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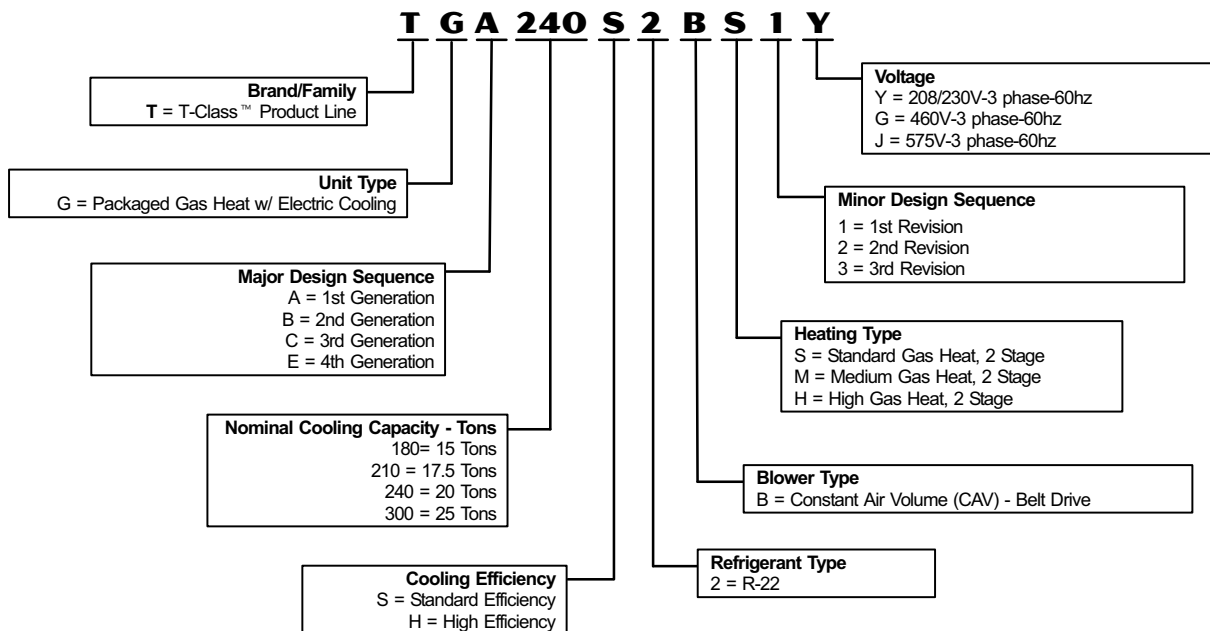


ASHRAE 90.1  
 COMPLIANT



**15 to 25 Tons**  
**Net Cooling Capacity - 180,000 to 286,000 Btuh**  
**Gas Input Heat Capacity - 260,000 to 480,000 Btuh**

**MODEL NUMBER IDENTIFICATION**



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## FEATURES AND BENEFITS

### APPROVALS

ETL and CSA listed.

Heating efficiency ratings verified by CSA.

180 thru 240 models are certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2000.

300S models are tested at conditions included in ARI Standard 340/360-2000. Components bonded for grounding to meet safety standards for servicing required by UL, CSA and National and Canadian Electrical Codes.

ENERGY STAR® certified units are designed to use less energy, help save money on utility bills, and help protect the environment.

The ENERGY STAR® Partner of the Year Award signifies that Lennox has made outstanding contributions to design energy efficient units that will lower energy bills, while meeting industry standards for comfort and indoor air quality. Lennox was the first HVAC manufacturer to win this award and has been a four-time recipient since 2003. ISO 9001 Registered Manufacturing Quality System.

### WARRANTY

Limited ten years aluminized heat exchanger, limited fifteen years optional stainless steel heat exchanger.

Limited five years on compressors.

Limited one year all other covered components.

### HEATING SYSTEM

- 1 Aluminized steel inshot burners, direct spark ignition, electronic flame sensor, combustion air inducer, redundant automatic dual-stage gas valve with manual shut-off.

#### Heat Exchanger

Tubular, dimpled design (patent pending), construction, aluminized steel, life cycle tested.

Stainless Steel Heat Exchanger is required if mixed air temperature is less than 45°F.

#### Fan & Limit Controls

Factory installed with fixed temperature setting.

Heat limit controls protect against overheating.

T-Class Packaged Gas / Electric 15 to 25 tons / Page 2

### Safety Switches

Flame roll-out switches, flame sensors and combustion air inducer proving switches protect system operation. All safety switches are monitored by the ignition control board.

### Electronic Ignition

Solid-state electronic spark igniter provides positive direct ignition of burners on each operating cycle. The system permits main gas valve to stay open only when the burners are proven to be lit. Should a loss of flame occur, the gas valve closes, shutting off the gas to the burners. Ignition module has LED to indicate status and aid in troubleshooting.

Watchguard circuit on module automatically resets ignition controls after one hour of continuous thermostat demand after unit lockout, eliminating nuisance service calls. Ignition control is factory installed in the controls section.

### REQUIRED SELECTIONS

#### Gas Input - Order one:

169,000 / 260,000 Btuh low/high fire - Standard Heat Gas Input.

234,000 / 360,000 Btuh low/high fire - Medium Gas Heat Input.

312,000 / 480,000 Btuh low/high fire - High Gas Heat Input

### OPTIONS/ACCESSORIES

#### Factory Installed

##### Stainless Steel Heat Exchanger

Required if mixed air temperature is below 45°F.

#### Field Installed

##### Cold Weather Kit

Electric heater automatically controls minimum temperature in gas burner compartment when temperature is below -40°F CSA certified to allow operation of unit down to -60°F.

##### Combustion Air Intake Extensions

Recommended for use with existing flue extension kits in areas where high snow drifts can block intake air.

##### Gas Piping Kit

Allows gas piping through the unit base.

##### LPG/Propane Kits

Conversion kit to field change over units from Natural Gas to LPG/Propane.

### Vertical Vent Extension Kit

Exhausts flue gases vertically above unit.

### COOLING SYSTEM

Designed to maximize sensible and latent cooling performance at design conditions.

Two efficiency levels provide flexibility. System can operate from 30°F to 125°F without any additional controls.

#### 2 Compressors

Resiliently mounted on rubber grommets for quiet operation. Scroll compressors on all models for high performance, reliability and quiet operation.

#### 3 Thermal Expansion Valves

Assures optimal performance throughout the application range. Removable element head.

#### 4 Filter/Driers

High capacity filter/driers protect the system from dirt and moisture.

#### Freezestats

Protects the evaporator coil from damaging ice build-up due to conditions such as low/no air flow, or low/no refrigerant charge.

#### 5 Coil Construction

Copper tube construction, enhanced rippled-edge aluminum fins, flared shoulder tubing connections, silver soldered construction for improved heat transfer. Factory leak tested.

#### Evaporator Coil

Cross row circuiting with rifled copper tubing optimizes both sensible and latent cooling capacity. Low fin per inch count minimizes air pressure drop. Face-split evaporator coils are designed to keep condensate water off of an inactive part of the coil so the condensate will not re-enter the air stream.

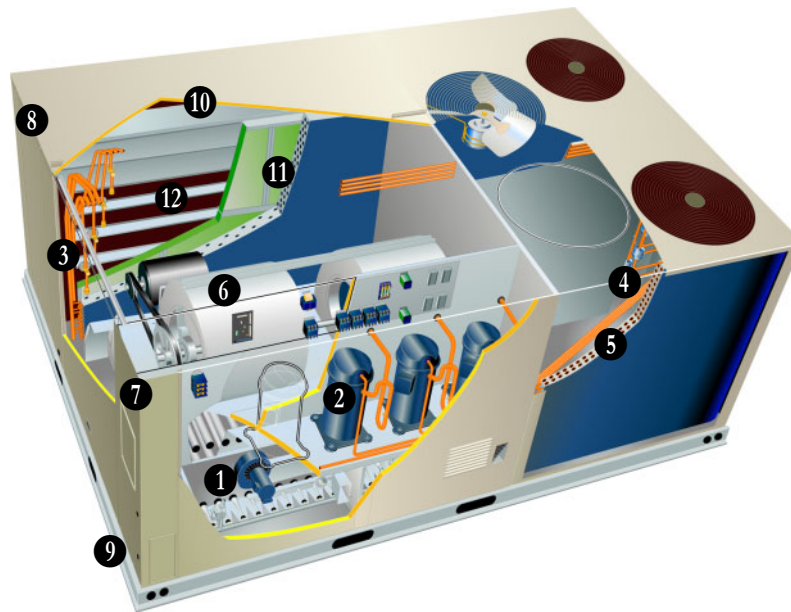
#### Condenser Coil

Formed type coil.

#### Condensate Drain Pan

Painted, galvanized pan with positive slope. Drain connection extends outside unit.

## FEATURES AND BENEFITS



### **COOLING - CONTINUED**

#### **Outdoor Coil Fan Motors**

Thermal overload protected, totally enclosed, permanently lubricated ball bearings, shaft up, independent motor mount.

#### **Outdoor Coil Fan**

PVC coated fan guard furnished.

### **REQUIRED SELECTIONS**

#### **Cooling Capacity**

Specify the nominal cooling capacity of the unit.

#### **Cooling Efficiency**

Specify either standard or high efficiency.

### **OPTIONS/ACCESSORIES**

#### **Field Installed**

##### **Condensate Drain Trap**

Available in copper or PVC.

##### **Compressor Crankcase Heaters**

Protects against refrigerant migration that can occur during low ambient operation.

##### **High Pressure Switches**

Protects the compressor from overload conditions such as dirty condenser coils, blocked refrigerant flow, or loss of outdoor fan operation. Manual reset.

##### **Low Ambient Kit**

Cycles the outdoor fan while allowing compressor operation in the cooling cycle. This intermittent fan operation allows the system to operate without icing the evaporator coil and losing capacity. Designed for use in ambient temperatures no lower than 0°F.

### **6 BLOWER**

Supply air fan provides a wide range of air flow capability. Stocked models (units typically in-stock at warehouses) are equipped with standard static motor/drive combinations. Special order high and low static motor and drive options are available CTO (configure to order) offering an even wider range of capability.

#### **Supply Air Motor**

Overload protected with permanently lubricated ball bearings ensures durable operation. Belt drive motors that meet EPACT efficiency requirements maximize air performance and save energy. Special order high and low static motors provide a higher level of air performance for demanding applications.

#### **Supply Air Blower**

A double inlet wheel with forward curve blades provide maximum air performance and quiet operation. Dynamically balanced with permanently lubricated ball bearings assure long, reliable operation. Adjustable pulleys allow air to be precisely tuned to the needs of the application.

### **REQUIRED SELECTIONS**

#### **Supply Air Blower**

Specify Blower motor and drive kit (See Blower Data Table for specifications).

### **ELECTRICAL**

### **REQUIRED SELECTIONS**

#### **Voltage Choice**

Specify 208/230V, 460V or 575V 3-phase-60hz when ordering base unit.

### **OPTIONS/ACCESSORIES**

#### **Field Installed**

### **7 Circuit Breakers up to 175 Amp**

HACR circuit breaker without power distribution lugs. Accessible from outside of unit, spring-loaded weatherproof cover furnished. Main power to the unit is field connected to the circuit breaker which allows all power to be shutoff for service. Circuit breaker is sized to the unit maximum overcurrent protection (MOCP) size.

### **Disconnect Switch up to 250 Amp**

Accessible from outside of unit, spring loaded weatherproof cover furnished. Main power to the unit is field connected to the disconnect which allows all power to be shut off for service.

### **GFI Service Outlets (2)**

115v ground fault circuit interrupter (GFCI) type, field wired.

## FEATURES AND BENEFITS

### CONTROLS

#### Unit Controller

Microprocessor-based control board provides flexible control of cooling functions. All control voltage is provided via a 24V (secondary) transformer with built-in circuit breaker protection. Built-in functions include:

**Blower On/Off Delay** - Time delay between blower on and off cycles provides a more even supply air temperature during heating.

**Built-in Control Parameters** - Saves installation time as no programming is required.

**Minimum Compressor Run Time** - Ensures proper oil return to the compressor.

**Night Setback Mode** - Saves energy by closing outdoor air dampers and operating supply fan on thermostat demand only.

**Heat/Cool Staging** - Capable of up to 2 heat / 2 cool staging with a third party DDC control system or compatible thermostat.

