | 1041 | 791  | 846  | 931  | 881  | 928  | 806  | 927  | 733  | 925  | 659  | 924  | 585  | 923  | 512  |
| 27,000 | 75      | 1159                             | 867  | 1158 | 787  | 1157 | 707  | 967  | 543  | 1155 | 548  | 1154 | 468  | 1155 | 390  |      |      |      |      |      |      |
|        | 71      | 1090                             | 984  | 1089 | 904  | 1088 | 824  | 909  | 647  | 1086 | 664  | 1085 | 585  | 1085 | 505  | 1085 | 426  | 1084 | 347  |      |      |
|        | 67      | 1040                             | 1106 | 1033 | 1025 | 1027 | 944  | 851  | 750  | 1020 | 783  | 1019 | 704  | 1018 | 624  | 1017 | 545  | 1016 | 465  | 1015 | 386  |
|        | 62      | 1033                             | 1283 | 1007 | 1191 | 980  | 1099 | 805  | 885  | 946  | 925  | 939  | 843  | 938  | 763  | 937  | 684  | 935  | 604  | 934  | 525  |
| 29,000 | 75      | 1171                             | 906  | 1170 | 820  | 1169 | 735  | 974  | 559  | 1167 | 563  | 1166 | 478  | 1166 | 394  |      |      |      |      |      |      |
|        | 71      | 1102                             | 1031 | 1101 | 945  | 1100 | 859  | 916  | 669  | 1098 | 688  | 1097 | 602  | 1096 | 517  | 1096 | 431  | 1096 | 346  |      |      |
|        | 67      | 1061                             | 1164 | 1051 | 1076 | 1042 | 988  | 859  | 778  | 1031 | 815  | 1030 | 730  | 1029 | 644  | 1028 | 559  | 1027 | 473  | 1026 | 388  |
|        | 62      | 1056                             | 1353 | 1028 | 1255 | 1000 | 1157 | 819  | 924  | 961  | 970  | 951  | 880  | 949  | 794  | 948  | 709  | 947  | 623  | 945  | 538  |
| 31,000 | 75      | 1182                             | 946  | 1181 | 854  | 1180 | 762  | 982  | 575  | 1178 | 579  | 1177 | 488  | 1177 | 398  |      |      |      |      |      |      |
|        | 71      | 1115                             | 1078 | 1113 | 986  | 1112 | 894  | 923  | 692  | 1109 | 711  | 1108 | 620  | 1108 | 528  | 1107 | 437  | 1107 | 345  |      |      |
|        | 67      | 1081                             | 1223 | 1069 | 1128 | 1056 | 1033 | 867  | 806  | 1043 | 846  | 1042 | 755  | 1041 | 664  | 1040 | 573  | 1039 | 481  | 1037 | 390  |
|        | 62      | 1079                             | 1424 | 1049 | 1320 | 1020 | 1216 | 833  | 963  | 977  | 1014 | 962  | 916  | 961  | 825  | 959  | 734  | 958  | 642  | 956  | 551  |
| 33,000 | 75      | 1194                             | 985  | 1193 | 887  | 1192 | 789  | 989  | 591  | 1190 | 594  | 1188 | 497  | 1189 | 402  |      |      |      |      |      |      |
|        | 71      | 1127                             | 1125 | 1125 | 1027 | 1124 | 929  | 931  | 714  | 1121 | 735  | 1120 | 637  | 1119 | 540  | 1119 | 442  | 1118 | 344  |      |      |
|        | 67      | 1102                             | 1281 | 1087 | 1179 | 1071 | 1077 | 874  | 835  | 1055 | 878  | 1054 | 781  | 1052 | 684  | 1051 | 586  | 1050 | 489  | 1049 | 392  |
|        | 62      | 1101                             | 1495 | 1071 | 1384 | 1040 | 1274 | 847  | 1003 | 992  | 1058 | 973  | 953  | 972  | 856  | 970  | 758  | 969  | 661  | 967  | 564  |

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



# Cooling Performance Data – 80 Ton Model (Cont'd)

TABLE 9 – COOLING PERFORMANCE DATA\* – 80 TON MODEL (CONT'D)

## 85°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,000 | 75      | 996                   | 608  | 996  | 565  | 995  | 521  | 995  | 478  | 995  | 435  | 994  | 391  | 995  | 348  |      |      |      |      |      |      |
|        | 71      | 931                   | 688  | 930  | 647  | 930  | 606  | 929  | 565  | 929  | 514  | 928  | 464  | 928  | 418  | 928  | 372  | 929  | 326  |      |      |
|        | 67      | 868                   | 746  | 868  | 700  | 868  | 654  | 867  | 608  | 867  | 569  | 866  | 529  | 866  | 483  | 866  | 438  | 866  | 393  | 866  | 348  |
|        | 62      | 810                   | 833  | 805  | 787  | 800  | 741  | 795  | 695  | 794  | 648  | 794  | 601  | 793  | 556  | 793  | 511  | 792  | 465  | 791  | 420  |
| 17,000 | 75      | 1026                  | 653  | 1026 | 603  | 1026 | 553  | 1026 | 503  | 1020 | 453  | 1015 | 403  | 1024 | 353  |      |      |      |      |      |      |
|        | 71      | 960                   | 729  | 960  | 679  | 959  | 628  | 958  | 578  | 953  | 530  | 947  | 482  | 1390 | 419  | 1363 | 357  | 880  | 295  |      |      |
|        | 67      | 897                   | 803  | 897  | 752  | 896  | 702  | 895  | 652  | 890  | 606  | 884  | 560  | 886  | 508  | 889  | 455  | 891  | 403  | 894  | 350  |
|        | 62      | 850                   | 906  | 841  | 851  | 831  | 796  | 821  | 741  | 816  | 696  | 811  | 650  | 812  | 598  | 814  | 545  | 816  | 492  | 818  | 439  |
| 19,000 | 75      | 1046                  | 693  | 1046 | 637  | 1045 | 581  | 1045 | 525  | 1041 | 469  | 1036 | 414  | 1044 | 358  |      |      |      |      |      |      |
|        | 71      | 980                   | 777  | 979  | 721  | 978  | 665  | 978  | 608  | 973  | 554  | 969  | 500  | 1301 | 434  | 1281 | 369  | 918  | 304  |      |      |
|        | 67      | 920                   | 860  | 918  | 804  | 916  | 747  | 914  | 691  | 910  | 638  | 905  | 585  | 907  | 527  | 909  | 469  | 910  | 412  | 912  | 354  |
|        | 62      | 883                   | 979  | 869  | 916  | 855  | 854  | 842  | 791  | 837  | 738  | 831  | 685  | 832  | 627  | 834  | 569  | 835  | 511  | 836  | 453  |
| 21,000 | 75      | 1065                  | 733  | 1065 | 671  | 1065 | 609  | 1064 | 547  | 1061 | 486  | 1058 | 424  | 1063 | 362  |      |      |      |      |      |      |
|        | 71      | 1000                  | 826  | 999  | 763  | 998  | 701  | 997  | 639  | 994  | 578  | 991  | 517  | 1212 | 449  | 1198 | 381  | 956  | 313  |      |      |
|        | 67      | 943                   | 918  | 940  | 855  | 937  | 793  | 934  | 730  | 930  | 670  | 927  | 610  | 928  | 547  | 929  | 484  | 929  | 421  | 930  | 358  |
|        | 62      | 916                   | 1052 | 898  | 982  | 880  | 911  | 862  | 841  | 857  | 781  | 852  | 720  | 853  | 657  | 853  | 593  | 853  | 530  | 853  | 467  |
| 23,000 | 75      | 1085                  | 774  | 1084 | 705  | 1084 | 637  | 1083 | 569  | 1081 | 502  | 1079 | 434  | 1082 | 367  |      |      |      |      |      |      |
|        | 71      | 1019                  | 874  | 1018 | 806  | 1017 | 738  | 1017 | 670  | 1014 | 602  | 1012 | 535  | 1123 | 464  | 1116 | 393  | 995  | 322  |      |      |
|        | 67      | 965                   | 976  | 961  | 907  | 957  | 838  | 953  | 769  | 951  | 702  | 949  | 634  | 949  | 566  | 949  | 498  | 949  | 429  | 949  | 361  |
|        | 62      | 949                   | 1125 | 927  | 1047 | 904  | 969  | 882  | 891  | 878  | 823  | 873  | 755  | 873  | 686  | 872  | 618  | 872  | 549  | 871  | 481  |
| 25,000 | 75      | 1105                  | 814  | 1104 | 740  | 1103 | 665  | 1102 | 591  | 1102 | 518  | 1101 | 444  | 1101 | 372  |      |      |      |      |      |      |
|        | 71      | 1039                  | 922  | 1038 | 848  | 1037 | 774  | 1036 | 700  | 1035 | 626  | 1034 | 553  | 1034 | 479  | 1033 | 405  | 1033 | 331  |      |      |
|        | 67      | 988                   | 1033 | 982  | 958  | 977  | 884  | 972  | 809  | 971  | 734  | 970  | 659  | 969  | 585  | 969  | 512  | 968  | 438  | 967  | 365  |
|        | 62      | 982                   | 1197 | 956  | 1112 | 929  | 1027 | 902  | 942  | 898  | 865  | 894  | 789  | 893  | 716  | 891  | 642  | 890  | 569  | 889  | 495  |
| 27,000 | 75      | 1115                  | 853  | 1115 | 773  | 1114 | 693  | 1113 | 613  | 1112 | 533  | 1111 | 454  | 1111 | 375  |      |      |      |      |      |      |
|        | 71      | 1051                  | 969  | 1049 | 889  | 1048 | 809  | 1046 | 729  | 1045 | 650  | 1044 | 570  | 1044 | 490  | 1043 | 410  | 1043 | 331  |      |      |
|        | 67      | 1008                  | 1092 | 999  | 1010 | 991  | 928  | 982  | 846  | 982  | 766  | 981  | 685  | 980  | 606  | 979  | 526  | 978  | 447  | 977  | 367  |
|        | 62      | 1003                  | 1268 | 976  | 1176 | 949  | 1085 | 921  | 993  | 913  | 910  | 904  | 826  | 903  | 747  | 902  | 667  | 900  | 587  | 899  | 508  |
| 29,000 | 75      | 1126                  | 892  | 1125 | 806  | 1124 | 720  | 1123 | 634  | 1122 | 549  | 1121 | 463  | 1121 | 379  |      |      |      |      |      |      |
|        | 71      | 1062                  | 1016 | 1060 | 930  | 1059 | 845  | 1057 | 759  | 1056 | 673  | 1055 | 588  | 1054 | 502  | 1054 | 416  | 1053 | 330  |      |      |
|        | 67      | 1028                  | 1151 | 1016 | 1062 | 1005 | 973  | 993  | 884  | 992  | 798  | 991  | 712  | 990  | 627  | 989  | 541  | 988  | 456  | 987  | 370  |
|        | 62      | 1025                  | 1338 | 996  | 1240 | 968  | 1143 | 940  | 1045 | 927  | 954  | 915  | 863  | 913  | 778  | 912  | 692  | 910  | 606  | 909  | 521  |
| 31,000 | 75      | 1137                  | 931  | 1136 | 839  | 1135 | 748  | 1134 | 656  | 1132 | 564  | 1131 | 473  | 1131 | 382  |      |      |      |      |      |      |
|        | 71      | 1074                  | 1063 | 1072 | 972  | 1069 | 880  | 1067 | 788  | 1066 | 697  | 1065 | 605  | 1064 | 514  | 1064 | 422  | 1063 | 330  |      |      |
|        | 67      | 1048                  | 1210 | 1033 | 1114 | 1018 | 1018 | 1004 | 922  | 1002 | 830  | 1001 | 738  | 1000 | 647  | 999  | 556  | 998  | 464  | 997  | 373  |
|        | 62      | 1046                  | 1408 | 1017 | 1305 | 988  | 1201 | 959  | 1097 | 942  | 998  | 925  | 900  | 924  | 808  | 922  | 717  | 920  | 625  | 918  | 534  |
| 33,000 | 75      | 1147                  | 970  | 1146 | 873  | 1145 | 775  | 1144 | 677  | 1143 | 580  | 1141 | 483  | 1141 | 386  |      |      |      |      |      |      |
|        | 71      | 1085                  | 1111 | 1083 | 1013 | 1080 | 915  | 1078 | 817  | 1077 | 720  | 1075 | 623  | 1075 | 525  | 1074 | 428  | 1073 | 330  |      |      |
|        | 67      | 1068                  | 1268 | 1050 | 1165 | 1032 | 1062 | 1014 | 959  | 1013 | 862  | 1012 | 765  | 1010 | 668  | 1009 | 570  | 1008 | 473  | 1006 | 376  |
|        | 62      | 1067                  | 1479 | 1037 | 1369 | 1007 | 1259 | 977  | 1149 | 957  | 1043 | 936  | 937  | 934  | 839  | 932  | 742  | 930  | 644  | 928  | 547  |

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



TABLE 9 – COOLING PERFORMANCE DATA\* – 80 TON MODEL (CONT'D)

## 95°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,000 | 75      | 961                   | 594  | 960  | 550  | 960  | 507  | 960  | 464  | 959  | 420  | 959  | 377  | 959  | 333  |      |      |      |      |      |      |
|        | 71      | 898                   | 666  | 897  | 628  | 897  | 589  | 897  | 550  | 896  | 500  | 895  | 449  | 895  | 401  | 895  | 352  | 896  | 304  |      |      |
|        | 67      | 838                   | 739  | 837  | 690  | 837  | 642  | 837  | 594  | 836  | 558  | 836  | 521  | 835  | 474  | 835  | 427  | 835  | 380  | 835  | 333  |
|        | 62      | 787                   | 826  | 780  | 777  | 773  | 729  | 766  | 681  | 766  | 637  | 765  | 594  | 765  | 547  | 764  | 500  | 764  | 453  | 763  | 406  |
| 17,000 | 75      | 988                   | 639  | 988  | 588  | 987  | 538  | 986  | 488  | 977  | 439  | 969  | 390  | 987  | 338  |      |      |      |      |      |      |
|        | 71      | 925                   | 714  | 924  | 664  | 923  | 613  | 923  | 563  | 912  | 517  | 902  | 471  | 1839 | 418  | 1837 | 365  | 922  | 312  |      |      |
|        | 67      | 864                   | 788  | 864  | 738  | 863  | 687  | 862  | 637  | 851  | 595  | 840  | 554  | 845  | 499  | 850  | 444  | 856  | 390  | 861  | 335  |
|        | 62      | 828                   | 895  | 816  | 838  | 803  | 782  | 791  | 726  | 780  | 685  | 770  | 644  | 775  | 589  | 779  | 534  | 783  | 479  | 788  | 424  |
| 19,000 | 75      | 1006                  | 678  | 1005 | 622  | 1005 | 566  | 1004 | 509  | 997  | 454  | 990  | 399  | 1004 | 343  |      |      |      |      |      |      |
|        | 71      | 943                   | 762  | 942  | 706  | 941  | 649  | 940  | 593  | 932  | 540  | 924  | 487  | 1627 | 429  | 1625 | 371  | 939  | 312  |      |      |
|        | 67      | 887                   | 846  | 884  | 789  | 882  | 732  | 880  | 675  | 871  | 625  | 863  | 576  | 867  | 517  | 872  | 457  | 877  | 398  | 881  | 339  |
|        | 62      | 859                   | 967  | 843  | 903  | 827  | 840  | 811  | 776  | 802  | 726  | 792  | 677  | 801  | 620  | 809  | 562  | 818  | 505  | 826  | 447  |
| 21,000 | 75      | 1024                  | 718  | 1023 | 655  | 1023 | 593  | 1022 | 531  | 1017 | 470  | 1012 | 409  | 1021 | 348  |      |      |      |      |      |      |
|        | 71      | 960                   | 810  | 960  | 748  | 959  | 685  | 958  | 623  | 952  | 563  | 947  | 504  | 1415 | 440  | 1414 | 376  | 956  | 313  |      |      |
|        | 67      | 909                   | 905  | 905  | 841  | 901  | 777  | 897  | 713  | 891  | 656  | 885  | 598  | 889  | 534  | 893  | 471  | 897  | 407  | 902  | 344  |
|        | 62      | 890                   | 1039 | 870  | 968  | 851  | 897  | 832  | 826  | 823  | 768  | 814  | 710  | 827  | 650  | 839  | 590  | 852  | 531  | 865  | 471  |
| 23,000 | 75      | 1042                  | 757  | 1041 | 689  | 1040 | 621  | 1040 | 553  | 1036 | 485  | 1033 | 418  | 1038 | 353  |      |      |      |      |      |      |
|        | 71      | 978                   | 857  | 977  | 789  | 977  | 721  | 976  | 653  | 972  | 586  | 969  | 520  | 1203 | 451  | 1202 | 382  | 973  | 313  |      |      |
|        | 67      | 931                   | 963  | 926  | 892  | 920  | 822  | 914  | 751  | 911  | 686  | 908  | 620  | 911  | 552  | 915  | 484  | 918  | 416  | 922  | 348  |
|        | 62      | 920                   | 1111 | 898  | 1033 | 875  | 955  | 853  | 877  | 844  | 809  | 836  | 742  | 853  | 680  | 870  | 619  | 887  | 557  | 904  | 495  |
| 25,000 | 75      | 1059                  | 797  | 1059 | 723  | 1058 | 649  | 1057 | 575  | 1056 | 501  | 1055 | 427  | 1055 | 357  |      |      |      |      |      |      |
|        | 71      | 996                   | 905  | 995  | 831  | 994  | 757  | 994  | 683  | 993  | 610  | 991  | 536  | 991  | 462  | 991  | 388  | 990  | 314  |      |      |
|        | 67      | 954                   | 1021 | 946  | 944  | 939  | 867  | 932  | 789  | 931  | 716  | 930  | 642  | 933  | 570  | 936  | 497  | 939  | 425  | 942  | 352  |
|        | 62      | 951                   | 1183 | 925  | 1098 | 899  | 1012 | 873  | 927  | 865  | 851  | 857  | 775  | 879  | 711  | 900  | 647  | 921  | 583  | 942  | 519  |
| 27,000 | 75      | 1070                  | 836  | 1069 | 757  | 1068 | 677  | 1067 | 597  | 1066 | 517  | 1064 | 438  | 1064 | 360  |      |      |      |      |      |      |
|        | 71      | 1008                  | 953  | 1006 | 873  | 1005 | 793  | 1004 | 713  | 1002 | 634  | 1001 | 554  | 1001 | 474  | 1000 | 394  | 1000 | 314  |      |      |
|        | 67      | 974                   | 1080 | 963  | 996  | 953  | 912  | 942  | 828  | 941  | 748  | 940  | 669  | 942  | 590  | 944  | 512  | 946  | 433  | 948  | 354  |
|        | 62      | 971                   | 1253 | 945  | 1162 | 918  | 1070 | 891  | 979  | 879  | 895  | 868  | 811  | 883  | 739  | 898  | 666  | 914  | 594  | 929  | 522  |
| 29,000 | 75      | 1080                  | 876  | 1079 | 790  | 1078 | 705  | 1077 | 619  | 1076 | 533  | 1074 | 448  | 1074 | 363  |      |      |      |      |      |      |
|        | 71      | 1020                  | 1001 | 1018 | 915  | 1016 | 829  | 1014 | 743  | 1012 | 658  | 1011 | 572  | 1011 | 486  | 1010 | 401  | 1009 | 315  |      |      |
|        | 67      | 994                   | 1138 | 980  | 1048 | 966  | 957  | 952  | 866  | 951  | 781  | 950  | 696  | 951  | 611  | 952  | 526  | 953  | 441  | 953  | 356  |
|        | 62      | 992                   | 1323 | 964  | 1225 | 937  | 1128 | 909  | 1031 | 893  | 939  | 878  | 848  | 887  | 767  | 897  | 686  | 906  | 605  | 916  | 524  |
| 31,000 | 75      | 1090                  | 916  | 1089 | 824  | 1088 | 733  | 1087 | 641  | 1086 | 549  | 1084 | 458  | 1084 | 367  |      |      |      |      |      |      |
|        | 71      | 1032                  | 1048 | 1029 | 957  | 1026 | 865  | 1024 | 773  | 1022 | 682  | 1021 | 590  | 1020 | 499  | 1020 | 407  | 1019 | 315  |      |      |
|        | 67      | 1014                  | 1197 | 997  | 1100 | 979  | 1002 | 962  | 905  | 961  | 813  | 960  | 722  | 960  | 631  | 959  | 540  | 959  | 449  | 959  | 358  |
|        | 62      | 1012                  | 1393 | 984  | 1289 | 955  | 1186 | 927  | 1083 | 908  | 984  | 888  | 884  | 892  | 795  | 895  | 705  | 899  | 616  | 903  | 526  |
| 33,000 | 75      | 1101                  | 956  | 1099 | 858  | 1098 | 761  | 1097 | 663  | 1096 | 566  | 1094 | 468  | 1093 | 370  |      |      |      |      |      |      |
|        | 71      | 1043                  | 1096 | 1040 | 998  | 1037 | 901  | 1033 | 803  | 1032 | 706  | 1031 | 609  | 1030 | 511  | 1029 | 413  | 1028 | 315  |      |      |
|        | 67      | 1034                  | 1256 | 1013 | 1151 | 993  | 1047 | 973  | 943  | 971  | 846  | 970  | 749  | 968  | 652  | 967  | 554  | 966  | 457  | 964  | 360  |
|        | 62      | 1033                  | 1463 | 1004 | 1353 | 974  | 1244 | 945  | 1134 | 922  | 1028 | 898  | 921  | 896  | 823  | 894  | 725  | 892  | 627  | 889  | 529  |

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

# Cooling Performance Data – 80 Ton Model (Cont'd)

TABLE 9 – COOLING PERFORMANCE DATA\* – 80 TON MODEL (CONT'D)

## 105°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,000 | 75      | 918                   | 587  | 908  | 543  | 899  | 500  | 889  | 456  | 903  | 406  | 917  | 355  | 917  | 319  |      |      |      |      |      |      |
|        | 71      | 858                   | 645  | 858  | 604  | 857  | 562  | 857  | 521  | 856  | 462  | 856  | 404  | 856  | 366  | 856  | 328  | 856  | 290  |      |      |
|        | 67      | 800                   | 717  | 800  | 671  | 800  | 625  | 799  | 579  | 799  | 520  | 798  | 461  | 798  | 425  | 798  | 390  | 798  | 354  | 797  | 319  |
|        | 62      | 760                   | 811  | 750  | 758  | 741  | 705  | 732  | 652  | 731  | 608  | 731  | 565  | 730  | 521  | 730  | 478  | 729  | 435  | 728  | 391  |
| 17,000 | 75      | 944                   | 622  | 943  | 572  | 942  | 521  | 942  | 471  | 937  | 422  | 932  | 372  | 941  | 322  |      |      |      |      |      |      |
|        | 71      | 883                   | 697  | 883  | 647  | 882  | 596  | 881  | 546  | 876  | 498  | 870  | 450  | 1336 | 398  | 1333 | 346  | 873  | 294  |      |      |
|        | 67      | 825                   | 770  | 825  | 720  | 824  | 670  | 823  | 620  | 817  | 574  | 812  | 528  | 814  | 476  | 816  | 423  | 819  | 371  | 821  | 318  |
|        | 62      | 799                   | 880  | 784  | 822  | 769  | 765  | 755  | 708  | 749  | 662  | 744  | 617  | 745  | 564  | 747  | 511  | 749  | 458  | 751  | 405  |
| 19,000 | 75      | 960                   | 662  | 960  | 606  | 959  | 549  | 958  | 493  | 954  | 438  | 951  | 382  | 957  | 326  |      |      |      |      |      |      |
|        | 71      | 900                   | 745  | 899  | 689  | 899  | 633  | 898  | 577  | 893  | 522  | 889  | 467  | 1238 | 410  | 1236 | 353  | 891  | 295  |      |      |
|        | 67      | 848                   | 829  | 846  | 772  | 843  | 715  | 840  | 659  | 835  | 606  | 830  | 553  | 832  | 495  | 833  | 438  | 835  | 380  | 836  | 322  |
|        | 62      | 828                   | 953  | 811  | 888  | 793  | 823  | 776  | 759  | 769  | 705  | 762  | 652  | 763  | 594  | 764  | 535  | 765  | 477  | 766  | 419  |
| 21,000 | 75      | 977                   | 701  | 976  | 639  | 976  | 577  | 975  | 516  | 972  | 453  | 969  | 391  | 974  | 330  |      |      |      |      |      |      |
|        | 71      | 917                   | 793  | 916  | 731  | 915  | 669  | 914  | 607  | 911  | 546  | 908  | 484  | 1140 | 422  | 1139 | 359  | 908  | 297  |      |      |
|        | 67      | 871                   | 887  | 866  | 824  | 861  | 761  | 856  | 697  | 853  | 638  | 849  | 578  | 850  | 515  | 850  | 452  | 851  | 389  | 852  | 326  |
|        | 62      | 858                   | 1025 | 837  | 954  | 817  | 882  | 797  | 810  | 789  | 749  | 780  | 687  | 781  | 624  | 781  | 560  | 781  | 496  | 781  | 432  |
| 23,000 | 75      | 994                   | 740  | 993  | 673  | 992  | 605  | 991  | 538  | 989  | 469  | 987  | 401  | 990  | 334  |      |      |      |      |      |      |
|        | 71      | 934                   | 841  | 933  | 773  | 932  | 705  | 931  | 638  | 929  | 570  | 926  | 502  | 1043 | 434  | 1041 | 366  | 926  | 298  |      |      |
|        | 67      | 894                   | 946  | 887  | 876  | 880  | 806  | 873  | 736  | 870  | 669  | 868  | 603  | 868  | 534  | 868  | 466  | 867  | 398  | 867  | 329  |
|        | 62      | 887                   | 1098 | 864  | 1019 | 841  | 940  | 818  | 861  | 808  | 792  | 799  | 723  | 798  | 653  | 798  | 584  | 797  | 515  | 796  | 445  |
| 25,000 | 75      | 1010                  | 780  | 1009 | 707  | 1009 | 633  | 1008 | 560  | 1007 | 485  | 1006 | 410  | 1006 | 338  |      |      |      |      |      |      |
|        | 71      | 950                   | 888  | 950  | 815  | 949  | 742  | 948  | 669  | 946  | 594  | 945  | 519  | 945  | 446  | 944  | 373  | 944  | 299  |      |      |
|        | 67      | 917                   | 1004 | 908  | 928  | 898  | 851  | 889  | 775  | 888  | 701  | 887  | 628  | 886  | 554  | 885  | 480  | 884  | 407  | 883  | 333  |
|        | 62      | 917                   | 1171 | 891  | 1085 | 865  | 999  | 839  | 913  | 828  | 835  | 817  | 758  | 816  | 683  | 814  | 608  | 813  | 534  | 812  | 459  |
| 27,000 | 75      | 1019                  | 819  | 1018 | 740  | 1017 | 661  | 1016 | 581  | 1015 | 501  | 1014 | 421  | 1014 | 342  |      |      |      |      |      |      |
|        | 71      | 962                   | 937  | 960  | 857  | 958  | 778  | 956  | 698  | 955  | 618  | 954  | 537  | 953  | 458  | 952  | 379  | 952  | 299  |      |      |
|        | 67      | 936                   | 1064 | 923  | 980  | 911  | 896  | 898  | 812  | 897  | 733  | 895  | 653  | 894  | 573  | 893  | 494  | 892  | 414  | 891  | 335  |
|        | 62      | 935                   | 1239 | 909  | 1147 | 882  | 1056 | 856  | 964  | 841  | 879  | 827  | 794  | 825  | 713  | 823  | 633  | 822  | 552  | 820  | 471  |
| 29,000 | 75      | 1028                  | 859  | 1027 | 774  | 1026 | 688  | 1025 | 603  | 1024 | 517  | 1023 | 432  | 1022 | 346  |      |      |      |      |      |      |
|        | 71      | 974                   | 985  | 971  | 899  | 968  | 814  | 965  | 728  | 963  | 642  | 962  | 556  | 961  | 470  | 961  | 385  | 960  | 299  |      |      |
|        | 67      | 955                   | 1123 | 939  | 1032 | 923  | 941  | 907  | 850  | 905  | 764  | 904  | 678  | 903  | 592  | 901  | 507  | 900  | 422  | 899  | 336  |
|        | 62      | 954                   | 1308 | 927  | 1210 | 900  | 1112 | 873  | 1015 | 855  | 922  | 837  | 830  | 835  | 744  | 832  | 657  | 830  | 571  | 828  | 484  |
| 31,000 | 75      | 1037                  | 899  | 1036 | 807  | 1035 | 716  | 1034 | 624  | 1032 | 534  | 1031 | 443  | 1030 | 350  |      |      |      |      |      |      |
|        | 71      | 986                   | 1033 | 982  | 942  | 978  | 850  | 973  | 758  | 972  | 666  | 971  | 574  | 970  | 483  | 969  | 391  | 968  | 299  |      |      |
|        | 67      | 973                   | 1182 | 954  | 1084 | 935  | 985  | 916  | 887  | 914  | 795  | 912  | 703  | 911  | 612  | 910  | 520  | 908  | 429  | 907  | 338  |
|        | 62      | 973                   | 1377 | 945  | 1273 | 917  | 1169 | 889  | 1066 | 868  | 966  | 847  | 866  | 844  | 774  | 841  | 681  | 839  | 589  | 836  | 497  |
| 33,000 | 75      | 1046                  | 938  | 1044 | 841  | 1043 | 743  | 1042 | 645  | 1041 | 550  | 1040 | 454  | 1038 | 354  |      |      |      |      |      |      |
|        | 71      | 998                   | 1082 | 993  | 984  | 987  | 885  | 982  | 787  | 981  | 690  | 979  | 593  | 978  | 495  | 977  | 397  | 976  | 300  |      |      |
|        | 67      | 992                   | 1241 | 970  | 1136 | 947  | 1030 | 925  | 924  | 923  | 826  | 921  | 728  | 919  | 631  | 918  | 534  | 916  | 437  | 915  | 339  |
|        | 62      | 991                   | 1445 | 963  | 1336 | 935  | 1226 | 906  | 1117 | 881  | 1009 | 857  | 902  | 854  | 804  | 850  | 706  | 847  | 608  | 844  | 510  |

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

TABLE 9 – COOLING PERFORMANCE DATA\* – 80 TON MODEL (CONT'D)

## 115°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 15,000 | 75      | 876                   | 579  | 857  | 536  | 837  | 492  | 817  | 449  | 846  | 391  | 874  | 333  | 874  | 304  |      |      |      |      |      |      |
|        | 71      | 819                   | 623  | 818  | 579  | 818  | 536  | 817  | 492  | 817  | 425  | 816  | 358  | 816  | 330  | 816  | 303  | 816  | 275  |      |      |
|        | 67      | 763                   | 695  | 763  | 652  | 763  | 608  | 762  | 565  | 762  | 482  | 761  | 400  | 761  | 376  | 761  | 352  | 760  | 328  | 760  | 304  |
|        | 62      | 733                   | 797  | 721  | 739  | 709  | 681  | 697  | 623  | 697  | 579  | 696  | 536  | 696  | 496  | 695  | 456  | 694  | 416  | 694  | 377  |
| 17,000 | 75      | 899                   | 606  | 898  | 555  | 898  | 505  | 897  | 455  | 896  | 405  | 896  | 355  | 896  | 305  |      |      |      |      |      |      |
|        | 71      | 841                   | 680  | 841  | 629  | 840  | 579  | 840  | 529  | 839  | 479  | 838  | 428  | 834  | 378  | 829  | 327  | 825  | 276  |      |      |
|        | 67      | 787                   | 752  | 786  | 702  | 785  | 652  | 785  | 602  | 784  | 552  | 783  | 502  | 783  | 452  | 782  | 402  | 782  | 352  | 781  | 302  |
|        | 62      | 770                   | 865  | 753  | 807  | 736  | 748  | 718  | 689  | 718  | 639  | 717  | 589  | 716  | 539  | 716  | 488  | 715  | 438  | 714  | 387  |
| 19,000 | 75      | 914                   | 645  | 913  | 589  | 912  | 532  | 911  | 476  | 911  | 420  | 910  | 364  | 910  | 309  |      |      |      |      |      |      |
|        | 71      | 856                   | 727  | 855  | 671  | 855  | 614  | 854  | 558  | 853  | 502  | 852  | 446  | 849  | 390  | 845  | 333  | 842  | 276  |      |      |
|        | 67      | 810                   | 811  | 806  | 754  | 802  | 698  | 799  | 641  | 798  | 585  | 797  | 529  | 796  | 473  | 796  | 417  | 795  | 361  | 795  | 305  |
|        | 62      | 797                   | 937  | 778  | 871  | 759  | 806  | 740  | 741  | 735  | 684  | 731  | 626  | 730  | 570  | 729  | 514  | 728  | 457  | 727  | 401  |
| 21,000 | 75      | 928                   | 684  | 927  | 622  | 927  | 560  | 926  | 498  | 925  | 436  | 924  | 374  | 924  | 312  |      |      |      |      |      |      |
|        | 71      | 871                   | 774  | 870  | 712  | 869  | 650  | 868  | 588  | 867  | 526  | 866  | 464  | 864  | 402  | 861  | 339  | 859  | 277  |      |      |
|        | 67      | 833                   | 871  | 826  | 807  | 820  | 743  | 813  | 679  | 812  | 617  | 811  | 555  | 810  | 493  | 810  | 432  | 809  | 370  | 808  | 308  |
|        | 62      | 824                   | 1008 | 803  | 936  | 782  | 864  | 761  | 793  | 753  | 728  | 745  | 663  | 744  | 601  | 743  | 539  | 742  | 477  | 741  | 415  |
| 23,000 | 75      | 943                   | 724  | 942  | 655  | 941  | 587  | 940  | 519  | 939  | 452  | 938  | 384  | 938  | 315  |      |      |      |      |      |      |
|        | 71      | 886                   | 822  | 885  | 754  | 884  | 685  | 883  | 617  | 882  | 550  | 881  | 482  | 879  | 414  | 877  | 345  | 876  | 277  |      |      |
|        | 67      | 856                   | 930  | 847  | 859  | 837  | 788  | 827  | 717  | 826  | 650  | 825  | 582  | 824  | 514  | 823  | 446  | 823  | 379  | 822  | 311  |
|        | 62      | 852                   | 1080 | 828  | 1001 | 805  | 923  | 782  | 844  | 771  | 772  | 760  | 700  | 758  | 632  | 757  | 564  | 755  | 496  | 754  | 428  |
| 25,000 | 75      | 957                   | 763  | 956  | 689  | 955  | 615  | 955  | 541  | 953  | 467  | 952  | 394  | 952  | 319  |      |      |      |      |      |      |
|        | 71      | 901                   | 869  | 900  | 795  | 898  | 721  | 897  | 647  | 896  | 573  | 895  | 500  | 894  | 426  | 894  | 352  | 893  | 278  |      |      |
|        | 67      | 879                   | 990  | 867  | 912  | 854  | 834  | 842  | 756  | 840  | 682  | 839  | 608  | 838  | 535  | 837  | 461  | 836  | 387  | 835  | 314  |
|        | 62      | 879                   | 1152 | 853  | 1066 | 828  | 981  | 803  | 896  | 788  | 816  | 774  | 736  | 772  | 663  | 770  | 589  | 769  | 515  | 767  | 442  |
| 27,000 | 75      | 965                   | 802  | 965  | 722  | 964  | 642  | 963  | 563  | 962  | 484  | 960  | 405  | 960  | 323  |      |      |      |      |      |      |
|        | 71      | 914                   | 919  | 911  | 838  | 908  | 758  | 905  | 678  | 904  | 599  | 903  | 519  | 902  | 439  | 902  | 359  | 901  | 279  |      |      |
|        | 67      | 897                   | 1049 | 882  | 964  | 866  | 878  | 851  | 793  | 849  | 713  | 848  | 633  | 846  | 554  | 845  | 474  | 844  | 395  | 843  | 315  |
|        | 62      | 897                   | 1221 | 871  | 1129 | 845  | 1038 | 819  | 947  | 801  | 860  | 784  | 773  | 782  | 693  | 780  | 613  | 777  | 534  | 775  | 454  |
| 29,000 | 75      | 974                   | 842  | 973  | 756  | 972  | 670  | 971  | 584  | 970  | 500  | 969  | 417  | 967  | 328  |      |      |      |      |      |      |
|        | 71      | 927                   | 968  | 922  | 882  | 918  | 795  | 914  | 709  | 912  | 624  | 911  | 538  | 910  | 452  | 909  | 366  | 909  | 281  |      |      |
|        | 67      | 915                   | 1108 | 897  | 1016 | 878  | 923  | 860  | 830  | 858  | 744  | 856  | 658  | 854  | 572  | 853  | 487  | 852  | 402  | 850  | 316  |
|        | 62      | 914                   | 1290 | 888  | 1192 | 861  | 1095 | 835  | 998  | 815  | 904  | 794  | 810  | 792  | 724  | 789  | 638  | 786  | 552  | 783  | 466  |
| 31,000 | 75      | 982                   | 881  | 981  | 790  | 980  | 698  | 979  | 606  | 978  | 517  | 977  | 428  | 975  | 333  |      |      |      |      |      |      |
|        | 71      | 940                   | 1018 | 934  | 925  | 928  | 833  | 922  | 740  | 921  | 649  | 919  | 558  | 918  | 466  | 917  | 374  | 916  | 282  |      |      |
|        | 67      | 933                   | 1168 | 911  | 1068 | 890  | 968  | 869  | 868  | 866  | 775  | 864  | 683  | 862  | 591  | 861  | 500  | 860  | 409  | 858  | 317  |
|        | 62      | 932                   | 1359 | 905  | 1255 | 878  | 1152 | 851  | 1048 | 828  | 947  | 805  | 846  | 801  | 754  | 798  | 662  | 794  | 570  | 791  | 479  |
| 33,000 | 75      | 991                   | 921  | 989  | 823  | 988  | 725  | 987  | 628  | 986  | 534  | 985  | 440  | 983  | 338  |      |      |      |      |      |      |
|        | 71      | 953                   | 1068 | 945  | 969  | 938  | 870  | 930  | 771  | 929  | 674  | 927  | 577  | 926  | 479  | 925  | 381  | 924  | 284  |      |      |
|        | 67      | 951                   | 1227 | 926  | 1120 | 902  | 1012 | 878  | 905  | 875  | 806  | 872  | 707  | 871  | 610  | 869  | 513  | 867  | 416  | 866  | 319  |
|        | 62      | 950                   | 1428 | 922  | 1318 | 895  | 1209 | 867  | 1099 | 841  | 991  | 815  | 883  | 811  | 785  | 807  | 687  | 803  | 589  | 799  | 491  |