**Thermostat Bounce Delay** - Protects compressor from short cycling when a mechanical thermostat is used.

### OPTIONS/ACCESSORIES

#### Field Installed

##### Blower Proving Switch

Uses a static pressure sensor to monitor blower operation and shuts down unit if blower fails.

##### Dirty Filter Switch

Senses static pressure increase indicating dirty filter condition.

##### Smoke Detector

Photoelectric type, installed in supply air section or return air section or both sections

##### Commercial Control Systems

###### L Connection® Network

Complete building automation control system for single or multi-zone applications. Options include local interface, software for local or remote communication, and hardware for networking other control functions. See L Connection Network Engineering Handbook Bulletin for details.

##### Thermostats

Control system and thermostat options. Aftermarket unit controller options. See See Page 25.

### CABINET

#### 8 Construction

Heavy-gauge steel panels and full perimeter heavy-gauge galvanized steel base rail provides structural integrity for transportation, handling, and installation.

Base rails have rigging holes. Three sides of the base rail have fork slots.

Raised edges around duct and power entry openings in the bottom of the unit provide additional protection against water entering the building.

#### Air-Flow Choice

Units are available in down-flow (vertical) or horizontal return air flow configuration.

Horizontal air flow requires Horizontal Roof Curb.

Horizontal Return Air Panel Kit is also required if converting a down-flow configured unit to horizontal air flow.

#### 9 Power/Gas Entry

Electrical and gas lines can be brought through the unit base or through horizontal access knock-outs.

#### Exterior Panels

Constructed of heavy-gauge, galvanized steel with a two-layer enamel paint finish.

#### 10 Insulation

All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation.

Unit base is fully insulated. The insulation also serves as an air seal to the roof curb, eliminating the need to add a seal during installation.

#### Access Panels

Access panels are provided for the compressor/controls/heating section and the blower access and air filter/economizer section.

### REQUIRED SELECTIONS

#### Air Flow Configuration

Specify horizontal or down-flow (vertical).

### OPTIONS/ACCESSORIES

#### Factory Installed

##### Corrosion Protection

A completely flexible immersed coating with an electrodeposited dry film process. (AST ElectroFin E-Coat) Meets Mil Spec MIL-P-53084, ASTM B117 Standard Method Salt Spray Testing, ASTM 1153 Standard Specification for Methyl Isobutyl Ketone.

##### Hinged Access Panels

Large access panels are hinged and have quarter-turn latches for quick and easy access to maintenance areas (economizer / filter, compressor / controls, heating / blower).

##### Field Installed

###### Coil Guards

Painted, galvanized steel wire guards to protect outdoor coil. Not used with Hail Guards.

###### Hail Guards

Constructed of heavy gauge steel, painted to match cabinet, helps protect outdoor coils from hail damage. Not used with Coil Guards.

###### Horizontal Return Air Panel Kit

Required for horizontal applications with Horizontal Roof Curb, contains panel with return air opening for field replacement of existing unit panel and panel to cover bottom return air opening in unit, see dimension drawings.

### INDOOR AIR QUALITY

#### 11 Air Filters

Disposable 2 inch filters furnished as standard.

### OPTIONS/ACCESSORIES

#### Field Installed

##### Indoor Air Quality (CO<sub>2</sub>) Sensor

Monitors CO<sub>2</sub> levels adjusts economizer dampers as needed for Demand Control Ventilation.

##### Replaceable Media Filter Kit With Frame

Permanent, metal frame filters with 2 inch polyester replaceable media.

### SERVICEABILITY

Designed to streamline general maintenance and decrease troubleshooting time.

#### Marked & Color-Coded Wiring

All electrical wiring is color-coded and marked to identify which components it is connecting.

#### Electrical Plugs

Positive connection electrical plugs are used to connect common accessories or maintenance parts for easy removal or installation.

#### Access Panels

Large access panels are provided for quick and easy access to maintenance areas.

#### Blower Access

Blower assembly slides out of the unit for easy access.

#### TXV Access

Thermal expansion valves are located near the perimeter of the unit for easier access.

#### Thermal Expansion Valves

Removable element head allows change out of element and bulb without removing the TXV.

#### Coil Cleaning

Independently formed condenser coils allow separation for easier cleaning.

#### Standard Components

A large number of common maintenance parts are standard throughout the entire range of sizes (15 - 25 tons), reducing the need to carry a lot of different parts to the job or in inventory.

#### Compressor Access

Compressors are located near the perimeter of the unit for easier access.

#### Compressor Compartment

Compressors are isolated from the condenser air flow allowing system operation checks to be done without changing the air flow across the outdoor coils.

## OPTIONS / ACCESSORIES

### **ECONOMIZER/OUTDOOR AIR/EXHAUST ACCESSORIES**

#### **Factory or Field Installed**

#### **12 Economizer**

Parallel, gear-driven action return air and outdoor air dampers, plug-in connections to unit, nylon bearings, neoprene seals, 24 volt, spring return motor, adjustable minimum damper position, damper assembly slides in unit, outdoor air hood must be ordered separately, choice of economizer controls. Economizer modulates dampers to maintain a 55°F discharge air temperature.

#### **Economizer Enthalpy Control**

Senses outdoor air enthalpy and enables economizer if the enthalpy is less than the setpoint of the control.

#### **Down-Flow Barometric Relief Dampers**

Allows relief of excess return air static when economizer is near full open. Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle. Bird screen furnished.

#### **Outdoor Air Damper Section**

25% Manual Outdoor Air Dampers - Parallel blade dampers are manually adjustable to a fixed position.  
25% Automatic Outdoor Air Damper - Parallel blade, gear-driven dampers are automatically adjusted with a two-position damper motor.

#### **Economizer and Outdoor Air Damper**

**Application Note** - Minimum mixed air temperature in heating mode 30°F  
Maximum mixed air temperature in cooling mode: 90°F

#### **Power Exhaust Fans**

C1PWRE20C-1 models have two, 1/3 hp motors with 20 in., five blade propeller-type fans with a total power input of 750 Watts and a total air volume of 8630 cfm at 0 in. w.g..

Motor is inherently protected and enclosed for maximum protection from weather, dust and corrosion. Installs internal to unit for down-flow applications only with economizer option, provides exhaust air pressure relief, interlocked to run when return air dampers are closed and supply air blower is operating, fan runs when outdoor air dampers are 50% open (adjustable), motor is overload protected, steel cabinet and hood painted to match unit, requires optional Down-flow Economizer Barometric Relief Dampers.

See Power Exhaust Blower Tables.

#### **Field Installed**

#### **Economizer Control**

**Sensible Temperature Control** - Senses outdoor air temperature and enables the economizer if the temperature is less than the set point of the control. Order two kits for differential control.

**Single Outdoor Enthalpy Control** - Senses outdoor air enthalpy and enables economizer if the enthalpy is less than the setpoint of the control.

**Differential Enthalpy (Dual) Control** - Two solid-state enthalpy sensors allow the control to select between outdoor air or return air, whichever has lower enthalpy.

#### **Outdoor Air Hood**

Required with Economizer, Outdoor Air Damper Sections, cleanable aluminum mesh fresh air filters furnished.

#### **Down-Flow Barometric Relief**

#### **Damper Hood**

Protects exhaust air from recirculating into outdoor air stream.

#### **Horizontal Barometric Relief Dampers**

Allows relief of excess air when economizer is near full open. Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle. Field installed in return air duct. Bird screen furnished.

### **CEILING DIFFUSERS**

#### **OPTIONS/ACCESSORIES**

#### **Field Installed**

#### **Ceiling Diffusers**

Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings.

**Transitions (Supply and Return)** - Used with diffusers, installs in roof curb, galvanized steel construction, flanges furnished for duct connection to diffusers, fully insulated.

### **ROOF CURBS**

#### **OPTIONS/ACCESSORIES**

#### **Field Installed**

#### **Down-Flow**

Nailer strip furnished, mates to unit, US National Roofing Contractors Approved, shipped knocked down. Available in 8, 14, 18, and 24 inch heights.

#### **Horizontal**

Converts unit from down-flow to horizontal (side) air flow, return air is on unit, supply air is on curb, see dimension drawings. Curbs for rooftop applications meet National Roofing Code requirements. Available in cliplock and standard versions.

Requires Horizontal Return Air Panel. Available in 26, 30, 37, and 41 inch heights.

Optional Insulation Kit is available to help prevent sweating.

#### **Fastening Systems**

Cliplock curbs use interlocking tabs to fasten together. No tools required. Standard roof curb corners fasten together with furnished hardware.

## OPTIONS / ACCESSORIES

Item	Catalog No.	180	210	240	300S	
<b>COOLING SYSTEM</b>						
Compressor Crankcase Heater	208/230V - TACHK10/15-Y	76M34	x	x	x	x
	460V - TACHK10/15-G	76M35	x	x	x	x
	575V - TACHK10/15-J	76M76	x	x	x	x
Condensate Drain Trap	PVC - LTACDKP09/36	37K90	x	x	x	x
	Copper - LTACDKC09-36	48K14	x	x	x	x
Efficiency	Standard		○	○	○	○
	High		○	○	○	
High Pressure Switches	T1SNSR11C-2	43W00	x	x	x	x
Low Ambient Kit	T1SNSR12C-2	43W01	x	x	x	x
Refrigerant Type		R-22	○	○	○	○
<b>HEATING SYSTEM</b>						
Cold Weather Kit	208/230V - LTACWK10/15-Y	19W53	x	x	x	x
	460V - LTACWK10/15-G	19W54	x	x	x	x
	575V - LTACWK10/15-J	19W55	x	x	x	x
Combustion Air Intake Extensions	LTACA1K10/15	89L97	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
Gas Heat Input	Standard - 169/260 kBtuh input		○	○	○	○
	Medium - 234/360 kBtuh input		○	○	○	○
	High - 312/480 kBtuh input		○	○	○	○
Gas Piping Kit	Thru unit base - C1GPKT01C01	85M31	x	x	x	x
LPG/Propane Conversion Kits	Standard - LTALPGK-130	72M94	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
	Medium - LTALPGK-180	72M95	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
	High - LTALPGK-240	72M96	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
Stainless Steel Heat Exchanger			○	○	○	○
Vertical Vent Extension	LTAWEK10/15	73M72	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
<b>BLOWER - SUPPLY AIR</b> - See Blower Data Tables for Specifications						
	Low Static Motor/Drive Combination		○	○	○	○
	Standard Static Motor/Drive Combination (stock unit)		○	○	○	○
	High Static Motor/Drive Combination		○	○	○	○
<sup>2</sup> Standard to Low Static Conversion Kit	Drive Kit #A - C1DRKT044-1	90M53	x			
	Drive Kit #2 - C1DRKT004-1	87M04		x		
	Drive Kit #9 - C1DRKT045-1	90M54			x	
	Drive Kit #7 - C1DRKT042-1	90M51				x
<sup>3</sup> High to Standard Static Conversion Kit	Drive Kit #3 - C1DRKT038-1	90M47	x			
	Drive Kit #7 - C1DRKT042-1	90M51		x		
<b>CABINET</b>						
Coil Guards	C1GARD20C-1	88K55	x	x	x	x
Corrosion Protection			○	○	○	○
Hail Guards	C1GARD10C-1	88K28	x	x	x	x
Hinged Access Panels			○	○	○	○
<sup>4</sup> Horizontal Return Air Panel Kit	C1HRAP10C-1	87M00	x	x	x	x
<b>CONTROLS</b>						
Blower Proving Switch	C0SWCH01AE-1	30K49	x	x	x	x
Dirty Filter Switch	C0SWCH00AE-1	30K48	x	x	x	x
Smoke Detector - Supply	LTASASDK10/36	70K87	x	x	x	x
Smoke Detector - Return	LTARASDK10/36	70K86	x	x	x	x

**NOTE** - The catalog and part numbers that appear here are for ordering field installed accessories only.

○ - Configure to Order (Factory Installed). Factory installed items are special order with extended lead times and must be ordered with the unit.

X - Field Installed

<sup>1</sup> Order two each.

<sup>2</sup> Standard static drive can be converted to low static drive with field installed kit.

<sup>3</sup> High static drive can be converted to standard static drive with field installed kit.

<sup>4</sup> Required for horizontal applications with Horizontal Roof Curb.