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

# Cooling Performance Data – 90 Ton Model

TABLE 10 - COOLING PERFORMANCE DATA\* – 90 TON MODEL

## 75°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 17,500 | 75      | 1204                  | 78   | 1202 | 78   | 1201 | 78   | 1200 | 78   | 1199 | 78   | 1199 | 78   | 1199 | 78   |      |      |      |      |      |      |
|        | 71      | 1127                  | 77   | 1126 | 77   | 1125 | 77   | 1124 | 77   | 1122 | 77   | 1121 | 77   | 1121 | 77   | 1120 | 77   | 1120 | 77   |      |      |
|        | 67      | 1054                  | 75   | 1053 | 75   | 1052 | 75   | 1051 | 75   | 1050 | 75   | 1049 | 75   | 1048 | 75   | 1047 | 75   | 1047 | 75   | 1046 | 75   |
|        | 62      | 982                   | 74   | 976  | 74   | 971  | 74   | 966  | 74   | 965  | 74   | 964  | 74   | 963  | 74   | 961  | 74   | 960  | 74   | 958  | 74   |
| 19,250 | 75      | 1229                  | 79   | 1227 | 79   | 1226 | 79   | 1224 | 79   | 1223 | 79   | 1222 | 79   | 1222 | 79   |      |      |      |      |      |      |
|        | 71      | 1152                  | 77   | 1151 | 77   | 1149 | 77   | 1148 | 77   | 1146 | 77   | 1145 | 77   | 1144 | 77   | 1144 | 77   | 1144 | 77   |      |      |
|        | 67      | 1079                  | 76   | 1077 | 76   | 1076 | 76   | 1075 | 76   | 1074 | 76   | 1072 | 76   | 1071 | 76   | 1070 | 76   | 1069 | 76   | 1068 | 76   |
|        | 62      | 1017                  | 75   | 1008 | 74   | 998  | 74   | 989  | 74   | 988  | 74   | 987  | 74   | 985  | 74   | 983  | 74   | 982  | 74   | 980  | 74   |
| 21,000 | 75      | 1253                  | 79   | 1252 | 79   | 1250 | 79   | 1248 | 79   | 1247 | 79   | 1245 | 79   | 1246 | 79   |      |      |      |      |      |      |
|        | 71      | 1176                  | 78   | 1175 | 78   | 1174 | 78   | 1172 | 78   | 1170 | 78   | 1169 | 78   | 1168 | 78   | 1167 | 78   | 1167 | 78   |      |      |
|        | 67      | 1103                  | 76   | 1102 | 76   | 1101 | 76   | 1099 | 76   | 1098 | 76   | 1096 | 76   | 1095 | 76   | 1093 | 76   | 1092 | 76   | 1091 | 76   |
|        | 62      | 1053                  | 75   | 1039 | 75   | 1026 | 75   | 1012 | 75   | 1011 | 75   | 1009 | 75   | 1007 | 75   | 1006 | 75   | 1004 | 75   | 1002 | 75   |
| 22,750 | 75      | 1270                  | 80   | 1268 | 80   | 1266 | 80   | 1264 | 80   | 1263 | 80   | 1261 | 80   | 1261 | 80   |      |      |      |      |      |      |
|        | 71      | 1193                  | 78   | 1191 | 78   | 1190 | 78   | 1189 | 78   | 1187 | 78   | 1185 | 78   | 1184 | 78   | 1183 | 78   | 1182 | 78   |      |      |
|        | 67      | 1121                  | 77   | 1119 | 77   | 1117 | 77   | 1115 | 76   | 1114 | 76   | 1112 | 76   | 1110 | 76   | 1109 | 76   | 1107 | 76   | 1106 | 76   |
|        | 62      | 1081                  | 76   | 1063 | 75   | 1046 | 75   | 1029 | 75   | 1027 | 75   | 1025 | 75   | 1023 | 75   | 1021 | 75   | 1019 | 75   | 1017 | 75   |
| 24,500 | 75      | 1286                  | 80   | 1284 | 80   | 1282 | 80   | 1280 | 80   | 1278 | 80   | 1276 | 80   | 1276 | 80   |      |      |      |      |      |      |
|        | 71      | 1209                  | 78   | 1208 | 78   | 1207 | 78   | 1205 | 78   | 1203 | 78   | 1201 | 78   | 1200 | 78   | 1199 | 78   | 1197 | 78   |      |      |
|        | 67      | 1140                  | 77   | 1137 | 77   | 1134 | 77   | 1132 | 77   | 1130 | 77   | 1128 | 77   | 1126 | 77   | 1124 | 77   | 1122 | 77   | 1121 | 77   |
|        | 62      | 1108                  | 76   | 1088 | 76   | 1067 | 76   | 1046 | 75   | 1044 | 75   | 1041 | 75   | 1039 | 75   | 1037 | 75   | 1035 | 75   | 1032 | 75   |
| 26,250 | 75      | 1302                  | 80   | 1300 | 80   | 1298 | 80   | 1296 | 80   | 1294 | 80   | 1291 | 80   | 1292 | 80   |      |      |      |      |      |      |
|        | 71      | 1226                  | 79   | 1225 | 79   | 1223 | 79   | 1222 | 79   | 1220 | 79   | 1218 | 79   | 1216 | 79   | 1214 | 79   | 1212 | 79   |      |      |
|        | 67      | 1158                  | 77   | 1154 | 77   | 1151 | 77   | 1148 | 77   | 1146 | 77   | 1144 | 77   | 1142 | 77   | 1140 | 77   | 1138 | 77   | 1135 | 77   |
|        | 62      | 1136                  | 77   | 1112 | 76   | 1088 | 76   | 1064 | 75   | 1060 | 75   | 1057 | 75   | 1055 | 75   | 1053 | 75   | 1050 | 75   | 1048 | 75   |
| 28,000 | 75      | 1318                  | 81   | 1316 | 81   | 1314 | 81   | 1312 | 81   | 1310 | 81   | 1307 | 81   | 1307 | 81   |      |      |      |      |      |      |
|        | 71      | 1243                  | 79   | 1241 | 79   | 1240 | 79   | 1238 | 79   | 1236 | 79   | 1234 | 79   | 1232 | 79   | 1230 | 79   | 1227 | 79   |      |      |
|        | 67      | 1176                  | 78   | 1172 | 78   | 1168 | 78   | 1164 | 77   | 1162 | 77   | 1161 | 77   | 1158 | 77   | 1156 | 77   | 1153 | 77   | 1150 | 77   |
|        | 62      | 1164                  | 77   | 1136 | 77   | 1109 | 76   | 1081 | 76   | 1077 | 76   | 1073 | 76   | 1071 | 76   | 1068 | 76   | 1066 | 76   | 1063 | 76   |
| 29,750 | 75      | 1329                  | 81   | 1327 | 81   | 1324 | 81   | 1322 | 81   | 1319 | 81   | 1316 | 81   | 1316 | 81   |      |      |      |      |      |      |
|        | 71      | 1253                  | 79   | 1252 | 79   | 1250 | 79   | 1249 | 79   | 1246 | 79   | 1244 | 79   | 1242 | 79   | 1239 | 79   | 1237 | 79   |      |      |
|        | 67      | 1193                  | 78   | 1187 | 78   | 1181 | 78   | 1175 | 78   | 1173 | 78   | 1171 | 78   | 1168 | 78   | 1165 | 78   | 1162 | 78   | 1159 | 78   |
|        | 62      | 1184                  | 78   | 1155 | 77   | 1126 | 77   | 1096 | 76   | 1090 | 76   | 1083 | 76   | 1080 | 76   | 1078 | 76   | 1075 | 76   | 1073 | 76   |
| 31,500 | 75      | 1339                  | 81   | 1337 | 81   | 1335 | 81   | 1332 | 81   | 1329 | 81   | 1326 | 81   | 1325 | 81   |      |      |      |      |      |      |
|        | 71      | 1264                  | 80   | 1262 | 80   | 1261 | 80   | 1259 | 80   | 1256 | 79   | 1254 | 79   | 1251 | 79   | 1249 | 79   | 1246 | 79   |      |      |
|        | 67      | 1210                  | 78   | 1202 | 78   | 1193 | 78   | 1185 | 78   | 1183 | 78   | 1181 | 78   | 1178 | 78   | 1175 | 78   | 1172 | 78   | 1168 | 78   |
|        | 62      | 1204                  | 78   | 1173 | 78   | 1142 | 77   | 1111 | 76   | 1102 | 76   | 1093 | 76   | 1090 | 76   | 1088 | 76   | 1085 | 76   | 1082 | 76   |
| 33,250 | 75      | 1349                  | 81   | 1347 | 81   | 1345 | 81   | 1343 | 81   | 1339 | 81   | 1335 | 81   | 1334 | 81   |      |      |      |      |      |      |
|        | 71      | 1275                  | 80   | 1273 | 80   | 1271 | 80   | 1269 | 80   | 1266 | 80   | 1264 | 80   | 1261 | 80   | 1258 | 80   | 1255 | 80   |      |      |
|        | 67      | 1227                  | 79   | 1217 | 79   | 1206 | 78   | 1195 | 78   | 1193 | 78   | 1191 | 78   | 1188 | 78   | 1184 | 78   | 1181 | 78   | 1177 | 78   |
|        | 62      | 1224                  | 79   | 1192 | 78   | 1159 | 77   | 1127 | 77   | 1115 | 77   | 1103 | 76   | 1100 | 76   | 1097 | 76   | 1094 | 76   | 1092 | 76   |
| 35,000 | 75      | 1359                  | 82   | 1357 | 82   | 1355 | 82   | 1353 | 82   | 1349 | 82   | 1345 | 81   | 1343 | 81   |      |      |      |      |      |      |
|        | 71      | 1285                  | 80   | 1283 | 80   | 1281 | 80   | 1279 | 80   | 1277 | 80   | 1274 | 80   | 1271 | 80   | 1268 | 80   | 1265 | 80   |      |      |
|        | 67      | 1245                  | 79   | 1232 | 79   | 1219 | 79   | 1206 | 78   | 1204 | 78   | 1201 | 78   | 1198 | 78   | 1194 | 78   | 1190 | 78   | 1186 | 78   |
|        | 62      | 1244                  | 79   | 1210 | 78   | 1176 | 78   | 1142 | 77   | 1127 | 77   | 1113 | 77   | 1110 | 77   | 1107 | 77   | 1104 | 77   | 1101 | 77   |
| 36,000 | 75      | 1364                  | 82   | 1361 | 82   | 1357 | 82   | 1353 | 82   | 1351 | 82   | 1350 | 82   | 1348 | 82   |      |      |      |      |      |      |
|        | 71      | 1290                  | 80   | 1287 | 80   | 1285 | 80   | 1282 | 80   | 1279 | 80   | 1276 | 80   | 1274 | 80   | 1271 | 80   | 1269 | 80   |      |      |
|        | 67      | 1253                  | 79   | 1238 | 79   | 1224 | 79   | 1209 | 79   | 1207 | 79   | 1204 | 78   | 1201 | 78   | 1197 | 78   | 1194 | 78   | 1190 | 78   |
|        | 62      | 1252                  | 79   | 1218 | 79   | 1184 | 78   | 1149 | 77   | 1133 | 77   | 1116 | 77   | 1112 | 77   | 1109 | 77   | 1106 | 77   | 1102 | 77   |

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

TABLE 10 – COOLING PERFORMANCE DATA\* – 90 TON MODEL (CONT'D)

## 85°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 17,500 | 75      | 1164                  | 86   | 1162 | 86   | 1161 | 86   | 1159 | 86   | 1159 | 86   | 1158 | 86   | 1158 | 86   |      |      |      |      |      |      |
|        | 71      | 1090                  | 84   | 1089 | 84   | 1088 | 84   | 1086 | 84   | 1085 | 84   | 1083 | 84   | 1083 | 84   | 1083 | 84   | 1083 | 84   |      |      |
|        | 67      | 1019                  | 83   | 1019 | 83   | 1018 | 83   | 1017 | 83   | 1015 | 83   | 1014 | 83   | 1013 | 83   | 1012 | 83   | 1012 | 83   | 1010 | 83   |
|        | 62      | 955                   | 81   | 948  | 81   | 941  | 81   | 934  | 81   | 933  | 81   | 932  | 81   | 930  | 81   | 929  | 81   | 931  | 81   | 926  | 81   |
| 19,250 | 75      | 1187                  | 86   | 1185 | 86   | 1184 | 86   | 1182 | 86   | 1181 | 86   | 1180 | 86   | 1180 | 86   |      |      |      |      |      |      |
|        | 71      | 1113                  | 84   | 1112 | 84   | 1110 | 85   | 1109 | 85   | 1107 | 85   | 1105 | 85   | 1105 | 85   | 1105 | 85   | 1104 | 85   |      |      |
|        | 67      | 1042                  | 83   | 1041 | 83   | 1040 | 83   | 1039 | 83   | 1037 | 83   | 1036 | 83   | 1035 | 83   | 1034 | 83   | 1034 | 83   | 1031 | 83   |
|        | 62      | 990                   | 82   | 978  | 82   | 967  | 82   | 955  | 81   | 954  | 82   | 953  | 82   | 951  | 82   | 949  | 82   | 954  | 82   | 946  | 82   |
| 21,000 | 75      | 1210                  | 87   | 1208 | 87   | 1206 | 87   | 1205 | 87   | 1203 | 87   | 1201 | 87   | 1202 | 87   |      |      |      |      |      |      |
|        | 71      | 1136                  | 85   | 1134 | 85   | 1133 | 85   | 1132 | 85   | 1130 | 85   | 1128 | 85   | 1503 | 85   | 1502 | 85   | 1126 | 85   |      |      |
|        | 67      | 1065                  | 84   | 1064 | 84   | 1063 | 84   | 1061 | 84   | 1060 | 84   | 1058 | 84   | 1056 | 84   | 1055 | 84   | 1054 | 84   | 1052 | 84   |
|        | 62      | 1024                  | 83   | 1009 | 82   | 993  | 82   | 977  | 82   | 975  | 82   | 974  | 82   | 972  | 82   | 970  | 82   | 968  | 82   | 966  | 82   |
| 22,750 | 75      | 1226                  | 87   | 1224 | 87   | 1222 | 87   | 1220 | 87   | 1218 | 87   | 1216 | 87   | 1216 | 87   |      |      |      |      |      |      |
|        | 71      | 1152                  | 85   | 1150 | 85   | 1149 | 85   | 1148 | 85   | 1146 | 85   | 1144 | 85   | 1425 | 85   | 1423 | 85   | 1140 | 85   |      |      |
|        | 67      | 1084                  | 84   | 1082 | 84   | 1079 | 84   | 1077 | 84   | 1075 | 84   | 1073 | 84   | 1072 | 84   | 1070 | 84   | 1068 | 84   | 1066 | 84   |
|        | 62      | 1051                  | 83   | 1032 | 83   | 1013 | 82   | 994  | 82   | 992  | 82   | 989  | 82   | 987  | 82   | 985  | 82   | 983  | 82   | 981  | 82   |
| 24,500 | 75      | 1242                  | 87   | 1240 | 87   | 1238 | 87   | 1236 | 87   | 1233 | 87   | 1231 | 87   | 1231 | 87   |      |      |      |      |      |      |
|        | 71      | 1168                  | 85   | 1166 | 85   | 1165 | 85   | 1163 | 85   | 1161 | 85   | 1159 | 85   | 1346 | 85   | 1344 | 85   | 1155 | 85   |      |      |
|        | 67      | 1102                  | 84   | 1099 | 84   | 1096 | 84   | 1093 | 84   | 1091 | 84   | 1089 | 84   | 1087 | 84   | 1085 | 84   | 1083 | 84   | 1081 | 84   |
|        | 62      | 1079                  | 83   | 1056 | 83   | 1034 | 83   | 1011 | 82   | 1008 | 82   | 1005 | 82   | 1002 | 82   | 1000 | 82   | 998  | 82   | 996  | 82   |
| 26,250 | 75      | 1258                  | 87   | 1256 | 87   | 1253 | 87   | 1251 | 87   | 1249 | 87   | 1246 | 87   | 1246 | 87   |      |      |      |      |      |      |
|        | 71      | 1184                  | 86   | 1183 | 86   | 1181 | 86   | 1179 | 86   | 1177 | 86   | 1175 | 86   | 1267 | 86   | 1265 | 86   | 1169 | 86   |      |      |
|        | 67      | 1121                  | 84   | 1117 | 84   | 1112 | 84   | 1108 | 84   | 1106 | 84   | 1105 | 84   | 1102 | 84   | 1100 | 84   | 1097 | 84   | 1095 | 84   |
|        | 62      | 1106                  | 84   | 1080 | 83   | 1054 | 83   | 1029 | 82   | 1024 | 82   | 1020 | 82   | 1018 | 82   | 1015 | 83   | 1013 | 83   | 1010 | 83   |
| 28,000 | 75      | 1274                  | 88   | 1271 | 88   | 1269 | 87   | 1267 | 87   | 1264 | 87   | 1261 | 87   | 1261 | 87   |      |      |      |      |      |      |
|        | 71      | 1200                  | 86   | 1199 | 86   | 1197 | 86   | 1195 | 86   | 1193 | 86   | 1191 | 86   | 1189 | 86   | 1186 | 86   | 1184 | 86   |      |      |
|        | 67      | 1139                  | 84   | 1134 | 84   | 1129 | 84   | 1124 | 84   | 1122 | 84   | 1120 | 84   | 1117 | 84   | 1115 | 84   | 1112 | 84   | 1109 | 84   |
|        | 62      | 1133                  | 84   | 1104 | 84   | 1075 | 83   | 1046 | 83   | 1040 | 83   | 1035 | 83   | 1033 | 83   | 1030 | 83   | 1028 | 83   | 1025 | 83   |
| 29,750 | 75      | 1283                  | 88   | 1280 | 88   | 1278 | 88   | 1275 | 88   | 1272 | 88   | 1269 | 88   | 1268 | 88   |      |      |      |      |      |      |
|        | 71      | 1210                  | 86   | 1208 | 86   | 1206 | 86   | 1204 | 86   | 1202 | 86   | 1200 | 86   | 1197 | 86   | 1194 | 86   | 1192 | 86   |      |      |
|        | 67      | 1156                  | 85   | 1149 | 85   | 1141 | 85   | 1133 | 85   | 1131 | 85   | 1129 | 85   | 1126 | 85   | 1123 | 85   | 1120 | 85   | 1117 | 85   |
|        | 62      | 1151                  | 85   | 1121 | 84   | 1091 | 84   | 1061 | 83   | 1052 | 83   | 1044 | 83   | 1041 | 83   | 1039 | 83   | 1036 | 83   | 1034 | 83   |
| 31,500 | 75      | 1291                  | 88   | 1289 | 88   | 1287 | 88   | 1284 | 88   | 1281 | 88   | 1277 | 88   | 1276 | 88   |      |      |      |      |      |      |
|        | 71      | 1219                  | 87   | 1217 | 87   | 1215 | 87   | 1213 | 87   | 1211 | 87   | 1208 | 87   | 1205 | 87   | 1202 | 87   | 1200 | 86   |      |      |
|        | 67      | 1173                  | 85   | 1163 | 85   | 1152 | 85   | 1142 | 85   | 1140 | 85   | 1138 | 85   | 1134 | 85   | 1131 | 85   | 1128 | 85   | 1124 | 85   |
|        | 62      | 1170                  | 85   | 1139 | 85   | 1107 | 84   | 1076 | 84   | 1065 | 83   | 1053 | 83   | 1050 | 83   | 1047 | 83   | 1045 | 83   | 1042 | 83   |
| 33,250 | 75      | 1300                  | 89   | 1298 | 89   | 1295 | 89   | 1293 | 89   | 1289 | 89   | 1286 | 88   | 1284 | 88   |      |      |      |      |      |      |
|        | 71      | 1229                  | 87   | 1226 | 87   | 1224 | 87   | 1222 | 87   | 1219 | 87   | 1217 | 87   | 1214 | 87   | 1211 | 87   | 1208 | 87   |      |      |
|        | 67      | 1190                  | 86   | 1177 | 86   | 1164 | 86   | 1151 | 85   | 1149 | 85   | 1147 | 85   | 1143 | 85   | 1139 | 85   | 1136 | 85   | 1132 | 85   |
|        | 62      | 1188                  | 86   | 1156 | 85   | 1124 | 85   | 1091 | 84   | 1077 | 84   | 1062 | 84   | 1059 | 84   | 1056 | 84   | 1053 | 84   | 1050 | 84   |
| 35,000 | 75      | 1309                  | 89   | 1307 | 89   | 1304 | 89   | 1302 | 89   | 1298 | 89   | 1294 | 89   | 1291 | 89   |      |      |      |      |      |      |
|        | 71      | 1238                  | 87   | 1236 | 87   | 1233 | 87   | 1231 | 87   | 1228 | 87   | 1225 | 87   | 1222 | 87   | 1219 | 87   | 1215 | 87   |      |      |
|        | 67      | 1207                  | 87   | 1192 | 86   | 1176 | 86   | 1160 | 86   | 1158 | 86   | 1156 | 86   | 1152 | 86   | 1148 | 86   | 1144 | 86   | 1139 | 86   |
|        | 62      | 1207                  | 86   | 1173 | 86   | 1140 | 85   | 1107 | 84   | 1089 | 84   | 1071 | 84   | 1068 | 84   | 1064 | 84   | 1061 | 84   | 1058 | 84   |
| 36,000 | 75      | 1313                  | 89   | 1310 | 89   | 1307 | 89   | 1304 | 89   | 1301 | 89   | 1298 | 89   | 1295 | 89   |      |      |      |      |      |      |
|        | 71      | 1243                  | 87   | 1240 | 87   | 1237 | 87   | 1234 | 87   | 1231 | 87   | 1228 | 87   | 1225 | 87   | 1222 | 87   | 1219 | 87   |      |      |
|        | 67      | 1215                  | 87   | 1198 | 86   | 1181 | 86   | 1163 | 86   | 1161 | 86   | 1158 | 86   | 1155 | 86   | 1151 | 86   | 1147 | 86   | 1143 | 86   |
|        | 62      | 1215                  | 87   | 1181 | 86   | 1147 | 85   | 1114 | 85   | 1094 | 84   | 1074 | 84   | 1070 | 84   | 1067 | 84   | 1063 | 84   | 1059 | 84   |

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

# Cooling Performance Data – 90 Ton Model (Cont'd)

TABLE 10 – COOLING PERFORMANCE DATA\* – 90 TON MODEL (CONT'D)

## 95°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 17,500 | 75      | 1124                  | 93   | 1122 | 93   | 1121 | 93   | 1119 | 93   | 1118 | 93   | 1117 | 93   | 1117 | 93   |      |      |      |      |      |      |
|        | 71      | 1053                  | 91   | 1052 | 91   | 1050 | 91   | 1049 | 91   | 1047 | 91   | 1046 | 91   | 1046 | 91   | 1046 | 91   | 1046 | 92   |      |      |
|        | 67      | 985                   | 90   | 984  | 90   | 983  | 90   | 982  | 90   | 980  | 90   | 979  | 90   | 978  | 90   | 977  | 90   | 978  | 90   | 975  | 90   |
|        | 62      | 928                   | 89   | 919  | 89   | 910  | 89   | 901  | 88   | 901  | 89   | 900  | 89   | 898  | 89   | 896  | 89   | 903  | 89   | 893  | 89   |
| 19,250 | 75      | 1145                  | 93   | 1144 | 93   | 1142 | 93   | 1140 | 93   | 1139 | 93   | 1137 | 93   | 1138 | 94   |      |      |      |      |      |      |
|        | 71      | 1074                  | 92   | 1073 | 92   | 1071 | 92   | 1070 | 92   | 1068 | 92   | 1066 | 92   | 1066 | 92   | 1066 | 92   | 1065 | 92   |      |      |
|        | 67      | 1006                  | 90   | 1005 | 90   | 1004 | 90   | 1003 | 90   | 1001 | 91   | 999  | 91   | 998  | 91   | 997  | 91   | 998  | 91   | 994  | 91   |
|        | 62      | 962                   | 89   | 949  | 89   | 935  | 89   | 922  | 89   | 920  | 89   | 919  | 89   | 917  | 89   | 915  | 89   | 926  | 89   | 912  | 89   |
| 21,000 | 75      | 1167                  | 94   | 1165 | 94   | 1163 | 94   | 1161 | 94   | 1159 | 94   | 1158 | 94   | 1158 | 94   |      |      |      |      |      |      |
|        | 71      | 1095                  | 92   | 1094 | 92   | 1092 | 92   | 1091 | 92   | 1089 | 92   | 1087 | 92   | 1839 | 92   | 1837 | 92   | 1085 | 92   |      |      |
|        | 67      | 1028                  | 91   | 1026 | 91   | 1025 | 91   | 1023 | 91   | 1021 | 91   | 1020 | 91   | 1018 | 91   | 1017 | 91   | 1015 | 91   | 1014 | 91   |
|        | 62      | 996                   | 90   | 978  | 90   | 960  | 90   | 942  | 89   | 940  | 89   | 939  | 89   | 937  | 89   | 935  | 89   | 933  | 89   | 930  | 89   |
| 22,750 | 75      | 1181                  | 94   | 1179 | 94   | 1177 | 94   | 1175 | 94   | 1173 | 94   | 1171 | 94   | 1171 | 94   |      |      |      |      |      |      |
|        | 71      | 1109                  | 93   | 1108 | 93   | 1107 | 93   | 1105 | 93   | 1103 | 93   | 1101 | 93   | 1664 | 93   | 1662 | 93   | 1098 | 93   |      |      |
|        | 67      | 1046                  | 91   | 1043 | 91   | 1040 | 91   | 1037 | 91   | 1035 | 91   | 1034 | 91   | 1032 | 91   | 1030 | 91   | 1028 | 91   | 1026 | 91   |
|        | 62      | 1021                  | 91   | 1000 | 90   | 980  | 90   | 959  | 90   | 956  | 90   | 953  | 90   | 950  | 90   | 948  | 90   | 946  | 90   | 944  | 90   |
| 24,500 | 75      | 1195                  | 95   | 1193 | 95   | 1191 | 95   | 1189 | 95   | 1186 | 95   | 1184 | 95   | 1184 | 95   |      |      |      |      |      |      |
|        | 71      | 1124                  | 93   | 1122 | 93   | 1121 | 93   | 1119 | 93   | 1117 | 93   | 1114 | 93   | 1489 | 93   | 1487 | 93   | 1110 | 93   |      |      |
|        | 67      | 1064                  | 92   | 1060 | 92   | 1056 | 92   | 1051 | 92   | 1049 | 92   | 1048 | 92   | 1045 | 92   | 1043 | 92   | 1041 | 92   | 1038 | 92   |
|        | 62      | 1047                  | 91   | 1023 | 91   | 999  | 90   | 975  | 90   | 971  | 90   | 966  | 90   | 964  | 90   | 962  | 90   | 959  | 90   | 957  | 90   |
| 26,250 | 75      | 1209                  | 95   | 1207 | 95   | 1205 | 95   | 1203 | 95   | 1200 | 95   | 1197 | 95   | 1196 | 95   |      |      |      |      |      |      |
|        | 71      | 1138                  | 93   | 1137 | 93   | 1135 | 93   | 1134 | 93   | 1131 | 93   | 1128 | 93   | 1315 | 93   | 1312 | 93   | 1123 | 93   |      |      |
|        | 67      | 1083                  | 92   | 1077 | 92   | 1071 | 92   | 1065 | 92   | 1064 | 92   | 1062 | 92   | 1059 | 92   | 1056 | 92   | 1053 | 92   | 1051 | 92   |
|        | 62      | 1072                  | 92   | 1046 | 91   | 1019 | 91   | 992  | 90   | 986  | 90   | 980  | 90   | 978  | 90   | 975  | 90   | 973  | 90   | 970  | 90   |
| 28,000 | 75      | 1223                  | 95   | 1221 | 95   | 1219 | 95   | 1216 | 95   | 1213 | 95   | 1210 | 95   | 1209 | 95   |      |      |      |      |      |      |
|        | 71      | 1153                  | 94   | 1151 | 94   | 1149 | 94   | 1148 | 94   | 1145 | 94   | 1142 | 94   | 1140 | 94   | 1138 | 94   | 1135 | 94   |      |      |
|        | 67      | 1101                  | 92   | 1094 | 92   | 1087 | 92   | 1079 | 92   | 1078 | 92   | 1076 | 92   | 1072 | 92   | 1069 | 92   | 1066 | 92   | 1063 | 92   |
|        | 62      | 1097                  | 92   | 1068 | 92   | 1039 | 91   | 1009 | 91   | 1002 | 91   | 994  | 90   | 991  | 90   | 989  | 91   | 986  | 91   | 983  | 91   |
| 29,750 | 75      | 1232                  | 96   | 1230 | 96   | 1227 | 96   | 1225 | 96   | 1222 | 96   | 1218 | 96   | 1217 | 96   |      |      |      |      |      |      |
|        | 71      | 1162                  | 94   | 1160 | 94   | 1158 | 94   | 1156 | 94   | 1154 | 94   | 1151 | 94   | 1148 | 94   | 1146 | 94   | 1143 | 94   |      |      |
|        | 67      | 1118                  | 93   | 1108 | 93   | 1098 | 92   | 1088 | 92   | 1086 | 92   | 1084 | 92   | 1081 | 92   | 1077 | 92   | 1074 | 92   | 1070 | 92   |
|        | 62      | 1115                  | 93   | 1085 | 92   | 1055 | 91   | 1025 | 91   | 1014 | 91   | 1003 | 91   | 1000 | 91   | 997  | 91   | 994  | 91   | 991  | 91   |
| 31,500 | 75      | 1241                  | 96   | 1239 | 96   | 1236 | 96   | 1234 | 96   | 1230 | 96   | 1226 | 96   | 1224 | 96   |      |      |      |      |      |      |
|        | 71      | 1172                  | 94   | 1169 | 94   | 1167 | 94   | 1165 | 94   | 1162 | 94   | 1160 | 94   | 1157 | 94   | 1154 | 94   | 1151 | 94   |      |      |
|        | 67      | 1135                  | 93   | 1123 | 93   | 1110 | 93   | 1097 | 93   | 1095 | 93   | 1093 | 93   | 1089 | 93   | 1085 | 93   | 1082 | 93   | 1078 | 93   |
|        | 62      | 1133                  | 93   | 1102 | 92   | 1071 | 92   | 1040 | 91   | 1026 | 91   | 1011 | 91   | 1008 | 91   | 1005 | 91   | 1002 | 91   | 999  | 91   |
| 33,250 | 75      | 1250                  | 96   | 1247 | 96   | 1245 | 96   | 1242 | 96   | 1238 | 96   | 1234 | 96   | 1232 | 96   |      |      |      |      |      |      |
|        | 71      | 1181                  | 94   | 1179 | 94   | 1176 | 94   | 1174 | 94   | 1171 | 94   | 1168 | 94   | 1165 | 94   | 1162 | 94   | 1158 | 94   |      |      |
|        | 67      | 1153                  | 94   | 1137 | 93   | 1121 | 93   | 1106 | 93   | 1103 | 93   | 1101 | 93   | 1097 | 93   | 1093 | 93   | 1089 | 93   | 1085 | 93   |
|        | 62      | 1151                  | 94   | 1119 | 93   | 1088 | 92   | 1056 | 92   | 1038 | 91   | 1020 | 91   | 1017 | 91   | 1014 | 91   | 1011 | 91   | 1008 | 91   |
| 35,000 | 75      | 1259                  | 96   | 1256 | 96   | 1254 | 96   | 1251 | 96   | 1247 | 96   | 1243 | 96   | 1239 | 96   |      |      |      |      |      |      |
|        | 71      | 1191                  | 95   | 1188 | 95   | 1185 | 95   | 1183 | 95   | 1180 | 95   | 1177 | 95   | 1173 | 95   | 1170 | 95   | 1166 | 95   |      |      |
|        | 67      | 1170                  | 94   | 1151 | 94   | 1133 | 93   | 1114 | 93   | 1112 | 93   | 1110 | 93   | 1105 | 93   | 1101 | 93   | 1097 | 93   | 1093 | 93   |
|        | 62      | 1169                  | 94   | 1137 | 93   | 1104 | 93   | 1071 | 92   | 1050 | 92   | 1028 | 91   | 1025 | 91   | 1022 | 91   | 1019 | 91   | 1016 | 91   |
| 36,000 | 75      | 1262                  | 96   | 1260 | 96   | 1258 | 96   | 1255 | 96   | 1251 | 96   | 1246 | 96   | 1243 | 96   |      |      |      |      |      |      |
|        | 71      | 1197                  | 95   | 1193 | 95   | 1190 | 95   | 1186 | 95   | 1182 | 95   | 1179 | 95   | 1176 | 95   | 1173 | 95   | 1170 | 95   |      |      |
|        | 67      | 1178                  | 94   | 1158 | 94   | 1138 | 93   | 1118 | 93   | 1115 | 93   | 1113 | 93   | 1109 | 93   | 1105 | 93   | 1100 | 93   | 1096 | 93   |
|        | 62      | 1177                  | 94   | 1144 | 94   | 1111 | 93   | 1078 | 92   | 1055 | 92   | 1032 | 91   | 1028 | 91   | 1024 | 91   | 1020 | 91   | 1017 | 91   |

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



TABLE 10 – COOLING PERFORMANCE DATA\* – 90 TON MODEL (CONT'D)

## 105°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 17,500 | 75      | 1075                  | 102  | 1073 | 102  | 1071 | 102  | 1070 | 102  | 1069 | 102  | 1067 | 103  | 1068 | 103  |      |      |      |      |      |      |
|        | 71      | 1007                  | 101  | 1006 | 101  | 1004 | 101  | 1003 | 101  | 1001 | 101  | 1000 | 101  | 999  | 100  | 998  | 99   | 997  | 98   |      |      |
|        | 67      | 934                   | 100  | 936  | 100  | 937  | 100  | 939  | 100  | 937  | 100  | 935  | 100  | 934  | 100  | 933  | 100  | 933  | 100  | 931  | 100  |
|        | 62      | 897                   | 98   | 885  | 98   | 873  | 98   | 861  | 98   | 861  | 98   | 860  | 98   | 858  | 98   | 856  | 98   | 858  | 98   | 852  | 98   |
| 19,250 | 75      | 1094                  | 103  | 1092 | 103  | 1091 | 103  | 1089 | 103  | 1087 | 103  | 1086 | 103  | 1086 | 103  |      |      |      |      |      |      |
|        | 71      | 1026                  | 102  | 1025 | 101  | 1024 | 101  | 1022 | 101  | 1020 | 101  | 1018 | 101  | 1017 | 101  | 1016 | 100  | 1015 | 100  |      |      |
|        | 67      | 958                   | 100  | 958  | 100  | 958  | 100  | 958  | 100  | 956  | 100  | 954  | 100  | 953  | 100  | 951  | 100  | 952  | 100  | 948  | 100  |
|        | 62      | 929                   | 99   | 913  | 99   | 897  | 99   | 881  | 98   | 879  | 98   | 878  | 98   | 876  | 98   | 874  | 98   | 886  | 99   | 870  | 99   |
| 21,000 | 75      | 1114                  | 103  | 1112 | 103  | 1110 | 103  | 1108 | 103  | 1106 | 103  | 1104 | 103  | 1104 | 103  |      |      |      |      |      |      |
|        | 71      | 1045                  | 102  | 1044 | 102  | 1043 | 102  | 1041 | 102  | 1039 | 102  | 1037 | 102  | 1412 | 102  | 1411 | 102  | 1034 | 102  |      |      |
|        | 67      | 983                   | 100  | 981  | 100  | 979  | 100  | 977  | 100  | 975  | 100  | 973  | 100  | 971  | 100  | 969  | 100  | 968  | 101  | 966  | 101  |
|        | 62      | 961                   | 100  | 941  | 99   | 920  | 99   | 900  | 99   | 898  | 99   | 896  | 99   | 893  | 99   | 891  | 99   | 889  | 99   | 887  | 99   |
| 22,750 | 75      | 1127                  | 104  | 1125 | 104  | 1123 | 104  | 1121 | 104  | 1119 | 104  | 1116 | 104  | 1116 | 104  |      |      |      |      |      |      |
|        | 71      | 1059                  | 102  | 1058 | 102  | 1056 | 102  | 1055 | 102  | 1052 | 102  | 1050 | 102  | 1331 | 102  | 1329 | 102  | 1046 | 102  |      |      |
|        | 67      | 1002                  | 101  | 998  | 101  | 994  | 101  | 990  | 101  | 988  | 101  | 986  | 101  | 984  | 101  | 982  | 101  | 980  | 101  | 977  | 101  |
|        | 62      | 985                   | 100  | 963  | 100  | 940  | 99   | 917  | 99   | 913  | 99   | 909  | 99   | 906  | 99   | 904  | 99   | 902  | 99   | 899  | 99   |
| 24,500 | 75      | 1141                  | 104  | 1139 | 104  | 1136 | 104  | 1134 | 104  | 1132 | 104  | 1129 | 104  | 1128 | 104  |      |      |      |      |      |      |
|        | 71      | 1073                  | 102  | 1071 | 102  | 1070 | 102  | 1068 | 102  | 1066 | 102  | 1063 | 102  | 1250 | 102  | 1248 | 102  | 1058 | 102  |      |      |
|        | 67      | 1021                  | 101  | 1015 | 101  | 1009 | 101  | 1003 | 101  | 1001 | 101  | 1000 | 101  | 997  | 101  | 994  | 101  | 992  | 101  | 989  | 101  |
|        | 62      | 1009                  | 101  | 985  | 100  | 960  | 100  | 935  | 99   | 928  | 99   | 922  | 99   | 919  | 99   | 917  | 99   | 914  | 99   | 912  | 99   |
| 26,250 | 75      | 1154                  | 104  | 1152 | 104  | 1150 | 104  | 1147 | 104  | 1144 | 104  | 1141 | 104  | 1140 | 104  |      |      |      |      |      |      |
|        | 71      | 1086                  | 102  | 1085 | 102  | 1083 | 102  | 1082 | 102  | 1079 | 102  | 1077 | 102  | 1169 | 102  | 1166 | 102  | 1070 | 102  |      |      |
|        | 67      | 1040                  | 101  | 1032 | 101  | 1024 | 101  | 1017 | 101  | 1015 | 101  | 1013 | 101  | 1010 | 101  | 1007 | 101  | 1004 | 101  | 1001 | 101  |
|        | 62      | 1034                  | 101  | 1007 | 100  | 979  | 100  | 952  | 99   | 944  | 99   | 935  | 99   | 932  | 99   | 930  | 99   | 927  | 99   | 924  | 99   |
| 28,000 | 75      | 1168                  | 104  | 1165 | 104  | 1163 | 104  | 1161 | 104  | 1157 | 104  | 1154 | 104  | 1152 | 104  |      |      |      |      |      |      |
|        | 71      | 1100                  | 102  | 1098 | 102  | 1097 | 102  | 1095 | 103  | 1092 | 103  | 1090 | 103  | 1087 | 103  | 1085 | 103  | 1082 | 103  |      |      |
|        | 67      | 1059                  | 101  | 1049 | 101  | 1040 | 101  | 1030 | 101  | 1028 | 101  | 1026 | 101  | 1023 | 101  | 1019 | 101  | 1016 | 101  | 1013 | 101  |
|        | 62      | 1058                  | 101  | 1029 | 101  | 999  | 100  | 970  | 99   | 959  | 99   | 948  | 99   | 945  | 99   | 942  | 99   | 940  | 99   | 937  | 99   |
| 29,750 | 75      | 1175                  | 104  | 1173 | 104  | 1170 | 104  | 1168 | 105  | 1164 | 105  | 1160 | 105  | 1158 | 105  |      |      |      |      |      |      |
|        | 71      | 1109                  | 103  | 1107 | 103  | 1105 | 103  | 1102 | 103  | 1100 | 103  | 1097 | 103  | 1094 | 103  | 1091 | 103  | 1088 | 103  |      |      |
|        | 67      | 1075                  | 102  | 1062 | 102  | 1050 | 101  | 1037 | 101  | 1035 | 101  | 1033 | 101  | 1030 | 101  | 1026 | 101  | 1022 | 101  | 1019 | 102  |
|        | 62      | 1074                  | 102  | 1044 | 101  | 1014 | 101  | 984  | 100  | 970  | 100  | 956  | 100  | 953  | 100  | 950  | 100  | 947  | 100  | 944  | 100  |
| 31,500 | 75      | 1183                  | 105  | 1180 | 105  | 1178 | 105  | 1175 | 105  | 1171 | 105  | 1167 | 105  | 1164 | 105  |      |      |      |      |      |      |
|        | 71      | 1118                  | 103  | 1115 | 103  | 1113 | 103  | 1110 | 103  | 1107 | 103  | 1104 | 103  | 1101 | 103  | 1098 | 103  | 1094 | 103  |      |      |
|        | 67      | 1091                  | 102  | 1076 | 102  | 1060 | 102  | 1045 | 102  | 1043 | 102  | 1040 | 102  | 1036 | 102  | 1032 | 102  | 1028 | 102  | 1024 | 102  |
|        | 62      | 1091                  | 102  | 1060 | 102  | 1029 | 101  | 999  | 100  | 981  | 100  | 964  | 100  | 960  | 100  | 957  | 100  | 954  | 100  | 950  | 100  |
| 33,250 | 75      | 1190                  | 105  | 1188 | 105  | 1185 | 105  | 1183 | 105  | 1178 | 105  | 1174 | 105  | 1171 | 105  |      |      |      |      |      |      |
|        | 71      | 1127                  | 103  | 1124 | 103  | 1120 | 104  | 1117 | 104  | 1114 | 104  | 1111 | 104  | 1108 | 104  | 1104 | 104  | 1100 | 104  |      |      |
|        | 67      | 1108                  | 103  | 1089 | 103  | 1071 | 102  | 1052 | 102  | 1050 | 102  | 1048 | 102  | 1043 | 102  | 1039 | 102  | 1035 | 102  | 1030 | 102  |
|        | 62      | 1107                  | 103  | 1076 | 102  | 1044 | 102  | 1013 | 101  | 992  | 101  | 971  | 100  | 968  | 100  | 964  | 100  | 961  | 100  | 957  | 100  |
| 35,000 | 75      | 1198                  | 105  | 1195 | 105  | 1192 | 106  | 1190 | 106  | 1185 | 106  | 1181 | 106  | 1177 | 106  |      |      |      |      |      |      |
|        | 71      | 1136                  | 104  | 1132 | 104  | 1128 | 104  | 1124 | 104  | 1121 | 104  | 1118 | 104  | 1114 | 104  | 1110 | 104  | 1106 | 104  |      |      |
|        | 67      | 1124                  | 103  | 1102 | 103  | 1081 | 103  | 1060 | 102  | 1057 | 102  | 1055 | 102  | 1050 | 102  | 1046 | 102  | 1041 | 102  | 1036 | 102  |
|        | 62      | 1123                  | 103  | 1091 | 103  | 1060 | 102  | 1028 | 101  | 1003 | 101  | 979  | 100  | 975  | 101  | 972  | 101  | 968  | 101  | 964  | 101  |
| 36,000 | 75      | 1201                  | 106  | 1198 | 106  | 1196 | 106  | 1193 | 106  | 1189 | 106  | 1184 | 106  | 1180 | 106  |      |      |      |      |      |      |
|        | 71      | 1143                  | 104  | 1138 | 104  | 1133 | 104  | 1128 | 104  | 1124 | 104  | 1120 | 104  | 1117 | 104  | 1113 | 104  | 1109 | 104  |      |      |
|        | 67      | 1131                  | 104  | 1109 | 103  | 1086 | 103  | 1063 | 102  | 1061 | 102  | 1058 | 103  | 1053 | 103  | 1049 | 103  | 1044 | 103  | 1039 | 103  |
|        | 62      | 1131                  | 104  | 1099 | 103  | 1066 | 102  | 1034 | 102  | 1009 | 101  | 983  | 101  | 979  | 101  | 974  | 101  | 970  | 101  | 965  | 101  |

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



# Cooling Performance Data – 90 Ton Model (Cont'd)

TABLE 10 – COOLING PERFORMANCE DATA\* – 90 TON MODEL (CONT'D)

## 115°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 17,500 | 75      | 1025                  | 112  | 1024 | 112  | 1022 | 112  | 1020 | 112  | 1019 | 112  | 1017 | 112  | 1018 | 112  |      |      |      |      |      |      |
|        | 71      | 962                   | 111  | 960  | 111  | 959  | 111  | 957  | 110  | 955  | 110  | 953  | 110  | 951  | 108  | 950  | 106  | 948  | 104  |      |      |
|        | 67      | 883                   | 110  | 887  | 109  | 891  | 109  | 895  | 109  | 894  | 109  | 892  | 109  | 891  | 109  | 889  | 109  | 888  | 109  | 887  | 109  |
|        | 62      | 865                   | 108  | 851  | 108  | 836  | 107  | 821  | 107  | 820  | 107  | 820  | 107  | 818  | 107  | 816  | 107  | 814  | 108  | 812  | 108  |
| 19,250 | 75      | 1043                  | 112  | 1041 | 112  | 1040 | 112  | 1038 | 112  | 1036 | 112  | 1034 | 112  | 1034 | 113  |      |      |      |      |      |      |
|        | 71      | 979                   | 111  | 977  | 111  | 976  | 111  | 974  | 111  | 972  | 111  | 970  | 111  | 969  | 110  | 967  | 109  | 966  | 108  |      |      |
|        | 67      | 910                   | 110  | 911  | 110  | 912  | 109  | 913  | 109  | 911  | 109  | 909  | 109  | 908  | 109  | 906  | 110  | 906  | 110  | 902  | 110  |
|        | 62      | 895                   | 109  | 877  | 108  | 858  | 108  | 840  | 108  | 838  | 108  | 836  | 108  | 834  | 108  | 832  | 108  | 847  | 108  | 827  | 108  |
| 21,000 | 75      | 1061                  | 113  | 1059 | 113  | 1057 | 113  | 1055 | 113  | 1053 | 113  | 1050 | 113  | 1050 | 113  |      |      |      |      |      |      |
|        | 71      | 996                   | 111  | 995  | 111  | 993  | 111  | 992  | 111  | 989  | 111  | 987  | 111  | 986  | 111  | 984  | 111  | 983  | 111  |      |      |
|        | 67      | 938                   | 110  | 935  | 110  | 933  | 110  | 930  | 110  | 928  | 110  | 927  | 110  | 925  | 110  | 922  | 110  | 920  | 110  | 918  | 110  |
|        | 62      | 925                   | 109  | 903  | 109  | 881  | 108  | 858  | 108  | 855  | 108  | 853  | 108  | 850  | 108  | 848  | 108  | 845  | 108  | 843  | 108  |
| 22,750 | 75      | 1073                  | 113  | 1071 | 113  | 1068 | 113  | 1066 | 113  | 1064 | 113  | 1061 | 113  | 1060 | 113  |      |      |      |      |      |      |
|        | 71      | 1008                  | 111  | 1006 | 111  | 1005 | 111  | 1003 | 112  | 1001 | 112  | 998  | 112  | 997  | 112  | 995  | 112  | 993  | 112  |      |      |
|        | 67      | 957                   | 110  | 952  | 110  | 947  | 110  | 942  | 110  | 940  | 110  | 938  | 110  | 935  | 110  | 933  | 110  | 930  | 110  | 928  | 110  |
|        | 62      | 948                   | 110  | 924  | 109  | 900  | 109  | 876  | 108  | 870  | 108  | 864  | 108  | 861  | 108  | 859  | 109  | 856  | 109  | 854  | 109  |
| 24,500 | 75      | 1084                  | 113  | 1082 | 113  | 1080 | 113  | 1078 | 113  | 1074 | 114  | 1071 | 114  | 1070 | 114  |      |      |      |      |      |      |
|        | 71      | 1020                  | 112  | 1018 | 112  | 1016 | 112  | 1014 | 112  | 1012 | 112  | 1009 | 112  | 1007 | 112  | 1005 | 112  | 1003 | 112  |      |      |
|        | 67      | 976                   | 111  | 969  | 110  | 961  | 110  | 953  | 110  | 951  | 110  | 949  | 110  | 946  | 110  | 943  | 111  | 940  | 111  | 937  | 111  |
|        | 62      | 970                   | 110  | 944  | 110  | 919  | 109  | 893  | 109  | 884  | 109  | 875  | 109  | 873  | 109  | 870  | 109  | 867  | 109  | 865  | 109  |
| 26,250 | 75      | 1096                  | 114  | 1094 | 114  | 1091 | 114  | 1089 | 114  | 1085 | 114  | 1082 | 114  | 1080 | 114  |      |      |      |      |      |      |
|        | 71      | 1031                  | 112  | 1030 | 112  | 1028 | 112  | 1026 | 112  | 1023 | 112  | 1021 | 112  | 1018 | 112  | 1016 | 112  | 1013 | 112  |      |      |
|        | 67      | 996                   | 111  | 985  | 111  | 975  | 111  | 964  | 111  | 962  | 111  | 961  | 111  | 957  | 111  | 954  | 111  | 950  | 111  | 947  | 111  |
|        | 62      | 992                   | 111  | 965  | 110  | 938  | 110  | 911  | 109  | 899  | 109  | 887  | 109  | 884  | 109  | 881  | 109  | 878  | 109  | 875  | 109  |
| 28,000 | 75      | 1108                  | 114  | 1105 | 114  | 1103 | 114  | 1100 | 114  | 1096 | 114  | 1092 | 114  | 1090 | 114  |      |      |      |      |      |      |
|        | 71      | 1043                  | 112  | 1041 | 112  | 1039 | 112  | 1037 | 112  | 1035 | 112  | 1032 | 113  | 1029 | 113  | 1026 | 113  | 1023 | 113  |      |      |
|        | 67      | 1015                  | 111  | 1002 | 111  | 989  | 111  | 976  | 111  | 974  | 111  | 972  | 111  | 968  | 111  | 964  | 111  | 961  | 111  | 957  | 111  |
|        | 62      | 1014                  | 111  | 986  | 111  | 957  | 110  | 928  | 110  | 913  | 109  | 898  | 109  | 895  | 109  | 892  | 109  | 889  | 109  | 886  | 109  |
| 29,750 | 75      | 1115                  | 114  | 1112 | 114  | 1110 | 114  | 1107 | 114  | 1103 | 114  | 1099 | 114  | 1096 | 114  |      |      |      |      |      |      |
|        | 71      | 1053                  | 112  | 1050 | 113  | 1047 | 113  | 1044 | 113  | 1042 | 113  | 1039 | 113  | 1036 | 113  | 1033 | 113  | 1029 | 113  |      |      |
|        | 67      | 1031                  | 112  | 1015 | 112  | 999  | 111  | 983  | 111  | 981  | 111  | 979  | 111  | 975  | 111  | 971  | 111  | 967  | 111  | 963  | 111  |
|        | 62      | 1030                  | 112  | 1001 | 111  | 971  | 111  | 942  | 110  | 924  | 110  | 906  | 109  | 903  | 109  | 899  | 109  | 896  | 110  | 893  | 110  |
| 31,500 | 75      | 1122                  | 114  | 1120 | 114  | 1117 | 114  | 1114 | 114  | 1110 | 115  | 1105 | 115  | 1102 | 115  |      |      |      |      |      |      |
|        | 71      | 1063                  | 113  | 1059 | 113  | 1055 | 113  | 1052 | 113  | 1049 | 113  | 1046 | 113  | 1042 | 113  | 1039 | 113  | 1035 | 113  |      |      |
|        | 67      | 1046                  | 112  | 1028 | 112  | 1009 | 112  | 990  | 111  | 988  | 111  | 986  | 111  | 982  | 111  | 977  | 111  | 973  | 112  | 968  | 112  |
|        | 62      | 1046                  | 112  | 1016 | 112  | 986  | 111  | 956  | 110  | 935  | 110  | 914  | 109  | 910  | 110  | 907  | 110  | 903  | 110  | 899  | 110  |
| 33,250 | 75      | 1129                  | 115  | 1127 | 115  | 1124 | 115  | 1121 | 115  | 1117 | 115  | 1112 | 115  | 1108 | 115  |      |      |      |      |      |      |
|        | 71      | 1072                  | 113  | 1068 | 113  | 1063 | 113  | 1059 | 113  | 1056 | 113  | 1053 | 113  | 1049 | 113  | 1045 | 113  | 1041 | 113  |      |      |
|        | 67      | 1062                  | 113  | 1041 | 112  | 1019 | 112  | 998  | 111  | 995  | 111  | 993  | 111  | 988  | 112  | 984  | 112  | 979  | 112  | 974  | 112  |
|        | 62      | 1061                  | 113  | 1031 | 112  | 1001 | 111  | 970  | 111  | 946  | 110  | 922  | 110  | 918  | 110  | 914  | 110  | 910  | 110  | 906  | 110  |
| 35,000 | 75      | 1137                  | 115  | 1134 | 115  | 1131 | 115  | 1129 | 115  | 1124 | 115  | 1118 | 115  | 1114 | 115  |      |      |      |      |      |      |
|        | 71      | 1082                  | 113  | 1077 | 113  | 1071 | 113  | 1066 | 113  | 1063 | 113  | 1059 | 113  | 1055 | 113  | 1051 | 113  | 1047 | 113  |      |      |
|        | 67      | 1078                  | 113  | 1053 | 113  | 1029 | 112  | 1005 | 112  | 1003 | 112  | 1000 | 112  | 995  | 112  | 990  | 112  | 985  | 112  | 980  | 112  |
|        | 62      | 1077                  | 113  | 1046 | 112  | 1015 | 112  | 984  | 111  | 957  | 110  | 930  | 110  | 925  | 110  | 921  | 110  | 917  | 110  | 913  | 110  |
| 36,000 | 75      | 1140                  | 115  | 1137 | 115  | 1134 | 115  | 1132 | 115  | 1127 | 115  | 1121 | 115  | 1116 | 115  |      |      |      |      |      |      |
|        | 71      | 1090                  | 113  | 1083 | 113  | 1076 | 113  | 1069 | 113  | 1066 | 113  | 1062 | 113  | 1058 | 114  | 1053 | 114  | 1049 | 114  |      |      |
|        | 67      | 1085                  | 113  | 1060 | 113  | 1034 | 112  | 1009 | 112  | 1006 | 112  | 1003 | 112  | 998  | 112  | 993  | 112  | 987  | 112  | 982  | 112  |
|        | 62      | 1085                  | 113  | 1053 | 113  | 1022 | 112  | 990  | 111  | 962  | 111  | 935  | 111  | 929  | 111  | 924  | 111  | 919  | 110  | 914  | 110  |

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

# Cooling Performance Data – 105 Ton Model

TABLE 11 - COOLING PERFORMANCE DATA\* – 105 TON MODEL

## 75°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 21,000 | 75      | 1462                  | 95   | 1461 | 95   | 1460 | 95   | 1460 | 95   | 1460 | 95   | 1460 | 95   | 1460 | 95   |      |      |      |      |      |      |
|        | 71      | 1364                  | 93   | 1363 | 93   | 1363 | 93   | 1362 | 93   | 1361 | 93   | 1361 | 93   | 1361 | 93   | 1361 | 93   | 1362 | 93   |      |      |
|        | 67      | 1273                  | 91   | 1272 | 91   | 1272 | 91   | 1272 | 91   | 1271 | 91   | 1271 | 90   | 1270 | 90   | 1270 | 90   | 1269 | 90   | 1269 | 90   |
|        | 62      | 1190                  | 89   | 1182 | 89   | 1174 | 88   | 1166 | 88   | 1166 | 88   | 1165 | 88   | 1165 | 88   | 1166 | 88   | 1166 | 88   | 1166 | 89   |
| 22,750 | 75      | 1487                  | 95   | 1486 | 95   | 1485 | 95   | 1484 | 95   | 1484 | 95   | 1484 | 95   | 1485 | 95   |      |      |      |      |      |      |
|        | 71      | 1388                  | 93   | 1388 | 93   | 1387 | 93   | 1386 | 93   | 1386 | 93   | 1385 | 93   | 1385 | 93   | 1385 | 93   | 1386 | 93   |      |      |
|        | 67      | 1297                  | 91   | 1296 | 91   | 1296 | 91   | 1295 | 91   | 1295 | 91   | 1294 | 91   | 1294 | 91   | 1293 | 91   | 1293 | 91   | 1292 | 91   |
|        | 62      | 1227                  | 90   | 1214 | 89   | 1201 | 89   | 1188 | 89   | 1188 | 89   | 1187 | 89   | 1187 | 89   | 1187 | 89   | 1187 | 89   | 1187 | 89   |
| 24,500 | 75      | 1512                  | 96   | 1511 | 96   | 1510 | 96   | 1509 | 96   | 1509 | 96   | 1508 | 96   | 1509 | 96   |      |      |      |      |      |      |
|        | 71      | 1413                  | 94   | 1412 | 94   | 1412 | 94   | 1411 | 94   | 1410 | 94   | 1409 | 94   | 1409 | 94   | 1409 | 94   | 1409 | 94   |      |      |
|        | 67      | 1321                  | 92   | 1320 | 92   | 1320 | 92   | 1319 | 92   | 1318 | 92   | 1318 | 92   | 1317 | 92   | 1317 | 92   | 1316 | 92   | 1316 | 91   |
|        | 62      | 1265                  | 90   | 1247 | 90   | 1229 | 90   | 1211 | 89   | 1210 | 89   | 1209 | 89   | 1209 | 89   | 1209 | 89   | 1208 | 89   | 1208 | 89   |
| 26,250 | 75      | 1537                  | 97   | 1536 | 97   | 1535 | 97   | 1534 | 97   | 1533 | 97   | 1533 | 97   | 1533 | 97   |      |      |      |      |      |      |
|        | 71      | 1437                  | 94   | 1437 | 94   | 1436 | 94   | 1435 | 94   | 1434 | 94   | 1434 | 94   | 1433 | 94   | 1433 | 94   | 1433 | 94   |      |      |
|        | 67      | 1345                  | 92   | 1344 | 92   | 1343 | 92   | 1343 | 92   | 1342 | 92   | 1341 | 92   | 1340 | 92   | 1340 | 92   | 1339 | 92   | 1339 | 92   |
|        | 62      | 1303                  | 91   | 1279 | 91   | 1256 | 90   | 1233 | 90   | 1232 | 90   | 1231 | 90   | 1231 | 90   | 1230 | 90   | 1229 | 90   | 1229 | 90   |
| 28,000 | 75      | 1562                  | 97   | 1560 | 97   | 1559 | 97   | 1558 | 97   | 1558 | 97   | 1557 | 97   | 1558 | 97   |      |      |      |      |      |      |
|        | 71      | 1462                  | 95   | 1461 | 95   | 1460 | 95   | 1459 | 95   | 1459 | 95   | 1458 | 95   | 1458 | 95   | 1457 | 95   | 1457 | 95   |      |      |
|        | 67      | 1369                  | 93   | 1368 | 93   | 1367 | 93   | 1366 | 93   | 1365 | 93   | 1364 | 93   | 1364 | 93   | 1363 | 93   | 1363 | 93   | 1362 | 93   |
|        | 62      | 1340                  | 92   | 1312 | 91   | 1283 | 91   | 1255 | 90   | 1254 | 90   | 1253 | 90   | 1252 | 90   | 1251 | 90   | 1251 | 90   | 1250 | 90   |
| 29,750 | 75      | 1578                  | 98   | 1576 | 98   | 1575 | 98   | 1574 | 98   | 1573 | 98   | 1572 | 98   | 1573 | 98   |      |      |      |      |      |      |
|        | 71      | 1478                  | 95   | 1477 | 95   | 1476 | 95   | 1475 | 95   | 1474 | 95   | 1473 | 95   | 1473 | 95   | 1472 | 95   | 1472 | 95   |      |      |
|        | 67      | 1391                  | 93   | 1388 | 93   | 1384 | 93   | 1381 | 93   | 1380 | 93   | 1379 | 93   | 1375 | 93   | 1371 | 93   | 1366 | 93   | 1362 | 93   |
|        | 62      | 1368                  | 93   | 1337 | 92   | 1305 | 91   | 1274 | 91   | 1271 | 90   | 1268 | 90   | 1264 | 90   | 1259 | 90   | 1254 | 90   | 1250 | 90   |
| 31,500 | 75      | 1594                  | 98   | 1592 | 98   | 1591 | 98   | 1590 | 98   | 1589 | 98   | 1588 | 98   | 1588 | 98   |      |      |      |      |      |      |
|        | 71      | 1494                  | 96   | 1493 | 96   | 1492 | 96   | 1491 | 96   | 1490 | 96   | 1488 | 96   | 1488 | 96   | 1488 | 95   | 1487 | 95   |      |      |
|        | 67      | 1412                  | 94   | 1407 | 94   | 1401 | 93   | 1396 | 93   | 1395 | 93   | 1394 | 93   | 1386 | 93   | 1378 | 93   | 1370 | 93   | 1362 | 93   |
|        | 62      | 1397                  | 93   | 1362 | 93   | 1328 | 92   | 1293 | 91   | 1288 | 91   | 1283 | 91   | 1275 | 91   | 1267 | 90   | 1258 | 90   | 1250 | 90   |
| 33,250 | 75      | 1609                  | 99   | 1608 | 99   | 1607 | 98   | 1606 | 98   | 1604 | 98   | 1603 | 98   | 1604 | 98   |      |      |      |      |      |      |
|        | 71      | 1510                  | 96   | 1509 | 96   | 1508 | 96   | 1507 | 96   | 1505 | 96   | 1504 | 96   | 1503 | 96   | 1503 | 96   | 1502 | 96   |      |      |
|        | 67      | 1433                  | 94   | 1426 | 94   | 1419 | 94   | 1411 | 94   | 1410 | 94   | 1409 | 94   | 1397 | 93   | 1386 | 93   | 1374 | 93   | 1362 | 93   |
|        | 62      | 1425                  | 94   | 1387 | 93   | 1350 | 92   | 1312 | 91   | 1305 | 91   | 1298 | 91   | 1286 | 91   | 1274 | 91   | 1262 | 90   | 1250 | 90   |
| 35,000 | 75      | 1625                  | 99   | 1624 | 99   | 1623 | 99   | 1621 | 99   | 1620 | 99   | 1618 | 99   | 1619 | 99   |      |      |      |      |      |      |
|        | 71      | 1526                  | 96   | 1525 | 96   | 1523 | 96   | 1522 | 96   | 1521 | 96   | 1519 | 96   | 1518 | 96   | 1518 | 96   | 1517 | 96   |      |      |
|        | 67      | 1454                  | 95   | 1445 | 94   | 1436 | 94   | 1426 | 94   | 1425 | 94   | 1424 | 94   | 1408 | 94   | 1393 | 93   | 1378 | 93   | 1362 | 93   |
|        | 62      | 1453                  | 95   | 1413 | 94   | 1372 | 93   | 1332 | 92   | 1323 | 92   | 1313 | 91   | 1298 | 91   | 1282 | 91   | 1266 | 90   | 1250 | 90   |
| 36,000 | 75      | 1635                  | 99   | 1633 | 99   | 1632 | 99   | 1630 | 99   | 1629 | 99   | 1627 | 99   | 1627 | 99   |      |      |      |      |      |      |
|        | 71      | 1535                  | 97   | 1534 | 97   | 1532 | 97   | 1531 | 97   | 1529 | 96   | 1528 | 96   | 1527 | 96   | 1527 | 96   | 1526 | 96   |      |      |
|        | 67      | 1466                  | 95   | 1456 | 95   | 1445 | 94   | 1435 | 94   | 1434 | 94   | 1432 | 94   | 1415 | 94   | 1397 | 93   | 1380 | 93   | 1362 | 93   |
|        | 62      | 1469                  | 95   | 1427 | 94   | 1385 | 93   | 1343 | 92   | 1332 | 92   | 1322 | 92   | 1304 | 91   | 1286 | 91   | 1268 | 90   | 1250 | 90   |

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

# Cooling Performance Data – 105 Ton Model (Cont'd)

TABLE 11 – COOLING PERFORMANCE DATA\* – 105 TON MODEL (CONT'D)

## 85°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 21,000 | 75      | 1409                  | 104  | 1408 | 104  | 1407 | 104  | 1407 | 104  | 1407 | 104  | 1406 | 104  | 1407 | 104  |      |      |      |      |      |      |
|        | 71      | 1315                  | 102  | 1314 | 102  | 1314 | 102  | 1313 | 102  | 1312 | 102  | 1312 | 102  | 1312 | 102  | 1312 | 102  | 1313 | 102  |      |      |
|        | 67      | 1226                  | 100  | 1226 | 100  | 1226 | 100  | 1226 | 100  | 1225 | 100  | 1225 | 100  | 1224 | 100  | 1224 | 100  | 1224 | 100  | 1223 | 100  |
|        | 62      | 1157                  | 98   | 1146 | 98   | 1135 | 98   | 1124 | 97   | 1124 | 97   | 1124 | 97   | 1123 | 97   | 1123 | 97   | 1123 | 97   | 1122 | 97   |
| 22,750 | 75      | 1432                  | 104  | 1432 | 104  | 1431 | 104  | 1430 | 104  | 1430 | 104  | 1429 | 104  | 1430 | 104  |      |      |      |      |      |      |
|        | 71      | 1338                  | 102  | 1337 | 102  | 1337 | 102  | 1336 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  |      |      |
|        | 67      | 1250                  | 100  | 1249 | 100  | 1249 | 100  | 1248 | 100  | 1248 | 100  | 1247 | 100  | 1247 | 100  | 1246 | 100  | 1246 | 100  | 1245 | 100  |
|        | 62      | 1193                  | 99   | 1177 | 98   | 1161 | 98   | 1145 | 98   | 1145 | 98   | 1144 | 98   | 1144 | 98   | 1143 | 98   | 1143 | 98   | 1143 | 98   |
| 24,500 | 75      | 1456                  | 105  | 1455 | 105  | 1454 | 105  | 1454 | 105  | 1453 | 105  | 1452 | 105  | 1453 | 105  |      |      |      |      |      |      |
|        | 71      | 1362                  | 103  | 1361 | 103  | 1360 | 103  | 1359 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  |      |      |
|        | 67      | 1273                  | 100  | 1272 | 100  | 1271 | 100  | 1271 | 100  | 1270 | 100  | 1269 | 100  | 1269 | 100  | 1268 | 100  | 1268 | 100  | 1267 | 100  |
|        | 62      | 1229                  | 99   | 1208 | 99   | 1187 | 98   | 1166 | 98   | 1166 | 98   | 1165 | 98   | 1165 | 98   | 1164 | 98   | 1163 | 98   | 1163 | 98   |
| 26,250 | 75      | 1480                  | 105  | 1479 | 105  | 1478 | 105  | 1477 | 105  | 1476 | 105  | 1475 | 105  | 1476 | 105  |      |      |      |      |      |      |
|        | 71      | 1385                  | 103  | 1384 | 103  | 1383 | 103  | 1382 | 103  | 1381 | 103  | 1380 | 103  | 1380 | 103  | 1380 | 103  | 1380 | 103  |      |      |
|        | 67      | 1296                  | 101  | 1295 | 101  | 1294 | 101  | 1293 | 101  | 1292 | 101  | 1291 | 101  | 1291 | 101  | 1290 | 101  | 1290 | 101  | 1289 | 101  |
|        | 62      | 1265                  | 100  | 1239 | 99   | 1213 | 99   | 1187 | 98   | 1187 | 98   | 1186 | 98   | 1185 | 98   | 1184 | 98   | 1184 | 98   | 1183 | 98   |
| 28,000 | 75      | 1503                  | 106  | 1502 | 106  | 1501 | 106  | 1501 | 106  | 1499 | 106  | 1498 | 106  | 1499 | 106  |      |      |      |      |      |      |
|        | 71      | 1408                  | 103  | 1407 | 103  | 1406 | 103  | 1405 | 103  | 1404 | 103  | 1403 | 103  | 1403 | 103  | 1403 | 103  | 1403 | 103  |      |      |
|        | 67      | 1319                  | 101  | 1318 | 101  | 1317 | 101  | 1316 | 101  | 1315 | 101  | 1314 | 101  | 1313 | 101  | 1313 | 101  | 1312 | 101  | 1312 | 101  |
|        | 62      | 1302                  | 101  | 1271 | 100  | 1239 | 99   | 1208 | 99   | 1208 | 99   | 1207 | 99   | 1206 | 99   | 1205 | 98   | 1204 | 98   | 1203 | 98   |
| 29,750 | 75      | 1517                  | 106  | 1516 | 106  | 1515 | 106  | 1514 | 106  | 1513 | 106  | 1512 | 106  | 1512 | 106  |      |      |      |      |      |      |
|        | 71      | 1422                  | 104  | 1421 | 104  | 1420 | 104  | 1419 | 104  | 1418 | 104  | 1417 | 104  | 1417 | 104  | 1416 | 104  | 1416 | 104  |      |      |
|        | 67      | 1341                  | 102  | 1337 | 102  | 1333 | 102  | 1329 | 102  | 1328 | 102  | 1326 | 102  | 1324 | 101  | 1322 | 101  | 1319 | 101  | 1317 | 101  |
|        | 62      | 1328                  | 102  | 1295 | 101  | 1262 | 100  | 1228 | 99   | 1224 | 99   | 1220 | 99   | 1217 | 99   | 1215 | 99   | 1212 | 99   | 1209 | 99   |
| 31,500 | 75      | 1531                  | 107  | 1530 | 107  | 1529 | 107  | 1528 | 107  | 1527 | 107  | 1525 | 107  | 1526 | 107  |      |      |      |      |      |      |
|        | 71      | 1436                  | 104  | 1435 | 104  | 1434 | 104  | 1433 | 104  | 1432 | 104  | 1431 | 104  | 1430 | 104  | 1430 | 104  | 1429 | 104  |      |      |
|        | 67      | 1364                  | 103  | 1356 | 102  | 1349 | 102  | 1342 | 102  | 1341 | 102  | 1339 | 102  | 1335 | 102  | 1331 | 102  | 1327 | 102  | 1323 | 102  |
|        | 62      | 1355                  | 102  | 1319 | 102  | 1284 | 101  | 1249 | 100  | 1241 | 100  | 1234 | 99   | 1229 | 99   | 1224 | 99   | 1220 | 99   | 1215 | 99   |
| 33,250 | 75      | 1545                  | 107  | 1544 | 107  | 1543 | 107  | 1542 | 107  | 1540 | 107  | 1539 | 107  | 1539 | 107  |      |      |      |      |      |      |
|        | 71      | 1451                  | 105  | 1449 | 105  | 1448 | 105  | 1447 | 105  | 1446 | 105  | 1444 | 105  | 1444 | 105  | 1443 | 105  | 1442 | 105  |      |      |
|        | 67      | 1386                  | 103  | 1376 | 103  | 1366 | 103  | 1356 | 103  | 1354 | 103  | 1352 | 102  | 1346 | 102  | 1340 | 102  | 1334 | 102  | 1328 | 102  |
|        | 62      | 1381                  | 103  | 1344 | 102  | 1306 | 101  | 1269 | 100  | 1258 | 100  | 1247 | 100  | 1241 | 100  | 1234 | 100  | 1227 | 99   | 1221 | 99   |
| 35,000 | 75      | 1560                  | 108  | 1558 | 108  | 1557 | 108  | 1555 | 108  | 1554 | 108  | 1552 | 108  | 1552 | 108  |      |      |      |      |      |      |
|        | 71      | 1465                  | 105  | 1463 | 105  | 1462 | 105  | 1461 | 105  | 1459 | 105  | 1458 | 105  | 1457 | 105  | 1456 | 105  | 1456 | 105  |      |      |
|        | 67      | 1409                  | 104  | 1395 | 104  | 1382 | 103  | 1369 | 103  | 1367 | 103  | 1365 | 103  | 1357 | 103  | 1349 | 103  | 1341 | 102  | 1334 | 102  |
|        | 62      | 1408                  | 104  | 1368 | 103  | 1328 | 102  | 1289 | 101  | 1275 | 101  | 1261 | 100  | 1252 | 100  | 1244 | 100  | 1235 | 100  | 1226 | 100  |
| 36,000 | 75      | 1568                  | 108  | 1566 | 108  | 1565 | 108  | 1564 | 108  | 1562 | 108  | 1560 | 108  | 1560 | 108  |      |      |      |      |      |      |
|        | 71      | 1473                  | 106  | 1472 | 106  | 1471 | 106  | 1469 | 106  | 1468 | 106  | 1466 | 106  | 1465 | 105  | 1464 | 105  | 1464 | 105  |      |      |
|        | 67      | 1422                  | 104  | 1407 | 104  | 1392 | 104  | 1377 | 103  | 1375 | 103  | 1372 | 103  | 1364 | 103  | 1355 | 103  | 1346 | 103  | 1337 | 102  |
|        | 62      | 1423                  | 104  | 1382 | 103  | 1341 | 102  | 1300 | 101  | 1285 | 101  | 1269 | 101  | 1259 | 100  | 1249 | 100  | 1240 | 100  | 1230 | 100  |

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

TABLE 11 – COOLING PERFORMANCE DATA\* – 105 TON MODEL (CONT'D)

## 95°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 21,000 | 75      | 1356                  | 113  | 1355 | 113  | 1354 | 113  | 1354 | 113  | 1353 | 113  | 1353 | 113  | 1354 | 113  |      |      |      |      |      |      |
|        | 71      | 1266                  | 111  | 1265 | 111  | 1265 | 111  | 1264 | 111  | 1263 | 111  | 1263 | 111  | 1263 | 111  | 1263 | 111  | 1264 | 111  |      |      |
|        | 67      | 1180                  | 109  | 1180 | 109  | 1180 | 109  | 1180 | 109  | 1179 | 109  | 1179 | 109  | 1178 | 109  | 1178 | 109  | 1178 | 109  | 1178 | 109  |
|        | 62      | 1123                  | 107  | 1110 | 107  | 1096 | 107  | 1082 | 106  | 1082 | 106  | 1082 | 106  | 1081 | 106  | 1080 | 106  | 1080 | 106  | 1079 | 106  |
| 22,750 | 75      | 1377                  | 114  | 1376 | 114  | 1375 | 114  | 1375 | 114  | 1374 | 114  | 1374 | 114  | 1374 | 114  |      |      |      |      |      |      |
|        | 71      | 1287                  | 111  | 1286 | 111  | 1285 | 111  | 1285 | 111  | 1284 | 111  | 1283 | 111  | 1283 | 111  | 1284 | 111  | 1284 | 111  |      |      |
|        | 67      | 1202                  | 109  | 1201 | 109  | 1201 | 109  | 1200 | 109  | 1200 | 109  | 1199 | 109  | 1199 | 109  | 1198 | 109  | 1198 | 109  | 1197 | 109  |
|        | 62      | 1158                  | 108  | 1139 | 108  | 1120 | 107  | 1101 | 107  | 1101 | 107  | 1101 | 107  | 1100 | 107  | 1099 | 107  | 1098 | 107  | 1097 | 107  |
| 24,500 | 75      | 1398                  | 114  | 1397 | 114  | 1396 | 114  | 1395 | 114  | 1395 | 114  | 1394 | 114  | 1395 | 114  |      |      |      |      |      |      |
|        | 71      | 1308                  | 112  | 1307 | 112  | 1306 | 112  | 1305 | 112  | 1305 | 112  | 1304 | 112  | 1304 | 112  | 1304 | 112  | 1304 | 112  |      |      |
|        | 67      | 1223                  | 110  | 1222 | 110  | 1221 | 110  | 1220 | 110  | 1220 | 110  | 1219 | 110  | 1219 | 110  | 1218 | 110  | 1218 | 110  | 1217 | 110  |
|        | 62      | 1192                  | 109  | 1168 | 108  | 1145 | 108  | 1121 | 107  | 1120 | 107  | 1119 | 107  | 1119 | 107  | 1118 | 107  | 1117 | 107  | 1116 | 107  |
| 26,250 | 75      | 1419                  | 115  | 1418 | 115  | 1417 | 115  | 1416 | 115  | 1415 | 115  | 1414 | 115  | 1415 | 115  |      |      |      |      |      |      |
|        | 71      | 1329                  | 113  | 1328 | 112  | 1327 | 112  | 1326 | 112  | 1325 | 112  | 1324 | 112  | 1324 | 112  | 1324 | 112  | 1324 | 112  |      |      |
|        | 67      | 1245                  | 110  | 1243 | 110  | 1242 | 110  | 1241 | 110  | 1240 | 110  | 1239 | 110  | 1239 | 110  | 1238 | 110  | 1238 | 110  | 1237 | 110  |
|        | 62      | 1226                  | 110  | 1198 | 109  | 1169 | 108  | 1141 | 108  | 1139 | 108  | 1138 | 108  | 1137 | 108  | 1136 | 108  | 1135 | 108  | 1134 | 108  |
| 28,000 | 75      | 1440                  | 116  | 1439 | 116  | 1438 | 116  | 1437 | 116  | 1436 | 115  | 1435 | 115  | 1436 | 115  |      |      |      |      |      |      |
|        | 71      | 1350                  | 113  | 1349 | 113  | 1348 | 113  | 1347 | 113  | 1346 | 113  | 1345 | 113  | 1344 | 113  | 1344 | 112  | 1344 | 112  |      |      |
|        | 67      | 1266                  | 111  | 1264 | 111  | 1263 | 111  | 1261 | 111  | 1260 | 111  | 1260 | 111  | 1259 | 111  | 1258 | 111  | 1257 | 111  | 1257 | 111  |
|        | 62      | 1260                  | 111  | 1227 | 110  | 1194 | 109  | 1160 | 108  | 1159 | 108  | 1157 | 108  | 1156 | 108  | 1155 | 108  | 1154 | 108  | 1153 | 108  |
| 29,750 | 75      | 1453                  | 116  | 1452 | 116  | 1451 | 116  | 1450 | 116  | 1449 | 116  | 1448 | 116  | 1448 | 116  |      |      |      |      |      |      |
|        | 71      | 1363                  | 113  | 1362 | 113  | 1361 | 113  | 1360 | 113  | 1359 | 113  | 1358 | 113  | 1357 | 113  | 1357 | 113  | 1356 | 113  |      |      |
|        | 67      | 1290                  | 112  | 1285 | 111  | 1279 | 111  | 1274 | 111  | 1272 | 111  | 1271 | 111  | 1271 | 111  | 1270 | 111  | 1269 | 111  | 1269 | 111  |
|        | 62      | 1286                  | 111  | 1251 | 111  | 1216 | 110  | 1182 | 109  | 1176 | 109  | 1170 | 108  | 1169 | 108  | 1168 | 108  | 1167 | 108  | 1166 | 108  |
| 31,500 | 75      | 1467                  | 116  | 1466 | 116  | 1464 | 116  | 1463 | 116  | 1462 | 116  | 1460 | 116  | 1461 | 116  |      |      |      |      |      |      |
|        | 71      | 1377                  | 114  | 1375 | 114  | 1374 | 114  | 1373 | 114  | 1372 | 114  | 1371 | 114  | 1370 | 113  | 1369 | 113  | 1369 | 113  |      |      |
|        | 67      | 1315                  | 112  | 1305 | 112  | 1296 | 112  | 1286 | 111  | 1285 | 111  | 1283 | 111  | 1282 | 111  | 1282 | 111  | 1281 | 111  | 1281 | 112  |
|        | 62      | 1311                  | 112  | 1275 | 111  | 1239 | 110  | 1203 | 109  | 1193 | 109  | 1183 | 109  | 1181 | 109  | 1180 | 109  | 1179 | 109  | 1178 | 109  |
| 33,250 | 75      | 1480                  | 117  | 1479 | 117  | 1478 | 117  | 1476 | 117  | 1475 | 117  | 1473 | 117  | 1474 | 117  |      |      |      |      |      |      |
|        | 71      | 1390                  | 114  | 1389 | 114  | 1388 | 114  | 1387 | 114  | 1385 | 114  | 1384 | 114  | 1383 | 114  | 1382 | 114  | 1381 | 114  |      |      |
|        | 67      | 1339                  | 113  | 1326 | 112  | 1312 | 112  | 1299 | 112  | 1297 | 112  | 1294 | 112  | 1294 | 112  | 1294 | 112  | 1293 | 112  | 1293 | 112  |
|        | 62      | 1337                  | 113  | 1299 | 112  | 1262 | 111  | 1225 | 110  | 1210 | 109  | 1195 | 109  | 1194 | 109  | 1193 | 109  | 1192 | 109  | 1191 | 109  |
| 35,000 | 75      | 1494                  | 117  | 1492 | 117  | 1491 | 117  | 1489 | 117  | 1488 | 117  | 1486 | 117  | 1486 | 117  |      |      |      |      |      |      |
|        | 71      | 1403                  | 115  | 1402 | 114  | 1401 | 114  | 1400 | 114  | 1398 | 114  | 1396 | 114  | 1396 | 114  | 1395 | 114  | 1394 | 114  |      |      |
|        | 67      | 1363                  | 113  | 1346 | 113  | 1329 | 112  | 1312 | 112  | 1309 | 112  | 1306 | 112  | 1306 | 112  | 1305 | 112  | 1305 | 112  | 1305 | 112  |
|        | 62      | 1362                  | 113  | 1323 | 112  | 1285 | 111  | 1246 | 110  | 1227 | 110  | 1208 | 109  | 1207 | 109  | 1206 | 109  | 1204 | 109  | 1203 | 109  |
| 36,000 | 75      | 1501                  | 117  | 1500 | 117  | 1498 | 117  | 1497 | 117  | 1495 | 117  | 1493 | 117  | 1493 | 117  |      |      |      |      |      |      |
|        | 71      | 1411                  | 115  | 1410 | 115  | 1409 | 115  | 1407 | 115  | 1406 | 115  | 1404 | 115  | 1403 | 114  | 1402 | 114  | 1401 | 114  |      |      |
|        | 67      | 1377                  | 114  | 1358 | 113  | 1339 | 113  | 1319 | 112  | 1316 | 112  | 1313 | 112  | 1312 | 112  | 1312 | 112  | 1312 | 112  | 1312 | 112  |
|        | 62      | 1376                  | 114  | 1337 | 113  | 1298 | 112  | 1258 | 111  | 1237 | 110  | 1216 | 110  | 1214 | 109  | 1213 | 109  | 1212 | 109  | 1210 | 109  |

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

# Cooling Performance Data – 105 Ton Model (Cont'd)

TABLE 11 – COOLING PERFORMANCE DATA\* – 105 TON MODEL (CONT'D)