## OPTIONS / ACCESSORIES

Item	Catalog No.	180	210	240	300S	
<b>ELECTRICAL</b>						
Voltage 60 hz	208/230V - 3 phase	○	○	○	○	
	460V - 3 phase	○	○	○	○	
	575V - 3 phase	○	○	○	○	
HACR Circuit Breakers	30 to 150 Amp size available	x	x	x	x	
Disconnect Switch	150 Amp - T1DISC150-1 For 208/230V-3ph models	80M01	x	x	x	x
	80 Amp - T1DISC080-1 For 460/575V models	80M00	x	x	x	x
GFI Service Outlets		74M70	x	x	x	x
<b>ECONOMIZER</b>						
<b>Economizer</b>						
Economizer - Order Hood Separately	T1ECON10C-1	86M31	⊗	⊗	⊗	⊗
Hood for Economizer	C1HOOD10C	85M25	x	x	x	x
<b>Economizer Controls</b>						
Differential Enthalpy (dual)	C1SNSR07AE	86M33	x	x	x	x
Sensible (order two kits for Differential)	TASEK10/15	76M37	⊗	⊗	⊗	⊗
Single Outdoor Enthalpy	C1SNSR06AE	86M32	x	x	x	x
<b>Barometric Relief</b>						
Down-Flow Barometric Relief Dampers - Order Hood Separately	LAGED18/24	16K98	⊗	⊗	⊗	⊗
Hood for Down-Flow LAGED	C1HOOD20C	85M26	x	x	x	x
Horizontal Barometric Relief Dampers - Hood Furnished	LAGEDH18/24	16K99	x	x	x	x
<b>OUTDOOR AIR</b>						
<b>Outdoor Air Dampers</b>						
Damper Section - Order Hood Separately	Motorized - T1DAMP20C-1	86M30	⊗	⊗	⊗	⊗
	Manual - LAOAD18/24	16K93	⊗	⊗	⊗	⊗
<b>Outdoor Air Hoods for Economizers and Outdoor Air Dampers</b>						
Outdoor Air Hood (No. of Filters) 16 x 25 x 1 in.	C1HOOD10C-1	85M25	⊗	⊗	⊗	⊗
<b>POWER EXHAUST FANS</b>						
Standard Static	208/230V - C1PWRE20C-1Y	85M37	x	x	x	x
	460V - C1PWRE20C-1G	85M38	x	x	x	x
	575V - C1PWRE20C-1J	85M39	x	x	x	x
<b>INDOOR AIR QUALITY</b>						
<b>Air Filters</b>						
Replaceable Media Filter Kit with Frame 24 x 24 x 2 order 6 per unit	C1FLTR30C-1	44N61	x	x	x	x
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>						
CO <sub>2</sub> Sensor Duct Mounting Kit	C0MISC19AE1-	85L43	x	x	x	x
Sensor - off-white case CO <sub>2</sub> display	C0SNSR50AE1L	77N39	x	x	x	x
Sensor - off-white case no display	C0SNSR52AE1L	87N53	x	x	x	x
Sensor - black case CO <sub>2</sub> display	C0SNSR51AE1L	87N52	x	x	x	x
Sensor - black case, no display	C0SNSR53AE1L	87N54	x	x	x	x
Aspiration Box for duct mounting	C0MISC16AE-1	90N43	x	x	x	x
Handheld CO <sub>2</sub> Monitor	LTAIAQSHM03/36	70N93	x	x	x	x

**NOTE** - The catalog and part numbers that appear here are for ordering field installed accessories only.

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

x - Field Installed.

## OPTIONS / ACCESSORIES

Item	Catalog No.	180	210	240	300S
<b>CEILING DIFFUSERS</b>					
Step-Down - Order one	RTD11-185	<b>29G06</b>	x		
	(Canada Only) RTD11-150/180S	<b>13K63</b>	x		
	RTD11-275	<b>29G07</b>		x	x
	(Canada Only) RTD11-275S	<b>13K64</b>		x	x
Flush - Order one	FD11-185	<b>29G10</b>	x		
	(Canada Only) FD11-150/180S	<b>13K58</b>	x		
	FD11-275-R	<b>29G11</b>		x	x
	(Canada Only) FD11-275S	<b>13K59</b>		x	x
Transitions (Supply and Return) Order one	LASRT18	<b>19K01</b>	x		
	(Canada Only) LASRT18S	<b>33K48</b>	x		
	LASRT21/24	<b>19K02</b>		x	x
	(Canada Only) LASRT21/24S	<b>33K49</b>		x	x
<b>ROOF CURBS - CLIPLOCK 1000</b>					
<b>Down-Flow</b>					
8 in. height	C1CURB40CN1-	<b>26W32</b>	x	x	x
14 in. height	LARMF18/30S-14	<b>33K44</b>	x	x	x
18 in. height	LARMF18/30S-18	<b>33K45</b>	x	x	x
24 in. height	LARMF18/30S-24	<b>33K46</b>	x	x	x
<b>Horizontal</b>					
26 in. height	LARMFH18/24S-26	<b>33K47</b>	x	x	x
37 in. height	LARMFH18/24S-37	<b>45K70</b>	x	x	x
<b>ROOF CURBS - STANDARD</b>					
<b>Down-Flow</b>					
14 in. height	LARMF18/36-14	<b>16K87</b>	x	x	x
24 in. height	LARMF18/36-24	<b>16K88</b>	x	x	x
<b>Horizontal</b>					
26 in. height	LARMFH18/24-26	<b>97J33</b>	x	x	x
37 in. height	LARMFH18/24-37	<b>38K53</b>	x	x	x
<b>Insulation Kits</b>					
for LARMFH18/24-26		<b>73K32</b>	x	x	x
for LARMFH18/24-37		<b>73K34</b>	x	x	x

**NOTE** - The catalog and part numbers that appear here are for ordering field installed accessories only.

⊗ - Field Installed or Configure to Order (factory installed)

○ - Configure to Order (Factory Installed)

**X** - Field Installed.



**SPECIFICATIONS**

**15 - 17.5 TON**

General Data		Nominal Tonnage	15 Ton	15 Ton	17.5 Ton	17.5 Ton
		Model No.	TGA180S2B	TGA180H2B	TGA210S2B	TGA210H2B
		Efficiency Type	Standard	High	Standard	High
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		186,000	186,000	218,000	219,000
	<sup>1</sup> Net Cooling Capacity - Btuh		180,000	180,000	210,000	210,000
	ARI Rated Air Flow - cfm		6000	6000	6700	7000
	Total Unit Power - kW		18.6	16.7	22.1	19.4
	<sup>1</sup> EER (Btuh/Watt)		9.7	10.8	9.5	10.8
	<sup>2</sup> Integrated Part Load Value (Btuh/Watt)		10.1	11.2	9.9	11.2
		Refrigerant Type	R-22	R-22	R-22	R-22
Refrigerant Charge Furnished		Circuit 1	9 lbs. 0 oz.	11 lbs. 8 oz.	8 lbs. 0 oz.	11 lbs. 0 oz.
		Circuit 2	9 lbs. 0 oz.	11 lbs. 8 oz.	8 lbs. 0 oz.	11 lbs. 0 oz.
		Circuit 3	9 lbs. 0 oz.	11 lbs. 8 oz.	8 lbs. 0 oz.	11 lbs. 0 oz.
		Circuit 4	---	---	---	11 lbs. 0 oz.
<b>Gas Heating Options - See Page 11</b>			<b>Standard (2 Stage) - Medium (2 Stage) - High (2 Stage)</b>			
<b>Compressor Type (no.)</b>			Scroll (3)	Scroll (3)	Scroll (3)	Scroll (4)
<b>Outdoor Coils</b>	Net face area - sq. ft. total		56.0	56.0	56.0	56.0
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		1	2	1	2
	Fins per inch		20	20	20	20
<b>Outdoor Coil Fans</b>	Motor horsepower (W)		(4) 1/3	(4) 1/3	(4) 1/2	(4) 1/3
	Motor rpm		1075	1075	1075	1075
	Total Motor watts		1370	1395	1800	1395
	Diameter - in. - No. of blades		(4) 24 - 3	(4) 24 - 3	(4) 24 - 3	(4) 24 - 3
	Total Air volume - cfm (L/s)		15,850	15,450	16,000	15,450
<b>Indoor Coils</b>	Net face area - sq. ft. (m <sup>2</sup> ) total		22.3	22.3	22.3	22.3
	Tube diameter - in.		3/8	3/8	3/8	3/8
	No. of rows		3	3	3	3
	Fins per inch (m)		14	14	14	14
	Drain connection - number and size		(1) 1 in. NPT coupling		(1) 1 in. NPT coupling	
		Expansion device type				Balanced Port Thermostatic Expansion Valve, removeable power head
<b><sup>3, 4</sup> Indoor Blower and Drive Selection</b>	Nominal motor HP	Low Static	3 hp	3 hp	5 hp	5 hp
		Standard Static	3 hp	3 hp	5 hp	5 hp
		High Static	5 hp	5 hp	7.5 hp	7.5 hp
	Max. usable motor output (US Only)	Low Static	3.45 hp	3.45 hp	5.75 hp	5.75 hp
		Standard Static	3.45 hp	3.45 hp	5.75 hp	5.75 hp
		High Static	5.75 hp	5.75 hp	8.63 hp	8.63 hp
	Drive Kit	Low Static	#A - 535-725 rpm	#A - 535-725 rpm	#2 - 685-865 rpm	#2 - 685-865 rpm
		Standard Static	#1 - 710-965 rpm	#1 - 710-965 rpm	#3 - 850-1045 rpm	#3 - 850-1045 rpm
		High Static	#4 - 945-1185 rpm	#4 - 945-1185 rpm	#6 - 1045-1285 rpm	#6 - 1045-1285 rpm
	Field Installed Drive Kits	Standard to Low Static	#A - 535-725 rpm	#A - 535-725 rpm	#2 - 685-865 rpm	#2 - 685-865 rpm
High to Standard Static		#3 - 850-1045 rpm	#3 - 850-1045 rpm	#7 - 850-1045 rpm	#7 - 850-1045 rpm	
Blower wheel nominal diameter x width			(2) 15 x 15 in.			
<b>Filters</b>	Type of filter		Disposable, pleated MERV 4			
	No. and size - in.		(6) 24 x 24 x 2			
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase			

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

<sup>1</sup> Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure.

<sup>2</sup> Integrated Part Load Value tested at 80°F (27°C) outdoor air temperature.

<sup>3</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

<sup>4</sup> Stocked models are available with standard static drives. High static drives are factory installed (configure to order). Low static drive can be factory installed (configure to order) or standard static drives can be converted to low static with field installed kit. High static models can be converted to standard static with field installed kit.

**SPECIFICATIONS**
**20 - 25 TON**

General Data		Nominal Tonnage	20 Ton	20 Ton	25 Ton
		Model No.	TGA240S2B	TGA240H2B	TGA300S2B
		Efficiency Type	Standard	High	Standard
<b>Cooling Performance</b>	Gross Cooling Capacity - Btuh		243,000	251,000	302,000
	Net Cooling Capacity - Btuh		232,000	240,000	286,000
	ARI Rated Air Flow - cfm		8000	7500	9000
	Total Unit Power - kW		24.4	22.2	30.1
	<sup>1</sup> EER (Btuh/Watt)		9.5	10.8	9.5
	<sup>3</sup> Integrated Part Load Value (Btuh/Watt)		9.9	11.2	9.7
		Refrigerant Type	R-22	R-22	R-22
Refrigerant Charge Furnished	Circuit 1		11 lbs. 8 oz.	11 lbs. 8 oz.	11 lbs. 0 oz.
	Circuit 2		11 lbs. 8 oz.	11 lbs. 8 oz.	11 lbs. 0 oz.
	Circuit 3		11 lbs. 8 oz.	11 lbs. 8 oz.	11 lbs. 0 oz.
	Circuit 4		- - -	11 lbs. 8 oz.	11 lbs. 0 oz.
<b>Gas Heating Options - See Page 11</b>			<b>Standard (2 Stage) - Medium (2 Stage) - High (2 Stage)</b>		
<b>Compressor Type (no.)</b>			Scroll (3)	Scroll (4)	Scroll (4)
<b>Outdoor Coils</b>	Net face area - sq. ft. total		56.0	56.0	56.0
	Tube diameter - in.		3/8	3/8	3/8
	Number of rows		2	2	2
	Fins per inch		20	20	20
<b>Outdoor Coil Fans</b>	Motor horsepower		(4) 1/3	(4) 1/3	(4) 1/2
	Motor rpm		1075	1075	1075
	Total Motor watts		1395	1395	1800
	Diameter - in. - No. of blades		(4) 24 - 3	(4) 24 - 3	(4) 24 - 3
	Total Air volume - cfm		15,450	15,450	16,000
<b>Indoor Coils</b>	Net face area - sq. ft. total		22.3	22.3	22.3
	Tube diameter - in.		3/8	3/8	3/8
	No. of rows		3	4	4
	Fins per inch (m)		14	14	14
	Drain connection - no. and size		(1) 1 in. NPT coupling	(1) 1 in. NPT coupling	(1) 1 in. NPT coupling
Expansion device type			Balanced Port Thermostatic Expansion Valve, removeable power head		
<b><sup>4, 5</sup> Indoor Blower and Drive Selection</b>	Nominal motor HP	Low Static	5 hp	5 hp	7.5 hp (5.6 kW)
		Standard Static	7.5 hp	7.5 hp	10 hp (7.5 kW)
		High Static	10 hp	10 hp	N/A
	Max. usable motor output (US Only)	Low Static	5.75 hp	5.75 hp	8.63 hp (6.4 kW)
		Standard Static	8.63 hp	8.63 hp	11.5 hp (8.6 kW)
		High Static	11.5 hp	11.5 hp	N/A
	Drive Kit	Low Static	#2 - 685- 865 rpm	#2 - 685-865 rpm	#7 - 850-1045 rpm
		Standard Static	#7 - 850-1045 rpm	#7 - 850-1045 rpm	#6 - 1045-1285 rpm
		High Static	#6 - 1045-1285 rpm	#6 - 1045-1285 rpm	N/A
Field Installed Low Static Drive Kit			#9 - 685-865 rpm	#9 - 685-865 rpm	#7 - 850-1045 rpm
Blower wheel nominal diameter x width			(2) 15 x 15 in.		
<b>Filters</b>	Type of filter		Disposable, pleated MERV 4		
	No. and size - in.		(6) 24 x 24 x 2		
<b>Electrical characteristics</b>			208/230V, 460V or 575V - 60 hertz - 3 phase		

NOTE - Net capacity includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

<sup>1</sup> Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure.

<sup>2</sup> Tested at conditions included in with ARI Standard 340/360; 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air; minimum external duct static pressure.

<sup>3</sup> Integrated Part Load Value tested at 80°F (27°C) outdoor air temperature.

<sup>4</sup> Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

<sup>5</sup> Stocked models are available with standard static drives. High static drives are factory installed (configure to order). Low static drive can be factory installed (configure to order) or standard static drives can be converted to low static with field installed kit.

**SPECIFICATIONS - GAS HEAT**

**15 - 17.5 TON**

Usage Data	Model No.	TGA180S2B, TGA180H2B, TGA210S2B, or TGA210H2B			
<b>Gas Heating Performance</b>	Heat Input Type	Standard (2 Stage)	Medium (2 Stage)	High (2 Stage)	
		Input - Btuh	169,000	234,000	312,000
	Output - Btuh	First Stage	260,000	360,000	480,000
		Second Stage	208,000	288,000	384,000
Temperature Rise Range - °F		15 - 45	30 - 60	40 - 70+	
CSA Thermal Efficiency		80.0%			
Gas Supply Connections		1 in. NPT			
Recommended Gas Supply Pressure - Natural / LPG/Propane		7 in. w.g. / 10.8 in. w.g.			

**SPECIFICATIONS - GAS HEAT**

**20 - 25 TON**

Usage Data	Model No.	TGA240S2B, TGA240H2B, or TGA300S2B			
<b>Gas Heating Performance</b>	Heat Input Type	Standard (2 Stage)	Medium (2 Stage)	High (2 Stage)	
		Input - Btuh (KW)	169,000 (49.5)	234,000 (68.6)	312,000 (91.4)
	Output - Btuh (kW)	Second Stage	260,000 (76.2)	360,000 (105.5)	480,000 (140.6)
		Second Stage	208,000 (60.9)	288,000 (84.4)	384,000 (112.5)
Temperature Rise Range - °F		15 - 45	30 - 60	40 - 70+	
CSA Thermal Efficiency		80.0%			
Gas Supply Connections		1 in. NPT			
Recommended Gas Supply Pressure - Natural / LPG/Propane		7 in. w.g. (1.7 kPa) / 11 in. w.g. (2.7 kPa)			

**HIGH ALTITUDE DERATE**

NOTE - Units may be installed at altitudes up to 2000 ft. above sea level without any modifications.  
 At altitudes above 2000 ft. units must be derated to match information in the table shown.  
 At altitudes above 4500 ft. unit must be derated 2% for each 1000 ft. above sea level.

NOTE - This is the only permissible derate for these units.

Heat Input Type	Altitude Feet	Gas Manifold Pressure in. w.g.		Input Rate (Btuh)
		Natural Gas	LPG/Propane	
Standard (2 stage)	2001 - 4500	3.4/1.6	9.6/5.5	249,000/169,000
Medium (2 stage)	2001 - 4500	3.4/1.6	9.6/5.5	345,000/230,000
High (2 stage)	2001 - 4500	3.4/1.6	9.6/5.5	460,000/312,000

# COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 15 TON STANDARD EFFICIENCY - TWO COMPRESSORS OPERATING

TGA180S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	126.5	37.1	7.26	.67	.81	.95	123.2	36.1	7.97	.68	.82	.96	119.3	35.0	8.79	.69	.84	.97	114.9	33.7	9.73	.70	.85	.99
	6000	2830	131.3	38.5	7.36	.72	.89	1.00	127.9	37.5	8.06	.73	.90	1.00	123.9	36.3	8.89	.74	.91	1.00	119.3	35.0	9.83	.76	.94	1.00
	7200	3400	135.1	39.6	7.43	.78	.95	1.00	131.7	38.6	8.15	.79	.96	1.00	127.7	37.4	8.97	.80	.98	1.00	123.2	36.1	9.92	.82	.99	1.00
67°F (19°C)	4800	2265	134.4	39.4	7.42	.53	.65	.77	130.9	38.4	8.13	.53	.66	.79	126.9	37.2	8.95	.54	.66	.80	122.2	35.8	9.90	.54	.67	.82
	6000	2830	138.6	40.6	7.51	.56	.70	.85	135.0	39.6	8.22	.56	.71	.86	130.7	38.3	9.04	.57	.72	.88	126.0	36.9	9.99	.58	.73	.90
	7200	3400	141.6	41.5	7.58	.59	.75	.92	138.0	40.4	8.28	.59	.76	.94	133.6	39.2	9.11	.60	.78	.95	128.6	37.7	10.06	.61	.80	.97
71°F (22°C)	4800	2265	142.9	41.9	7.61	.40	.51	.63	139.3	40.8	8.31	.40	.52	.63	135.1	39.6	9.13	.41	.52	.64	133.2	38.2	10.09	.41	.53	.65
	6000	2830	147.0	43.1	7.70	.41	.54	.68	143.4	42.0	8.40	.41	.55	.68	139.0	40.7	9.23	.41	.56	.69	134.0	39.3	10.18	.42	.56	.71
	7200	3400	149.8	43.9	7.77	.42	.57	.73	146.2	42.8	8.46	.42	.58	.74	141.6	41.5	9.28	.43	.59	.75	136.4	40.0	10.25	.43	.60	.77

## 15 TON STANDARD EFFICIENCY - ALL COMPRESSORS OPERATING

TGA180S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	176.1	51.6	13.42	.70	.85	.98	169.6	49.7	14.86	.71	.86	.99	163.0	47.8	16.48	.73	.88	1.00	156.3	45.8	18.34	.74	.90	1.00
	6000	2830	182.9	53.6	13.58	.76	.92	1.00	176.1	51.6	15.02	.77	.94	1.00	169.3	49.6	16.67	.79	.96	1.00	162.3	47.6	18.54	.81	.98	1.00
	7200	3400	188.5	55.2	13.70	.81	.98	1.00	181.9	53.3	15.16	.83	1.00	1.00	175.3	51.4	16.82	.85	1.00	1.00	168.6	49.4	18.72	.87	1.00	1.00
67°F (19°C)	4800	2265	187.3	54.9	13.67	.55	.68	.81	180.4	52.9	15.13	.56	.69	.83	173.2	50.8	16.78	.56	.70	.84	166.0	48.6	18.65	.57	.71	.87
	6000	2830	193.0	56.6	13.81	.58	.73	.89	186.0	54.5	15.27	.59	.75	.91	178.4	52.3	16.94	.60	.76	.93	170.7	50.0	18.82	.61	.78	.95
	7200	3400	197.3	57.8	13.92	.61	.79	.96	189.9	55.7	15.38	.62	.81	.98	182.2	53.4	17.03	.63	.83	.99	174.3	51.1	18.93	.65	.85	1.00
71°F (22°C)	4800	2265	199.4	58.4	13.95	.41	.53	.65	192.3	56.4	15.43	.42	.54	.66	184.7	54.1	17.10	.42	.55	.68	177.0	51.9	18.99	.42	.56	.69
	6000	2830	205.2	60.1	14.10	.42	.57	.71	197.8	58.0	15.56	.43	.58	.72	189.9	55.7	17.23	.43	.58	.74	181.6	53.2	19.17	.44	.60	.76
	7200	3400	209.1	61.3	14.19	.44	.60	.77	201.4	59.0	15.67	.44	.61	.78	193.4	56.7	17.34	.45	.62	.80	184.7	54.1	19.25	.45	.64	.83

## 15 TON HIGH EFFICIENCY - TWO COMPRESSORS OPERATING

TGA180H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	124.8	36.6	6.64	.67	.81	.94	122.3	35.8	7.24	.67	.81	.95	118.9	34.8	7.96	.68	.83	.97	114.9	33.7	8.79	.69	.84	.98
	6000	2830	129.5	38.0	6.73	.71	.88	1.00	126.9	37.2	7.33	.72	.89	1.00	123.4	36.2	8.04	.73	.91	1.00	119.3	35.0	8.86	.75	.92	1.00
	7200	3400	133.2	39.0	6.80	.77	.95	1.00	130.6	38.3	7.39	.78	.96	1.00	127.2	37.3	8.10	.79	.97	1.00	123.1	36.1	8.93	.81	.99	1.00
67°F (19°C)	4800	2265	132.5	38.8	6.79	.52	.64	.77	129.9	38.1	7.38	.53	.65	.78	126.5	37.1	8.09	.53	.65	.79	122.2	35.8	8.91	.54	.66	.80
	6000	2830	136.6	40.0	6.88	.55	.69	.85	134.0	39.3	7.46	.56	.70	.86	130.4	38.2	8.16	.56	.71	.87	126.0	36.9	8.98	.57	.72	.89
	7200	3400	139.5	40.9	6.94	.58	.75	.92	136.9	40.1	7.51	.58	.75	.93	133.2	39.0	8.21	.59	.77	.94	128.8	37.7	9.03	.60	.78	.96
71°F (22°C)	4800	2265	140.7	41.2	6.96	.40	.51	.62	138.3	40.5	7.54	.40	.51	.62	134.7	39.5	8.24	.40	.52	.63	130.3	38.2	9.06	.40	.52	.64
	6000	2830	144.8	42.4	7.05	.41	.54	.67	142.2	41.7	7.62	.41	.54	.67	138.6	40.6	8.31	.41	.55	.68	134.0	39.3	9.14	.41	.55	.69
	7200	3400	147.6	43.3	7.11	.42	.57	.72	145.0	42.5	7.68	.42	.57	.73	141.2	41.4	8.36	.42	.58	.74	136.6	40.0	9.18	.43	.59	.76