## 105°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 21,000 | 75      | 1409                  | 104  | 1408 | 104  | 1407 | 104  | 1407 | 104  | 1407 | 104  | 1406 | 104  | 1407 | 104  |      |      |      |      |      |      |
|        | 71      | 1315                  | 102  | 1314 | 102  | 1314 | 102  | 1313 | 102  | 1312 | 102  | 1312 | 102  | 1312 | 102  | 1312 | 102  | 1313 | 102  |      |      |
|        | 67      | 1226                  | 100  | 1226 | 100  | 1226 | 100  | 1226 | 100  | 1225 | 100  | 1225 | 100  | 1224 | 100  | 1224 | 100  | 1224 | 100  | 1223 | 100  |
|        | 62      | 1157                  | 98   | 1146 | 98   | 1135 | 98   | 1124 | 97   | 1124 | 97   | 1124 | 97   | 1123 | 97   | 1123 | 97   | 1123 | 97   | 1122 | 97   |
| 22,750 | 75      | 1432                  | 104  | 1432 | 104  | 1431 | 104  | 1430 | 104  | 1430 | 104  | 1429 | 104  | 1430 | 104  |      |      |      |      |      |      |
|        | 71      | 1338                  | 102  | 1337 | 102  | 1337 | 102  | 1336 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  | 1335 | 102  |      |      |
|        | 67      | 1250                  | 100  | 1249 | 100  | 1249 | 100  | 1248 | 100  | 1248 | 100  | 1247 | 100  | 1247 | 100  | 1246 | 100  | 1246 | 100  | 1245 | 100  |
|        | 62      | 1193                  | 99   | 1177 | 98   | 1161 | 98   | 1145 | 98   | 1145 | 98   | 1144 | 98   | 1144 | 98   | 1143 | 98   | 1143 | 98   | 1143 | 98   |
| 24,500 | 75      | 1456                  | 105  | 1455 | 105  | 1454 | 105  | 1454 | 105  | 1453 | 105  | 1452 | 105  | 1453 | 105  |      |      |      |      |      |      |
|        | 71      | 1362                  | 103  | 1361 | 103  | 1360 | 103  | 1359 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  | 1358 | 102  |      |      |
|        | 67      | 1273                  | 100  | 1272 | 100  | 1271 | 100  | 1271 | 100  | 1270 | 100  | 1269 | 100  | 1269 | 100  | 1268 | 100  | 1268 | 100  | 1267 | 100  |
|        | 62      | 1229                  | 99   | 1208 | 99   | 1187 | 98   | 1166 | 98   | 1166 | 98   | 1165 | 98   | 1165 | 98   | 1164 | 98   | 1163 | 98   | 1163 | 98   |
| 26,250 | 75      | 1480                  | 105  | 1479 | 105  | 1478 | 105  | 1477 | 105  | 1476 | 105  | 1475 | 105  | 1476 | 105  |      |      |      |      |      |      |
|        | 71      | 1385                  | 103  | 1384 | 103  | 1383 | 103  | 1382 | 103  | 1381 | 103  | 1380 | 103  | 1380 | 103  | 1380 | 103  | 1380 | 103  |      |      |
|        | 67      | 1296                  | 101  | 1295 | 101  | 1294 | 101  | 1293 | 101  | 1292 | 101  | 1291 | 101  | 1291 | 101  | 1290 | 101  | 1290 | 101  | 1289 | 101  |
|        | 62      | 1265                  | 100  | 1239 | 99   | 1213 | 99   | 1187 | 98   | 1187 | 98   | 1186 | 98   | 1185 | 98   | 1184 | 98   | 1184 | 98   | 1183 | 98   |
| 28,000 | 75      | 1503                  | 106  | 1502 | 106  | 1501 | 106  | 1501 | 106  | 1499 | 106  | 1498 | 106  | 1499 | 106  |      |      |      |      |      |      |
|        | 71      | 1408                  | 103  | 1407 | 103  | 1406 | 103  | 1405 | 103  | 1404 | 103  | 1403 | 103  | 1403 | 103  | 1403 | 103  | 1403 | 103  |      |      |
|        | 67      | 1319                  | 101  | 1318 | 101  | 1317 | 101  | 1316 | 101  | 1315 | 101  | 1314 | 101  | 1313 | 101  | 1313 | 101  | 1312 | 101  | 1312 | 101  |
|        | 62      | 1302                  | 101  | 1271 | 100  | 1239 | 99   | 1208 | 99   | 1208 | 99   | 1207 | 99   | 1206 | 99   | 1205 | 98   | 1204 | 98   | 1203 | 98   |
| 29,750 | 75      | 1517                  | 106  | 1516 | 106  | 1515 | 106  | 1514 | 106  | 1513 | 106  | 1512 | 106  | 1512 | 106  |      |      |      |      |      |      |
|        | 71      | 1422                  | 104  | 1421 | 104  | 1420 | 104  | 1419 | 104  | 1418 | 104  | 1417 | 104  | 1417 | 104  | 1416 | 104  | 1416 | 104  |      |      |
|        | 67      | 1341                  | 102  | 1337 | 102  | 1333 | 102  | 1329 | 102  | 1328 | 102  | 1326 | 102  | 1324 | 101  | 1322 | 101  | 1319 | 101  | 1317 | 101  |
|        | 62      | 1328                  | 102  | 1295 | 101  | 1262 | 100  | 1228 | 99   | 1224 | 99   | 1220 | 99   | 1217 | 99   | 1215 | 99   | 1212 | 99   | 1209 | 99   |
| 31,500 | 75      | 1531                  | 107  | 1530 | 107  | 1529 | 107  | 1528 | 107  | 1527 | 107  | 1525 | 107  | 1526 | 107  |      |      |      |      |      |      |
|        | 71      | 1436                  | 104  | 1435 | 104  | 1434 | 104  | 1433 | 104  | 1432 | 104  | 1431 | 104  | 1430 | 104  | 1430 | 104  | 1429 | 104  |      |      |
|        | 67      | 1364                  | 103  | 1356 | 102  | 1349 | 102  | 1342 | 102  | 1341 | 102  | 1339 | 102  | 1335 | 102  | 1331 | 102  | 1327 | 102  | 1323 | 102  |
|        | 62      | 1355                  | 102  | 1319 | 102  | 1284 | 101  | 1249 | 100  | 1241 | 100  | 1234 | 99   | 1229 | 99   | 1224 | 99   | 1220 | 99   | 1215 | 99   |
| 33,250 | 75      | 1545                  | 107  | 1544 | 107  | 1543 | 107  | 1542 | 107  | 1540 | 107  | 1539 | 107  | 1539 | 107  |      |      |      |      |      |      |
|        | 71      | 1451                  | 105  | 1449 | 105  | 1448 | 105  | 1447 | 105  | 1446 | 105  | 1444 | 105  | 1444 | 105  | 1443 | 105  | 1442 | 105  |      |      |
|        | 67      | 1386                  | 103  | 1376 | 103  | 1366 | 103  | 1356 | 103  | 1354 | 103  | 1352 | 102  | 1346 | 102  | 1340 | 102  | 1334 | 102  | 1328 | 102  |
|        | 62      | 1381                  | 103  | 1344 | 102  | 1306 | 101  | 1269 | 100  | 1258 | 100  | 1247 | 100  | 1241 | 100  | 1234 | 100  | 1227 | 99   | 1221 | 99   |
| 35,000 | 75      | 1560                  | 108  | 1558 | 108  | 1557 | 108  | 1555 | 108  | 1554 | 108  | 1552 | 108  | 1552 | 108  |      |      |      |      |      |      |
|        | 71      | 1465                  | 105  | 1463 | 105  | 1462 | 105  | 1461 | 105  | 1459 | 105  | 1458 | 105  | 1457 | 105  | 1456 | 105  | 1456 | 105  |      |      |
|        | 67      | 1409                  | 104  | 1395 | 104  | 1382 | 103  | 1369 | 103  | 1367 | 103  | 1365 | 103  | 1357 | 103  | 1349 | 103  | 1341 | 102  | 1334 | 102  |
|        | 62      | 1408                  | 104  | 1368 | 103  | 1328 | 102  | 1289 | 101  | 1275 | 101  | 1261 | 100  | 1252 | 100  | 1244 | 100  | 1235 | 100  | 1226 | 100  |
| 36,000 | 75      | 1568                  | 108  | 1566 | 108  | 1565 | 108  | 1564 | 108  | 1562 | 108  | 1560 | 108  | 1560 | 108  |      |      |      |      |      |      |
|        | 71      | 1473                  | 106  | 1472 | 106  | 1471 | 106  | 1469 | 106  | 1468 | 106  | 1466 | 106  | 1465 | 105  | 1464 | 105  | 1464 | 105  |      |      |
|        | 67      | 1422                  | 104  | 1407 | 104  | 1392 | 104  | 1377 | 103  | 1375 | 103  | 1372 | 103  | 1364 | 103  | 1355 | 103  | 1346 | 103  | 1337 | 102  |
|        | 62      | 1423                  | 104  | 1382 | 103  | 1341 | 102  | 1300 | 101  | 1285 | 101  | 1269 | 101  | 1259 | 100  | 1249 | 100  | 1240 | 100  | 1230 | 100  |

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

TABLE 11 – COOLING PERFORMANCE DATA\* – 105 TON MODEL (CONT'D)

## 115°F OUTDOOR AMBIENT TEMPERATURE

|        |         | ENTERING AIR DRY BULB |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|--------|---------|-----------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|        |         | 95°F                  |      | 92°F |      | 89°F |      | 86°F |      | 83°F |      | 80°F |      | 77°F |      | 74°F |      | 71°F |      | 68°F |      |
| CFM    | WB (°F) | TMBH                  | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH | TMBH | SMBH |
| 21,000 | 75      | 1356                  | 113  | 1355 | 113  | 1354 | 113  | 1354 | 113  | 1353 | 113  | 1353 | 113  | 1354 | 113  |      |      |      |      |      |      |
|        | 71      | 1266                  | 111  | 1265 | 111  | 1265 | 111  | 1264 | 111  | 1263 | 111  | 1263 | 111  | 1263 | 111  | 1263 | 111  | 1264 | 111  |      |      |
|        | 67      | 1180                  | 109  | 1180 | 109  | 1180 | 109  | 1180 | 109  | 1179 | 109  | 1179 | 109  | 1178 | 109  | 1178 | 109  | 1178 | 109  | 1178 | 109  |
|        | 62      | 1123                  | 107  | 1110 | 107  | 1096 | 107  | 1082 | 106  | 1082 | 106  | 1082 | 106  | 1081 | 106  | 1080 | 106  | 1080 | 106  | 1079 | 106  |
| 22,750 | 75      | 1377                  | 114  | 1376 | 114  | 1375 | 114  | 1375 | 114  | 1374 | 114  | 1374 | 114  | 1374 | 114  |      |      |      |      |      |      |
|        | 71      | 1287                  | 111  | 1286 | 111  | 1285 | 111  | 1285 | 111  | 1284 | 111  | 1283 | 111  | 1283 | 111  | 1284 | 111  | 1284 | 111  |      |      |
|        | 67      | 1202                  | 109  | 1201 | 109  | 1201 | 109  | 1200 | 109  | 1200 | 109  | 1199 | 109  | 1199 | 109  | 1198 | 109  | 1198 | 109  | 1197 | 109  |
|        | 62      | 1158                  | 108  | 1139 | 108  | 1120 | 107  | 1101 | 107  | 1101 | 107  | 1101 | 107  | 1100 | 107  | 1099 | 107  | 1098 | 107  | 1097 | 107  |
| 24,500 | 75      | 1398                  | 114  | 1397 | 114  | 1396 | 114  | 1395 | 114  | 1395 | 114  | 1394 | 114  | 1395 | 114  |      |      |      |      |      |      |
|        | 71      | 1308                  | 112  | 1307 | 112  | 1306 | 112  | 1305 | 112  | 1305 | 112  | 1304 | 112  | 1304 | 112  | 1304 | 112  | 1304 | 112  |      |      |
|        | 67      | 1223                  | 110  | 1222 | 110  | 1221 | 110  | 1220 | 110  | 1220 | 110  | 1219 | 110  | 1219 | 110  | 1218 | 110  | 1218 | 110  | 1217 | 110  |
|        | 62      | 1192                  | 109  | 1168 | 108  | 1145 | 108  | 1121 | 107  | 1120 | 107  | 1119 | 107  | 1119 | 107  | 1118 | 107  | 1117 | 107  | 1116 | 107  |
| 26,250 | 75      | 1419                  | 115  | 1418 | 115  | 1417 | 115  | 1416 | 115  | 1415 | 115  | 1414 | 115  | 1415 | 115  |      |      |      |      |      |      |
|        | 71      | 1329                  | 113  | 1328 | 112  | 1327 | 112  | 1326 | 112  | 1325 | 112  | 1324 | 112  | 1324 | 112  | 1324 | 112  | 1324 | 112  |      |      |
|        | 67      | 1245                  | 110  | 1243 | 110  | 1242 | 110  | 1241 | 110  | 1240 | 110  | 1239 | 110  | 1239 | 110  | 1238 | 110  | 1238 | 110  | 1237 | 110  |
|        | 62      | 1226                  | 110  | 1198 | 109  | 1169 | 108  | 1141 | 108  | 1139 | 108  | 1138 | 108  | 1137 | 108  | 1136 | 108  | 1135 | 108  | 1134 | 108  |
| 28,000 | 75      | 1440                  | 116  | 1439 | 116  | 1438 | 116  | 1437 | 116  | 1436 | 115  | 1435 | 115  | 1436 | 115  |      |      |      |      |      |      |
|        | 71      | 1350                  | 113  | 1349 | 113  | 1348 | 113  | 1347 | 113  | 1346 | 113  | 1345 | 113  | 1344 | 113  | 1344 | 112  | 1344 | 112  |      |      |
|        | 67      | 1266                  | 111  | 1264 | 111  | 1263 | 111  | 1261 | 111  | 1260 | 111  | 1260 | 111  | 1259 | 111  | 1258 | 111  | 1257 | 111  | 1257 | 111  |
|        | 62      | 1260                  | 111  | 1227 | 110  | 1194 | 109  | 1160 | 108  | 1159 | 108  | 1157 | 108  | 1156 | 108  | 1155 | 108  | 1154 | 108  | 1153 | 108  |
| 29,750 | 75      | 1453                  | 116  | 1452 | 116  | 1451 | 116  | 1450 | 116  | 1449 | 116  | 1448 | 116  | 1448 | 116  |      |      |      |      |      |      |
|        | 71      | 1363                  | 113  | 1362 | 113  | 1361 | 113  | 1360 | 113  | 1359 | 113  | 1358 | 113  | 1357 | 113  | 1357 | 113  | 1356 | 113  |      |      |
|        | 67      | 1290                  | 112  | 1285 | 111  | 1279 | 111  | 1274 | 111  | 1272 | 111  | 1271 | 111  | 1271 | 111  | 1270 | 111  | 1269 | 111  | 1269 | 111  |
|        | 62      | 1286                  | 111  | 1251 | 111  | 1216 | 110  | 1182 | 109  | 1176 | 109  | 1170 | 108  | 1169 | 108  | 1168 | 108  | 1167 | 108  | 1166 | 108  |
| 31,500 | 75      | 1467                  | 116  | 1466 | 116  | 1464 | 116  | 1463 | 116  | 1462 | 116  | 1460 | 116  | 1461 | 116  |      |      |      |      |      |      |
|        | 71      | 1377                  | 114  | 1375 | 114  | 1374 | 114  | 1373 | 114  | 1372 | 114  | 1371 | 114  | 1370 | 113  | 1369 | 113  | 1369 | 113  |      |      |
|        | 67      | 1315                  | 112  | 1305 | 112  | 1296 | 112  | 1286 | 111  | 1285 | 111  | 1283 | 111  | 1282 | 111  | 1282 | 111  | 1281 | 111  | 1281 | 112  |
|        | 62      | 1311                  | 112  | 1275 | 111  | 1239 | 110  | 1203 | 109  | 1193 | 109  | 1183 | 109  | 1181 | 109  | 1180 | 109  | 1179 | 109  | 1178 | 109  |
| 33,250 | 75      | 1480                  | 117  | 1479 | 117  | 1478 | 117  | 1476 | 117  | 1475 | 117  | 1473 | 117  | 1474 | 117  |      |      |      |      |      |      |
|        | 71      | 1390                  | 114  | 1389 | 114  | 1388 | 114  | 1387 | 114  | 1385 | 114  | 1384 | 114  | 1383 | 114  | 1382 | 114  | 1381 | 114  |      |      |
|        | 67      | 1339                  | 113  | 1326 | 112  | 1312 | 112  | 1299 | 112  | 1297 | 112  | 1294 | 112  | 1294 | 112  | 1294 | 112  | 1293 | 112  | 1293 | 112  |
|        | 62      | 1337                  | 113  | 1299 | 112  | 1262 | 111  | 1225 | 110  | 1210 | 109  | 1195 | 109  | 1194 | 109  | 1193 | 109  | 1192 | 109  | 1191 | 109  |
| 35,000 | 75      | 1494                  | 117  | 1492 | 117  | 1491 | 117  | 1489 | 117  | 1488 | 117  | 1486 | 117  | 1486 | 117  |      |      |      |      |      |      |
|        | 71      | 1403                  | 115  | 1402 | 114  | 1401 | 114  | 1400 | 114  | 1398 | 114  | 1396 | 114  | 1396 | 114  | 1395 | 114  | 1394 | 114  |      |      |
|        | 67      | 1363                  | 113  | 1346 | 113  | 1329 | 112  | 1312 | 112  | 1309 | 112  | 1306 | 112  | 1306 | 112  | 1305 | 112  | 1305 | 112  | 1305 | 112  |
|        | 62      | 1362                  | 113  | 1323 | 112  | 1285 | 111  | 1246 | 110  | 1227 | 110  | 1208 | 109  | 1207 | 109  | 1206 | 109  | 1204 | 109  | 1203 | 109  |
| 36,000 | 75      | 1501                  | 117  | 1500 | 117  | 1498 | 117  | 1497 | 117  | 1495 | 117  | 1493 | 117  | 1493 | 117  |      |      |      |      |      |      |
|        | 71      | 1411                  | 115  | 1410 | 115  | 1409 | 115  | 1407 | 115  | 1406 | 115  | 1404 | 115  | 1403 | 114  | 1402 | 114  | 1401 | 114  |      |      |
|        | 67      | 1377                  | 114  | 1358 | 113  | 1339 | 113  | 1319 | 112  | 1316 | 112  | 1313 | 112  | 1312 | 112  | 1312 | 112  | 1312 | 112  | 1312 | 112  |
|        | 62      | 1376                  | 114  | 1337 | 113  | 1298 | 112  | 1258 | 111  | 1237 | 110  | 1216 | 110  | 1214 | 109  | 1213 | 109  | 1212 | 109  | 1210 | 109  |

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

## Heating Performance Data – Gas/Electric Heat

### GAS HEATING

TABLE 12 - GAS HEAT PERFORMANCE DATA

| Unit   | Gas Input Capacity<br>(Btu/hr x 1000) | Maximum Output Capacity<br>(Btu/hr x 1000) | Airflow<br>Minimum | Temp. Rise<br>(°F) |
|--------|---------------------------------------|--|--------------------|--------------------|
| 70–80  | 375                                   | 300  | 7,500              | 10–40              |
|        | 750                                   | 600  | 11,150             | 20–50              |
|        | 1125                                  | 900  | 15,150             | 25–55              |
| 90–105 | 375                                   | 300  | 6,950              | 10–40              |
|        | 750                                   | 600  | 11,150             | 20–50              |
|        | 1125                                  | 900  | 15,150             | 25–55              |

**NOTE**

Gas valve rated for 0.5 psig. If gas pressure greater than 0.5 psig then a gas pressure regulator is required.  
Minimum gas pressure is 4.5 iwg.

### ELECTRIC HEATING

TABLE 13 - ELECTRIC HEAT PERFORMANCE DATA

| UNIT       | SIZE (kW) | HEAT CAPACITY<br>(MBH) | AIRFLOW MIN<br>(CFM) | MAX TEMP RISE<br>(°F) |
|------------|-----------|------------------------|----------------------|-----------------------|
| 70–80 TON  | 80        | 273                    | 10,000               | 25                    |
|            | 108       | 369                    | 12,000               | 28                    |
|            | 150       | 512                    | 14,000               | 34                    |
|            | 200       | 683                    | 15,000               | 42                    |
| 90–105 TON | 108       | 369                    | 12,000               | 28                    |
|            | 150       | 512                    | 14,000               | 34                    |
|            | 200       | 683                    | 15,000               | 42                    |
|            | 250       | 854                    | 16,000               | 49                    |



## Supply Fan Data

**TABLE 14 - YPAL070–080: 28X25 FORWARD-CURVED FAN**

| TOTAL STATIC PRESSURE (IWG) |     |     |     |      |     |      |     |      |     |      |     |     |
|-----------------------------|-----|-----|-----|------|-----|------|-----|------|-----|------|-----|-----|
| CFM<br>STD. AIR             | 1.0 |     | 2.0 |      | 3.0 |      | 4.0 |      | 5.0 |      | 6.0 |     |
|                             | BHP | RPM | BHP | RPM  | BHP | RPM  | BHP | RPM  | BHP | RPM  | BHP | RPM |
| 18,000                      |     |     | 513 | 10.0 | 616 | 13.9 |     |      |     |      |     |     |
| 20,000                      |     |     | 520 | 11.7 | 619 | 15.9 | 717 | 20.8 |     |      |     |     |
| 22,000                      |     |     | 527 | 13.6 | 629 | 18.3 | 712 | 22.9 | 808 | 28.9 |     |     |
| 24,000                      |     |     | 537 | 15.8 | 637 | 20.9 | 720 | 25.9 | 795 | 31.1 |     |     |
| 26,000                      |     |     | 549 | 18.3 | 643 | 23.6 | 729 | 29.1 | 801 | 34.5 |     |     |
| 28,000                      |     |     | 562 | 21.2 | 651 | 26.6 | 736 | 32.6 | 810 | 38.5 |     |     |
| 30,000                      |     |     | 574 | 24.2 | 662 | 30.1 | 742 | 36.3 | 819 | 42.8 |     |     |
| 32,000                      |     |     | 585 | 27.4 | 674 | 34.0 | 750 | 40.3 | 825 | 47.2 |     |     |
| 34,000                      |     |     | 597 | 30.9 | 686 | 38.2 | 760 | 44.8 |     |      |     |     |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

**TABLE 15 - YPAL070–105: 32-INCH AIRFOIL FAN**

| TOTAL STATIC PRESSURE (IWG) |      |      |      |      |      |      |      |      |      |      |      |      |
|-----------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| CFM<br>STD. AIR             | 1.0  |      | 2.0  |      | 3.0  |      | 4.0  |      | 5.0  |      | 6.0  |      |
|                             | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  |
| 18,000                      |      |      |      |      | 937  | 12.8 | 1046 | 17.0 | 1149 | 21.7 | 1249 | 26.8 |
| 20,000                      |      |      |      |      | 970  | 14.6 | 1071 | 18.9 | 1168 | 23.7 | 1261 | 28.8 |
| 22,000                      |      |      | 906  | 12.4 | 1006 | 16.6 | 1101 | 21.1 | 1192 | 26.0 | 1280 | 31.2 |
| 24,000                      |      |      | 951  | 14.5 | 1046 | 18.9 | 1136 | 23.6 | 1222 | 28.7 | 1305 | 34.0 |
| 26,000                      | 900  | 12.4 | 998  | 16.8 | 1088 | 21.5 | 1174 | 26.4 | 1255 | 31.7 | 1334 | 37.2 |
| 28,000                      | 954  | 14.8 | 1047 | 19.5 | 1133 | 24.4 | 1214 | 29.6 | 1292 | 35.0 | 1367 | 40.7 |
| 30,000                      | 1008 | 17.4 | 1097 | 22.4 | 1179 | 27.6 | 1256 | 33.1 | 1331 | 38.7 | 1402 | 44.6 |
| 32,000                      | 1064 | 20.5 | 1148 | 25.8 | 1226 | 31.2 | 1300 | 36.9 | 1372 | 42.8 | 1440 | 48.9 |
| <b>YPAL090–105 Only</b>     |      |      |      |      |      |      |      |      |      |      |      |      |
| 34,000                      | 1119 | 23.8 | 1200 | 29.4 | 1275 | 35.2 | 1346 | 41.1 | 1414 | 47.3 | 1481 | 53.6 |
| 36,000                      | 1176 | 27.6 | 1252 | 33.5 | 1324 | 39.5 | 1393 | 45.7 | 1459 | 52.1 | 1523 | 58.7 |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

## Component Static Pressure Drops

**TABLE 16 - YPAL070–105: DDP402-9-100 DIRECT DRIVE PLENUM (DDP) SUPPLY FAN**

| TOTAL STATIC PRESSURE (IWG) |       |      |       |      |       |      |       |      |       |      |       |      |
|-----------------------------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|
| CFM<br>STD. AIR             | 1.0   |      | 2.0   |      | 3.0   |      | 4.0   |      | 5.0   |      | 6.0   |      |
|                             | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  |
| 14,000                      | 557   | 3.5  | 672   | 6.5  | 790   | 10.1 | 906   | 14.1 | 1,013 | 18.3 | 1,109 | 22.8 |
| 16,000                      | 604   | 4.3  | 706   | 7.6  | 807   | 11.2 | 911   | 15.4 | 1,013 | 20.0 | 1,110 | 24.8 |
| 18,000                      | 652   | 5.2  | 748   | 8.8  | 836   | 12.6 | 927   | 16.9 | 1,019 | 21.6 | 1,111 | 26.7 |
| 20,000                      | 701   | 6.2  | 792   | 10.1 | 873   | 14.2 | 953   | 18.7 | 1,035 | 23.5 | 1,118 | 28.8 |
| 22,000                      | 751   | 7.3  | 839   | 11.6 | 915   | 16.0 | 987   | 20.7 | 1,060 | 25.7 | 1,134 | 31.0 |
| 24,000                      | 801   | 8.5  | 887   | 13.3 | 959   | 18.0 | 1,026 | 23.0 | 1,093 | 28.1 | 1,159 | 33.6 |
| 26,000                      | 852   | 9.9  | 936   | 15.1 | 1,005 | 20.2 | 1,069 | 25.5 | 1,131 | 30.9 | 1,192 | 36.5 |
| 28,000                      | 905   | 11.5 | 985   | 17.1 | 1,053 | 22.6 | 1,114 | 28.2 | 1,172 | 33.9 | 1,229 | 39.8 |
| 30,000                      | 958   | 13.3 | 1,034 | 19.3 | 1,101 | 25.2 | 1,160 | 31.1 | 1,216 | 37.1 | 1,270 | 43.3 |
| 32,000                      | 1,012 | 15.4 | 1,084 | 21.6 | 1,150 | 28.0 | 1,208 | 34.3 | 1,261 | 40.6 | 1,313 | 47.1 |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

**TABLE 17 - YPAL070–105: DDP402-9-120 DIRECT DRIVE PLENUM (DDP) SUPPLY FAN**

| TOTAL STATIC PRESSURE (IWG) |     |      |       |      |       |      |       |      |       |      |       |      |
|-----------------------------|-----|------|-------|------|-------|------|-------|------|-------|------|-------|------|
| CFM<br>STD. AIR             | 1.0 |      | 2.0   |      | 3.0   |      | 4.0   |      | 5.0   |      | 6.0   |      |
|                             | BHP | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  | BHP   | RPM  |
| 18,000                      | 596 | 4.8  | 699   | 8.5  | 803   | 12.8 | 909   | 17.6 | 1,013 | 22.9 |       |      |
| 20,000                      | 637 | 5.7  | 734   | 9.7  | 826   | 14.1 | 920   | 19.1 | 1,016 | 24.5 | 1,110 | 30.3 |
| 22,000                      | 680 | 6.6  | 772   | 11.0 | 856   | 15.7 | 940   | 20.7 | 1,026 | 26.3 | 1,113 | 32.3 |
| 24,000                      | 723 | 7.7  | 813   | 12.5 | 890   | 17.4 | 966   | 22.6 | 1,044 | 28.3 | 1,123 | 34.4 |
| 26,000                      | 766 | 8.9  | 854   | 14.1 | 927   | 19.3 | 998   | 24.8 | 1,069 | 30.6 | 1,141 | 36.9 |
| 28,000                      | 810 | 10.2 | 895   | 15.8 | 967   | 21.4 | 1,033 | 27.1 | 1,098 | 33.2 | 1,164 | 39.6 |
| 30,000                      | 854 | 11.6 | 937   | 17.6 | 1,009 | 23.6 | 1,070 | 29.7 | 1,132 | 36.0 | 1,193 | 42.5 |
| 32,000                      | 899 | 13.2 | 981   | 19.7 | 1,049 | 26.0 | 1,109 | 32.4 | 1,168 | 39.0 | 1,225 | 45.8 |
| 34,000                      | 945 | 15.0 | 1,024 | 21.8 | 1,090 | 28.6 | 1,151 | 35.4 | 1,205 | 42.2 | 1,260 | 49.3 |
| 36,000                      | 991 | 16.9 | 1,132 | 31.3 | 1,132 | 31.3 | 1,192 | 38.5 | 1,245 | 45.7 | 1,296 | 53.0 |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

TABLE 18 - COMPONENT STATIC PRESSURE DROPS (INCHES OF WATER COLUMN)

| Size        | Airflow<br>CFM Standard Air | Evaporator<br>Coils |      | Return Air<br>Opening |                            |                           | Air Dampers   |   |   |                                    | Discharge<br>Opening |        | Dual Direct Drive<br>Plenum (DDP)<br>Supply Fan |                 |
|-------------|-----------------------------|---------------------|------|-----------------------|----------------------------|---------------------------|---|---|---|------------------------------------|----------------------|--------|---|-----------------|
|             |                             | Wet                 | Dry  | Bottom                | Rear                       | Side                      | Standard<br>OA<br>Damper<br>& Hoods<br>w/ 1-in.<br>Cleanable<br>Filters | Low<br>Leak OA<br>Damper<br>& Hoods<br>w/ 1-in.<br>Cleanable<br>Filters | Bottom & Rear<br>Return                           | Powered Exhaust**                  | Side                 | Bottom | Safety Grate<br>Downstream of<br>Acoustiweir™   | Inlet<br>Screen |
| YPAL 70-80  | 14,000                      | 0.20                | 0.20 | 0.07                  | 0.03                       | 0.08                      | 0.142   | 0.145   | 0.078   | 0.018                              | 0.07                 | 0.07   | 0.049   | -0.110          |
|             | 16,000                      | 0.25                | 0.24 | 0.08                  | 0.03                       | 0.09                      | 0.188   | 0.192   | 0.101   | 0.023                              | 0.09                 | 0.10   | 0.049   | 0.019           |
|             | 18,000                      | 0.30                | 0.28 | 0.10                  | 0.04                       | 0.11                      | 0.240   | 0.246   | 0.128   | 0.029                              | 0.12                 | 0.12   | 0.051   | 0.171           |
|             | 20,000                      | 0.35                | 0.33 | 0.11                  | 0.05                       | 0.13                      | 0.299   | 0.305   | 0.158   | 0.036                              | 0.14                 | 0.15   | 0.054   | 0.341           |
|             | 22,000                      | 0.40                | 0.38 | 0.13                  | 0.05                       | 0.15                      | 0.364   | 0.372   | 0.192   | 0.044                              | 0.17                 | 0.18   | 0.060   | 0.524           |
|             | 24,000                      | 0.46                | 0.43 | 0.15                  | 0.06                       | 0.18                      | 0.435   | 0.445   | 0.228   | 0.052                              | 0.21                 | 0.22   | 0.068   | 0.716           |
|             | 26,000                      | 0.52                | 0.48 | 0.18                  | 0.08                       | 0.21                      | 0.512   | 0.524   | 0.268   | 0.061                              | 0.24                 | 0.26   | 0.081   | 0.912           |
|             | 28,000                      | 0.59                | 0.54 | 0.21                  | 0.09                       | 0.24                      | 0.597   | 0.610   | 0.310   | 0.071                              | 0.28                 | 0.30   | 0.099   | 1.109           |
|             | 30,000                      | 0.66                | 0.60 | 0.25                  | 0.10                       | 0.29                      | 0.687   | 0.702   | 0.356   | 0.082                              | 0.32                 | 0.34   | 0.122   | 1.301           |
| 32,000      | 0.73                        | 0.67                | 0.29 | 0.12                  | 0.34                       | 0.784                     | 0.801   | 0.405   | 0.093   | 0.37                               | 0.39                 | 0.152  | 1.484   |                 |
| YPAL 90-105 | 14,000                      | 0.20                | 0.20 | 0.07                  | 0.04                       | 0.07                      | 0.107   | 0.109   | 0.057   | 0.011                              | 0.06                 | 0.06   | 0.045   | -0.110          |
|             | 16,000                      | 0.25                | 0.24 | 0.08                  | 0.04                       | 0.08                      | 0.141   | 0.144   | 0.074   | 0.015                              | 0.08                 | 0.08   | 0.046   | 0.019           |
|             | 18,000                      | 0.30                | 0.28 | 0.09                  | 0.05                       | 0.10                      | 0.181   | 0.185   | 0.094   | 0.019                              | 0.10                 | 0.10   | 0.047   | 0.171           |
|             | 20,000                      | 0.35                | 0.33 | 0.11                  | 0.06                       | 0.11                      | 0.225   | 0.230   | 0.116   | 0.023                              | 0.12                 | 0.12   | 0.049   | 0.341           |
|             | 22,000                      | 0.40                | 0.38 | 0.12                  | 0.07                       | 0.13                      | 0.275   | 0.280   | 0.140   | 0.028                              | 0.15                 | 0.15   | 0.052   | 0.524           |
|             | 24,000                      | 0.46                | 0.43 | 0.14                  | 0.08                       | 0.15                      | 0.329   | 0.336   | 0.167   | 0.033                              | 0.18                 | 0.17   | 0.057   | 0.716           |
|             | 26,000                      | 0.52                | 0.48 | 0.16                  | 0.09                       | 0.17                      | 0.388   | 0.396   | 0.196   | 0.039                              | 0.21                 | 0.21   | 0.065   | 0.912           |
|             | 28,000                      | 0.59                | 0.54 | 0.19                  | 0.10                       | 0.19                      | 0.452   | 0.461   | 0.227   | 0.045                              | 0.24                 | 0.24   | 0.075   | 1.109           |
|             | 30,000                      | 0.66                | 0.60 | 0.22                  | 0.12                       | 0.22                      | 0.521   | 0.531   | 0.261   | 0.052                              | 0.28                 | 0.27   | 0.089   | 1.301           |
|             | 32,000                      | 0.73                | 0.67 | 0.25                  | 0.13                       | 0.25                      | 0.594   | 0.606   | 0.297   | 0.059                              | 0.31                 | 0.31   | 0.107   | 1.484           |
|             | 34,000                      | 0.80                | 0.73 | 0.29                  | 0.15                       | 0.29                      | 0.673   | 0.686   | 0.335   | 0.067                              | 0.35                 | 0.35   | 0.129   | 1.653           |
|             | 36,000                      | 0.88                | 0.80 | 0.33                  | 0.18                       | 0.34                      | 0.756   | 0.772   | 0.376   | 0.075                              | 0.40                 | 0.39   | 0.156   | 1.804           |
| Size        | Airflow CFM<br>Standard Air | Filters             |      |                       |                            |                           |   |   |   |                                    |                      |        |   |                 |
|             |                             | 2-in.<br>Throwaway  |      | 2-in.<br>Cleanable    | 2-in.<br>Pleated<br>MERV 8 | 2-in.<br>Carbon<br>MERV 8 | Rigid Filter<br>Track w/ 2-in.<br>Throwaway (only)                      | 12-in. MERV 11*<br>w/ 2-in. MERV 8<br>Pre-filters                       | 12-in. MERV 14*<br>w/ 2-in. MERV 8<br>Pre-filters | Final Filter<br>12-in.<br>MERV 14* |                      |        |   |                 |
| YPAL 70-80  | 14,000                      | 0.06                |      | 0.01                  | 0.06                       | 0.12                      | 0.09  | 0.22  | 0.34  | 0.26                               |                      |        |   |                 |
|             | 16,000                      | 0.07                |      | 0.02                  | 0.07                       | 0.14                      | 0.11  | 0.26  | 0.40  | 0.30                               |                      |        |   |                 |
|             | 18,000                      | 0.08                |      | 0.02                  | 0.09                       | 0.16                      | 0.13  | 0.30  | 0.46  | 0.34                               |                      |        |   |                 |
|             | 20,000                      | 0.10                |      | 0.03                  | 0.10                       | 0.18                      | 0.16  | 0.35  | 0.52  | 0.39                               |                      |        |   |                 |
|             | 22,000                      | 0.11                |      | 0.03                  | 0.11                       | 0.20                      | 0.18  | 0.40  | 0.59  | 0.43                               |                      |        |   |                 |
|             | 24,000                      | 0.13                |      | 0.04                  | 0.13                       | 0.23                      | 0.21  | 0.45  | 0.66  | 0.48                               |                      |        |   |                 |
|             | 26,000                      | 0.14                |      | 0.05                  | 0.14                       | 0.25                      | 0.23  | 0.50  | 0.74  | 0.54                               |                      |        |   |                 |
|             | 28,000                      | 0.16                |      | 0.06                  | 0.16                       | 0.27                      | 0.26  | 0.56  | 0.81  | 0.59                               |                      |        |   |                 |
|             | 30,000                      | 0.18                |      | 0.07                  | 0.17                       | 0.29                      | 0.29  | 0.62  | 0.90  | 0.65                               |                      |        |   |                 |
| 32,000      | 0.20                        |                     | 0.08 | 0.19                  | 0.32                       | 0.32                      | 0.68  | 0.98  | 0.71  |                                    |                      |        |   |                 |
| YPAL 90-105 | 14,000                      | 0.04                |      | 0.01                  | 0.05                       | 0.10                      | 0.08  | 0.20  | 0.30  | 0.24                               |                      |        |   |                 |
|             | 16,000                      | 0.05                |      | 0.01                  | 0.06                       | 0.11                      | 0.10  | 0.23  | 0.35  | 0.27                               |                      |        |   |                 |
|             | 18,000                      | 0.06                |      | 0.01                  | 0.07                       | 0.13                      | 0.11  | 0.27  | 0.41  | 0.31                               |                      |        |   |                 |
|             | 20,000                      | 0.07                |      | 0.02                  | 0.08                       | 0.15                      | 0.13  | 0.31  | 0.46  | 0.34                               |                      |        |   |                 |
|             | 22,000                      | 0.08                |      | 0.02                  | 0.09                       | 0.17                      | 0.16  | 0.35  | 0.52  | 0.38                               |                      |        |   |                 |
|             | 24,000                      | 0.10                |      | 0.03                  | 0.10                       | 0.18                      | 0.18  | 0.39  | 0.58  | 0.43                               |                      |        |   |                 |
|             | 26,000                      | 0.11                |      | 0.03                  | 0.11                       | 0.20                      | 0.20  | 0.44  | 0.65  | 0.47                               |                      |        |   |                 |
|             | 28,000                      | 0.12                |      | 0.04                  | 0.12                       | 0.22                      | 0.22  | 0.49  | 0.71  | 0.52                               |                      |        |   |                 |
|             | 30,000                      | 0.13                |      | 0.04                  | 0.14                       | 0.24                      | 0.25  | 0.54  | 0.78  | 0.57                               |                      |        |   |                 |
|             | 32,000                      | 0.15                |      | 0.05                  | 0.15                       | 0.26                      | 0.27  | 0.59  | 0.85  | 0.62                               |                      |        |   |                 |
|             | 34,000                      | 0.16                |      | 0.06                  | 0.16                       | 0.27                      | 0.30  | 0.64  | 0.93  | 0.67                               |                      |        |   |                 |
|             | 36,000                      | 0.18                |      | 0.07                  | 0.17                       | 0.29                      | 0.33  | 0.70  | 1.01  | 0.72                               |                      |        |   |                 |

NOTES \*Includes 2-inch pleated filters. \*\* Power exhaust pressure drops are for sizing supply fan.

- Return air opening pressure drop does not include an exhaust fan. Use the value in the Powered Exhaust column to determine return air pressure drop attributed to the exhaust fan assembly.
- Front return is not available with barometric relief, exhaust fans or return fans.
- Pressure drop for rigid filter rack includes a 2-inch throwaway prefilter.

# Gas Heat Pressure Drops

TABLE 19 - GAS HEAT AIR PRESSURE DROPS

| Size | Airflow<br>CFM Std. Air | Size (mbh) |      |      |
|------|-------------------------|------------|------|------|
|      |                         | 375        | 750  | 1125 |
| 70   | 14,000                  | 0.05       | 0.08 | 0.09 |
|      | 16,000                  | 0.07       | 0.11 | 0.11 |
|      | 18,000                  | 0.09       | 0.14 | 0.14 |
|      | 20,000                  | 0.11       | 0.17 | 0.17 |
|      | 22,000                  | 0.14       | 0.20 | 0.21 |
|      | 24,000                  | 0.16       | 0.24 | 0.25 |
|      | 26,000                  | 0.19       | 0.28 | 0.29 |
|      | 28,000                  | 0.22       | 0.33 | 0.34 |
|      | 30,000                  | 0.25       | 0.38 | 0.39 |
|      | 32,000                  | 0.29       | 0.43 | 0.45 |
| 75   | 14,000                  | 0.05       | 0.08 | 0.09 |
|      | 16,000                  | 0.07       | 0.11 | 0.11 |
|      | 18,000                  | 0.09       | 0.14 | 0.14 |
|      | 20,000                  | 0.11       | 0.17 | 0.17 |
|      | 22,000                  | 0.14       | 0.20 | 0.21 |
|      | 24,000                  | 0.16       | 0.24 | 0.25 |
|      | 26,000                  | 0.19       | 0.28 | 0.29 |
|      | 28,000                  | 0.22       | 0.33 | 0.34 |
|      | 30,000                  | 0.25       | 0.38 | 0.39 |
|      | 32,000                  | 0.29       | 0.43 | 0.45 |
| 80   | 14,000                  | 0.05       | 0.08 | 0.09 |
|      | 16,000                  | 0.07       | 0.11 | 0.11 |
|      | 18,000                  | 0.09       | 0.14 | 0.14 |
|      | 20,000                  | 0.11       | 0.17 | 0.17 |
|      | 22,000                  | 0.14       | 0.20 | 0.21 |
|      | 24,000                  | 0.16       | 0.24 | 0.25 |
|      | 26,000                  | 0.19       | 0.28 | 0.29 |
|      | 28,000                  | 0.22       | 0.33 | 0.34 |
|      | 30,000                  | 0.25       | 0.38 | 0.39 |
|      | 32,000                  | 0.29       | 0.43 | 0.45 |
| 90   | 18,000                  | 0.07       | 0.11 | 0.11 |
|      | 20,000                  | 0.09       | 0.13 | 0.14 |
|      | 22,000                  | 0.11       | 0.16 | 0.17 |
|      | 24,000                  | 0.13       | 0.19 | 0.20 |
|      | 26,000                  | 0.15       | 0.22 | 0.23 |
|      | 28,000                  | 0.17       | 0.26 | 0.27 |
|      | 30,000                  | 0.20       | 0.30 | 0.31 |
|      | 32,000                  | 0.23       | 0.34 | 0.35 |
|      | 34,000                  | 0.26       | 0.38 | 0.40 |
|      | 36,000                  | 0.29       | 0.43 | 0.45 |
| 105  | 18,000                  | 0.07       | 0.11 | 0.11 |
|      | 20,000                  | 0.09       | 0.13 | 0.14 |
|      | 22,000                  | 0.11       | 0.16 | 0.17 |
|      | 24,000                  | 0.13       | 0.19 | 0.20 |
|      | 26,000                  | 0.15       | 0.22 | 0.23 |
|      | 28,000                  | 0.17       | 0.26 | 0.27 |
|      | 30,000                  | 0.20       | 0.30 | 0.31 |
|      | 32,000                  | 0.23       | 0.34 | 0.35 |
|      | 34,000                  | 0.26       | 0.38 | 0.40 |
|      | 36,000                  | 0.29       | 0.43 | 0.45 |

## Electric Heat Pressure Drops

**TABLE 20 - ELECTRIC HEAT AIR PRESSURE DROPS**

| Model       | Airflow<br>CFM Std.<br>Air | Electric Heater Air Pressure Drop (iwg) |        |        |        |        |
|-------------|----------------------------|---|--------|--------|--------|--------|
|             |                            | 80 kW                                   | 108 kW | 150 kW | 200 kW | 250 kW |
| YPAL070-080 | 14,000                     | 0.02                                    | 0.03   | 0.04   | 0.05   |        |
|             | 16,000                     | 0.03                                    | 0.04   | 0.06   | 0.07   |        |
|             | 18,000                     | 0.04                                    | 0.06   | 0.07   | 0.09   |        |
|             | 20,000                     | 0.05                                    | 0.07   | 0.09   | 0.11   |        |
|             | 22,000                     | 0.06                                    | 0.08   | 0.11   | 0.13   |        |
|             | 24,000                     | 0.07                                    | 0.10   | 0.13   | 0.16   |        |
|             | 26,000                     | 0.08                                    | 0.12   | 0.15   | 0.19   |        |
|             | 28,000                     | 0.09                                    | 0.13   | 0.18   | 0.22   |        |
|             | 30,000                     | 0.11                                    | 0.15   | 0.20   | 0.25   |        |
|             | 32,000                     | 0.12                                    | 0.17   | 0.23   | 0.28   |        |
| YPAL090-105 | 18,000                     |   | 0.06   | 0.07   | 0.09   | 0.12   |
|             | 20,000                     |   | 0.07   | 0.09   | 0.11   | 0.15   |
|             | 22,000                     |   | 0.08   | 0.11   | 0.13   | 0.19   |
|             | 24,000                     |   | 0.10   | 0.13   | 0.16   | 0.22   |
|             | 26,000                     |   | 0.12   | 0.15   | 0.19   | 0.26   |
|             | 28,000                     |   | 0.13   | 0.18   | 0.22   | 0.30   |
|             | 30,000                     |   | 0.15   | 0.20   | 0.25   | 0.35   |
|             | 32,000                     |   | 0.17   | 0.23   | 0.28   | 0.39   |
|             | 34,000                     |   | 0.20   | 0.26   | 0.32   | 0.44   |
|             | 36,000                     |   | 0.22   | 0.29   | 0.36   | 0.50   |

**TABLE 21 - ELECTRIC HEATER SIZE AVAILABILITY BY UNIT SIZE**

| MODEL         | 80kW | 108kW | 150kW* | 200kW* | 250kW* |
|---------------|------|-------|--------|--------|--------|
| YPAL070-080   | X    | X     | X      | X      |        |
| YPAL090-105** |      | X     | X      | X      | X      |

\*150-250kW electric heat not available in 200-230V configurations.