## 15 TON HIGH EFFICIENCY - ALL COMPRESSORS OPERATING

TGA180H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	4800	2265	175.6	51.5	11.96	.70	.85	.98	169.6	49.7	13.21	.71	.86	1.00	162.9	47.7	14.64	.72	.88	1.00	156.2	45.8	16.25	.74	.90	1.00
	6000	2830	182.3	53.4	12.08	.75	.93	1.00	176.1	51.6	13.32	.77	.94	1.00	169.4	49.6	14.75	.79	.96	1.00	162.4	47.6	16.39	.80	.98	1.00
	7200	3400	188.0	55.1	12.17	.81	.99	1.00	181.8	53.3	13.43	.83	1.00	1.00	175.5	51.4	14.86	.85	1.00	1.00	168.9	49.5	16.52	.87	1.00	1.00
67°F (19°C)	4800	2265	186.8	54.7	12.16	.55	.68	.81	180.4	52.9	13.40	.56	.69	.83	173.4	50.8	14.84	.56	.70	.84	166.1	48.7	16.46	.57	.71	.86
	6000	2830	192.6	56.4	12.27	.58	.73	.89	186.0	54.5	13.51	.59	.74	.91	178.9	52.4	14.93	.60	.76	.93	171.1	50.1	16.59	.61	.78	.95
	7200	3400	196.8	57.7	12.34	.61	.79	.96	190.2	55.7	13.58	.62	.80	.98	182.7	53.5	15.02	.63	.82	.99	174.7	51.2	16.68	.64	.85	1.00
71°F (22°C)	4800	2265	199.0	58.3	12.39	.41	.53	.65	192.5	56.4	13.62	.42	.54	.66	185.2	54.3	15.07	.42	.55	.67	177.4	52.0	16.73	.42	.55	.69
	6000	2830	204.8	60.0	12.49	.42	.57	.71	197.9	58.0	13.74	.43	.57	.72	190.4	55.8	15.17	.43	.58	.73	182.3	53.4	16.82	.43	.59	.75
	7200	3400	208.7	61.2	12.57	.44	.60	.77	201.8	59.1	13.81	.44	.61	.78	194.0	56.9	15.24	.44	.62	.80	185.6	54.4	16.90	.45	.63	.82

# COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 17.5 TON STANDARD EFFICIENCY - TWO COMPRESSORS OPERATING

TGA210S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	5600	2645	150.4	44.1	8.18	.65	.79	.92	146.0	42.8	9.15	.66	.80	.93	141.5	41.5	10.23	.66	.81	.95	136.6	40.0	11.45	.67	.83	.96
	7000	3305	155.8	45.7	8.28	.69	.86	.99	151.2	44.3	9.27	.70	.87	.99	146.5	42.9	10.35	.72	.89	1.00	141.5	41.5	11.59	.73	.91	1.00
	8400	3965	160.1	46.9	8.37	.74	.92	1.00	155.4	45.5	9.37	.76	.94	1.00	150.5	44.1	10.45	.77	.95	1.00	145.4	42.6	11.69	.79	.97	1.00
67°F (19°C)	5600	2645	159.6	46.8	8.35	.52	.63	.75	154.9	45.4	9.35	.52	.63	.76	150.0	44.0	10.43	.52	.64	.78	144.7	42.4	11.65	.53	.65	.79
	7000	3305	164.5	48.2	8.45	.54	.67	.82	159.5	46.7	9.45	.54	.68	.84	154.3	45.2	10.54	.55	.69	.85	148.8	43.6	11.77	.56	.71	.87
	8400	3965	168.0	49.2	8.52	.56	.72	.89	162.7	47.7	9.52	.57	.73	.90	157.4	46.1	10.63	.58	.75	.92	151.7	44.5	11.86	.58	.76	.94
71°F (22°C)	5600	2645	169.5	49.7	8.55	.39	.50	.60	164.5	48.2	9.56	.39	.50	.61	159.3	46.7	10.67	.39	.51	.62	153.7	45.0	11.91	.40	.51	.63
	7000	3305	174.5	51.1	8.64	.40	.52	.65	169.1	49.6	9.67	.40	.53	.66	163.5	47.9	10.79	.40	.54	.67	157.7	46.2	12.03	.41	.54	.68
	8400	3965	177.8	52.1	8.71	.41	.55	.70	172.3	50.5	9.74	.41	.56	.71	166.5	48.8	10.87	.41	.57	.72	160.4	47.0	12.12	.42	.58	.74

## 17.5 TON STANDARD EFFICIENCY - ALL COMPRESSORS OPERATING

TGA210S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	5600	2645	208.5	61.1	15.55	.69	.83	.96	201.3	59.0	17.41	.70	.85	.98	193.4	56.7	19.51	.71	.87	.99	184.8	54.2	21.92	.72	.89	1.00
	7000	3305	215.9	63.3	15.74	.74	.90	1.00	208.5	61.1	17.62	.75	.92	1.00	200.2	58.7	19.73	.77	.94	1.00	191.3	56.1	22.17	.79	.96	1.00
	8400	3965	221.9	65.0	15.90	.79	.97	1.00	214.3	62.8	17.78	.81	.98	1.00	206.1	60.4	19.93	.83	1.00	1.00	197.4	57.9	22.35	.85	1.00	1.00
67°F (19°C)	5600	2645	221.0	64.8	15.86	.54	.67	.80	213.2	62.5	17.72	.55	.68	.81	204.8	60.0	19.85	.55	.69	.83	195.5	57.3	22.26	.56	.70	.85
	7000	3305	227.3	66.6	16.04	.57	.72	.87	219.2	64.2	17.90	.58	.73	.89	210.3	61.6	20.03	.59	.75	.91	200.4	58.7	22.47	.60	.77	.94
	8400	3965	231.8	67.9	16.17	.60	.77	.94	223.4	65.5	18.04	.61	.79	.96	214.3	62.8	20.18	.62	.81	.97	204.2	59.8	22.63	.63	.83	.99
71°F (22°C)	5600	2645	234.7	68.8	16.24	.41	.53	.64	226.4	66.4	18.13	.41	.53	.65	217.5	63.7	20.29	.41	.54	.66	207.5	60.8	22.72	.42	.55	.68
	7000	3305	240.9	70.6	16.42	.42	.56	.69	232.2	68.1	18.31	.42	.56	.71	222.8	65.3	20.47	.42	.57	.72	212.4	62.2	22.92	.43	.59	.74
	8400	3965	245.2	71.9	16.54	.43	.59	.75	236.2	69.2	18.45	.43	.60	.76	226.4	66.4	20.59	.44	.61	.78	215.6	63.2	23.07	.44	.62	.81

## 17.5 TON HIGH EFFICIENCY - TWO COMPRESSORS OPERATING

TGA210H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	5600	2645	111.0	32.5	5.36	.60	.76	.93	107.4	31.5	5.94	.61	.78	.95	103.8	30.4	6.58	.62	.80	.97	100.0	29.3	7.32	.63	.82	.99
	7000	3305	115.4	33.8	5.42	.65	.86	1.00	111.8	32.8	6.00	.67	.88	1.00	108.0	31.7	6.66	.68	.90	1.00	104.2	30.5	7.40	.70	.93	1.00
	8400	3965	119.2	34.9	5.48	.72	.95	1.00	115.6	33.9	6.06	.74	.96	1.00	111.8	32.8	6.72	.76	.99	1.00	108.0	31.7	7.46	.78	1.00	1.00
67°F (19°C)	5600	2645	118.2	34.6	5.46	.48	.58	.71	114.4	33.5	6.04	.48	.59	.73	110.6	32.4	6.70	.48	.60	.75	106.4	31.2	7.44	.49	.61	.77
	7000	3305	122.2	35.8	5.54	.50	.63	.81	118.4	34.7	6.10	.50	.63	.83	114.2	33.5	6.76	.51	.65	.86	110.0	32.2	7.52	.52	.67	.88
	8400	3965	125.2	36.7	5.58	.53	.69	.90	121.2	35.5	6.16	.53	.71	.93	117.0	34.3	6.82	.54	.73	.95	112.4	32.9	7.56	.55	.75	.98
71°F (22°C)	5600	2645	126.2	37.0	5.60	.36	.46	.56	122.2	35.8	6.18	.36	.46	.57	118.0	34.6	6.84	.36	.47	.57	113.8	33.4	7.60	.36	.47	.58
	7000	3305	130.2	38.2	5.66	.37	.49	.61	126.0	36.9	6.24	.37	.49	.61	121.6	35.6	6.90	.37	.50	.63	117.2	34.3	7.64	.38	.51	.64
	8400	3965	133.0	39.0	5.70	.38	.52	.66	128.6	37.7	6.30	.38	.52	.68	124.2	36.4	6.94	.38	.53	.70	119.4	35.0	7.70	.39	.54	.72

## 17.5 TON HIGH EFFICIENCY - ALL COMPRESSORS OPERATING

TGA210H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	5600	2645	206.6	60.5	13.42	.69	.85	1.00	199.2	58.4	14.94	.70	.87	1.00	191.2	56.0	16.68	.71	.89	1.00	182.8	53.6	18.68	.73	.92	1.00
	7000	3305	215.0	63.0	13.58	.75	.94	1.00	207.4	60.8	15.10	.76	.96	1.00	199.2	58.4	16.84	.78	.99	1.00	190.4	55.8	18.84	.81	1.00	1.00
	8400	3965	222.4	65.2	13.70	.81	1.00	1.00	215.0	63.0	15.22	.83	1.00	1.00	207.2	60.7	17.00	.86	1.00	1.00	198.8	58.3	19.00	.89	1.00	1.00
67°F (19°C)	5600	2645	220.2	64.5	13.66	.54	.67	.80	211.8	62.1	15.18	.55	.68	.82	203.6	59.7	16.92	.55	.69	.85	194.4	57.0	18.92	.56	.71	.87
	7000	3305	227.4	66.6	13.80	.57	.72	.90	219.0	64.2	15.34	.58	.74	.92	210.0	61.5	17.08	.59	.76	.95	200.4	58.7	19.06	.60	.78	.98
	8400	3965	232.8	68.2	13.90	.61	.79	.99	223.8	65.6	15.42	.62	.81	1.00	214.6	62.9	17.18	.63	.83	1.00	204.6	60.0	19.14	.64	.86	1.00
71°F (22°C)	5600	2645	235.0	68.9	13.94	.41	.52	.64	226.6	66.4	15.48	.41	.53	.65	217.4	63.7	17.22	.41	.54	.67	207.6	60.8	19.20	.41	.55	.68
	7000	3305	242.2	71.0	14.08	.42	.56	.70	233.4	68.4	15.60	.42	.57	.71	223.4	65.5	17.38	.42	.58	.73	213.2	62.5	19.34	.43	.59	.75
	8400	3965	247.2	72.4	14.16	.43	.59	.76	237.8	69.7	15.70	.43	.61	.78	227.8	66.8	17.44	.44	.62	.81	217.2	63.7	19.42	.44	.63	.83

# COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 20 TON STANDARD EFFICIENCY - TWO COMPRESSORS OPERATING

TGA240S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)					75°F (24°C)					85°F (29°C)					95°F (35°C)								
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	169.4	49.6	8.96	.65	.79	.93	164.6	48.2	9.99	.66	.81	.94	159.6	46.8	11.15	.66	.82	.96	154.1	45.2	12.48	.67	.84	.97
	8000	3775	175.6	51.5	9.07	.69	.86	.99	170.5	50.0	10.09	.70	.88	1.00	165.3	48.4	11.27	.72	.89	1.00	159.6	46.8	12.59	.73	.91	1.00
	9600	4530	180.3	52.8	9.17	.75	.93	1.00	175.1	51.3	10.19	.76	.94	1.00	169.9	49.8	11.37	.77	.96	1.00	164.3	48.2	12.70	.79	.97	1.00
67°F (19°C)	6400	3020	179.9	52.7	9.15	.51	.63	.75	174.7	51.2	10.17	.52	.63	.77	169.2	49.6	11.33	.52	.64	.78	163.4	47.9	12.67	.53	.65	.80
	8000	3775	185.3	54.3	9.26	.54	.67	.83	179.8	52.7	10.28	.54	.68	.84	174.1	51.0	11.44	.55	.69	.86	168.0	49.2	12.77	.55	.71	.88
	9600	4530	189.1	55.4	9.34	.56	.72	.90	183.5	53.8	10.36	.57	.73	.91	177.5	52.0	11.52	.58	.75	.93	171.2	50.2	12.86	.58	.77	.95
71°F (22°C)	6400	3020	191.3	56.1	9.38	.39	.50	.60	185.8	54.5	10.40	.39	.50	.61	179.9	52.7	11.56	.39	.51	.62	173.8	50.9	12.91	.39	.51	.63
	8000	3775	196.7	57.6	9.49	.40	.52	.65	190.9	55.9	10.50	.40	.53	.66	184.8	54.2	11.67	.40	.53	.67	178.3	52.3	13.01	.40	.54	.68
	9600	4530	200.4	58.7	9.56	.41	.55	.70	194.4	57.0	10.58	.41	.56	.71	188.1	55.1	11.75	.41	.56	.73	181.2	53.1	13.09	.42	.57	.74

## 20 TON STANDARD EFFICIENCY - ALL COMPRESSORS OPERATING

TGA240S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)					95°F (35°C)					105°F (41°C)					115°F (46°C)								
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	230.9	67.7	16.79	.70	.85	.98	223.0	65.4	18.80	.71	.86	1.00	214.7	62.9	21.07	.72	.88	1.00	205.9	60.3	23.66	.73	.90	1.00
	8000	3775	239.1	70.1	16.97	.75	.92	1.00	231.1	67.7	18.96	.76	.94	1.00	222.5	65.2	21.28	.78	.96	1.00	213.2	62.5	23.88	.80	.98	1.00
	9600	4530	245.8	72.0	17.12	.80	.98	1.00	237.7	69.7	19.12	.82	1.00	1.00	229.0	67.1	21.44	.84	1.00	1.00	220.1	64.5	24.08	.86	1.00	1.00
67°F (19°C)	6400	3020	244.8	71.7	17.07	.55	.67	.81	236.4	69.3	19.08	.55	.68	.83	227.6	66.7	21.34	.56	.69	.84	217.9	63.9	23.95	.57	.71	.87
	8000	3775	251.8	73.8	17.22	.58	.72	.89	243.0	71.2	19.23	.58	.74	.91	233.7	68.5	21.52	.59	.75	.93	223.6	65.5	24.13	.60	.77	.95
	9600	4530	256.8	75.3	17.34	.60	.78	.95	247.7	72.6	19.35	.61	.80	.97	238.1	69.8	21.65	.62	.82	.99	227.9	66.8	24.27	.64	.84	1.00
71°F (22°C)	6400	3020	260.4	76.3	17.41	.41	.53	.65	251.6	73.7	19.43	.41	.54	.66	241.9	70.9	21.75	.42	.54	.67	231.7	67.9	24.39	.42	.55	.69
	8000	3775	267.4	78.4	17.56	.42	.56	.70	258.0	75.6	19.59	.42	.57	.71	247.8	72.6	21.91	.43	.58	.73	237.2	69.5	24.57	.43	.59	.75
	9600	4530	272.1	79.7	17.68	.43	.59	.76	262.3	76.9	19.71	.44	.60	.77	252.0	73.9	22.03	.44	.61	.79	241.0	70.6	24.67	.45	.63	.82

## 20 TON HIGH EFFICIENCY - TWO COMPRESSORS OPERATING

TGA240H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)					75°F (24°C)					85°F (29°C)					95°F (35°C)								
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	130.0	38.1	6.04	.59	.74	.92	126.2	37.0	6.78	.60	.76	.93	122.2	35.8	7.64	.61	.78	.95	118.0	34.6	8.62	.61	.80	.97
	8000	3775	135.0	39.6	6.10	.64	.84	1.00	131.0	38.4	6.82	.65	.86	1.00	127.0	37.2	7.68	.67	.88	1.00	122.4	35.9	8.68	.68	.90	1.00
	9600	4530	139.2	40.8	6.12	.70	.93	1.00	135.2	39.6	6.86	.72	.95	1.00	130.8	38.3	7.72	.74	.97	1.00	126.4	37.0	8.72	.76	.99	1.00
67°F (19°C)	6400	3020	138.0	40.4	6.12	.47	.57	.70	134.0	39.3	6.86	.47	.58	.72	129.6	38.0	7.72	.47	.58	.73	125.0	36.6	8.72	.48	.59	.75
	8000	3775	142.6	41.8	6.16	.49	.61	.79	138.4	40.6	6.92	.50	.62	.81	133.8	39.2	7.76	.50	.64	.84	129.0	37.8	8.76	.51	.65	.86
	9600	4530	146.0	42.8	6.20	.52	.67	.89	141.6	41.5	6.94	.52	.69	.91	136.8	40.1	7.80	.53	.71	.93	131.8	38.6	8.80	.54	.73	.95
71°F (22°C)	6400	3020	147.0	43.1	6.20	.36	.45	.55	142.8	41.9	6.94	.36	.46	.55	138.0	40.4	7.82	.36	.46	.56	133.2	39.0	8.82	.36	.47	.57
	8000	3775	151.6	44.4	6.24	.36	.48	.59	147.0	43.1	7.00	.36	.48	.60	142.2	41.7	7.86	.37	.49	.61	137.0	40.2	8.86	.37	.50	.62
	9600	4530	154.8	45.4	6.28	.37	.51	.65	150.0	44.0	7.04	.38	.51	.66	144.8	42.4	7.90	.38	.52	.68	139.4	40.9	8.90	.38	.53	.70

## 20 TON HIGH EFFICIENCY - ALL COMPRESSORS OPERATING

TGA240H

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)					95°F (35°C)					105°F (41°C)					115°F (46°C)								
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
			kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh	kW		75°F 24°C	80°F 27°C	85°F 29°C
63°F (17°C)	6400	3020	240.0	70.3	15.38	.69	.84	1.00	231.6	67.9	17.36	.70	.86	1.00	222.6	65.2	19.62	.71	.88	1.00	213.2	62.5	22.22	.72	.91	1.00
	8000	3775	249.4	73.1	15.46	.74	.93	1.00	240.4	70.5	17.48	.76	.96	1.00	231.0	67.7	19.74	.78	.98	1.00	221.6	64.9	22.32	.80	1.00	1.00
	9600	4530	257.0	75.3	15.56	.81	1.00	1.00	248.2	72.7	17.56	.83	1.00	1.00	239.2	70.1	19.86	.85	1.00	1.00	230.0	67.4	22.44	.88	1.00	1.00
67°F (19°C)	6400	3020	254.6	74.6	15.56	.54	.67	.80	245.4	71.9	17.56	.55	.68	.82	236.0	69.2	19.82	.55	.69	.84	225.8	66.2	22.40	.56	.70	.87
	8000	3775	262.8	77.0	15.64	.57	.72	.90	253.2	74.2	17.64	.58	.73	.92	243.0	71.2	19.94	.59	.75	.94	232.6	68.2	22.52	.60	.77	.97
	9600	4530	268.6	78.7	15.72	.60	.78	.98	258.8	75.8	17.72	.61	.80	1.00	248.2	72.7	20.02	.62	.83	1.00	237.2	69.5	22.62	.64	.85	1.00
71°F (22°C)	6400	3020	271.0	79.4	15.74	.41	.52	.64	261.4	76.6	17.76	.41	.53	.65	251.0	73.6	20.02	.41	.54	.66	240.4	70.5	22.62	.41	.55	.68
	8000	3775	279.2	81.8	15.82	.42	.56	.70	269.0	78.8	17.84	.42	.57	.71	258.0	75.6	20.14	.42	.58	.73	246.6	72.3	22.76	.43	.59	.75
	9600	4530	284.4	83.3	15.92	.43	.59	.76	273.8	80.2	17.92	.43	.60	.78	262.8	77.0	20.22	.44	.61	.80	251.0	73.6	22.80	.44	.63	.82

# COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

## 25 TON STANDARD EFFICIENCY - TWO COMPRESSORS OPERATING

TGA300S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
						75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C
cfm	L/s	kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW			
63°F (17°C)	8000	3775	149.4	43.8	8.28	.57	.74	.93	144.8	42.4	9.28	.58	.76	.95	140.0	41.0	10.36	.59	.78	.97	135.0	39.6	11.58	.60	.81	.99
	10000	4720	155.2	45.5	8.38	.62	.85	1.00	150.2	44.0	9.40	.64	.87	1.00	145.2	42.6	10.48	.66	.90	1.00	140.0	41.0	11.70	.68	.93	1.00
	12000	5665	159.8	46.8	8.46	.69	.94	1.00	154.8	45.4	9.48	.71	.97	1.00	149.8	43.9	10.58	.74	.98	1.00	144.8	42.4	11.82	.76	1.00	1.00
67°F (19°C)	8000	3775	158.4	46.4	8.42	.45	.55	.69	153.4	45.0	9.44	.45	.56	.71	148.2	43.4	10.54	.46	.57	.73	142.8	41.9	11.76	.46	.58	.76
	10000	4720	163.4	47.9	8.52	.47	.60	.80	158.0	46.3	9.54	.48	.60	.82	152.6	44.7	10.66	.49	.62	.85	146.8	43.0	11.88	.49	.64	.88
	12000	5665	167.0	48.9	8.58	.50	.66	.90	161.4	47.3	9.62	.51	.68	.93	155.8	45.7	10.72	.51	.71	.95	149.8	43.9	11.96	.52	.73	.97
71°F (22°C)	8000	3775	168.6	49.4	8.60	.34	.44	.53	163.2	47.8	9.66	.34	.44	.54	157.6	46.2	10.78	.34	.45	.55	151.6	44.4	12.00	.34	.45	.56
	10000	4720	173.4	50.8	8.70	.35	.46	.58	167.6	49.1	9.74	.35	.47	.59	161.8	47.4	10.86	.35	.48	.60	155.6	45.6	12.12	.35	.48	.61
	12000	5665	176.6	51.8	8.76	.36	.49	.63	170.6	50.0	9.80	.36	.50	.66	164.6	48.2	10.94	.36	.51	.68	158.2	46.4	12.20	.37	.52	.70

## 25 TON STANDARD EFFICIENCY - ALL COMPRESSORS OPERATING

TGA300S

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85°F (29°C)						95°F (35°C)						105°F (41°C)						115°F (46°C)					
			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb			Total Cooling Capacity		Comp Motor kW Input	Sensible To Total Ratio (S/T) Dry Bulb		
						75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C				75°F 24°C	80°F 27°C	85°F 29°C
cfm	L/s	kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW				kBtuh	kW			
63°F (17°C)	8000	3775	291.6	85.5	20.84	.69	.85	1.00	281.2	82.4	23.30	.70	.87	1.00	270.0	79.1	26.04	.71	.90	1.00	257.8	75.6	29.16	.73	.92	1.00
	10000	4720	302.4	88.6	21.08	.74	.95	1.00	291.8	85.5	23.54	.76	.97	1.00	280.2	82.1	26.32	.78	1.00	1.00	268.0	78.5	29.46	.81	1.00	1.00
	12000	5665	311.8	91.4	21.28	.81	1.00	1.00	301.4	88.3	23.78	.84	1.00	1.00	290.0	85.0	26.60	.86	1.00	1.00	278.0	81.5	29.80	.89	1.00	1.00
67°F (19°C)	8000	3775	308.6	90.4	21.22	.54	.67	.81	297.4	87.2	23.68	.54	.68	.83	285.2	83.6	26.48	.55	.69	.85	272.0	79.7	29.60	.56	.70	.88
	10000	4720	317.8	93.1	21.46	.57	.72	.91	306.0	89.7	23.92	.58	.73	.93	293.2	85.9	26.68	.59	.76	.96	279.4	81.9	29.88	.60	.78	.99
	12000	5665	324.6	95.1	21.58	.60	.79	.99	312.4	91.6	24.06	.61	.81	1.00	299.2	87.7	26.90	.62	.83	1.00	285.0	83.5	30.10	.64	.87	1.00
71°F (22°C)	8000	3775	328.2	96.2	21.68	.40	.52	.64	316.0	92.6	24.16	.40	.53	.65	303.0	88.8	27.00	.41	.54	.67	288.8	84.6	30.22	.41	.55	.68
	10000	4720	337.0	98.8	21.86	.41	.56	.70	324.2	95.0	24.40	.42	.57	.71	310.6	91.0	27.22	.42	.58	.73	295.8	86.7	30.40	.43	.59	.75
	12000	5665	342.8	100.5	22.02	.43	.59	.76	329.6	96.6	24.54	.43	.60	.78	315.6	92.5	27.38	.44	.62	.81	300.2	88.0	30.58	.44	.63	.84

**BLOWER DATA**

**15 TON**

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH STANDARD GAS HEAT, WET INDOOR COIL & AIR FILTERS IN PLACE.**

**FOR ALL UNITS ADD:**

1 - Any factory installed options air resistance (high gas heat, economizer, etc.). See table below

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 20

Then determine from table the blower motor output and drive required.