\*\*For 208V YPAL105, contact a YORK representative.

# Exhaust Fan Data

## EXHAUST FAN MOTOR SIZING INSTRUCTIONS

In order to determine the proper exhaust fan motor size, add the return duct static pressure to the appropriate damper pressure drop value in *Table 16 on page 52* to get the total static pressure applied to the exhaust fan. Based on the exhaust fan airflow and total static pressure, determine the brake horsepower (BHP) and RPM of the exhaust fan.

**TABLE 22 - DUAL 18 X 18 FORWARD-CURVED FAN**

| CFM<br>STD. AIR | TOTAL STATIC PRESSURE (INCHES OF WATER COLUMN) |     |      |     |      |     |      |     |      |     |      |     |
|-----------------|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
|                 | 0.25   |     | 0.50 |     | 0.75 |     | 1.00 |     | 1.25 |     | 1.50 |     |
|                 | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM |
| 6000            | 0.4  | 291 | 0.7  | 398 | 1.1  | 501 | 1.6  | 596 | 2.1  | 683 | 2.7  | 763 |
| 8000            | 0.7  | 316 | 1.1  | 406 | 1.5  | 485 | 1.9  | 566 | 2.4  | 643 | 3.0  | 717 |
| 10000           | 1.2  | 349 | 1.6  | 429 | 2.1  | 499 | 2.5  | 562 | 3.0  | 627 | 3.6  | 691 |
| 12000           | 1.9  | 392 | 2.3  | 456 | 2.9  | 522 | 3.4  | 581 | 3.9  | 635 | 4.5  | 688 |
| 14000           | 2.8  | 435 | 3.3  | 491 | 3.9  | 549 | 4.5  | 605 | 5.1  | 656 | 5.7  | 704 |
| 16000           | 3.9  | 476 | 4.6  | 533 | 5.1  | 579 | 5.9  | 631 | 6.6  | 681 | 7.3  | 727 |
| 18000           | 5.2  | 517 | 6.2  | 577 | 6.7  | 619 | 7.4  | 661 | 8.3  | 707 | 9.1  | 752 |
| 20000           | 7.0  | 560 | 8.0  | 619 | 8.8  | 662 | 9.4  | 698 | 10.2 | 737 | 11.2 | 779 |
| 22000           | 9.1  | 604 | 10.1 | 660 | 11.3 | 706 | 12.0 | 740 | 12.7 | 773 | 13.6 | 809 |
| 24000           | 11.7   | 648 | 12.7 | 701 | 14.0 | 748 |      |     |      |     |      |     |
| 26000           | 14.7   | 693 |      |     |      |     |      |     |      |     |      |     |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

**TABLE 23 - EXHAUST FAN PERFORMANCE**

| FAN TYPE    | 18X18 | 20X18 |
|-------------|-------|-------|
| YPAL070-080 | X     | X     |
| YPAL090-105 | X     | X     |

**TABLE 24 - DUAL 20 X 18 FORWARD-CURVED FAN**

| CFM<br>STD. AIR | TOTAL STATIC PRESSURE (INCHES OF WATER COLUMN) |     |      |     |      |     |      |     |      |     |      |     |
|-----------------|--|-----|------|-----|------|-----|------|-----|------|-----|------|-----|
|                 | 0.25   |     | 0.50 |     | 0.75 |     | 1.00 |     | 1.25 |     | 1.50 |     |
|                 | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM |
| 12000           | 1.3  | 295 | 1.9  | 373 | 2.5  | 445 | 3.2  | 514 | 3.9  | 577 | 4.6  | 635 |
| 14000           | 1.9  | 318 | 2.5  | 388 | 3.2  | 453 | 3.9  | 515 | 4.7  | 574 | 5.5  | 630 |
| 16000           | 2.6  | 344 | 3.3  | 407 | 4.1  | 466 | 4.9  | 522 | 5.7  | 576 | 6.6  | 629 |
| 18000           | 3.5  | 371 | 4.3  | 429 | 5.1  | 483 | 6.0  | 535 | 6.9  | 584 | 7.8  | 633 |
| 20000           | 4.6  | 399 | 5.4  | 453 | 6.4  | 503 | 7.3  | 551 | 8.3  | 597 | 9.3  | 642 |
| 22000           | 5.9  | 428 | 6.8  | 478 | 7.8  | 525 | 8.8  | 570 | 9.9  | 613 | 11.0 | 654 |
| 24000           | 7.5  | 458 | 8.5  | 505 | 9.5  | 549 | 10.6 | 591 | 11.7 | 631 | 12.9 | 670 |
| 26000           | 9.4  | 488 | 10.4 | 532 | 11.5 | 574 | 12.7 | 613 | 13.9 | 652 | 15.1 | 689 |
| 28000           | 11.5   | 519 | 12.6 | 560 | 13.8 | 600 | 15.0 | 637 | 16.3 | 673 | 17.6 | 709 |
| 30000           | 13.9   | 551 | 15.2 | 589 | 16.4 | 626 | 17.7 | 662 | 19.0 | 697 | 20.4 | 730 |
| 32000           | 16.7   | 583 | 18.1 | 618 | 19.4 | 654 | 20.7 | 688 | 22.1 | 721 | 23.6 | 753 |
| 34000           | 19.9   | 615 | 21.3 | 648 | 22.7 | 682 | 24.1 | 715 | 25.6 | 746 |      |     |
| 36000           | 23.4   | 647 | 24.9 | 679 | 26.4 | 710 | 27.9 | 742 |      |     |      |     |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

## Return Fan Data

**TABLE 25 - YPAL070–105: 270 SWSI AIRFOIL FAN**

| TOTAL STATIC PRESSURE (INCHES OF WATER COLUMN) |      |      |      |      |      |      |      |      |      |      |
|--|------|------|------|------|------|------|------|------|------|------|
| CFM<br>STD. AIR                                | 1.0  |      | 1.5  |      | 2.0  |      | 2.5  |      | 3.0  |      |
|  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  |
| 16000  | 5.4  | 966  | 7.3  | 1056 | 9.2  | 1139 | 11.2 | 1217 | 13.3 | 1295 |
| 18000  | 6.6  | 1041 | 8.6  | 1126 | 8.6  | 1126 | 12.9 | 1277 | 16.1 | 1618 |
| 20000  | 7.9  | 1119 | 10.2 | 1198 | 12.5 | 1272 | 14.9 | 1342 | 18.8 | 1709 |
| 22000  | 9.6  | 1199 | 12.0 | 1273 | 14.5 | 1343 | 17.1 | 1410 | 21.7 | 1803 |
| 24000  | 11.5 | 1283 | 14.0 | 1351 | 16.8 | 1417 | 19.5 | 1481 | 24.9 | 1900 |
| 26000  | 13.7 | 1369 | 16.4 | 1430 | 19.3 | 1493 | 22.2 | 1554 | 25.1 | 1611 |
| 28000  | 16.2 | 1456 | 19.0 | 1512 | 22.0 | 1571 | 25.2 | 1629 | 28.4 | 1684 |
| 30000  | 19.0 | 1544 | 22.0 | 1597 | 25.1 | 1651 | 28.5 | 1705 | 31.9 | 1759 |
| 32000  | 22.2 | 1633 | 25.4 | 1683 | 28.6 | 1733 | 32.1 | 1784 | 35.7 | 1835 |
| 34000  | 25.7 | 1723 | 29.1 | 1770 | 32.5 | 1817 | 36.1 | 1864 | 39.8 | 1912 |
| 36000  | 29.7 | 1813 | 33.3 | 1859 | 36.9 | 1902 |      |      |      |      |

**NOTE:** For performance at operating points not included in these tables, consult your local YORK representative.

**TABLE 26 - RETURN FAN PERFORMANCE**

| FAN TYPE    | 2X270 |
|-------------|-------|
| YPAL070–080 | X     |
| YPAL090–105 | X     |



# Electrical Data

## ELECTRICAL SERVICE SIZING

In order to determine the electrical service required for the cooling only single package unit, use the appropriate calculations listed below from UL 1995. Based on the configuration of the single package unit, the calculations will yield different minimum circuit ampacity (MCA) and maximum overcurrent protection (MOP).

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

### 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:

$$\text{MCA} = (1.25 \times \text{LOAD1}) + \text{LOAD2} + \text{LOAD3} + \text{LOAD4}$$

$$\text{MOP} = (2.25 \times \text{LOAD1}) + \text{LOAD2} + \text{LOAD3} + \text{LOAD4}$$

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.

**TABLE 27 - COMPRESSOR DATA (R-410A)**

| MODEL        | COMPRESSOR |       | NOMINAL VOLTAGE |     |      |     |      |     |
|--------------|------------|-------|-----------------|-----|------|-----|------|-----|
|              | QTY        | MODEL | 208/230         |     | 460  |     | 575  |     |
|              |            |       | RLA             | LRA | RLA  | LRA | RLA  | LRA |
| YPAL 70 TON  | 6          | ZP120 | 33.3            | 239 | 17.9 | 125 | 12.8 | 80  |
| YPAL 75 TON  | 2          | ZP154 | 51.3            | 300 | 23.1 | 150 | 19.9 | 109 |
|              | 4          | ZP137 | 48.1            | 245 | 18.6 | 125 | 14.7 | 100 |
| YPAL 80 TON  | 4          | ZP154 | 51.3            | 300 | 23.1 | 150 | 19.9 | 109 |
|              | 2          | ZP137 | 48.1            | 245 | 18.6 | 125 | 14.7 | 100 |
| YPAL 90 TON  | 4          | ZP182 | 55.8            | 340 | 26.9 | 173 | 23.7 | 132 |
|              | 2          | ZP154 | 51.3            | 300 | 23.1 | 150 | 19.9 | 109 |
| YPAL 105 TON | 3          | ZP182 |                 |     | 26.9 | 173 | 23.7 | 132 |
|              | 3          | ZP236 |                 |     | 30.8 | 229 | 25.0 | 180 |

**NOTE:** \*RLA data is per compressor

**TABLE 28 - SUPPLY, RETURN, AND EXHAUST FAN MOTOR DATA**

| MOTOR<br>HP | PREMIUM EFFICIENCY - ODP |          |          |          |
|-------------|--------------------------|----------|----------|----------|
|             | NOMINAL VOLTAGE          |          |          |          |
|             | 208/3/60                 | 230/3/60 | 460/3/60 | 575/3/60 |
|             | FLA                      | FLA      | FLA      | FLA      |
| 5           | 14                       | 13.2     | 6.6      | 5.3      |
| 7.5         | 20.4                     | 19.4     | 9.7      | 8        |
| 10          | 26                       | 25       | 12.5     | 10       |
| 15          | 38                       | 36       | 18       | 14.2     |
| 20          | 52                       | 48       | 24       | 18.9     |
| 25          | 64                       | 60       | 30       | 24.5     |
| 30          | 76                       | 72       | 36       | 28       |
| 40          | 99                       | 98       | 49       | 40       |
| 50          | 121                      | 114      | 57       | 46       |
| 60          | 144                      | 136      | 68       | 56       |

| MOTOR<br>HP | PREMIUM EFFICIENCY - TEFC |          |          |          |
|-------------|---------------------------|----------|----------|----------|
|             | NOMINAL VOLTAGE           |          |          |          |
|             | 208/3/60                  | 230/3/60 | 460/3/60 | 575/3/60 |
|             | FLA                       | FLA      | FLA      | FLA      |
| 5           | 13.9                      | 13.4     | 6.7      | 5.3      |
| 7.5         | 20                        | 19       | 9.5      | 7.6      |
| 10          | 25.4                      | 24       | 12       | 9.6      |
| 15          | 38                        | 36.2     | 18.1     | 14.6     |
| 20          | 52                        | 48       | 24       | 19.2     |
| 25          | 64                        | 62       | 31       | 24       |
| 30          | 78                        | 76       | 38       | 29       |
| 40          | 102                       | 96       | 48       | 37       |
| 50          | 128                       | 116      | 58       | 45       |
| 60          | 149                       | 135      | 67.8     | 54.4     |

**TABLE 29 - POWER SUPPLY VOLTAGE LIMITS**

| Nominal Voltage | Power Supply  | Minimum Voltage | Maximum Voltage |
|-----------------|---------------|-----------------|-----------------|
| 208             | 200V/3Ph/60Hz | 187             | 218             |
| 240             | 230V/3Ph/60Hz | 216             | 252             |
| 480             | 460V/3Ph/60Hz | 432             | 504             |
| 600             | 575V/3Ph/60Hz | 540             | 630             |

**TABLE 30 - CONDENSER FAN MOTOR FLA**

| FLA EACH MOTOR |                  | 208V/3PH/60HZ | 230V/3PH/60HZ | 460V/3PH/60HZ | 575V/3PH/60HZ |
|----------------|------------------|---------------|---------------|---------------|---------------|
|                |                  | 7.6           | 6.6           | 3.4           | 2.7           |
| MODEL          | QUANTITY OF FANS | 208V/3PH/60HZ | 230V/3PH/60HZ | 460V/3PH/60HZ | 575V/3PH/60HZ |
| YPAL070-105    | 6                | 45.6          | 39.6          | 20.4          | 16.2          |

**TABLE 31 - MISCELLANEOUS ELECTRICAL DATA**

| DESCRIPTION                 | NOMINAL VOLTAGE |      |      |      |      |
|-----------------------------|-----------------|------|------|------|------|
|                             | 208V            | 230V | 460V | 575V | 380V |
|                             | AMPS            | AMPS | AMPS | AMPS | AMPS |
| Control Transformer 750 VA  | 3.6             | 3.3  | 1.6  | 1.3  | 2.0  |
| Control Transformer 1.0 KVA | 4.8             | 4.4  | 2.2  | 1.8  | 2.6  |
| Convenience Outlet          | 9.6             | 8.7  | 4.4  | 3.5  | N/A  |
| Gas Heat                    | 9.6             | 8.7  | 4.4  | 3.5  | 5.3  |

**TABLE 32 - ELECTRIC HEAT AMP DRAW**

| kW* | 200V/3Ph/60Hz | 240V/3Ph/60Hz | 480V/3Ph/60Hz | 600V/3Ph/60Hz |
|-----|---------------|---------------|---------------|---------------|
|     | AMPS          | AMPS          | AMPS          | AMPS          |
| 80  | 193           | 193           | 96            | 80            |
| 108 | 260           | 260           | 130           | 109           |
| 150 |               |               | 181           | 151           |
| 200 |               |               | 241           | 201           |
| 250 |               |               | 301           | 251           |

**NOTE**

Heaters will be sized as follows: 208V heaters rated at 208V, 230V heaters rated at 240V, 460V heaters rated at 480V, 575V heaters rated at 600V.

## Electrical Data (Cont'd)

TABLE 33 - ELECTRICAL HEAT STAGES

|                    |             | 70–80 Tons |        |        |        |
|--------------------|-------------|------------|--------|--------|--------|
|                    |             | 80 KW      | 108 KW | 150 KW | 200 KW |
| Available Voltages | 200V/3/60Hz | 5          | 6      | NA     | NA     |
|                    | 230V/3/60Hz | 5          | 6      | NA     | NA     |
|                    | 460V/3/60Hz | 3          | 3      | 4      | 6      |
|                    | 575V/3/60Hz | 2          | 3      | 4      | 5      |

|                    |             | 90–105 tons |        |        |        |
|--------------------|-------------|-------------|--------|--------|--------|
|                    |             | 108 KW      | 150 KW | 200 KW | 250 KW |
| Available Voltages | 200V/3/60Hz | 6           | NA     | NA     | NA     |
|                    | 230V/3/60Hz | 6           | NA     | NA     | NA     |
|                    | 460V/3/60Hz | 3           | 4      | 6      | 6      |
|                    | 575V/3/60Hz | 3           | 4      | 5      | 6      |

# Controls

## CONTROL SEQUENCES

### GENERAL

The control system for the YORK® single packaged unit is fully self-contained and based around a single package unit controller. To aid in unit setup, maintenance, and operation, the single package unit controller is equipped with a user interface that is based around a 4 line x 20 character backlit LCD display. The LCD displays plain language text in a menu-driven format to facilitate use.

Based on the unit type (Variable Air Volume (VAV) or Single Zone VAV (SZVAV)), the rooftop units can be operated by a space temperature sensor or standalone. A field wiring terminal block is provided to facilitate unit setup and installation.

In lieu of the hardwired control options, the single package unit controller can be connected to and operated by a Building Automation System (BAS).

The IPU Controller uses the latest technology and provides complete control for the unit along with standard BACnet® MS/TP and Modbus™ RTU communications. The IPU also has an SD card slot that can be used to capture historic data on unit operation.

If required, the unit can be equipped with an optional field installed gateway which allows N2 or Echelon® communications. The E-Link gateway device is field installed and purchased through the Advanced Order Management System (AOMS).

YK-ELNKE01-0 – E-Link for Echelon

YK-ELNKE00-0 – E-Link for N2

### UNOCCUPIED / OCCUPIED SWITCHING

Depending on application, the unit can be indexed between unoccupied and occupied modes of operation by one of three methods, hardwired input, internal time clock, or BAS. A contact-closure input is provided for hardwiring to an external indexing device such as a central time clock or a manual switch. The unit controller is also equipped with a built in 7-day time clock which can be used, in lieu of the contact closure input, to switch the unit between Unoccupied and Occupied modes of operation.

The internal time clock is fully configurable via the user interface and includes Holiday scheduling. In addition to the hardwired input or the internal time clock, the unit can also be indexed between unoccupied and occupied modes of operation via a BAS command.

### GAS HEATING OPERATION

Units supplied with gas heat can be equipped with one, two, or three independently operated burner modules. Each module is a fully self-contained furnace with all necessary ignition controls, safeties, and gas valves. The IPU single package unit controller determines how the furnaces are started and stopped and prevents furnace operation if the Supply Fan airflow is not sufficient or if the Supply Air Temperature is excessively high. If a furnace module receives a signal to start from the IPU controller, the ignition control engages the furnace inducer (draft) fan for a 30-second pre-purge cycle. At the end of the 30-second pre-purge, the ignition control will stop the furnace and allows the inducer fan to operate for a 30-second post-purge. Each furnace contains a direct spark ignition system and included safeties for flame and inducer fan verification, high temperature and flame roll-out.

## ***Controls (Cont'd)***

### **HYDRONIC HEAT**

If the unit is configured with either of the wet heat options (steam or hot water) the single package unit controls will modulate the hydronic valve to maintain a supply air set point. In the event temperatures off the hydronic coil are below 34.0°F the fans will be shut down and the hydronic valve will open 100%. This function is an automatic reset so as the temperature rises above 36.0°F, the unit will automatically begin normal operation.

### **ELECTRIC HEATING OPERATION**

For units equipped with electric heaters, the unit can control up to six stages of electric heat which are staged on based on heating demand calculates by the IPU controller.

### **MORNING WARM-UP**

Morning warm-up can be initialized by BAS or by the IPU controller if the internal scheduling is used. If the internal scheduling is used, the morning warm-up start time is calculated through an adaptive algorithm. When morning warm-up is required, the IPU controller energizes the VAV heat relay, starts the supply fan and qualifies the return air temperature (RAT) for 5 minutes. The internal heat source (gas, hot water/steam, or electric) is controlled to maintain the RAT to the return air (RA) heating setpoint, morning warm-up ends when occupancy occurs (bas, internal scheduling, or contact closure) or when the maximum morning warm-up time has expired.

### **ECONOMIZER OPERATION**

The unit can be equipped with one of three types of optional economizers, dry bulb, single enthalpy, or comparative enthalpy. When the unit controller determines that outside air is suitable for economizing, the unit controller will control the outside air (OA) damper(s) open to provide economizer cooling. If economizer cooling alone is insufficient for the cooling load, the unit controller will stage up compressors, one at a time, to meet demand.

The control logic for the three types of economizers is as follows:

#### **Dry Bulb Economizer**

The dry bulb economizer is the default economizer control scheme. With the dry bulb economizer, the unit controller monitors the outside air temperature (OAT) only and compares it to a reference temperature setting. Outside air is deemed suitable for economizing when the OAT is determined to be less than the reference temperature setting. This method of economizing is effective, but is prone to some change-over inefficiencies due to the fact that this method is based on sensible temperatures only and does not take outside air moisture content into consideration.

#### **Single Enthalpy Economizer**

With the optional single enthalpy economizer, the unit 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 single package unit economizer.

### Dual Enthalpy Economizer

With the optional dual enthalpy economizer, the unit 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 packaged single package unit economizer.

### VENTILATION CONTROL SEQUENCES

#### Minimum OA Damper Position (VAV Units)

With VAV units, there are two minimum OA damper positions, one when the unit is at full speed and the second when the unit is at approximately half speed. These two points allow the control to linearly reset the position of the OA damper in response to fan speed.

When the unit goes into the occupied mode of operation, the unit controller will monitor the speed of the supply fan and open the OA damper to a calculated minimum position based on the fan speed. This minimum position will vary as the speed of the fan changes. The damper will remain at this calculated position as long as the unit is in the occupied mode and the economizer is not suitable for cooling.

#### Air Measurement Stations

When the unit is equipped with an air measurement station, the unit controller will control the OA damper to a measured flow rate through the air measurement station.

When the unit goes into the occupied mode of operation, the unit controller will control the OA damper to maintain the minimum airflow setpoint through the air measurement station. The unit controller will control the OA damper to this flow rate as long as the unit is in the occupied mode and the economizer is not suitable for cooling.

**NOTE:** Ventilation air should not be set below 1,500 CFM. When set lower than the suggested minimum airflow setpoint, the unit controller may not display a reliable CFM.

#### Demand Ventilation

If optional CO<sub>2</sub> sensors are connected to the unit, the unit controller can reset the minimum OA damper position(s) or minimum flow rate based on demand.

The unit controller will monitor the CO<sub>2</sub> level within the building. If the CO<sub>2</sub> level rises above the CO<sub>2</sub> setpoint, the controller will temporarily increase the minimum OA damper position or minimum OA flow rate to increase ventilation. If the CO<sub>2</sub> level drops below the CO<sub>2</sub> setpoint, the controller will decrease the minimum OA damper position or minimum OA flow rate to decrease ventilation. Demand ventilation will remain active as long as the unit is in the occupied mode of operation.

### EXHAUST CONTROL SEQUENCES

#### Barometric

The optional barometric exhaust system consists of a lightweight barometric relief damper installed on the end of the unit in the RA section. As more outside air is introduced into the controlled zone due to economizer and ventilation control sequences, the pressure inside the building rises. As building static pressure increases to overcome any exhaust duct static pressure, air will be allowed to escape through the barometric relief damper. Because this type of exhaust is not powered, the amount of air exhausted will be limited to the static pressure that will need to be overcome.

## Controls (Cont'd)

### Powered Variable Volume Exhaust-Discharge Damper Controlled

This optional variable volume powered exhaust system consists of a fixed speed fan configured with a proportionally controlled discharge damper. The single package unit controller monitors the pressure inside the building and controls the exhaust damper and the exhaust fan. If the building pressure rises, the exhaust damper is proportionally controlled open and the exhaust fan is controlled ON. If the building pressure falls, the exhaust damper is proportionally controlled closed and the exhaust fan is controlled OFF. The position of the exhaust damper in which the exhaust fan is controlled ON and OFF as well as the building pressure setpoint is user selectable from the single package unit user interface.

### Powered Variable Volume Exhaust-Variable Frequency Drive (VFD) Controlled

This optional variable volume powered exhaust system consist of an exhaust fan driven by a variable frequency drive (VFD), which is controlled by the single package unit controller. The single package unit controller monitors the pressure within the building. As the pressure rises, the VFD is controlled to increase exhaust fan speed. As the pressure falls, the VFD is controlled to decrease exhaust fan speed. The building pressure setpoint is user selectable from the single package unit user interface. ON/OFF control is maintained the same as exhaust-discharge damper control stated above.

### Return Fan Controlled

This optional variable volume powered return fan system consists of two return fans controlled by one VFD that is controlled by the single package unit control center. The VFD is controlled to maintain a slightly positive pressure over the mixing box section to prevent reverse flow. As the return and/or exhaust air dampers open, the return plenum pressure drops, the fan will speed up to maintain pressure. When the return and/or exhaust air dampers close, the return plenum pressure increases causing the VFD to slow the fan speed down.

### LOW AMBIENT/HEAD PRESSURE CONTROL OPERATION

The single package unit controller continuously monitors the OAT to determine if mechanical cooling should be allowed. As a safety, if the OAT falls to or below the low ambient lockout temperature, mechanical cooling is prevented from operating. For units with economizers, the low ambient lockout temperature is typically low enough that mechanical cooling will rarely be required. However for some applications, mechanical cooling is required when the OAT is lower than the low ambient lockout temperature.

For these applications, the unit must be equipped with optional low ambient controls. For optional low ambient operation, the single package unit controller monitors the refrigeration system discharge pressure and controls the speed of the condenser fans. If the discharge pressure falls, the speed of the first condenser fan on the refrigeration circuit is reduced to maintain acceptable condensing pressures in the refrigeration system. With the optional low ambient controls, mechanical cooling is allowed down to OATs of 0.0°F.

### SMOKE PURGE SEQUENCES

#### General

The controls of the rooftop unit are designed as standard with a ventilation override sequence to remove, exhaust, or ventilate smoke, fumes, or other airborne contaminants from the occupied space. This feature offers three selectable operations: purge, pressurization, and evacuation. The sequence is activated via one of three binary inputs. Some typical contact closures are smoke detectors, fire alarms, manual switches, etc.



**Note:** All cooling and heating modes are disabled during smoke purge.

**Purge** – Purge shall be used to displace the air inside the space with fresh outside air. When this sequence is started, the following will occur:

1. Start the supply fan if not already on. (**Note:** With VAV units, the fan speed will be controlled to maintain the active duct pressure setpoint.)
2. Start the return and exhaust fans if not already on.
3. Set the VFD to 100%.
4. Set the OA damper position to 100% and the exhaust damper to 100%.

**Pressurization** – Pressurization shall be used to pressurize the building or space in order to force the air inside the space through the walls to adjacent spaces or outside the building envelope. When this sequence is started, the following will occur:

1. Start the supply fan if not already on. (**Note:** With VAV units, the fan speed shall be controlled to maintain the active duct pressure setpoint.)
2. Stop the return and exhaust fans if on.
3. Set exhaust/return fan VFD to 0%.
4. Set the OA damper to 100% and the exhaust damper to 0%.

**Evacuation** – Evacuation shall be used to evacuate (negatively pressurize) the building or space in order to draw air through the walls from adjacent spaces or outside the building envelope. When this sequence is started, the following shall occur:

1. Stop the supply fan if on.
2. Start the return and exhaust fans if not already on.
3. Set the exhaust/return fan VFD to 100%.
4. Set the OA damper to 0% and the exhaust damper to 100%.

## SPECIFIC SEQUENCES

*(See Installation, Operation, and Maintenance manual (Form YRK2-NOM1) for further detail.)*

### Variable Air Volume (VAV) Mode

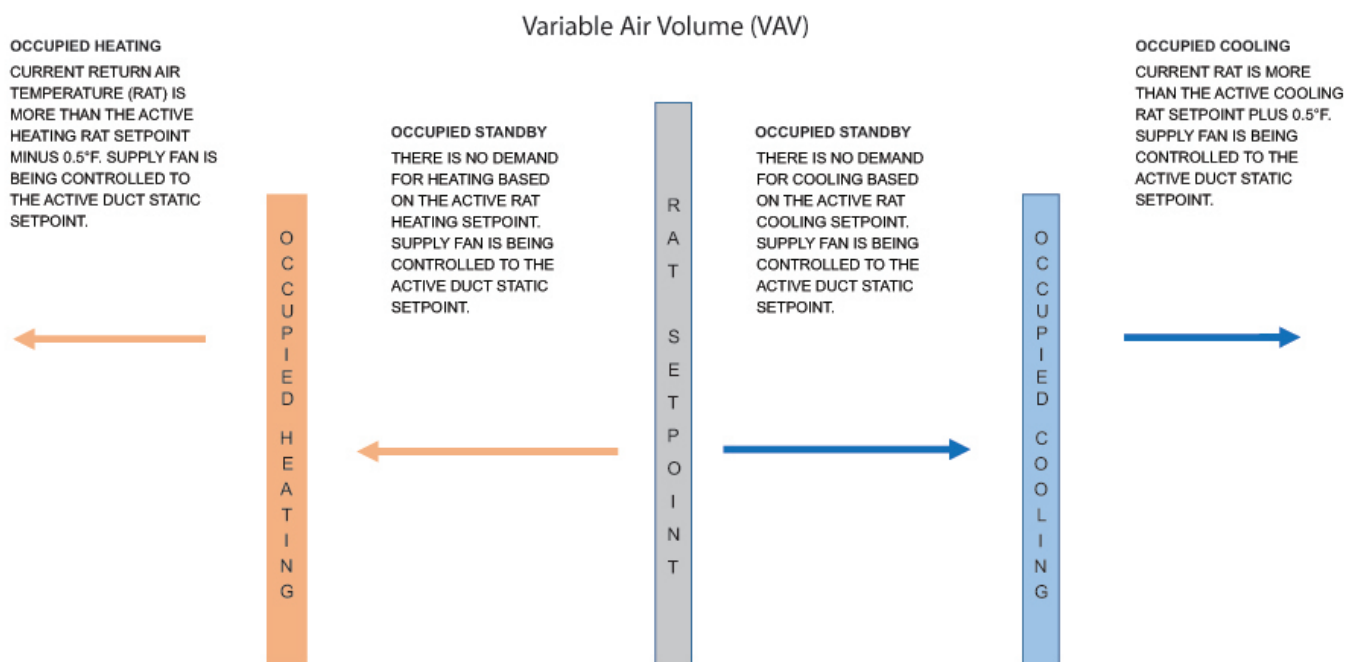
**Occupied Cooling** – In the occupied cooling mode, the unit controller monitors the RAT and compares it to the RAT cooling setpoint. The RAT cooling setpoint is entered into the unit controller through the set point key cooling subsection of the user interface. If the RAT is equal to or greater than the RAT cooling setpoint plus 0.5°F, the unit controller will place the unit in the occupied cooling mode. The unit will remain in the occupied cooling mode until the RAT is equal to or less than the RAT cooling setpoint minus 0.5°F.

**Occupied Heating** – In the occupied heating mode, the unit controller monitors the RAT and compares it to the RAT heating setpoint. The RAT heating setpoint is entered into the unit controller through the setpoints key, heating subsection of the user interface. If the RAT is equal to or less than the RAT heating setpoint minus 0.5°F, the unit controller will place the unit in the occupied heating mode. The unit will remain in the occupied heating mode until the RAT is equal to or greater than the RAT heating setpoint plus 0.5°F.

## Controls (Cont'd)

**Unoccupied Cooling** – In the unoccupied cooling mode, the unit controller will monitor the zone temperature and compare it to the unoccupied zone cooling setpoint. The unoccupied zone cooling setpoint is set through the setpoints key, cooling subsection of the user interface. If the zone temperature is equal to or greater than the unoccupied zone cooling setpoint temperature plus 0.5°F, the unit controller will place the unit in the unoccupied cooling mode. The unit will remain in the unoccupied cooling mode until the zone temperature is equal to or less than the unoccupied zone cooling setpoint minus 0.5°F.

**Unoccupied Heating** – In order for the unoccupied heating to function, the night set back setting must be set to enable. This can be done through the program key, heating subsection of the user interface. In the unoccupied heating mode, the unit controller will monitor the zone temperature and compare it to the unoccupied zone heating setpoint. The unoccupied zone heating setpoint is set through the setpoints key, heating subsection of the user interface. If zone temperature is equal to or less than the unoccupied zone heating setpoint minus 0.5°F, the unit controller will place the unit in the unoccupied heating mode. The unit will remain in the unoccupied heating mode until the zone temperature is equal to or greater than the unoccupied zone heating setpoint plus 0.5°F.



### NOTES:

1. WHENEVER THE UNIT ENTERS AN ACTIVE COOLING OR HEATING MODE, THE UNIT CONTROLLER WILL UTILIZE AS MANY OR AS FEW STAGES OF COOLING OR HEATING THAT IT NEEDS TO ACHIEVE AND MAINTAIN THE ACTIVE SUPPLY AIR TEMPERATURE (SAT) SETPOINT.
2. UNIT MODES WILL STAGE DOWN WHEN THE ZONE TEMPERATURE IS 0.5°F UNDER THE SETPOINTS FOR COOLING AND 0.5°F OVER THE SETPOINTS FOR HEATING.

LD20073

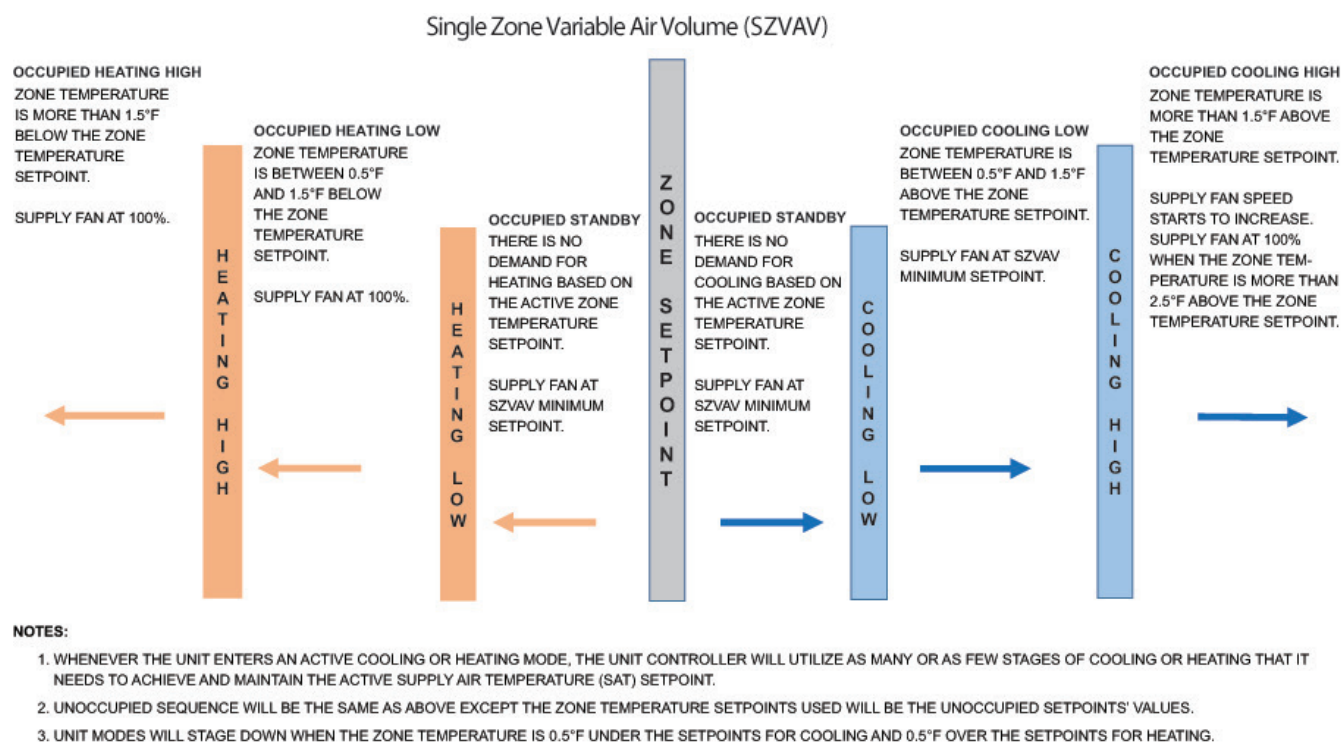
**FIGURE 3 - OPERATIONAL MODE: VARIABLE AIR VOLUME (VAV)**

### Single Zone VAV (SZVAV) Mode

Units configured for SZVAV operation shall contain a supply fan VFD. The unit shall switch between cooling mode, heating mode, and standby mode based on zone temperature. In cooling mode, the supply fan speed shall be varied based on zone temperature. If the zone temperature gets warmer, the supply fan speed shall increase. Conversely, if the zone temperature gets cooler, the supply fan speed shall decrease. In heating mode, the supply fan shall run at full speed. When the zone temperature is satisfied, the unit is neither in cooling mode nor heating mode, and the supply fan shall run at minimum speed. Control of cooling and heating stages shall operate as described in the following section.

**Unit Mode Determination (Hardwired or Communicated)** – The unit compares the analog wired zone temperature or communicated zone temperature input to the occupied zone cooling, occupied zone heating, unoccupied zone cooling, or unoccupied zone heating setpoints to determine the sub-mode of operation. *Figure 4 on page 67* shows what the unit mode would be based on the difference between the zone temperature and the zone temperature setpoints.

The only difference between hardwired and communicated is the method the unit controller uses to determine the zone temperature. In the hardwired mode, the input is an analog input to the control. In the communicated mode, the input is a serial input from a BAS.



**FIGURE 4 - OPERATIONAL MODE: SINGLE ZONE VAV (SZVAV)**

LD19888

## ***Controls (Cont'd)***

### **COOLING OPERATION**

#### **Zone Sensor Control**

If a zone sensor controls the unit, the single package unit controller shall maintain the zone temperature setpoint. This setpoint is user selectable at the single package unit user interface.

When a zone sensor is used for control, the single package unit controller will monitor the temperature within the space and control the unit accordingly. A closed-loop staging algorithm is used to stage compressors up and down as required to maintain the desired zone temperature setpoint. If the unit is equipped with an economizer, outside air conditions are continuously monitored by the control to determine if conditions are suitable for economizing. If conditions are suitable for economizing, the single package unit controller will modulate the OA damper in addition to staging compressors up and down to maintain the zone temperature setpoint.

### **HEATING OPERATION**

#### **Zone Sensor Control**

If a zone sensor controls the unit, the single package unit controller shall maintain all zone temperature setpoints. These setpoints are user selectable at the single package unit user interface.

When a zone sensor is used for control, the single package unit controller will monitor the temperature within the space and control the unit accordingly. A closed-loop staging algorithm is used to stage heating steps up and down as required to maintain the desired zone temperature setpoint. If the unit is equipped with an economizer, outside air conditions are continuously monitored by the control to determine if conditions are suitable for economizing. If conditions are suitable for economizing, the single package unit controller will modulate the OA damper in addition to staging heating steps up and down to maintain the zone temperature setpoint.