**0.30 to 1.40 in. w.g.**

**TGA180**

Air Volume cfm	External Static (in. w.g.)																								
	0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00		1.10		1.20		1.30		1.40		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
	<b>Low Static - 3 HP, Drive Kit A</b>						<b>Standard Static - 3 HP, Drive Kit 1</b>																		
4800	577	1.13	620	1.31	662	1.48	702	1.66	742	1.83	777	2.01	811	2.18	842	2.36	872	2.54	902	2.72	932	2.89	960	3.07	
5000	585	1.25	628	1.43	670	1.60	<b>710</b>	1.78	750	1.95	783	2.13	815	2.30	848	2.50	880	2.70	910	2.88	940	3.05	<b>968</b>	3.23	
5500	605	1.45	648	1.65	690	1.85	<b>728</b>	2.05	765	2.25	800	2.45	835	2.65	865	2.85	895	3.05	925	3.25	955	3.45	<b>983</b>	3.65	
6000	630	1.75	670	1.95	<b>710</b>	2.15	748	2.38	785	2.60	818	2.83	850	3.05	880	3.25	910	3.45	<b>940</b>	<b>3.68</b>	970	3.90	998	4.13	
6500	650	2.05	690	2.28	<b>730</b>	2.50	768	2.75	805	3.00	838	3.23	870	3.45	<b>900</b>	<b>3.70</b>	<b>930</b>	<b>3.95</b>	<b>958</b>	<b>4.18</b>	985	4.40	1013	4.63	
7000	675	2.35	<b>715</b>	2.63	755	2.90	790	3.15	825	3.40	<b>858</b>	<b>3.68</b>	<b>890</b>	<b>3.95</b>	<b>920</b>	<b>4.20</b>	<b>950</b>	<b>4.45</b>	978	4.70	1005	4.95	1030	5.18	
7200	687	2.55	<b>725</b>	2.81	763	3.06	798	3.33	<b>833</b>	<b>3.60</b>	<b>866</b>	<b>3.86</b>	<b>898</b>	<b>4.11</b>	<b>926</b>	<b>4.36</b>	<b>954</b>	<b>4.61</b>	984	4.90	1013	5.19	1038	5.44	

**NOTE - Bold** - To operate in this range, unit must be ordered with High Static Drive and drive kit #3 must be ordered separately for field installation.

**1.50 to 2.50 in. w.g.**

**TGA180**

Air Volume cfm	External Static (in. w.g.)																					
	1.50		1.60		1.70		1.80		1.90		2.00		2.10		2.20		2.30		2.40		2.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>High Static - 5 HP, Drive Kit 4</b>										<b>Field Furnished Drive</b>											
4800	987	3.24	1014	3.42	1041	3.60	1064	3.78	1087	3.95	1112	4.13	1136	4.30	1159	4.50	1181	4.70	1204	4.88	1226	5.06
5000	995	3.40	1020	3.60	1045	3.80	1070	3.98	1095	4.15	1118	4.33	1140	4.50	1163	4.70	1185	4.90	1208	5.10	1230	5.30
5500	1010	3.85	1035	4.05	1060	4.25	1085	4.48	1110	4.70	1133	4.90	1155	5.10	1178	5.30	1200	5.50	1220	5.70	1240	5.90
6000	1025	4.35	1050	4.58	1075	4.80	1098	5.00	1120	5.20	1145	5.43	1170	5.65	<b>1193</b>	<b>5.88</b>	1215	6.10	1235	6.33	1255	6.55
6500	1040	4.85	1065	5.10	1090	5.35	1115	5.60	<b>1140</b>	<b>5.85</b>	<b>1163</b>	<b>6.08</b>	<b>1185</b>	<b>6.30</b>	1205	6.53	1225	6.75	1248	7.00	1270	7.25
7000	1055	5.40	1080	5.68	<b>1105</b>	<b>5.95</b>	<b>1130</b>	<b>6.20</b>	<b>1155</b>	<b>6.45</b>	<b>1178</b>	<b>6.70</b>	1200	6.95	1220	7.20	1240	7.45	1263	7.73	1285	8.00
7200	1063	5.68	<b>1088</b>	<b>5.94</b>	<b>1113</b>	<b>6.19</b>	<b>1136</b>	<b>6.44</b>	<b>1159</b>	<b>6.69</b>	<b>1182</b>	<b>6.96</b>	1204	7.23	1226	7.50	1248	7.77	1269	8.03	1289	8.28

**NOTE - Bold, italics** - drive is capable of the values noted but will exceed motor horsepower.

**OPTIONS / ACCESSORIES AIR RESISTANCE (in. w.g.)**

Air Volume - cfm	Gas Heat Exchanger		Economizer	Horizontal Roof Curb
	Med. Heat	High Heat		
4800	.08	.10	---	.08
5000	.09	.11	---	.08
5500	.10	.13	---	.10
6000	.12	.15	---	.11
6500	.13	.17	.02	.13
7000	.15	.19	.04	.15
7200	.16	.20	.05	.16



**BLOWER DATA**

**17.5 TON**

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH STANDARD GAS HEAT, WET INDOOR COIL & AIR FILTERS IN PLACE.**

**FOR ALL UNITS ADD:**

1 - Any factory installed options air resistance (high gas heat, economizer, etc.). See table below

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 20

Then determine from table the blower motor output and drive required.

**0.20 to 1.20 in. w.g.**

**TGA210**

Air Volume cfm	External Static (in. w.g.)																					
	0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00		1.10		1.20	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Field Furnished</b>				<b>Low Static - 5 HP, Drive Kit 2</b>						<b>Standard Static - 5 HP, Drive Kit 3</b>											
5600	609	1.51	652	1.71	694	1.91	732	2.12	769	2.33	803	2.53	837	2.73	868	2.93	899	3.13	928	3.33	957	3.53
6000	630	1.75	670	1.95	710	2.15	748	2.38	785	2.60	818	2.83	850	3.05	880	3.25	910	3.45	940	3.68	970	3.90
6500	650	2.05	690	2.28	730	2.50	768	2.75	805	3.00	838	3.23	870	3.45	900	3.70	930	3.95	958	4.18	985	4.40
7000	675	2.35	715	2.63	755	2.90	790	3.15	825	3.40	858	3.68	890	3.95	920	4.20	950	4.45	978	4.70	1005	4.95
7500	700	2.75	738	3.03	775	3.30	810	3.58	845	3.85	878	4.15	910	4.45	938	4.70	965	4.95	993	5.23	1020	5.50
8000	725	3.20	763	3.50	800	3.80	833	4.08	865	4.35	898	4.65	930	4.95	958	5.23	985	5.50	<b>1013</b>	<b>5.80</b>	<b>1040</b>	<b>6.10</b>
8400	746	3.55	783	3.87	819	4.18	853	4.49	886	4.80	916	5.12	946	5.43	974	5.73	<b>1001</b>	<b>6.03</b>	<b>1029</b>	<b>6.35</b>	1056	6.66

**NOTE - Bold** - To operate in this range, unit must be ordered with High Static Drive and drive kit #7 must be ordered separately for field installation.

**1.30 to 2.40 in. w.g.**

**TGA210**

Air Volume cfm	External Static (in. w.g.)																							
	1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00		2.10		2.20		2.30		2.40	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Standard Static - 5 HP, Drive Kit 3</b>						<b>High Static - 7.5 HP, Drive Kit 6</b>																	
5600	985	3.74	1012	3.95	1037	4.15	1062	4.35	1087	4.58	1112	4.80	1135	5.00	1157	5.20	1180	5.41	1202	5.62	1223	5.83	1244	6.04
6000	998	4.13	1025	4.35	1050	4.58	1075	4.80	1098	5.00	1120	5.20	1145	5.43	1170	5.65	1193	5.88	1215	6.10	1235	6.33	1255	6.55
6500	1013	4.63	1040	4.85	1065	5.10	1090	5.35	1115	5.60	1140	5.85	1163	6.08	1185	6.30	1205	6.53	1225	6.75	1248	7.00	1270	7.25
7000	1030	5.18	1055	5.40	1080	5.68	1105	5.95	1130	6.20	1155	6.45	1178	6.70	1200	6.95	1220	7.20	1240	7.45	1263	7.73	1285	8.00
7500	1048	5.78	1075	6.05	1100	6.33	1125	6.60	1148	6.88	1170	7.15	1193	7.40	1215	7.65	1238	7.95	1260	8.25	1280	8.50	<b>1300</b>	<b>8.75</b>
8000	1065	6.40	1090	6.70	1115	6.98	1140	7.25	1163	7.55	1185	7.85	1208	8.13	1230	8.40	<b>1253</b>	<b>8.70</b>	<b>1275</b>	<b>9.00</b>	1295	9.30	1315	9.60
8400	1081	6.96	1106	7.26	1131	7.58	1156	7.89	1179	8.19	1201	8.49	<b>1224</b>	<b>8.79</b>	<b>1246</b>	<b>9.09</b>	<b>1266</b>	<b>9.38</b>	1286	9.67	1307	9.98	1328	10.29

**NOTE - Bold, italics** - drive is capable of the values noted but will exceed motor horsepower.  
*Italics* - field furnished drive

**OPTIONS / ACCESSORIES AIR RESISTANCE (in. w.g.)**

Air Volume - cfm	Gas Heat Exchanger		Economizer	Horizontal Roof Curb
	Med. Heat	High Heat		
5600	.10	.13	---	.10
6000	.12	.15	---	.11
6500	.13	.17	.02	.13
7000	.15	.19	.04	.15
7500	.17	.21	.06	.17
8000	.19	.24	.09	.19
8400	.20	.26	.11	.21

**BLOWER DATA**

**20 TON**

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH STANDARD GAS HEAT, WET INDOOR COIL & AIR FILTERS IN PLACE.**

**FOR ALL UNITS ADD:**

1 - Any factory installed options air resistance (high gas heat, economizer, etc.). See table below

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 20

Then determine from table the blower motor output and drive required.

**0.20 to 1.10 in. w.g.**

**TGA240**

Air Volume cfm	External Static (in. w.g.)																					
	.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00		1.10		1.20	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Low Static - 5 HP, Drive Kit 2</b>						<b>Standard Static - 7.5 HP, Drive Kit 7</b>															
6400	648	1.99	688	2.22	727	2.46	764	2.69	801	2.92	834	3.15	866	3.39	896	3.62	926	3.85	954	4.08	981	4.30
7000	675	2.35	715	2.63	755	2.90	790	3.15	825	3.40	858	3.68	890	3.95	920	4.20	950	4.45	978	4.70	1005	4.95
7500	700	2.75	738	3.03	775	3.30	810	3.58	845	3.85	878	4.15	910	4.45	938	4.70	965	4.95	993	5.23	1020	5.50
8000	725	3.20	763	3.50	800	3.80	833	4.08	865	4.35	898	4.65	930	4.95	958	5.23	985	5.50	1013	5.80	1040	6.10
8500	750	3.65	788	3.98	825	4.30	858	4.60	890	4.90	920	5.23	950	5.55	978	5.85	1005	6.15	1033	6.48	1060	6.80
9000	780	4.20	815	4.53	850	4.85	880	5.18	910	5.50	940	5.83	970	6.15	998	6.48	1025	6.80	1053	7.15	1080	7.50
9600	811	4.87	845	5.22	879	5.57	910	5.94	941	6.31	970	6.67	999	7.02	1027	7.38	1054	7.74	1079	8.08	1104	8.41

**1.30 to 2.40 in. w.g.**

**TGA240**

Air Volume cfm	External Static (in. w.g.)																							
	1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00		2.10		2.20		2.30		2.40	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Standard Static</b>						<b>High Static - 10 HP, Drive Kit 6</b>																	
6400	1008	4.53	1035	4.75	1060	4.98	1085	5.22	1110	5.45	1135	5.68	1157	5.91	1180	6.15	1202	6.40	1225	6.65	1246	6.88	1268	7.11
7000	1030	5.18	1055	5.40	1080	5.68	1105	5.95	1130	6.20	1155	6.45	1178	6.70	1200	6.95	1220	7.20	1240	7.45	1263	7.73	1285	8.00
7500	1048	5.78	1075	6.05	1100	6.33	1125	6.60	1148	6.88	1170	7.15	1193	7.40	1215	7.65	1238	7.95	1260	8.25	1280	8.50	1300	8.75
8000	1065	6.40	1090	6.70	1115	6.98	1140	7.25	1163	7.55	1185	7.85	1208	8.13	1230	8.40	1253	8.70	1275	9.00	1295	9.30	1315	9.60
8500	1085	7.10	1110	7.40	1135	7.73	1160	8.05	1183	8.35	1205	8.65	1228	8.95	1250	9.25	1270	9.55	1290	9.85	1310	10.15	1330	10.45
9000	1105	7.83	1130	8.15	1153	8.45	1175	8.75	1198	9.08	1220	9.40	1243	9.75	1265	10.10	1288	10.45	1310	10.80	1330	11.10	1350	11.40
9600	1129	8.77	1154	9.13	1177	9.46	1199	9.78	1222	10.14	1244	10.50	1267	10.87	1289	11.23	---	---	---	---	---	---		

NOTE - *italics* - field furnished drive.