**TABLE 34 - THREE PHASE POWER SUPPLY CONDUCTOR SIZE RANGE****70–75 TON UNITS**

| SUPPLY VOLTAGE | SINGLE POINT TB             | SINGLE POINT DISCONNECT | DUAL POINT TB TB1 | TB2             |
|----------------|-----------------------------|-------------------------|-------------------|-----------------|
| 208V           | (2-in.) 250 kcmil-500 kcmil | (2-in.) 2 AWG-500 kcmil | 4 AWG-500 kcmil   | 6 AWG-350 kcmil |
| 230V           | (2-in.) 250 kcmil-500 kcmil | (2-in.) 2 AWG-500 kcmil | 6 AWG-400 kcmil   | 6 AWG-350 kcmil |
| 380V-60        | (2-in.) 3/0-250 kcmil       | 4 AWG-500 kcmil         | 6 AWG-400 kcmil   | 14 AWG-2/0      |
| 460V           | (2-in.) 3/0-250 kcmil       | 4 AWG-500 kcmil         | 14 AWG-2/0        | 14 AWG-2/0      |
| 575V           | 6 AWG-400 kcmil             | 6 AWG-350 kcmil         | 14 AWG-2/0        | 14 AWG-2/0      |

**80 TON UNITS**

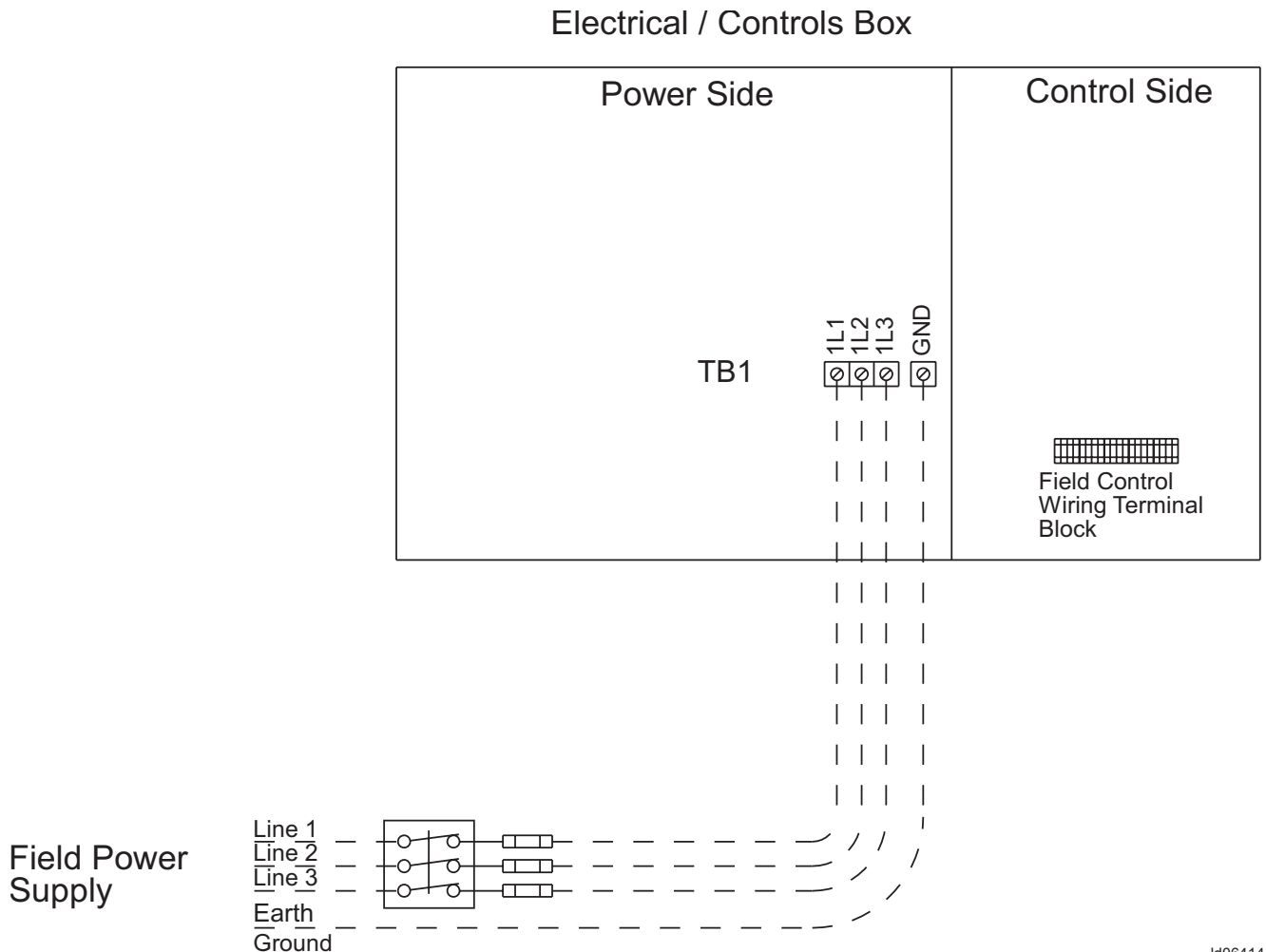
| SUPPLY VOLTAGE | SINGLE POINT TB             | SINGLE POINT DISCONNECT | DUAL POINT TB TB1       | TB2             |
|----------------|-----------------------------|-------------------------|-------------------------|-----------------|
| 208V           | (2-in.) 2/0-400 kcmil       | (2-in.) 2 AWG-500 kcmil | (2-in.) 2 AWG-500 kcmil | 6 AWG-350 kcmil |
| 230V           | (2-in.) 250 kcmil-500 kcmil | (2-in.) 2 AWG-500 kcmil | 4 AWG-500 kcmil         | 6 AWG-350 kcmil |
| 380V-60        | (2-in.) 3/0-250 kcmil       | 4 AWG-500 kcmil         | 6 AWG-400 kcmil         | 14 AWG-2/0      |
| 460V           | (2-in.) 3/0-250 kcmil       | 4 AWG-500 kcmil         | 6 AWG-400 kcmil         | 14 AWG-2/0      |
| 575V           | (2-in.) 3/0-250 kcmil       | 6 AWG-350 kcmil         | 14 AWG-2/0              | 14 AWG-2/0      |

**90–105 TON UNITS**

| SUPPLY VOLTAGE | SINGLE POINT TB       | SINGLE POINT DISCONNECT | DUAL POINT TB TB1       | TB2             |
|----------------|-----------------------|-------------------------|-------------------------|-----------------|
| 208V           | (2-in.) 2/0-400 kcmil | (2-in.) 2 AWG-500 kcmil | (2-in.) 2 AWG-500 kcmil | 4 AWG-600 kcmil |
| 230V           | (2-in.) 2/0-400 kcmil | (2-in.) 2 AWG-500 kcmil | (2-in.) 2 AWG-500 kcmil | 4 AWG-600 kcmil |
| 380V-60        | (2-in.) 3/0-250 kcmil | 4 AWG-500 kcmil         | 4 AWG-500 kcmil         | 14 AWG-2/0      |
| 460V           | (2-in.) 3/0-250 kcmil | 4 AWG-500 kcmil         | 6 AWG-400 kcmil         | 14 AWG-2/0      |
| 575V           | (2-in.) 3/0-250 kcmil | 6 AWG-350 kcmil         | 14 AWG-2/0              | 14 AWG-2/0      |

# Power Wiring: YPAL070–105

## SINGLE-POINT POWER SUPPLY WIRING



Id06414

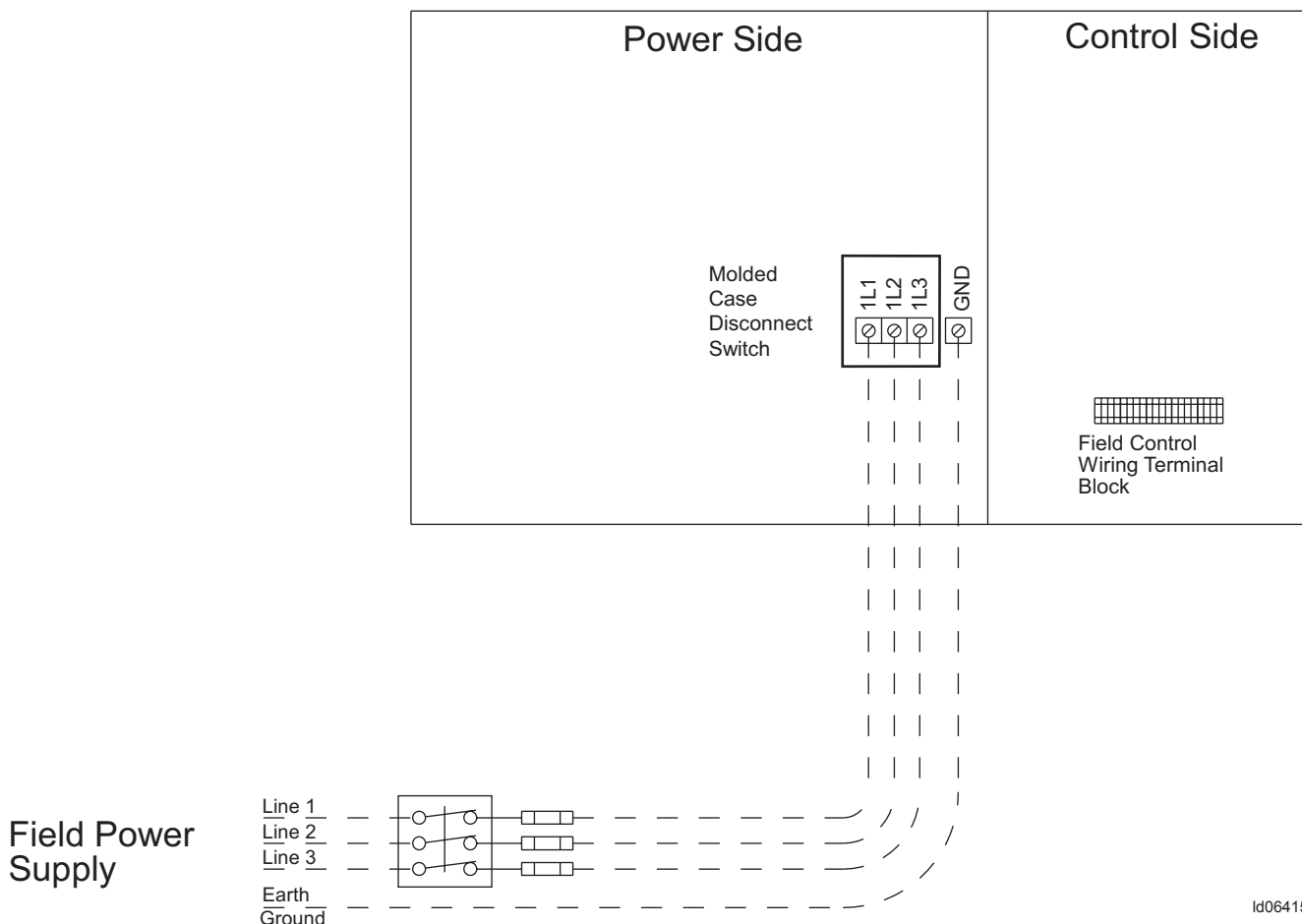
### NOTES:

1. All field wiring must be provided through a field-supplied fused disconnect switch to the unit terminals (or optional molded disconnect switch).
2. All electrical wiring must be made in accordance with all N.E.C. and/or local code requirements.
3. Minimum Circuit Ampacity (MCA) is based on U.L. Standard 1995, Section 36.14 (N.E.C. Section 440.34).
4. Maximum Dual Element Fuse size is based on U.L. Standard 1995, Section 36.15 (N.E.C. Section 440.22)
5. Use copper conductors only.
6. On units with an optional disconnect switch, the supplied disconnect switch is a "Disconnecting Means" as defined in the N.E.C. Section 100, and is intended for isolating the unit from the available power supply to perform maintenance and troubleshooting. This disconnect switch is not intended to be a Load Break Device.

**FIGURE 5 - SINGLE-POINT POWER SUPPLY WIRING**

## SINGLE-POINT POWER SUPPLY WIRING WITH NON-FUSED DISCONNECT

Electrical / Controls Box



Id06415

### NOTES:

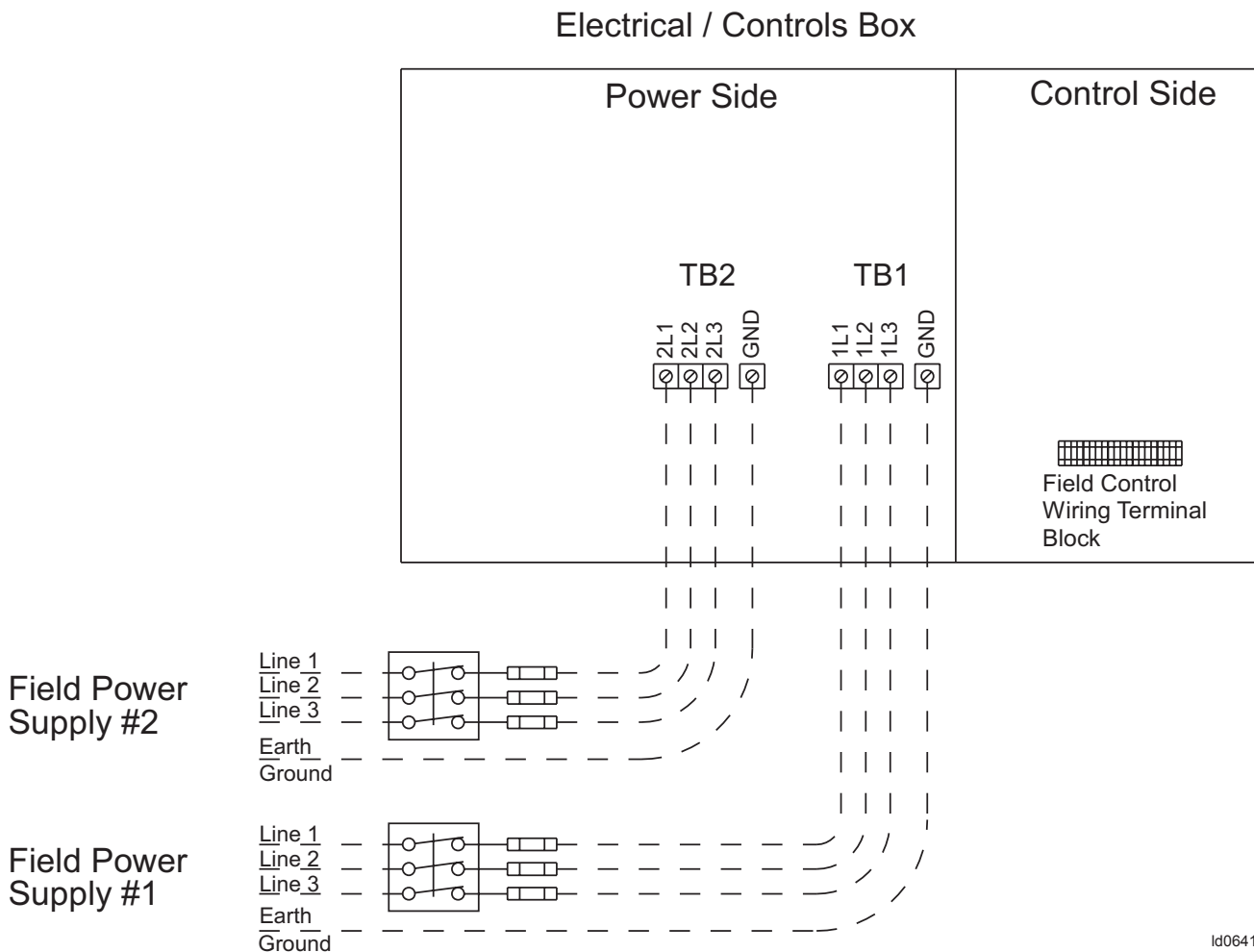
1. All field wiring must be provided through a field-supplied fused disconnect switch to the unit terminals (or optional molded disconnect switch).
2. All electrical wiring must be made in accordance with all N.E.C. and/or local code requirements.
3. Minimum Circuit Ampacity (MCA) is based on U.L. Standard 1995, Section 36.14 (N.E.C. Section 440.34).
4. Maximum Dual Element Fuse size is based on U.L. Standard 1995, Section 36.15 (N.E.C. Section 440.22)
5. Use copper conductors only.
6. On units with an optional disconnect switch, the supplied disconnect switch is a "Disconnecting Means" as defined in the N.E.C. Section 100, and is intended for isolating the unit from the available power supply to perform maintenance and troubleshooting. This disconnect switch is not intended to be a Load Break Device.

**FIGURE 6 - SINGLE-POINT POWER SUPPLY WIRING WITH NON-FUSED DISCONNECT**



# Power Wiring: YPAL070–105 (Cont'd)

## DUAL-POINT POWER SUPPLY WIRING



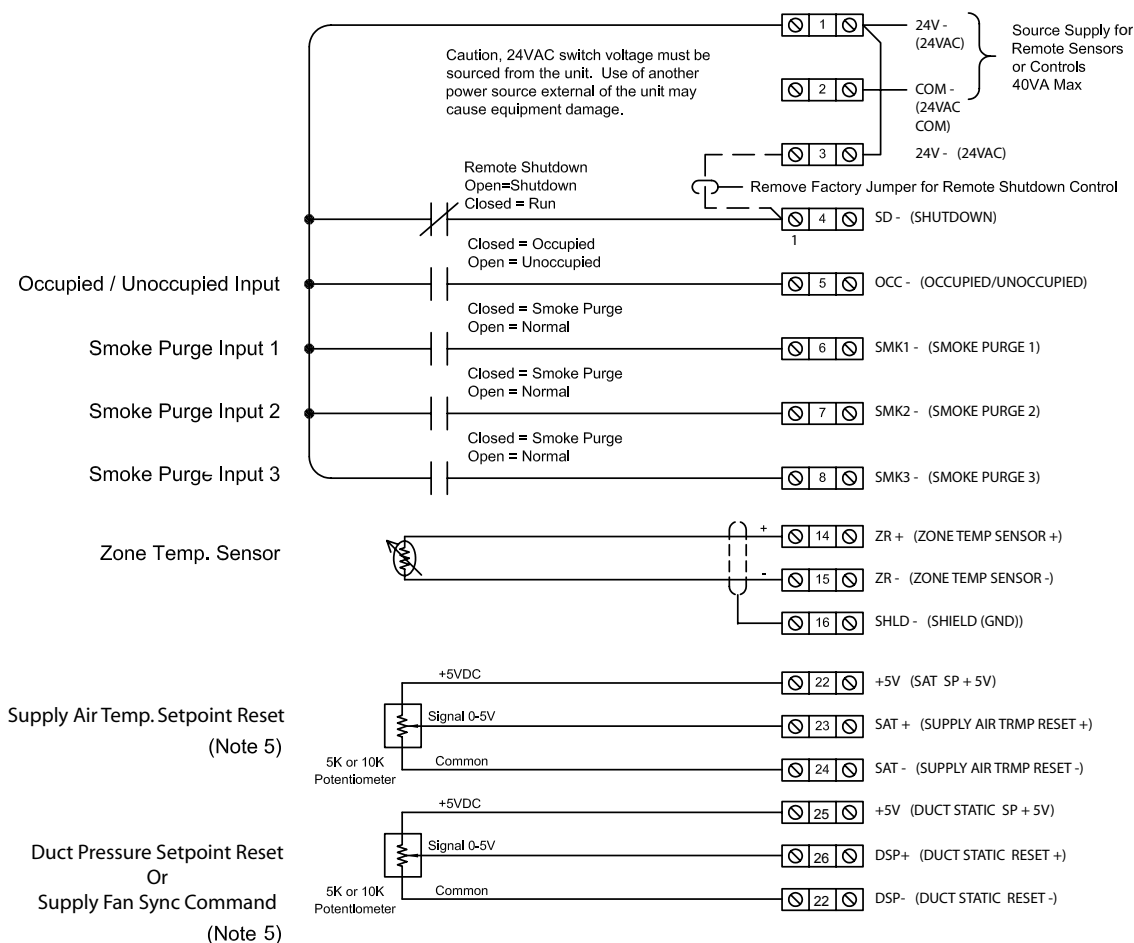
Id06416

### NOTES

1. All field wiring must be provided through a field-supplied fused disconnect switch to the unit terminals (or optional molded disconnect switch).
2. All electrical wiring must be made in accordance with all N.E.C. and/or local code requirements.
3. Minimum Circuit Ampacity (MCA) is based on U.L. Standard 1995, Section 36.14 (N.E.C. Section 440.34).
4. Maximum Dual Element Fuse size is based on U.L. Standard 1995, Section 36.15 (N.E.C. Section 440.22)
5. Use copper conductors only.
6. On units with an optional disconnect switch, the supplied disconnect switch is a "Disconnecting Means" as defined in the N.E.C. Section 100, and is intended for isolating the unit from the available power supply to perform maintenance and troubleshooting. This disconnect switch is not intended to be a Load Break Device.

**FIGURE 7 - DUAL-POINT POWER SUPPLY WIRING**

# Field Control Wiring



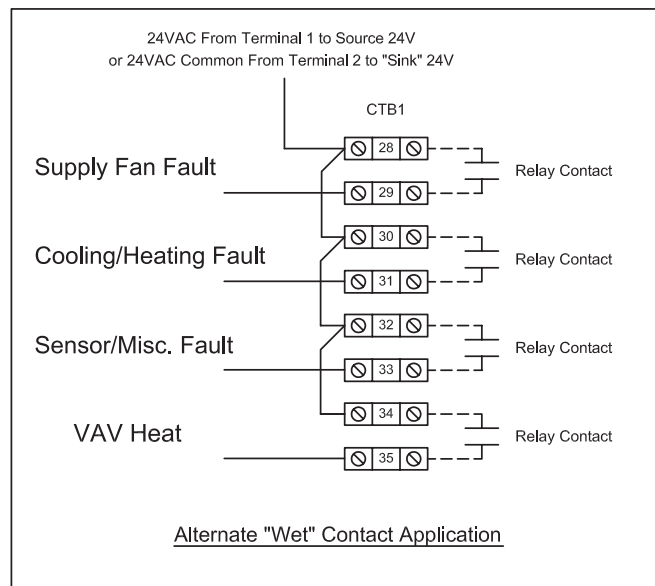
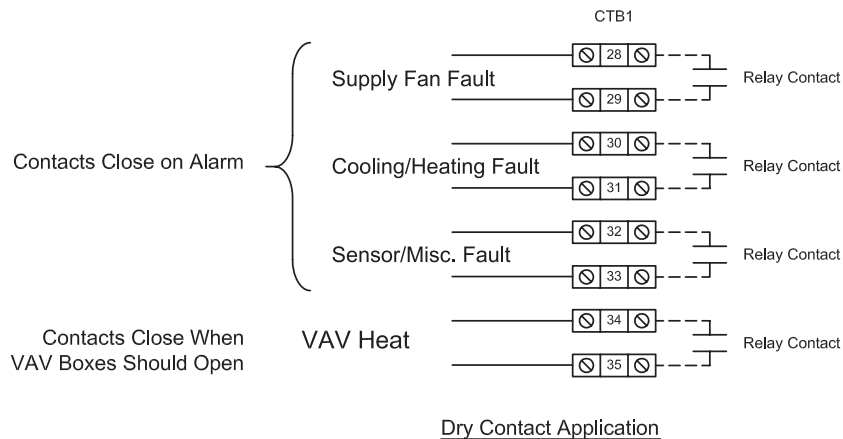
## NOTES

1. Wiring shown indicates typical wiring. Refer to the IOM manual (*Form YRK2-NOM1*) for more detailed wiring methods and options.
2. All wiring is Class 2, low voltage.
3. Maximum power available from the 24VAC terminal is 40VA.
4. Use shielded wire where shown.
5. Potentiometer application shown. As an alternative, signal inputs can be driven from an analog output of a third party controller.  
**NOTE:** Input resistance is 15 K ohms.

Id08184C

**FIGURE 8 - FIELD CONTROL WIRING - INPUTS**

## Field Control Wiring (Cont'd)



Id08186

### NOTES

1. Wiring shown indicates typical wiring. Refer to the IOM manual (*Form YRK2-NOM1*) for more detailed wiring methods and options.
2. All wiring is Class 2, low voltage.
3. Maximum power available from the 24VAC terminal is 40VA.
4. Use shielded wire where shown.
5. Potentiometer application shown. As an alternative, signal inputs can be driven from an analog output of a third party controller.  
**NOTE:** Input resistance is 15 K ohms.

**FIGURE 9 - FIELD CONTROL WIRING**

# General Arrangement Drawing – 70–80 Ton Models

BOTTOM SUPPLY / BOTTOM RETURN

## SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

## NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

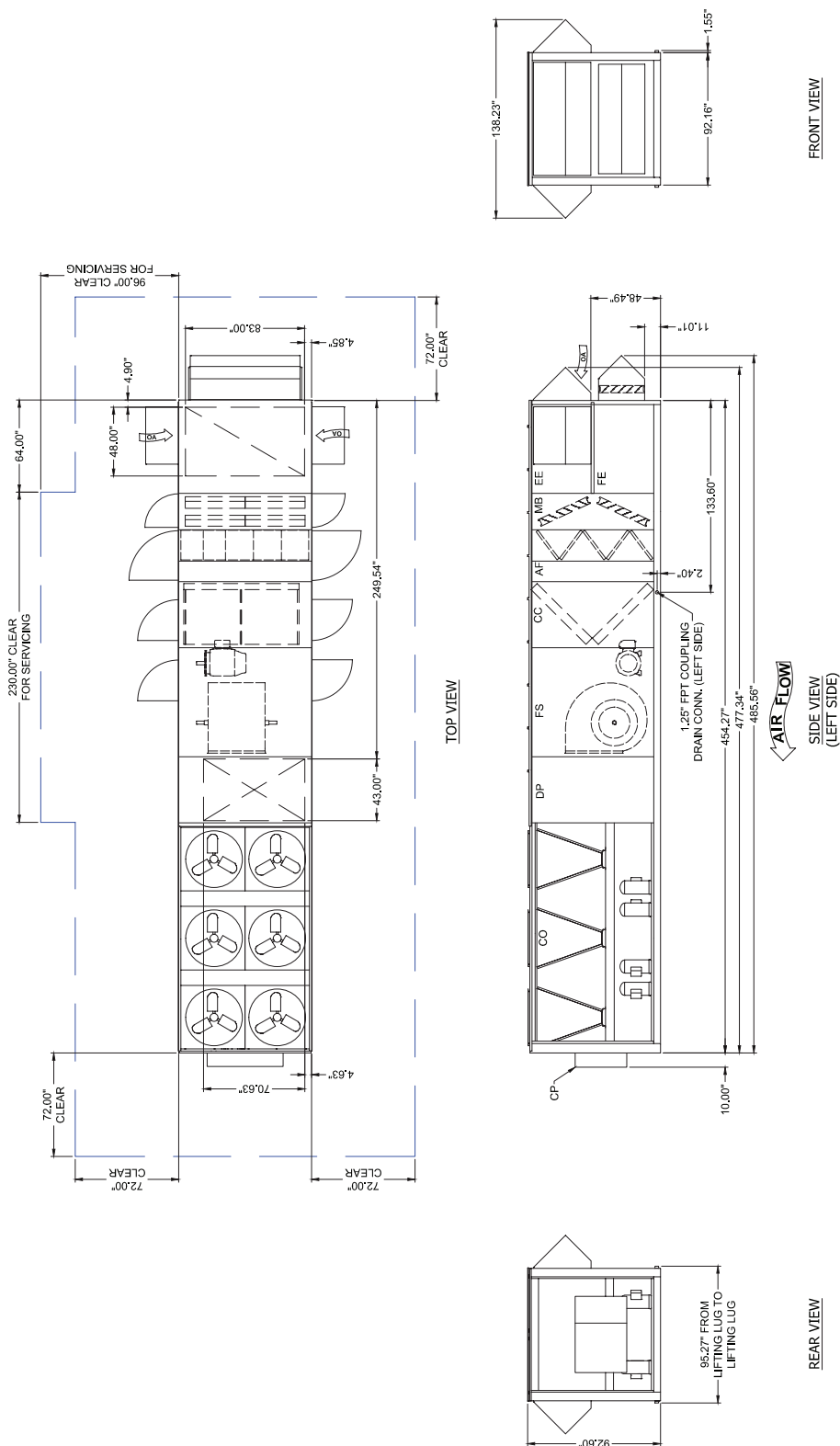


FIGURE 10 - GENERAL ARRANGEMENT DRAWING

LD08128

# General Arrangement Drawing – 70–80 Ton Models (Cont'd)

LEFT SUPPLY / LEFT RETURN

## SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

## NOTES

- 10-foot clearance minimum over the top of the condensing unit.
- Only one adjacent wall can exceed unit height.
- 12-foot clearance required to adjacent units.
- 8-foot service access recommended on one side.
- Outside air hoods folded for shipment.
- Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
- Opening dimensions  $\pm 0.5$  inch.

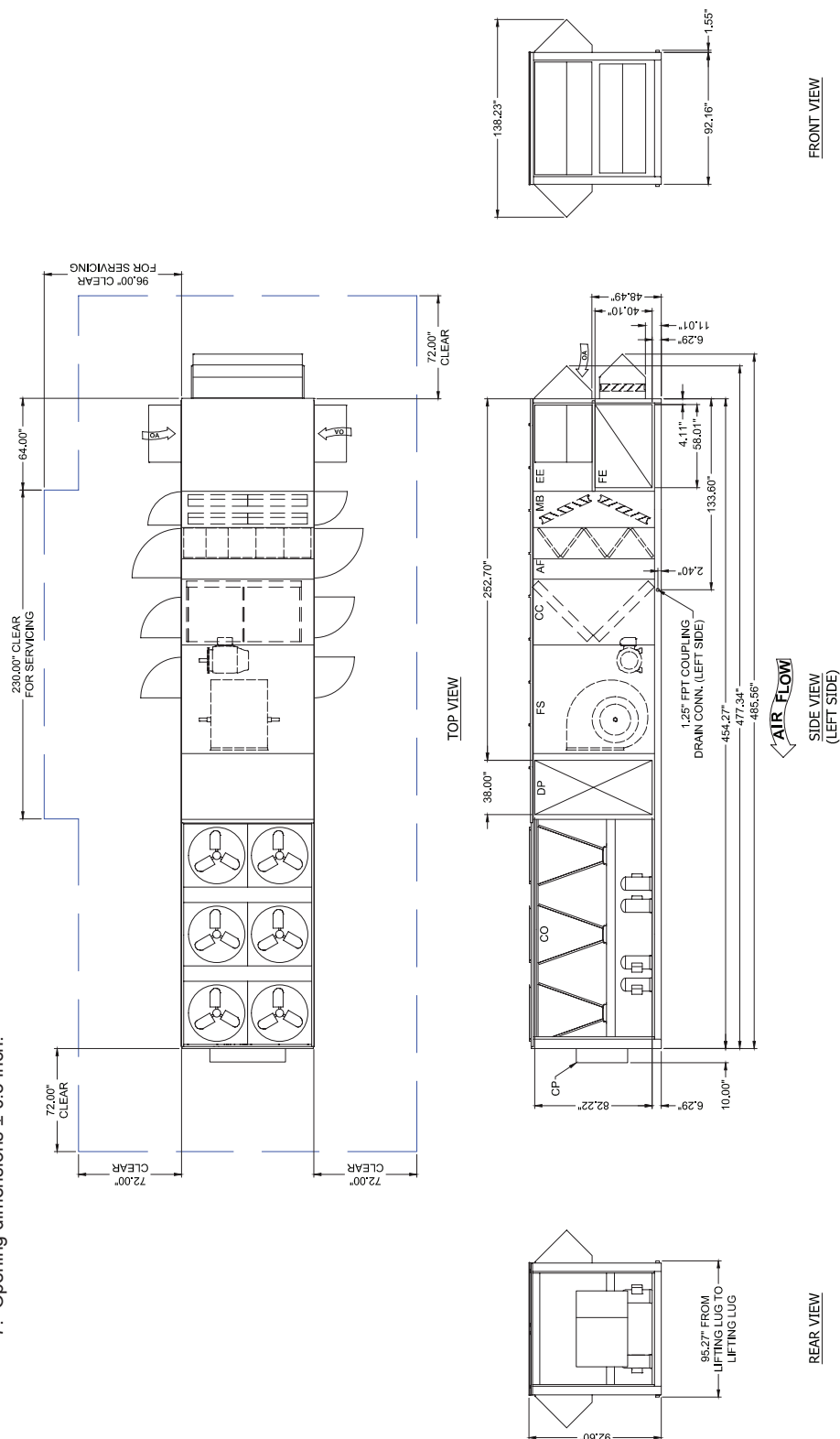


FIGURE 11 - GENERAL ARRANGEMENT DRAWING

Id08129

LEFT SUPPLY / FRONT RETURN

- SECTION DESCRIPTIONS:**
- EE = Economizer
  - FE = Fan Exhaust
  - MB = Mixing Box
  - AF = Angle Filters
  - CC = Cooling Coils
  - FS = Supply Fan
  - DP = Discharge Plenum
  - CO = Condenser Section
  - CP = Control Panel

- NOTES**
- 1. 10-foot clearance minimum over the top of the condensing unit.
  - 2. Only one adjacent wall can exceed unit height.
  - 3. 12-foot clearance required to adjacent units.
  - 4. 8-foot service access recommended on one side.
  - 5. Outside air hoods folded for shipment.
  - 6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
  - 7. Opening dimensions  $\pm 0.5$  inch.

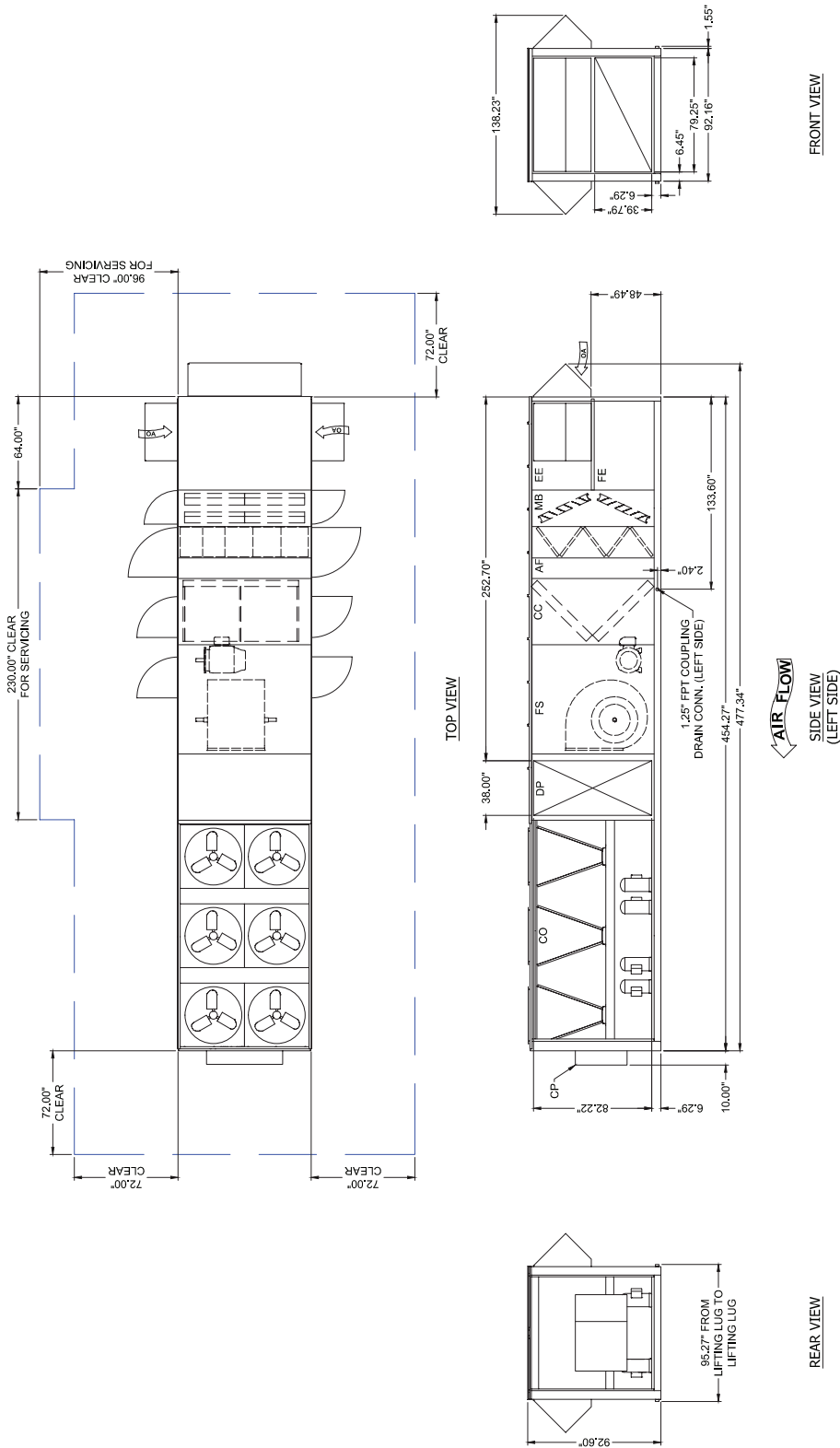


FIGURE 12 - GENERAL ARRANGEMENT DRAWING

# General Arrangement Drawing – 70–80 Ton Models (Cont'd)

## EXTENDED CABINET / BOTTOM SUPPLY / BOTTOM RETURN

### SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

### NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

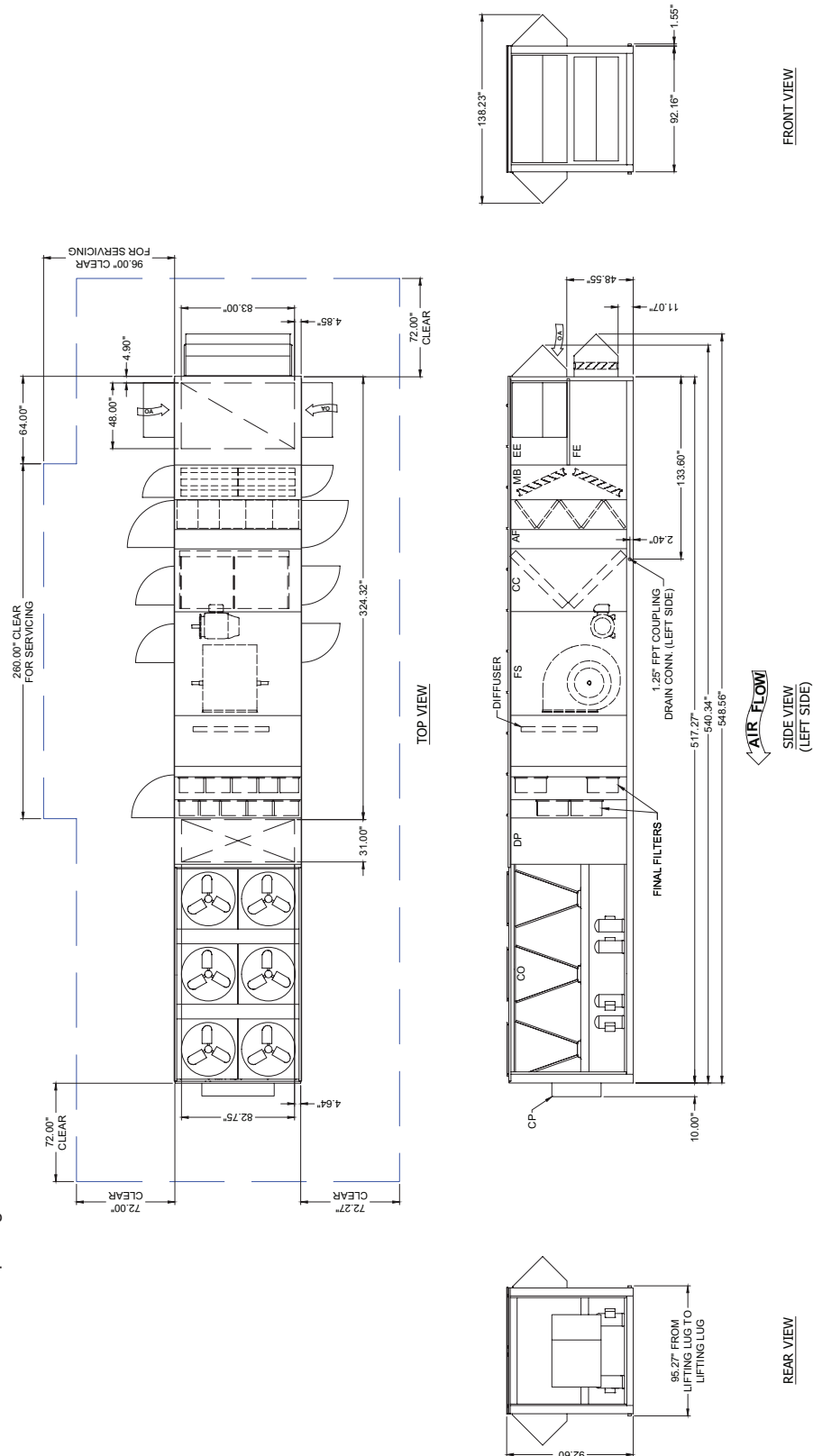


FIGURE 13 - GENERAL ARRANGEMENT DRAWING

LD08136



EXTENDED CABINET / LEFT SUPPLY / LEFT RETURN

SECTION DESCRIPTIONS:

- EE = Economizer
- FE = Fan Exhaust
- MB = Mixing Box
- AF = Angle Filters
- CC = Cooling Coils
- FS = Supply Fan
- DP = Discharge Plenum
- CO = Condenser Section
- CP = Control Panel

NOTES

- 1. 10-foot clearance minimum over the top of the condensing unit.
- 2. Only one adjacent wall can exceed unit height.
- 3. 12-foot clearance required to adjacent units.
- 4. 8-foot service access recommended on one side.
- 5. Outside air hoods folded for shipment.
- 6. Unit casing, clearance, and utility connection dimensions  $\pm$  1 inch.
- 7. Opening dimensions  $\pm$  0.5 inch.

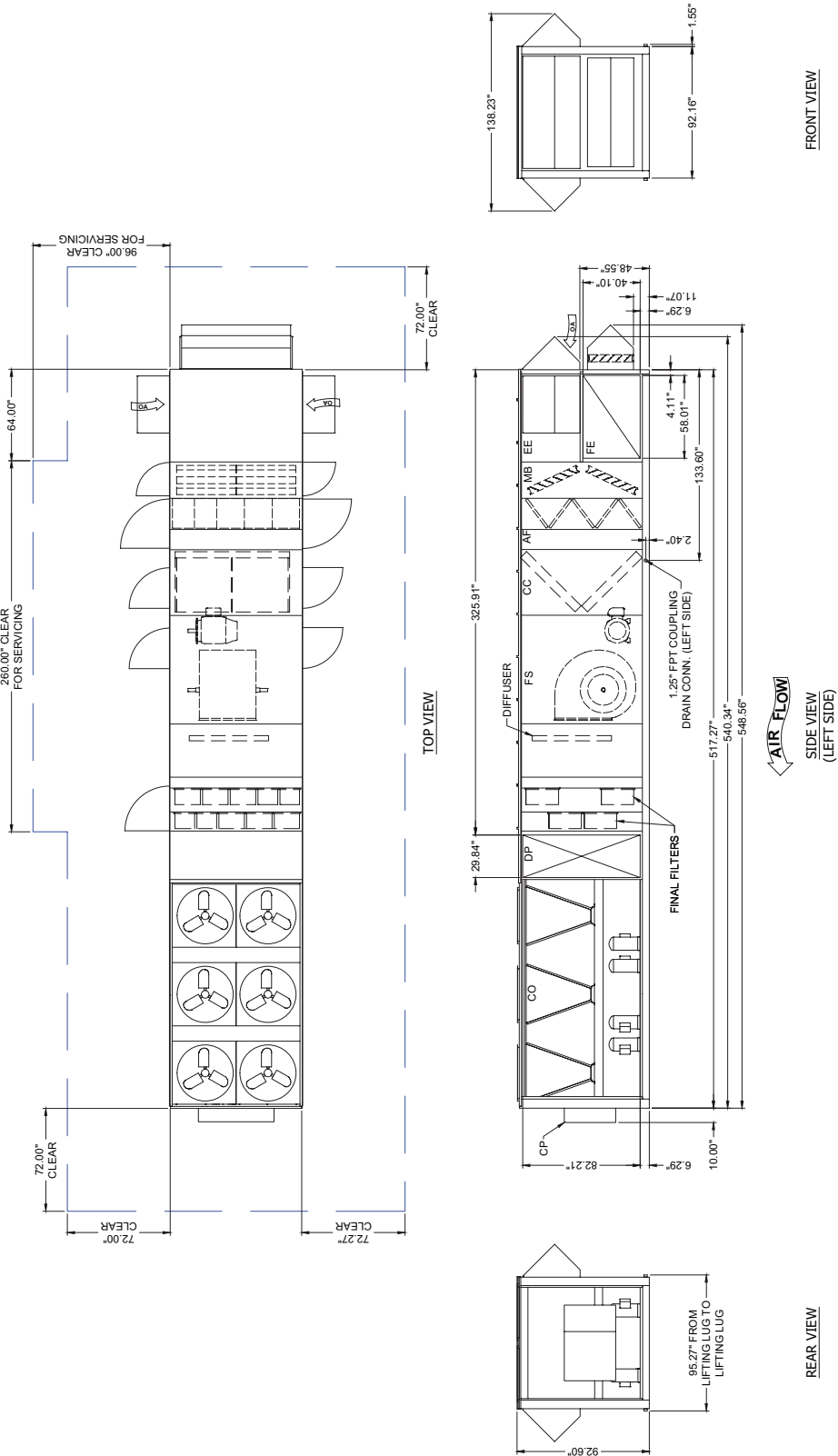


FIGURE 14 - GENERAL ARRANGEMENT DRAWING

# General Arrangement Drawing – 70–80 Ton Models (Cont'd)

EXTENDED CABINET / LEFT SUPPLY / FRONT RETURN

## SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

## NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

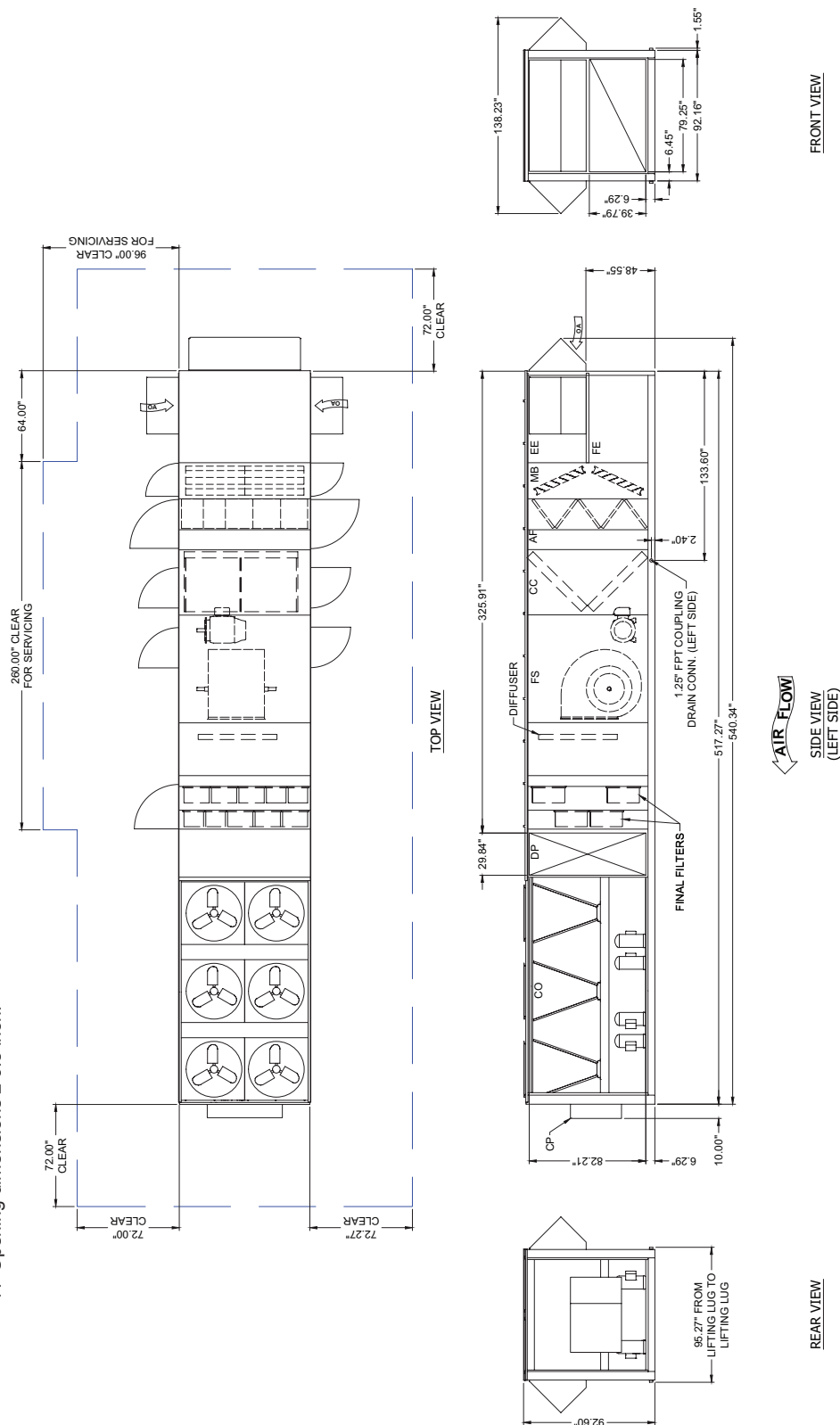


FIGURE 15 - GENERAL ARRANGEMENT DRAWING

LD08138

# General Arrangement Drawing – 90–105 Ton Models

BOTTOM SUPPLY / BOTTOM RETURN

## SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

## NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

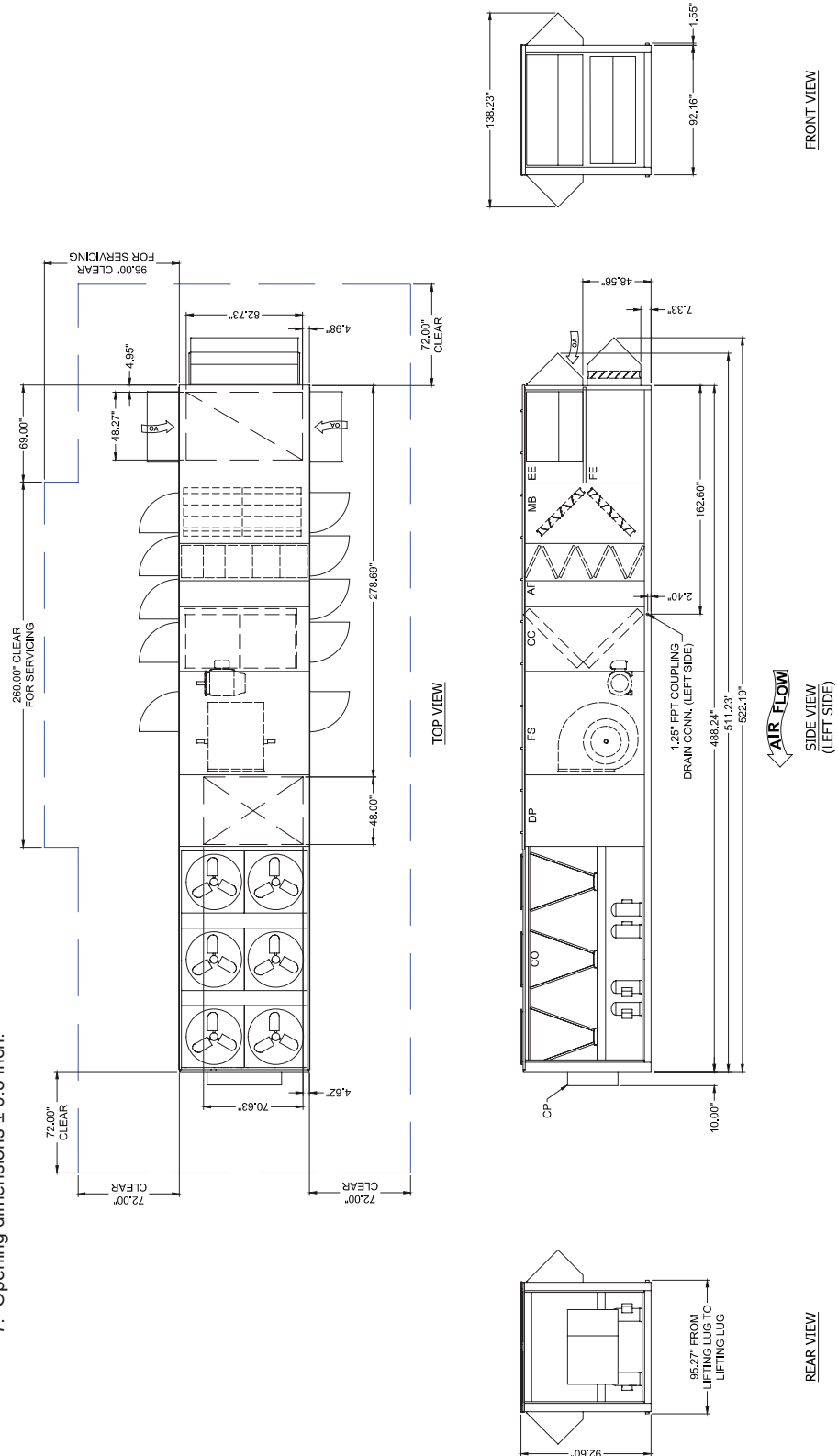


FIGURE 16 - GENERAL ARRANGEMENT DRAWING

# General Arrangement Drawing – 90–105 Ton Models (Cont'd)

LEFT SUPPLY / LEFT RETURN

## SECTION DESCRIPTIONS:

EE = Economizer  
 FE = Fan Exhaust  
 MB = Mixing Box  
 AF = Angle Filters  
 CC = Cooling Coils  
 FS = Supply Fan  
 DP = Discharge Plenum  
 CO = Condenser Section  
 CP = Control Panel

## NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

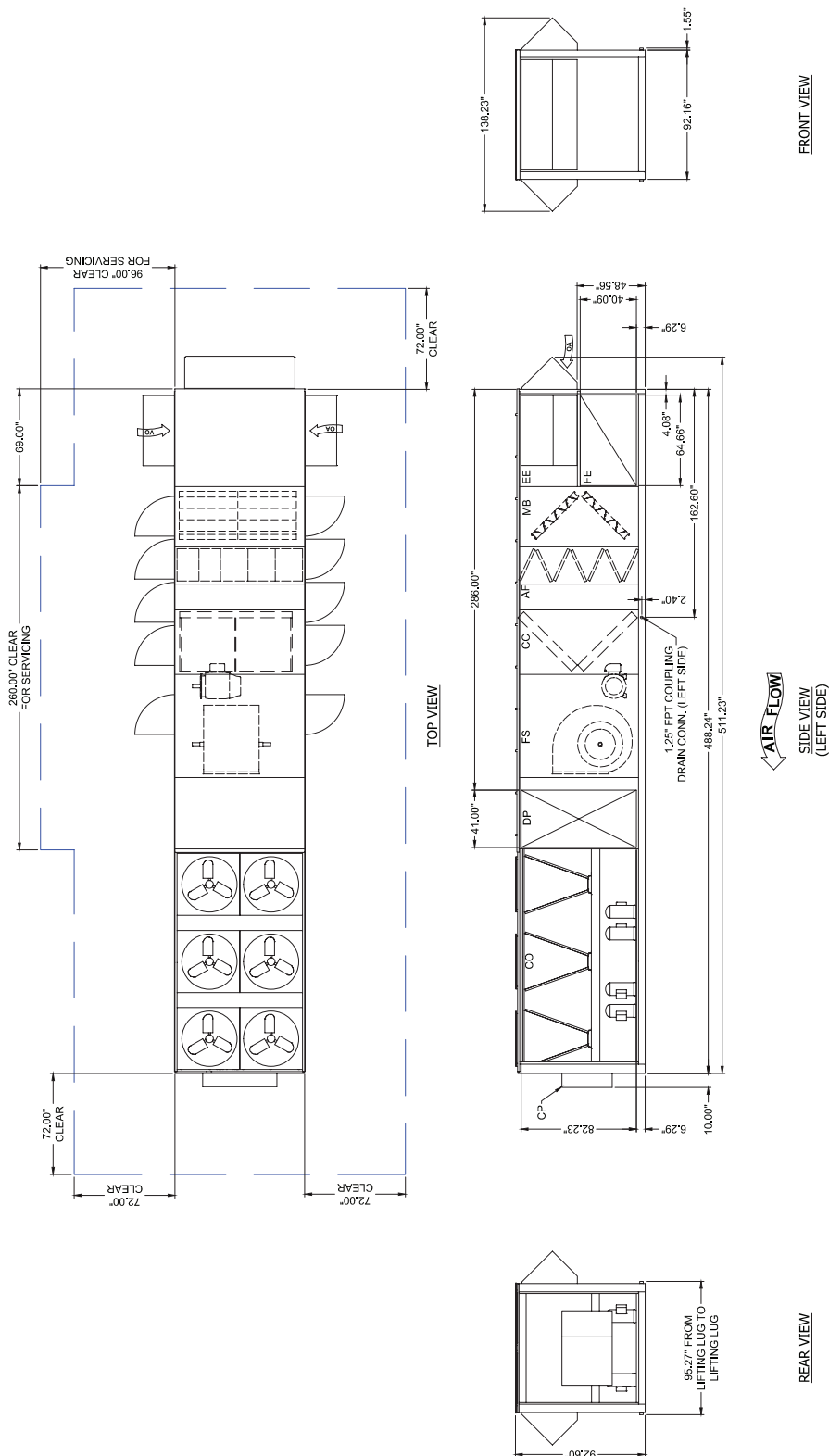


FIGURE 17 - GENERAL ARRANGEMENT DRAWING

LD08132

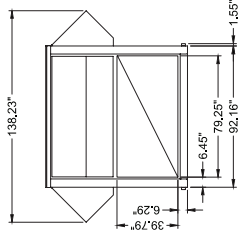
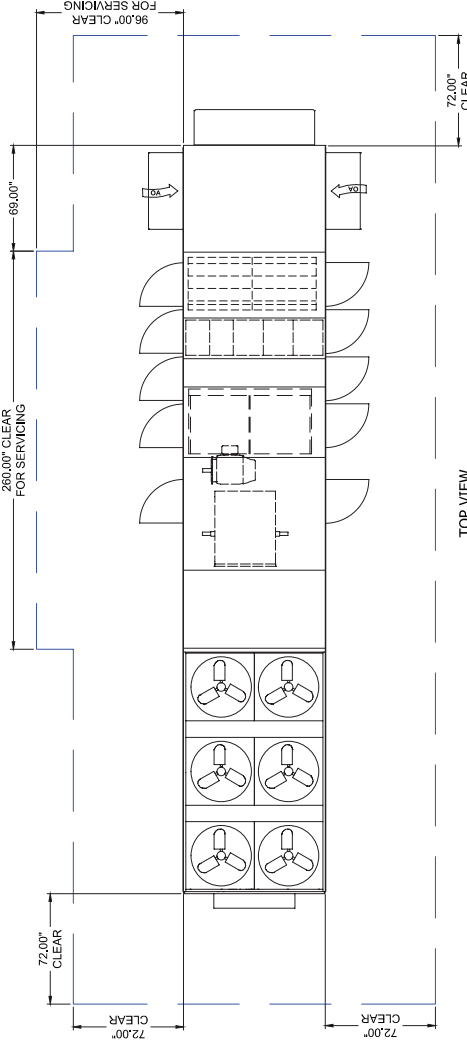
LEFT SUPPLY / FRONT RETURN

SECTION DESCRIPTIONS:

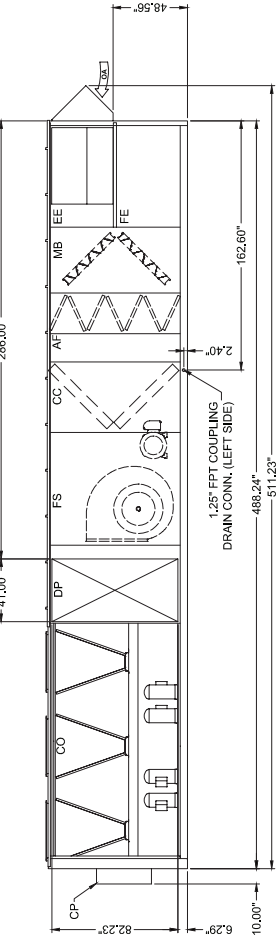
- EE = Economizer
- FE = Fan Exhaust
- MB = Mixing Box
- AF = Angle Filters
- CC = Cooling Coils
- FS = Supply Fan
- DP = Discharge Plenum
- CO = Condenser Section
- CP = Control Panel

NOTES

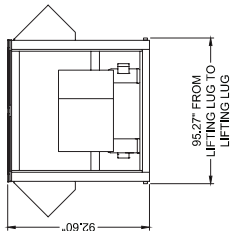
- 1. 10-foot clearance minimum over the top of the condensing unit.
- 2. Only one adjacent wall can exceed unit height.
- 3. 12-foot clearance required to adjacent units.
- 4. 8-foot service access recommended on one side.
- 5. Outside air hoods folded for shipment.
- 6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
- 7. Opening dimensions  $\pm 0.5$  inch.



FRONT VIEW



AIR FLOW  
SIDE VIEW  
(LEFT SIDE)



REAR VIEW

FIGURE 18 - GENERAL ARRANGEMENT DRAWING

# General Arrangement Drawing – 90–105 Ton Models (Cont'd)

## EXTENDED CABINET / BOTTOM SUPPLY / BOTTOM RETURN

### SECTION DESCRIPTIONS:

EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

### NOTES

- 10-foot clearance minimum over the top of the condensing unit.
- Only one adjacent wall can exceed unit height.
- 12-foot clearance required to adjacent units.
- 8-foot service access recommended on one side.
- Outside air hoods folded for shipment.
- Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
- Opening dimensions  $\pm 0.5$  inch.

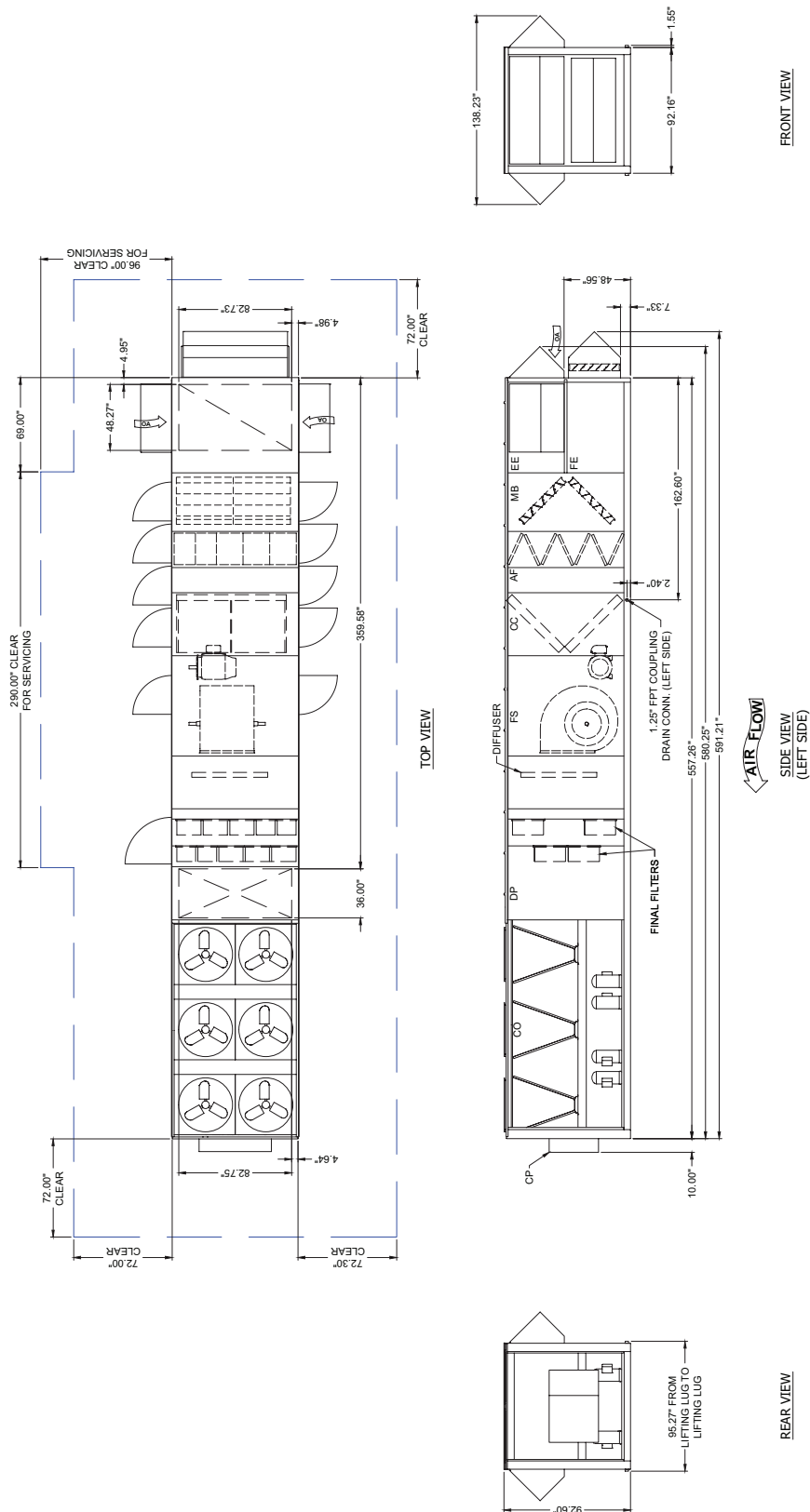


FIGURE 19 - GENERAL ARRANGEMENT DRAWING

Id08139

## EXTENDED CABINET / LEFT SUPPLY / LEFT RETURN

## NOTES

1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.

## SECTION DESCRIPTIONS:

EE = Economizer  
 FE = Fan Exhaust  
 MB = Mixing Box  
 AF = Angle Filters  
 CC = Cooling Coils  
 FS = Supply Fan  
 DP = Discharge Plenum  
 CO = Condenser Section  
 CP = Control Panel

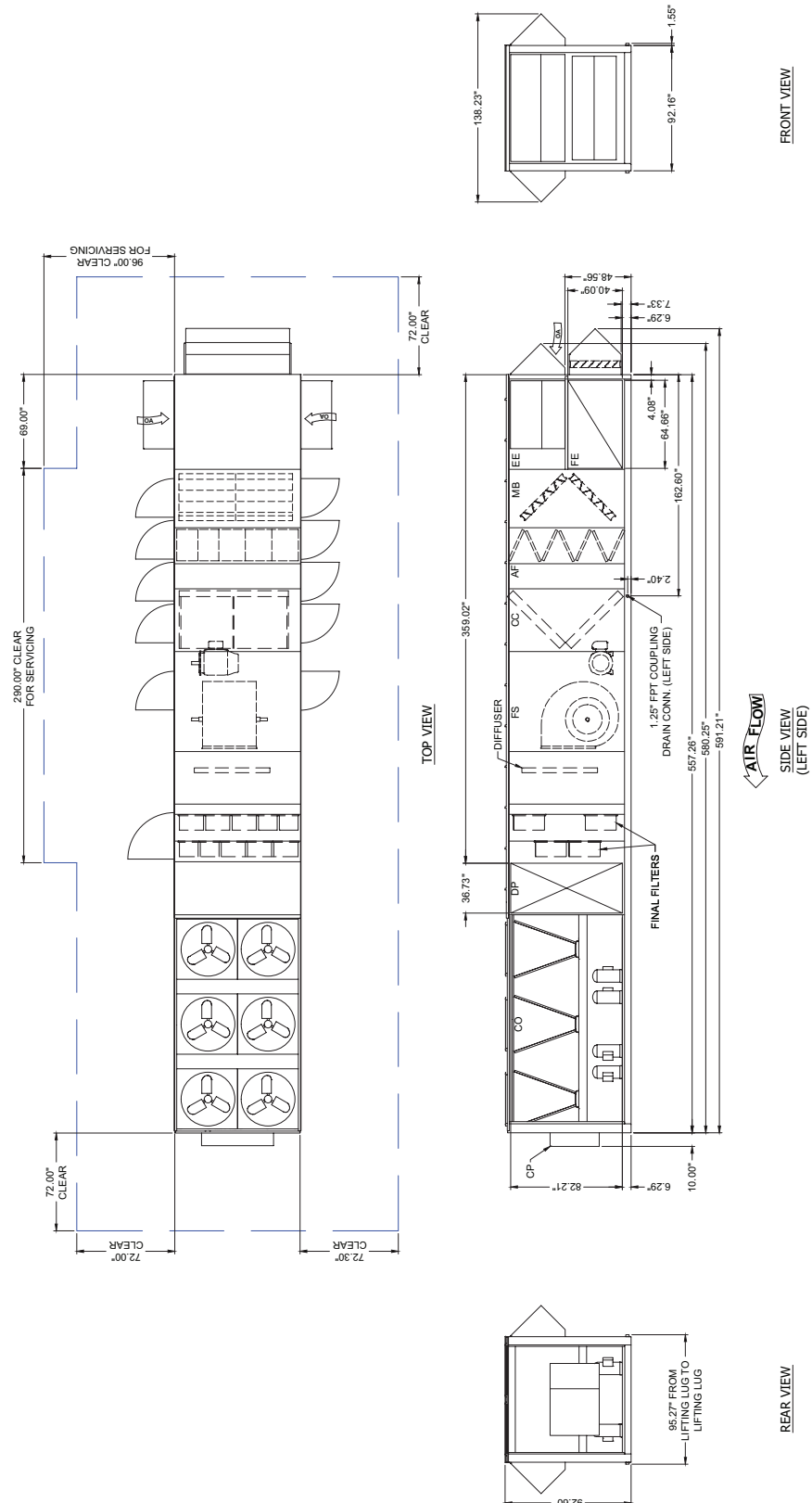


FIGURE 20 - GENERAL ARRANGEMENT DRAWING

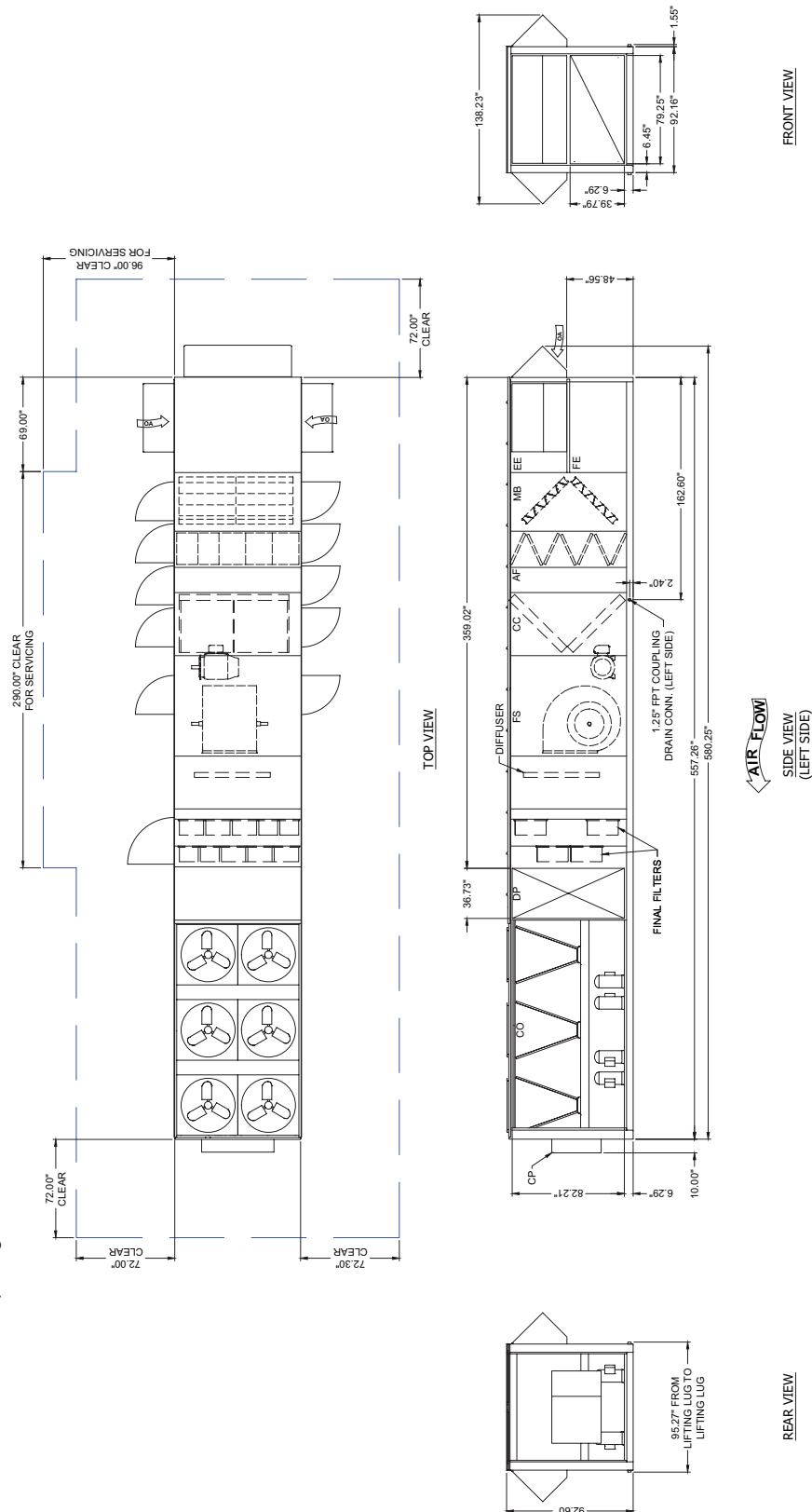


### SECTION DESCRIPTIONS:

- EE = Economizer  
FE = Fan Exhaust  
MB = Mixing Box  
AF = Angle Filters  
CC = Cooling Coils  
FS = Supply Fan  
DP = Discharge Plenum  
CO = Condenser Section  
CP = Control Panel

## NOTES

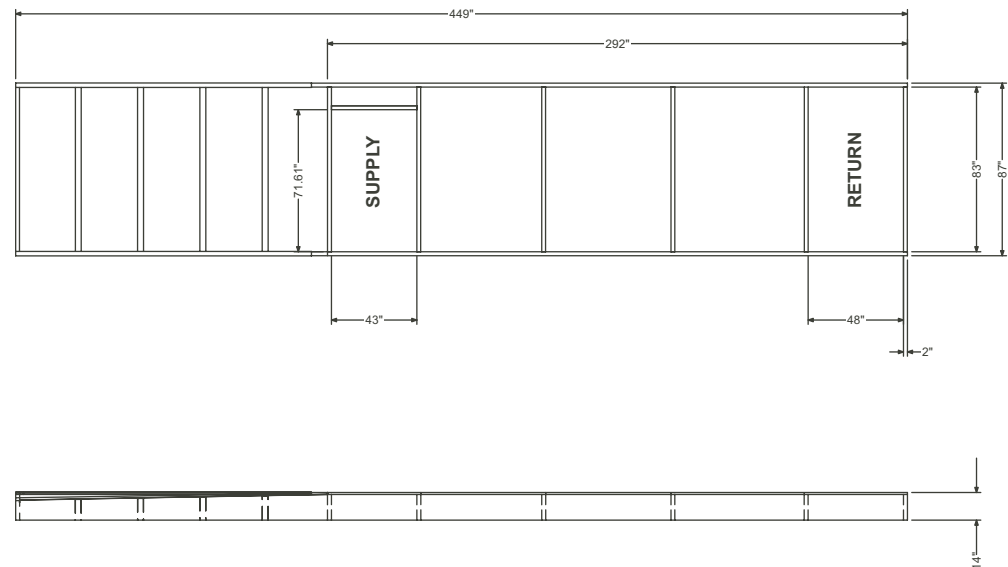
1. 10-foot clearance minimum over the top of the condensing unit.
2. Only one adjacent wall can exceed unit height.
3. 12-foot clearance required to adjacent units.
4. 8-foot service access recommended on one side.
5. Outside air hoods folded for shipment.
6. Unit casing, clearance, and utility connection dimensions  $\pm 1$  inch.
7. Opening dimensions  $\pm 0.5$  inch.



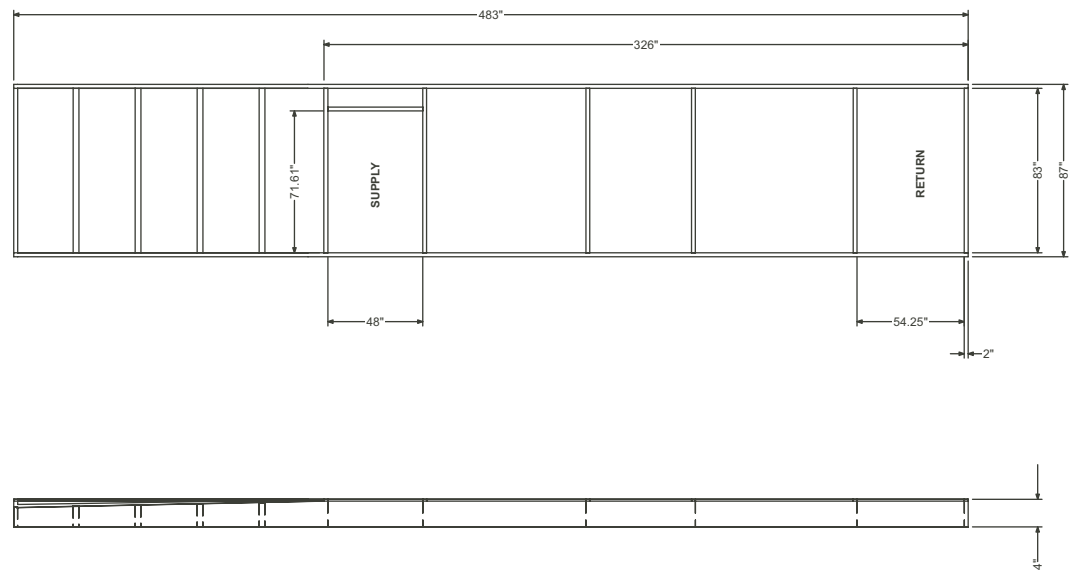
**FIGURE 21 - GENERAL ARRANGEMENT DRAWING**

# General Arrangement Drawing - Curb Layout

## CURB LAYOUT DRAWING / 70–80 TON MODEL



## CURB LAYOUT DRAWING / 90–105 TON MODEL



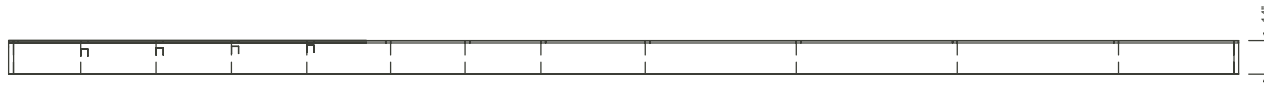
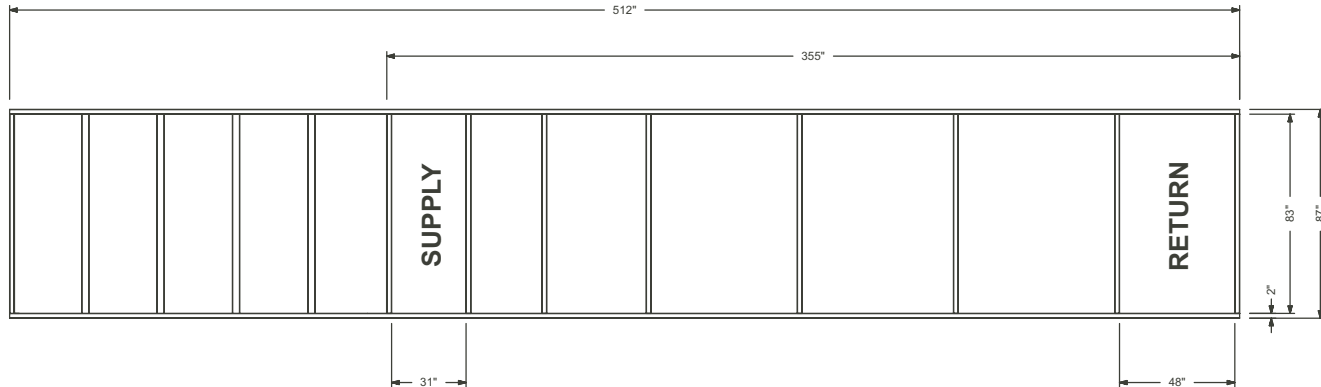
### NOTES

1. Unit must be installed square and level.
2. Curb configuration for "bottom" return and "bottom" supply.
3. These drawings are not intended as construction documents for the field fabricated roof curbs. YORK will not be responsible for the unit fit up, leak integrity, or sound level for installation using field fabricated roof curbs.
4. The YPAL unit does not have a base pan under the condensing section of the unit. Field fabricated roof curbs must have a cap on the top of the condensing section of the curb to prevent moisture from entering the space. The cap design must be sloped away from the supply duct opening to the end of the unit for the drainage of the moisture off of the top of the cap.

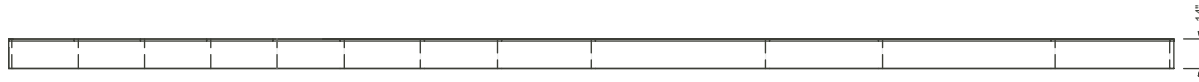
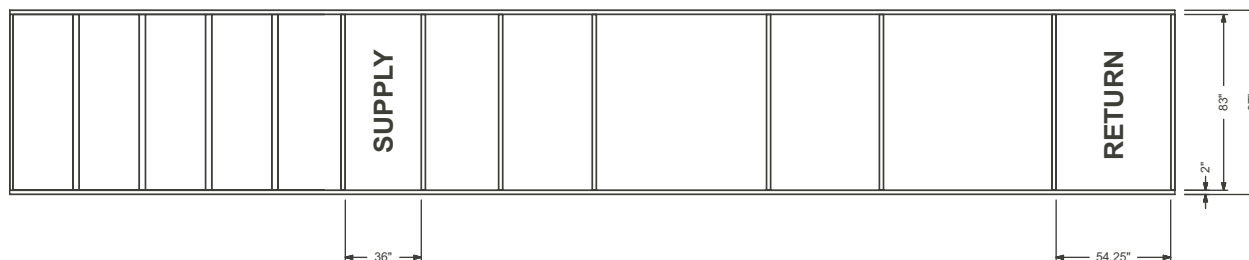
**FIGURE 22 - GENERAL ARRANGEMENT DRAWING**

## General Arrangement Drawing - Curb Layout (Cont'd)

### EXTENDED CURB LAYOUT DRAWING / 70–80 TON MODEL



### EXTENDED CURB LAYOUT DRAWING / 90–105 TON MODEL



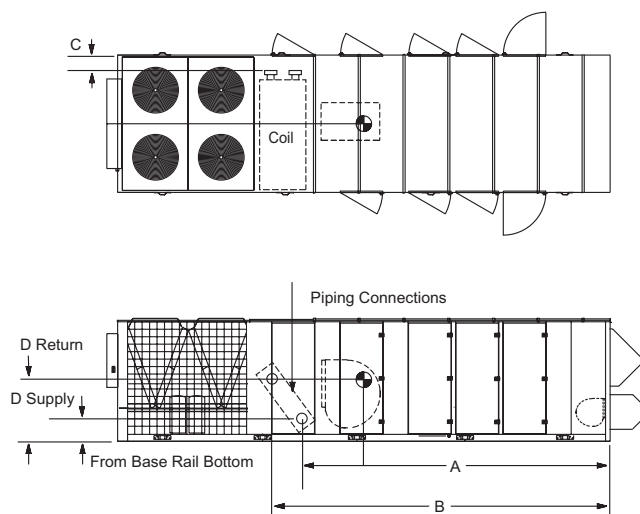
#### NOTES:

1. Unit must be installed square and level.
2. Curb configuration for "bottom" return and "bottom" supply.
3. These drawings are not intended as construction documents for the field fabricated roof curbs. YORK will not be responsible for the unit fit up, leak integrity, or sound level for installation using field fabricated roof curbs.
4. The YPAL unit does not have a base pan under the condensing section of the unit. Field fabricated roof curbs must have a cap on the top of the condensing section of the curb to prevent moisture from entering the space. The cap design must be sloped away from the supply duct opening to the end of the unit for the drainage of the moisture off of the top of the cap.

**FIGURE 23 - GENERAL ARRANGEMENT DRAWING**

# Hot Water/Steam Coil Connection Locations

## HOT WATER & STEAM COIL CONNECTION LOCATIONS



LD08119

**TABLE 35 - FITTING LOCATION DIMENSIONS**

| UNIT SIZE        | A      | B      | C      | D <sub>SUPPLY</sub> | D <sub>RETURN</sub> | CONNECTION SIZES (INCHES) |              |
|------------------|--------|--------|--------|---------------------|---------------------|---------------------------|--------------|
|                  | Note 1 | Note 2 | Note 3 | Note 4              | Note 4              | SUPPLY                    | RETURN       |
| <b>HOT WATER</b> |        |        |        |                     |                     |                           |              |
| <b>70-80</b>     | 254.60 | 285.60 | 6.25   | 45.60               | 16.00               | 2-inch FPS                | 2-inch FPS   |
| <b>90-105</b>    | 283.10 | 319.80 | 6.25   | 50.10               | 15.50               | 2-inch FPS                | 2-inch FPS   |
| <b>STEAM</b>     |        |        |        |                     |                     |                           |              |
| <b>70-80</b>     | 254.60 | 270.50 | 5.75   | 31.90               | 16.00               | 2-inch MPT                | 1.5-inch MPT |
| <b>90-105</b>    | 283.10 | 301.50 | 5.75   | 32.60               | 15.60               | 2-inch MPT                | 1.5-inch MPT |

**NOTES**

1. Location of return line connection, horizontal from economizer corner post, in direction of airflow
2. Location of supply line connection, horizontal from economizer corner post, in direction of airflow
3. Location of both supply and return lines, horizontal from outside casing of unit, across direction of airflow
4. Location of supply and return lines, vertical from bottom edge of base rail

MPT = Male Pipe Thread      FPS = Female Pipe Sweat      FPT = Female Pipe Thread

Hot Water Coil Connections w/ controls are valve connections facing bottom of the unit, at locations indicated.

Steam and Hot Water connections w/o controls are fittings connections facing side of the unit, at locations indicated.

Power/Control Entry – 70–105 Ton Models

TABLE 36 - POWER/CONTROL ENTRY ENCLOSURE TYPE

|         |     | VOLTAGE  |          |          |          |
|---------|-----|----------|----------|----------|----------|
|         |     | 200/3/60 | 230/3/60 | 460/3/60 | 575/3/60 |
| TONNAGE | 70  | Large    | Large    | Small    | Small    |
|         | 75  | Large    | Large    | Small    | Small    |
|         | 80  | Large    | Large    | Small    | Small    |
|         | 90  | Large    | Large    | Large    | Small    |
|         | 105 | N/A      | N/A      | Large    | Small    |

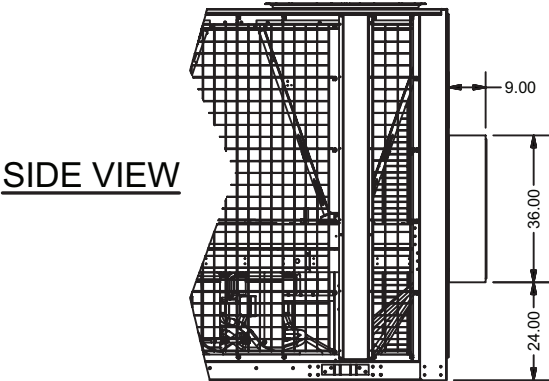
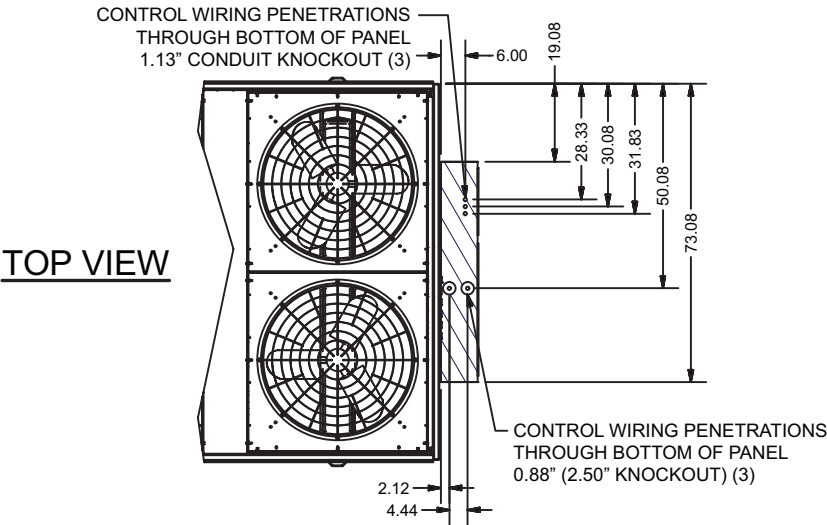
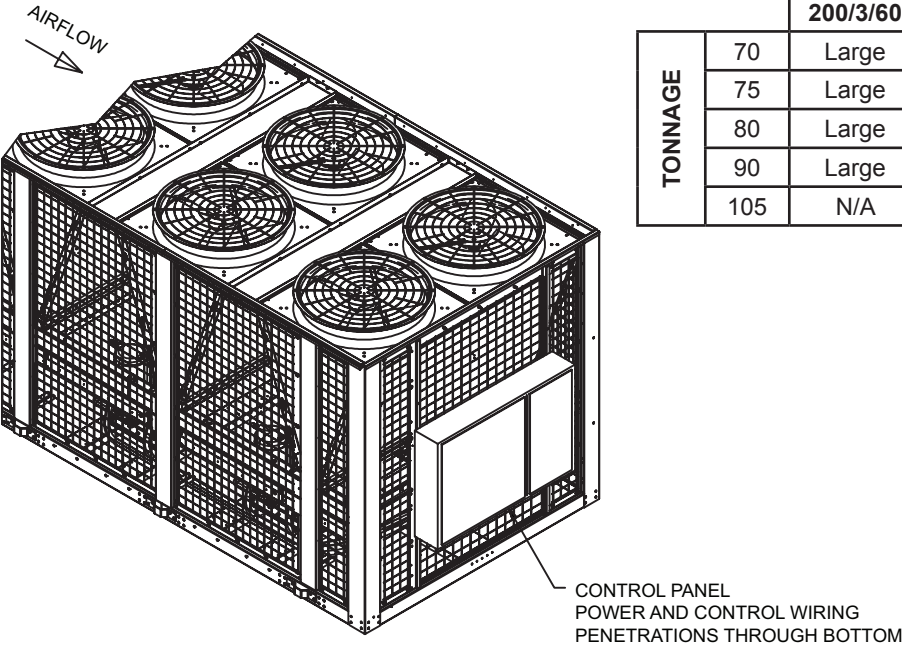


FIGURE 24 - POWER/CONTROL ENTRY: SMALL ENCLOSURE

LD28375

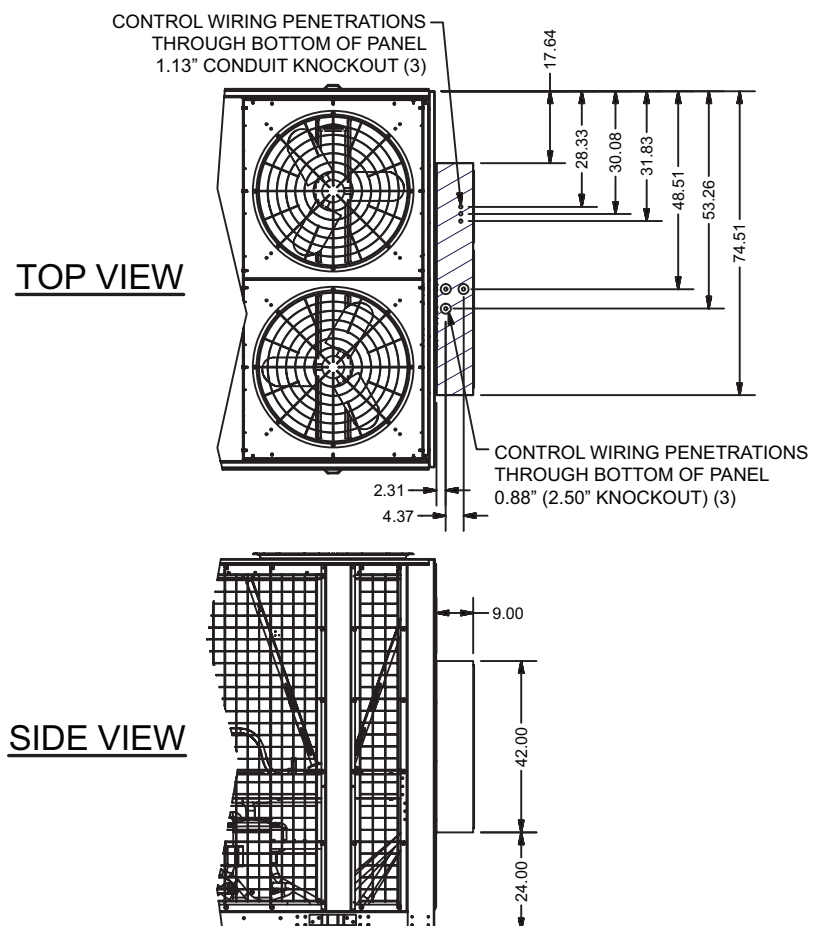
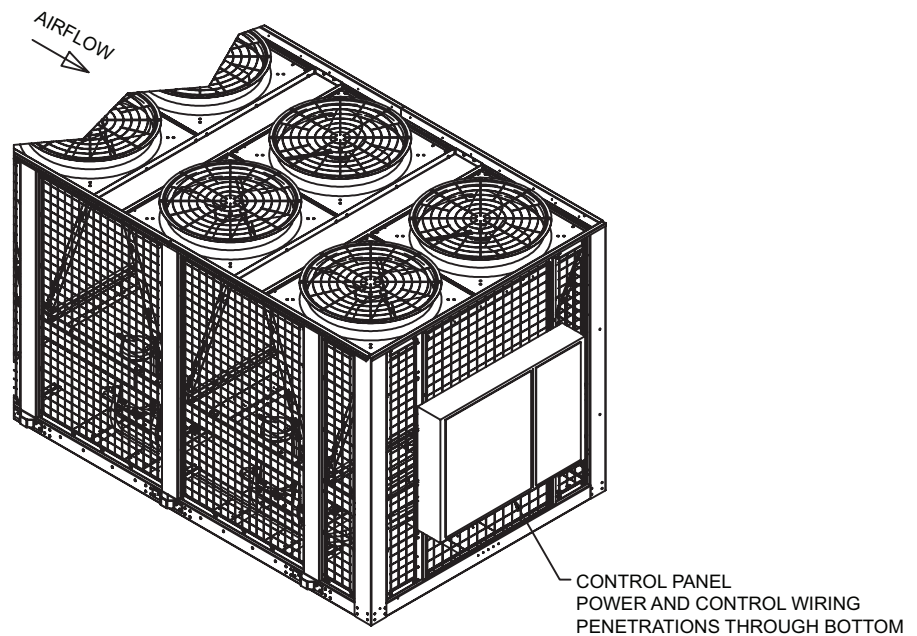


FIGURE 25 - POWER/CONTROL ENTRY: LARGE ENCLOSURE

LD28376

# Guide Specifications

## GENERAL

### Scope

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

Provide Microprocessor-controlled, air-cooled, double-wall construction outdoor packaged single package unit air conditioning product of the scheduled capacities and performance as shown and indicated on the Drawings, including but not limited to:

1. Single-piece single package unit package
2. Charge of refrigerant and oil
3. Electrical power and control connections
4. Supply and return duct connections
5. Factory start-up

### Quality Assurance

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

1. All units shall meet the latest ASHRAE 90.1 minimum energy-efficiency requirements (EER)
2. All units shall meet the latest ASHRAE 62 requirements for ventilation and indoor air quality.
3. All units shall be rated in accordance with the ARI Standard 340/360
4. All units shall be tested to ANSI/UL 1995 and CAN/CSA C22.2 No. 236 standards
5. Gas heating units shall be designed in conform to ANSI Z21.47-2006/CSA2.3-2006 standards and be carry the ETL listed.
6. Units shall be ETL and ETL Canada listed

**Manufacturers:** The design shown on the drawing is based upon products of the manufacturer scheduled. Alternate equipment manufacturers shall be acceptable if equipment meets the scheduled performance and complies with these specifications. If equipment manufactured by manufacturer other than that scheduled is utilized, then the Mechanical Contractor shall be responsible for coordinating with the General Contractor and all affected Subcontractors to insure proper provisions for installation of the furnished unit. This coordination shall include, but not be limited to, the following:

1. Structural supports for units.
2. Roof curb transition.
3. Piping size and connection/header locations.
4. Electrical power requirements and wire/conduit and overcurrent protection sizes.
5. All costs incurred to modify the building provisions to accept the furnished units.



**Warranty:** Manufacturer shall warrant all equipment and material of its manufacture against defects in workmanship and material for a period of eighteen (18) months from date of shipment.

1. The warranty shall include parts only during this period.
2. The warranty shall not include parts associated with routine maintenance, such as belts, air filters, etc.

### **Delivery and Handling**

Unit shall be delivered to the job site fully assembled, wired, and charged with refrigerant and oil by the manufacturer.

Unit shall be stored and handled per Manufacturer's instructions.

All handling and storage procedures shall be per manufacturer's recommendations.

### **Submittals**

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

**Product Data:** Product data shall include 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 shall be provided.
2. Product data of filter media, filter performance data, filter assembly, and filter frames shall be provided.
3. Electrical requirements for power supply wiring; including wiring diagrams for inter-lock and control wiring shall be supplied. Factory and field-installed wiring shall be clearly indicated.
4. Operation and maintenance documentation shall be supplied in accordance with Section 01830 – Operation and Maintenance, including but not limited to instructions for lubrication, filter replacement, compressor, motor and drive replacement, coil cleaning, filter maintenance, spare parts lists, and wiring diagrams.

### **Warranties**

Equipment shall include the manufacturer's warranty not less than eighteen months from the date of shipment.

Extended parts warranty [optional] shall be included for an additional 1 [5] years

Extended parts and labor warranty [optional] shall be included for an additional 1 [5] years

## Guide Specifications (Cont'd)

### EQUIPMENT

#### Product Specification

**Summary:** Completely factory assembled unitized construction packaged single package unit air conditioning unit including a factory-mounted and wired unit controller and sensors, single-point power connection 460V [208V/230V/575V] three-phase, 60Hz power supply, outdoor air handling section with return and supply openings, discharge plenum, direct-expansion refrigerant condensing section.

**Factory Test:** The refrigerant circuit shall be pressure-tested, evacuated and fully charged with refrigerant and oil. The completed refrigerant circuit shall undergo a factory helium leak test and undergo an automated operational run test and quality inspection prior to shipment. The unit controller shall be configured and run tested at the factory to minimize field setup time. If the unit is not configured and tested, then the manufacturer shall provide field start up and testing to ensure that the controller is functioning properly.

The rooftop unit shall be tested and certified to meet the seismic standards of the 2012 International Building Code and ASCE 7-06. The unit shall be APPROVED for seismic application when properly installed, used as intended, and contains a Seismic Certification Label referencing the Certificate of Compliance. As limited by the tabulated values, below grade, grade, and roof-level installations, installations in essential facilities, for life safety applications, and/or of equipment containing hazardous contents are permitted and included in this certification with an Equipment Importance Factor assigned as IP=1.5, certified to a maximum Design Structural Response Acceleration at Short Periods (Sds) of up to 1.4 g. The unit shall be labeled to reflect this.

#### Unit Construction

**Base Rail:** The unit shall include an integral design base rail with lifting points clearly marked and visible on the base rail and a 1-1/4-inch FPT connection for condensate drainage. The unit base shall be designed with a recessed curb mounting location. The recessed curb-mounting surface shall provide a continuous surface for field application of curb gasketing to create a weather tight seal between the curb and unit.

**Casing:** Casing shall be complete post and panel construction with exterior skin. All panels, doors, walls, uprights, floor panels and roofing shall be one-inch thick; 1-1/2 pound density insulation. Units are specifically designed for outdoor installation.

**Roof:** The unit roof shall be bowed with the peak in the middle of the unit and sloped to both sides of the unit for drainage. A drip lip shall run the length of the unit to prevent water drainage down the side of the unit. Roof and sidewall seams shall be continuously caulked and covered with formed galvanized seam caps. All panel fasteners shall be secured through standing seams to prevent fastener penetrations that are exposed to the air stream.

**Paint:** Exterior painted surfaces are designed to withstand a minimum of 1,000 salt spray hours when tested in accordance with ASTM B-117.

**Markings and Diagrams:** All necessary tags and decals to aid in the service and/or indicating caution areas shall be provided. Electrical wiring diagrams shall be attached to the control panel access door.

**Documentation:** Installation and maintenance manuals shall be supplied with each unit.

**Access Doors:** Double wall access doors shall be provided in the fan, coil, filter and inlet sections of the unit on both sides of the unit. Doors shall be double-wall construction with

a solid liner and a minimum thickness of 1-inch. Doors shall be attached to the unit with piano-type stainless steel hinges. Latches shall be positive-action, creating an airtight seal between the door and unit. Panels and doors shall be completely gasketed with a closed-cell, neoprene gasket. Door tiebacks shall be provided for all doors to secure doors while servicing.

### ***Economizer Type***

#### **Select None or One of the Following**

1. **No Outside Air:** the unit has no provisions for outside ventilation air.
2. **Manual Outside Air Damper:** A manually adjustable outside air damper capable of admitting 0–25% outside air shall be provided.
3. **Modulating Economizer:** This option includes modulating outdoor air and return air dampers that are interlocked (mechanical interlock) and positioned by fully modulating, solid-state damper actuators. Control of the damper is via a standard ambient outdoor air dry bulb sensor, or optional single or comparative enthalpy controls.
4. **Two-Position Outside Air Damper:** A two position damper outside air damper capable of admitting 0–25% outside air shall be provided. The minimum position shall be manually adjustable from 0–25%. Control shall be based on the occupied mode of the unit. For occupied mode, the damper shall be open to the minimum position and for unoccupied, it shall be closed.
5. **Modulating Economizer:** The economizer segment shall be designed to use outside air for cooling and ventilation and provide a means of exhausting air from the air-handling unit. The segment shall consist of parallel acting low-leak dampers. The return air, outside air and exhaust air dampers shall be sized for 100% of nominal unit airflow. The exhaust air damper assembly shall have a factory-assembled rain hood. The rain hood shall have a drip-lip the full width of the hood to channel moisture away from the air being drawn into the unit.

### ***Economizer Leakage***

#### **Select One of the Following**

1. Damper assemblies are low-leak design. Damper blades are fabricated from a minimum of 16-gauge galvanized steel. Blade edges are covered with vinyl seals.
2. Damper assemblies have a maximum leakage rate of 10 cfm/sq-ft at 1.0 inch water column (iwg) when tested in accordance with AMCA Standard 500, and have a longevity of 60,000 damper opening and closing cycles, complying with the requirements of California Title 24.

#### **Select One of the Following Types of Building Pressure Control**

1. **No Building Exhaust/Relief:** The unit has no provisions to exhaust building return air.
2. **Barometric Relief Damper:** Building air exhaust shall be accomplished through barometric relief dampers installed in the return air plenum. The dampers open relative to the building pressure. The opening pressure shall be adjustable.
3. **On/Off Fan Powered Exhaust:** A twin double width, double inlet (DWDI) Class II forward-curved centrifugal exhaust fan shall be provided to exhaust building return air to relieve building static pressure. The fans shall be constant volume and operate based on either a building static pressure, or outside air damper position.

## Guide Specifications (Cont'd)

4. **Powered Exhaust with Modulating Discharge Damper:** A twin DWDI Class II forward-curved centrifugal exhaust fan shall be provided to exhaust building return air to relieve building static pressure. The fans shall operate at a constant volume and operate based on building static pressure. Exhaust airflow shall be modulated via a parallel-acting control damper. The exhaust air dampers shall be sized for 100% of the exhaust airflow.
5. **Powered Exhaust with Variable Frequency Drive (VFD):** A twin DWDI Class II forward-curved centrifugal exhaust fan shall be provided to exhaust building return air to relieve building static pressure. Exhaust airflow shall be modulated via a factory-installed and commissioned variable frequency drive (VFD) with the same nameplate horsepower as the supply fan motor.
6. **Power Return Fan:** Two SWSI plenum fans shall be provided to draw return air from the building to the single package unit. An access door shall be provided on at least one side of the unit for fan/motor access. The return fan shall operate to maintain a constant pressure within the return plenum.
7. **Power Return Fan:** Two SWSI plenum fans shall be provided to draw return air from the building to the single package unit. An access door shall be provided on at least one side of the unit for fan/motor access. The return fan shall operate to maintain a constant pressure within the return plenum. A discharge damper shall be provided to modulate building exhaust. The damper shall be controlled via building pressure. The return damper shall linked with the outside air damper to modulate volumes of return and outside airflows.

### For Powered Exhaust or Return Fan Options Above, Use The Following

1. **Fan Motor:** Fan motors shall be NEMA design ball-bearing types with electrical characteristics and horsepower as specified. Motors shall be 1750 RPM, open drip-proof type [TEFC]. [Optional shaft grounding rings on motors increase motor longevity when applied with a VFD.] The motor shall be located within the unit on an adjustable base.

**Mountings:** Fan and fan motor shall be internally mounted and isolated on a full width isolator support channel using 1-inch springs **[2-inch springs and seismic restraints]**. The fan discharge shall be connected to the fan cabinet using a flexible connection to insure vibration-free operation.

**Bearings and Drives:** Fan bearings shall be self-aligning, pillow block or flanged type regreaseable ball bearings and shall be designed for an average life (L50) of at least 200,000 hours. All bearings shall be factory lubricated and equipped with standard hydraulic grease fittings and lube lines extended to the motor side of the fan. Fan drives shall be selected for a 1.5 service factor and anti-static belts shall be furnished. All drives shall be fixed pitch. Fan shafts shall be selected to operate well below the first critical speed and each shaft shall be factory coated after assembly with an anti-corrosion coating.

**Optional Belt Guards:** Belt guards shall be provided to enclose the drive and sheave package as a safeguard while servicing the fan section.

**Optional Airflow Measurement:** The DWDI forward curved exhaust fans [SWSI plenum return fans] shall be supplied with piezorings. Airflow measurement ring shall be supplied for integration into a field-supplied controller. Field to provide required transducer, tubing, and wiring harness.

### ***Filter Section***

#### **Select a Filter Rack, Filter Media, and Switch if Desired**

1. **Angled Filter Rack:** Two-inch throwaway filters shall be provided in an angled filter rack.
2. **Angled Filter Rack:** Two-inch cleanable filters shall be provided in an angled filter rack.
3. **Angled Filter Rack:** Two-inch MERV 8 carbon media filters shall be provided in an angled filter rack.
4. **Angled Filter Rack:** Two-inch high efficiency (30%) MERV 8 pleated filters shall be provided in an angled filter rack.
5. **Flat Filter Rack:** 60–65% Efficient MERV 11 Rigid Filters with a two-inch high efficiency MERV 8 pleated pre-filters shall be provided in a flat filter rack.
6. **Flat Filter Rack:** 90–95% Efficient MERV 14 Rigid Filters with a two-inch high efficiency MERV 8 pleated pre-filters shall be provided in a flat filter rack.
7. **Optional Dirty Filter Alarm:** A dirty filter switch shall be provided and wired to the single package unit control panel. Upon closure of the switch, the controller shall display a dirty filter fault. The setting of the switch can be changed manually to close at a specified pressure drop across the filters. Dirty filter switch shall be provided as a default for the downstream filter rack whenever it is selected for the upstream filter rack.
8. **Optional Magnehelic Gauge:** A flush mounted, factory installed differential pressure gauge shall be provided to measure pressure drop across both filter banks. Tubing shall be provided with the gauges.

### ***Evaporator Section***

1. **Cooling Coil:** Evaporator coils shall be direct expansion type with intertwined circuiting to assure complete coil face activity during part load operation. Coil tubes shall be 3/8-inch OD copper, with internally enhanced tubes. Fins shall be enhanced mechanically expanded to bond with the copper tubes. Coil casing shall be fabricated from heavy gauge galvanized steel. All coils shall be pressure tested at a minimum of 450 psig.
2. **IAQ Drain Pan:** The main coil drain pan shall be double-sloped stainless steel with a condensate connection through the base rail of the unit. Clearance between the evaporator coil and the drain pan shall allow for easy access to the drain pan for cleaning, and shall be visible for inspection without the removal of components.
3. **Intermediate Drain Pan:** Coils with finned height greater than 48 inches shall have an intermediate drain pan extending the entire finned length of the coil. The intermediate pans shall have drop tubes to guide condensate to the main drain pan.

### ***Supply Fan Section***

1. **Fan:** The fan section shall be equipped with a single DWDI forward-curved [airfoil optional on 70–85T but standard on 90–105T] centrifugal type wheels. An access door shall be provided on both sides of the unit for fan/motor access.
  - a. **Mountings:** Fan and fan motor shall be internally mounted and isolated on a full width isolator support channel using 1-inch [2-inch optional] springs [with optional seismic restraints]. The fan discharge shall be connected to the fan cabinet using a flexible connection to insure vibration-free operation.

## Guide Specifications (Cont'd)

- b. **Bearings and Drives:** Fan bearings shall be self-aligning, pillow block or flanged type regreaseable ball bearings and shall be designed for an average life (L50) of at least 200,000 hours. All bearings shall be factory lubricated and equipped with standard hydraulic grease fittings and lube lines extended to the motor side of the fan. Fan drives shall be selected for a 1.5 service factor and anti-static belts shall be furnished. All drives shall be fixed pitch. Fan shafts shall be selected to operate well below the first critical speed and each shaft shall be factory coated after assembly with an anti-corrosion coating.
  - c. **Optional VFD Manual Bypass:** A three contactor manual bypass shall be provided to permit replacement of the VFD in the event of a power failure.
  - d. **Optional Belt Guard:** Belt guards shall be provided to enclose the drive and sheave package as a safeguard while servicing the fan section.
  - e. **Supply Fan Airflow Measurement:** The DWDI forward-curved [airfoil] supply fan shall be supplied with a piezoring. Airflow measurement ring shall be supplied for integration into a field-supplied controller. Field to provide required transducer, tubing, and wiring harness.
2. **Direct Drive Plenum (DDP) Supply Fan:** The fan section shall be equipped with a Single Width Single Inlet (SWSI) airfoil plenum wheel. Plenum fans shall be direct drive. An access door shall be provided on both sides of the unit for fan/motor access.
- a. **Mountings:** Fan and fan motor shall be internally mounted and isolated on a full width isolator support channel using 1-inch springs [2-inch springs and seismic restraints].
  - b. **Acoustiweir™:** Unit shall include a discharge air (DA) sound attenuation barrier. The passive sound attenuator barrier shall be mounted on the downstream side of the supply fan and shall block line-of-sight between the fan and the unit discharge opening. If not available, manufacturer must provide a sound attenuator of at least 3 feet in length.
  - c. **Thrust Restraints:** Provide horizontal thrust restraints between air handling unit casing and fan housing.
  - d. **Seismic Snubber:** Unit shall be supplied with seismic snubbers on the SWSI plenum fan.
  - e. **Supply Fan Airflow Measurement:** The SWSI supply fan shall be supplied with an airflow measurement device. Airflow measurement device shall be capable of measurement accuracy of +/-5%. Airflow measurement ring and transducer shall be supplied for integration into a field-supplied controller.
  - f. **Fan Inlet Screen:** Unit shall be provided with a fan inlet screen.
  - g. **Safety Grate:** Safety grates capable of supporting a 300 pound center load shall be provided over bottom supply air (SA) opening.
3. **Fan Motor:** Fan motors shall be NEMA design ball-bearing types with electrical characteristics and horsepower as specified. Motors shall be 1750 RPM, open drip-proof type [TEFC optional]. [Optional shaft grounding rings on motors increase motor longevity when applied with a VFD.] The motor shall be located within the unit on an adjustable base.



4. **Variable Air Volume (VAV) Fan Control:** Variable Air Volume (VAV) supply fan control shall be accomplished by using a VFD matched to the supply fan motor HP. The VFD shall include 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 must be provided. Inlet guide vanes shall not be acceptable. VFD control keypads shall be located in the control cabinet for accessibility and servicing while the unit is operating.

### Discharge Plenum

#### Select One of the Following Heat/No Heat Configurations:

1. **Cooling Only:** The discharge air temperature sensor shall be located in the discharge plenum and be located such that it accurately measures the supply air temperature. Walls shall be lined with a solid liner to prevent erosion of the insulation and separate insulation from the air stream.
2. **Staged Gas Heat:** The heating section shall include an induced draft furnace in two stages [four stages or six stages] of heating capacity.

**Heat Exchanger:** The heat exchanger shall be constructed of tubular aluminized steel [stainless steel], with stainless steel flue baffles and flue assembly.

**Burner and Ignition Control:** The burner shall include a direct-driven induced-draft combustion fan with energy efficient intermittent pilot spark ignition, redundant main gas valves with pressure regulator.

**Combustion Air Fan:** The inducer fan(s) shall maintain 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.

**Safety Devices:** A high limit controller with automatic reset to prevent the heat exchanger from operating at an excessive temperature shall be included. A centrifugal switch on the induced draft fan motor shaft shall prevent ignition until sufficient airflow is established through the heat exchanger. A rollout switch shall provide secondary airflow safety protection. The rollout switch shall discontinue furnace operation if the flue becomes restricted.

**Flue:** The furnace flue shall be shipped loose to protect it from damage during transit. The flue shall be field-mounted by the installing contractor. The flue outlet shall be located above the unit to help prevent recycling of combustion gases back through the heat exchanger. Agency Certification: Gas heating sections are ETL listed to both US and Canadian safety standards.

3. **Modulating Gas Heat:** The heating section shall include an induced draft furnace in 8:1 modulation [16:1, 24:1] of heating capacity.

**Heat Exchanger(s):** The heat exchanger(s) shall be constructed of tubular aluminized steel [stainless steel], with stainless steel flue baffles and flue assembly.

**Burner(s) and Ignition Control:** The burner(s) shall include a direct-driven induced-draft combustion fan with energy efficient intermittent pilot spark ignition, redundant main gas valves with pressure regulator.

**Combustion Air Fan(s):** The inducer fan(s) shall maintain 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.

## Guide Specifications (Cont'd)

**Safety Devices:** A high limit controller with automatic reset to prevent the heat exchanger from operating at an excessive temperature shall be included. A centrifugal switch on the induced draft fan motor shaft shall prevent ignition until sufficient airflow is established through the heat exchanger. A rollout switch shall provide secondary airflow safety protection. The rollout switch shall discontinue furnace operation if the flue becomes restricted.

**Flue:** The furnace flue shall be shipped loose to protect it from damage during transit. The flue shall be field-mounted by the installing contractor. The flue outlet shall be located above the unit to help prevent recycling of combustion gases back through the heat exchanger.

**Agency Certification:** Gas heating sections are ETL listed to both US and Canadian safety standards.

4. **Electric Heat:** An electric slip-in heater is installed within the single package unit discharge 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 a minimum of two steps of capacity.

**Heat Exchanger:** The furnace 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.

**Safety Devices:** The primary high temperature protection is a manual reset type thermal cut out. Secondary protection is a manual reset type thermal cut out. Secondary protection is a replaceable thermal link.

**Agency Certification:** The operation of the electric heater is an integral part of the single package units control system. Power connection to the heater is through the power panel for the unit. Electric heat is ETL certified to both US and Canadian safety standards.

5. **Hot Water Heating Coil:** A hot water coil shall be installed in the single package unit discharge plenum.

**Construction:** The hot water coil shall have 8 [10, 12, 14] fins per inch, 2 tubes per circuit, and a 2-inch inlet and outlet connection. Primary surface shall be 1/2-inch OD copper tube, staggered in direction of airflow. Connections have 1/4-inch FPT drain plug on each connection. A structural galvanized steel casing shall protect the coil. An intermediate coil support shall be provided. The coil shall be circuited to provide free draining and venting, through one vent and drain. Freezestat shall be provided to prevent coil freeze up.

**Testing:** Completed coil, including headers, connections and return bends shall be tested with 325 pounds compressed air under water. Coils shall be designed for operation at 250 psig design working pressure.

6. **Steam Heating Coil:** A steam heating coil shall be installed in the single package unit discharge plenum.

**Construction:** The steam coil shall be constructed in the non-freeze style. The steam coil shall have six fins per inch, a 2-inch inlet, and 1-1/2-inch outlet connection. Tubes shall be 1-inch OD seamless copper tubing with a minimum wall thickness of 0.035 inch and expanded into the fin collars for maximum fin-tube bond. Inner distributing tubes shall be 5/8-inch OD seamless copper tubing with a minimum wall thickness of



1/4 inch. All header connections shall be of red brass or steel, 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.

**Testing:** The completed coil, including headers and connections, shall be tested underwater with 325 pounds compressed air to ensure a leak free coil.

7. **Diffuser Section:** For applications with an extended discharge plenum with downstream filtration or heating, a diffuser section is provided. A diffuser shall be included to distribute the airflow from the fan evenly across the heating coil or filter bank to optimize coil/filter life and effectiveness. The diffuser shall be sized for 50% free area and provide adequate upstream and downstream clearance to minimize air-side pressure drop.

**For Extended Discharge Plenums, Select One of the Following:**

1. **Downstream Final Filter Rack:** A 12-inch rigid filter rack and filters shall be provided downstream of the supply fan and diffuser segment for hospital applications. The filter shall be 90–95% efficient MERV 14. A magnehelic pressure gauge shall be included and visible from the outside of the unit for servicing and code compliance. A dirty filter switch shall be provided with the downstream final filter rack to alert the user of clogged filters. When a dirty filter switch is selected for the final filter rack, it shall be provided as default with the upstream filter rack.
2. **Blank Section:** A blank section shall be provided downstream of the supply fan and diffuser section.

**Condenser Section**

1. **Condenser Fans:** Condenser fans shall be matched up with compressors to optimize system control. Condenser fans shall be propeller type, directly driven by permanently lubricated TEAO motor.
2. **Condenser Coil:** Microchannel condenser coils shall be constructed of parallel flow aluminum alloy tubes metallurgically brazed to enhanced aluminum alloy fins. Coils are configured in a V-bank configuration, with individual flat coils rotated from the vertical plane for protection from hail damage for each condensing circuit. Condensing coils shall have a subcooler for more efficient, stable operation.
3. **Compressors:** Units shall use industrial-duty hermetic scroll compressors, piped and charged with P.O.E. oil and R-410A refrigerant. Compressors shall have an enlarged liquid carrying capacity to withstand rugged operating conditions. Compressor frame shall be cast iron, with cast iron fixed and orbiting scrolls. Each compressor shall feature a solid state protection module, designed to protect the compressor from over-temperature and over-current conditions. Compressors shall be vibration-isolated from the unit, and installed in an easily accessible area of the unit. All compressor-to-pipe connections shall be brazed to minimize potential for leaks. Each compressor shall include a replaceable suction screen, discharge line check valve, and oil sight glass.
4. **Low Ambient:** Compressors shall operate down to 0.0°F [optional] by monitoring the refrigeration system discharge pressure and adjusting condenser airflow to maintain the proper head pressure to protect compressor operation. Refrigerant pressure transducers shall be included and provide the discharge pressure on the single package unit control display.

## Guide Specifications (Cont'd)

5. **In-Line Liquid Line Driers [replaceable core liquid line driers]:** Refrigerant piping includes check valves, thermal expansion valves with replaceable thermostatic elements, high and low pressure switches, anti-recycling timing device to prevent compressor restart for five minutes after shutdown.
6. **Condenser Wire Grill [optional louvered condenser enclosure or no enclosure]:** The condenser section shall be enclosed by a wire grill [louvered or none] condenser enclosure on the three exposed sides. Paint finish shall match the color and salt spray specifications of the unit exterior.
7. **Hot Gas Bypass:** Hot gas bypass piping shall be provided to enable compressor unloading to better match cooling demand at low loads, prevent excessive cycling of the compressor, and reduce the risk of coil freeze-up.
8. **Compressor Sound Treatment [optional]:** Compressor sound blankets shall be provided to attenuate radiated sound from the compressors.
9. **Service Valves [optional]:** Liquid, suction and discharge service valves shall be included to provide a means of isolating the refrigerant charge in the system so that the refrigeration system may be serviced without removing the charge of the unit.

### Controls

1. **Enclosure:** Unit shall be shipped complete with factory configured, installed, wired and tested single package unit controller housed in a rain and dust tight enclosure with hinged, latched, and gasket sealed door.
2. **Basic Controls:** Control shall include automatic start, stop, operating, and protection sequences across the range of scheduled conditions and transients. The single package unit controller shall provide 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 stored in non-volatile memory, with programmed setpoints retained in lithium battery backed real time clock (RTC) memory for minimum 5 years. Eighty character liquid crystal display, descriptions and numeric data in English (or metric) units. The sealed keypad shall include buttons for setpoints, display, entry, unit options & clock, and an on/off switch.
3. **Diagnostics:** Upon start-up, the controller shall run through a self-diagnostic check to verify proper operation and sequence loading. The single package unit controller shall continually monitor all input and output points on the controller to maintain proper operation. The unit shall continue 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 shall be stored in the shutdown history to facilitate service and troubleshooting.

#### 4. Controls and BAS Communications

**BACnet® MS/TP (RS-485) or Modbus™:** The unit shall include BACnet or Modbus communications directly from the unit controller. Equipment that is not native BACnet at the unit control board shall include any necessary interface or translator device factory-mounted and wired within the unit. If a field-installed gateway device is required by the manufacturer, the manufacturer shall include all necessary materials, equipment, service and commissioning of the gateway. A control points list, BIBBs and PICS statement shall be provided by the manufacturer to facilitate communications programming with the building automation system. Programming, establishing communications and commissioning shall be the responsibility of the installing controls contractor. Start-up assistance and support may be purchased from the manufacturer.

**Analog inputs:** 0–5VDC inputs shall be provided for remote reset of supply air temperature, and duct static pressure

**Binary inputs:** Dry (or wet) contacts shall be provided for alarm outputs for supply fan fault, cooling/heating fault, or general/sensor faults. Contacts shall also be provided for occupied/unoccupied (start/stop) switching; shutdown, smoke purge, exhaust or pressurization operations; call for cooling or heating; and for morning warm-up.

## EXECUTION

### Installation

**General:** Installing contractor shall install single package unit(s), including components and controls required for operation, in accordance with single package unit manufacturer's written instructions and recommendations. Single package units shall be installed as specified.

1. Unit(s) specified shall include a protective covering membrane for such equipment being shipped by truck, rail, or ship. The membrane is fully formed around the equipment exterior. The membrane covers the entire top, side, and end panel surface as to protect the product effectively during shipping and storage including long term storage. Storing on job-site shall no longer require the unit(s) to be covered with a tarp as long as the covering membrane has not been removed.
2. All size or shape equipment including electrical components, especially those not built with weatherproof enclosures, VFDs, and end devices shall be effectively covered for protection against rain, snow, wind, dirt, sun fading, road salt/chemicals, rust, and corrosion during shipping cycle. Equipment shall remain clean and dry.
3. Manufacturers of units not having a protective membrane, fully formed around the equipment exterior, covering the entire top, side and end panel surface area shall be required to ship equipment covered with a tarp, in crating or in a closed truck as is necessary to ensure product protection from road salt/chemicals damage, moisture and dirt infiltration. Arrangements for long term storage at the job site shall be required.

**Location:** Locate the single package unit as indicated on drawings, including cleaning and service maintenance clearance per Manufacturer instructions. Adjust and level the single package unit on support structure.

### INSPECTION AND START-UP SUPERVISION

A factory-trained service representative of the manufacturer shall supervise the unit start-up and application specific calibration of control components.