**OPTIONS / ACCESSORIES AIR RESISTANCE (in. w.g.)**

Air Volume - cfm	Gas Heat Exchanger		Economizer	Horizontal Roof Curb
	Med. Heat	High Heat		
6400	.13	.17	.02	.13
7000	.15	.19	.04	.15
7500	.17	.21	.06	.17
8000	.19	.24	.09	.19
8500	.20	.26	.11	.21
9000	.23	.29	.14	.24
9600	.25	.32	.16	.26

**BLOWER DATA**

**STANDARD 25 TON**

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH STANDARD GAS HEAT, WET INDOOR COIL & AIR FILTERS IN PLACE.**

**FOR ALL UNITS ADD:**

1 - Any factory installed options air resistance (high gas heat, economizer, etc.). See table below

2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 20

Then determine from table the blower motor output and drive required.

**0.00 to 1.00 in. w.g.**

**TGA300S**

Air Volume cfm	External Static (in. w.g.)																					
	0.00		0.10		0.20		0.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Low Static - 7.5 HP, Drive Kit 7</b>																					
8000	725	3.20	763	3.50	800	3.80	833	4.08	865	4.35	898	4.65	930	4.95	958	5.23	985	5.50	1013	5.80	1040	6.10
8500	750	3.65	788	3.98	825	4.30	858	4.60	890	4.90	920	5.23	950	5.55	978	5.85	1005	6.15	1033	6.48	1060	6.80
9250	790	4.45	825	4.80	860	5.15	893	5.50	925	5.85	955	6.20	985	6.55	1013	6.88	1040	7.20	1065	7.53	1090	7.85
10000	835	5.40	868	5.78	900	6.15	930	6.50	960	6.85	988	7.23	1015	7.60	1043	7.98	1070	8.35	1095	8.70	1120	9.05
10750	875	6.40	908	6.83	940	7.25	970	7.65	1000	8.05	1028	8.45	1055	8.85	1080	9.25	1105	9.65	1130	10.05	1155	10.45
11500	915	7.40	948	7.88	980	8.35	<b>1010 8.80</b>	<b>1040 9.25</b>	1068	9.68	1095	10.10	1118	10.53	1140	10.95	1165	11.40	<b>1190 11.85</b>			

NOTE - **Bold, italics** - drive is capable of the values noted but will exceed motor horsepower.

**1.10 to 2.20 in. w.g.**

**TGA300S**

Air Volume cfm	External Static (in. w.g.)																							
	1.10		1.20		1.30		1.40		1.50		1.60		1.70		1.80		1.90		2.00		2.10		2.20	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Standard Static - 10 HP, Drive Kit 6</b>										<b>Field Furnished Drive</b>													
8000	1065	6.40	1090	6.70	1115	6.98	1140	7.25	1163	7.55	1185	7.85	1208	8.13	1230	8.40	1253	8.70	1275	9.00	1295	9.30	1315	9.60
8500	1085	7.10	1110	7.40	1135	7.73	1160	8.05	1183	8.35	1205	8.65	1228	8.95	1250	9.25	1270	9.55	1290	9.85	1310	10.15	1330	10.45
9250	1115	8.20	1140	8.55	1163	8.88	1185	9.20	1208	9.53	1230	9.85	1253	10.20	1275	10.55	1295	10.88	1315	11.20	---	---	---	---
10000	1145	9.43	1170	9.80	1193	10.15	1215	10.50	1238	10.88	1260	11.25	1283	11.62	---	---	---	---	---	---	---	---	---	---
10750	1178	10.83	1200	11.20	1222	11.57	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
11500	<b>1210 12.23</b>	<b>1230 12.60</b>	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

NOTE - **Bold, italics** - drive is capable of the values noted but will exceed motor horsepower.

**OPTIONS / ACCESSORIES AIR RESISTANCE (in. w.g.)**

Air Volume - cfm	Gas Heat Exchanger		Economizer	Horizontal Roof Curb
	Med. Heat	High Heat		
8000	.19	.24	.09	.13
8500	.20	.26	.11	.15
9250	.24	.30	.15	.18
10,000	.27	.35	.19	.21

## BLOWER DATA

### CEILING DIFFUSER AIR RESISTANCE - in. w.g.

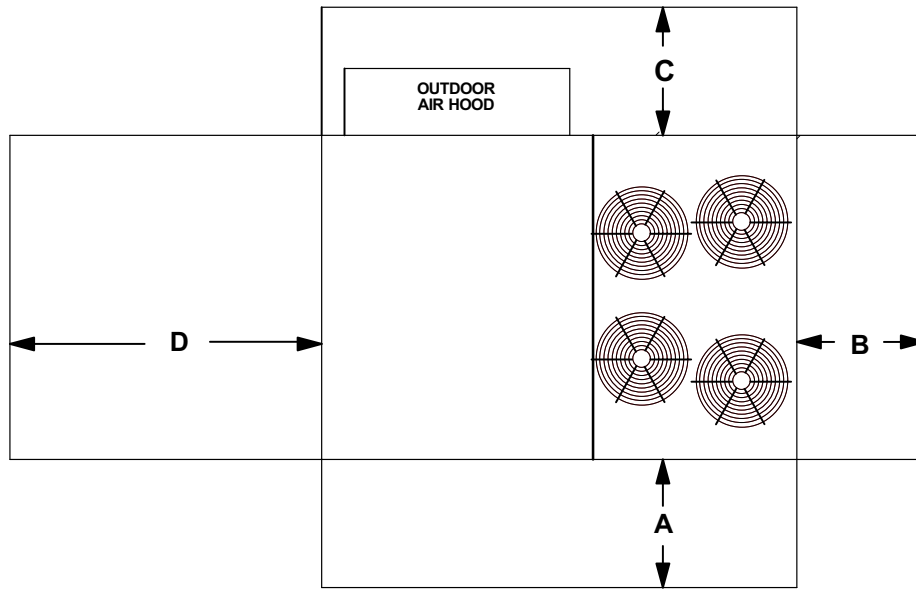
Air Volume cfm	Step-Down Diffuser						Flush Diffuser	
	RTD11-185			RTD11-275			FD11-185	FD11-275
	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open	2 Ends Open	1 Side/2 Ends Open	All Ends & Sides Open		
5000	.51	.44	.39	---	---	---	.27	---
5200	.56	.48	.42	---	---	---	.30	---
5400	.61	.52	.45	---	---	---	.33	---
5600	.66	.56	.48	---	---	---	.36	---
5800	.71	.59	.51	---	---	---	.39	---
6000	.76	.63	.55	.36	.31	.27	.42	.29
6200	.80	.68	.59	---	---	---	.46	---
6400	.86	.72	.63	---	---	---	.50	---
6500	---	---	---	.42	.36	.31	---	.34
6600	.92	.77	.67	---	---	---	.54	---
6800	.99	.83	.72	---	---	---	.58	---
7000	1.03	.87	.76	.49	.41	.36	.62	.40
7200	1.09	.92	.80	---	---	---	.66	---
7400	1.15	.97	.84	---	---	---	.70	---
7500	---	---	---	.51	.46	.41	---	.45
7600	1.20	1.02	.88	---	---	---	.74	---
8000	---	---	---	.59	.49	.43	---	.50
8500	---	---	---	.69	.58	.50	---	.57
9000	---	---	---	.79	.67	.58	---	.66
9500	---	---	---	.89	.75	.65	---	.74
10,000	---	---	---	1.00	.84	.73	---	.81
10,500	---	---	---	1.10	.92	.80	---	.89
11,000	---	---	---	1.21	1.01	.88	---	.96

## BLOWER DATA

### CEILING DIFFUSER AIR THROW DATA - ft.

Model No.	Air Volume - cfm	<sup>1</sup> Effective Throw Range		Model No.	Air Volume - cfm	<sup>1</sup> Effective Throw Range	
		Step-Down	Flush			Step-Down	Flush
		Diffuser Model	RTD11-185			FD11-185	Diffuser Model
180	5600	39 - 49	28 - 37	210, 240, 300S	7200	33 - 38	26 - 35
	5800	42 - 51	29 - 38		7400	35 - 40	28 - 37
	6000	44 - 54	40 - 50		7600	36 - 41	29 - 38
	6200	45 - 55	42 - 51		7800	38 - 43	40 - 50
	6400	46 - 55	53 - 52		8000	39 - 44	42 - 51
	6600	57 - 56	45 - 56		8200	41 - 46	43 - 52
					8400	43 - 49	44 - 54
			8600		44 - 50	46 - 57	
			8800		47 - 55	48 - 59	

## UNIT CLEARANCES - INCHES (MM)



<sup>1</sup> Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
<b>Service Clearance</b>	60	1524	36	914	36	914	66	1676	<b>Unobstructed</b>
<b>Clearance to Combustibles</b>	36	914	1	25	1	25	1	25	
<b>Minimum Operation Clearance</b>	45	1143	36	914	36	914	41	1041	

NOTE - Entire perimeter of unit base requires support when elevated above the mounting surface.

<sup>1</sup> **Service Clearance** - Required for removal of serviceable parts.

**Clearance to Combustibles** - Required clearance to combustible material.

**Minimum Operation Clearance** - Required clearance for proper unit operation.

## OUTDOOR SOUND DATA

Unit Model No.	Octave Band Sound Power Levels dBA, re 10 <sup>-12</sup> Watts							<sup>1</sup> Sound Rating Number (dB)
	Center Frequency - HZ							
	125	250	500	1000	2000	4000	8000	
180	80	83	87	88	84	80	71	93
210, 240	77	83	87	87	84	80	71	92
300S	80	84	87	87	83	77	64	93

Note - The octave sound power data does not include tonal corrections.

<sup>1</sup> Tested according to ARI Standard 370-2001 test conditions.

**ELECTRICAL DATA****15 TON****15 TON STANDARD EFFICIENCY (R-22)****TGA180S2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (3)</b>	Rated Load Amps (total)	15.6 (46.8)			7.5 (22.5)			6 (18)		
	Locked Rotor Amps (total)	124 (372)			59.6 (178.8)			49.4 (148.2)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Locked Rotor Amps (total)	4.7 (18.8)			2.4 (9.6)			1.9 (7.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>
	Rated Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
	Locked Rotor Amps	66	105	152	26.8	45.6	66	23.4	36.6	54
<b><sup>1</sup> Maximum Over-current Protection</b>	Unit Only	80	90	110	40	40	50	30	35	40
	with power exhaust	90	90	110	40	45	50	35	35	40
<b><sup>2</sup> Minimum Circuit Ampacity</b>	Unit Only	71	77	85	35	38	41	28	30	33
	with power exhaust	76	82	90	37	40	44	30	32	35
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

**15 TON HIGH EFFICIENCY (R-22)****TGA180H2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (3)</b>	Rated Load Amps (total)	15.4 (46.2)			7.4 (22.2)			5.9 (17.7)		
	Locked Rotor Amps (total)	124 (372)			59.6 (178.8)			49.4 (148.2)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Locked Rotor Amps (total)	4.7 (18.8)			2.4 (9.6)			1.9 (7.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>
	Rated Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
	Locked Rotor Amps	66	105	152	26.8	45.6	66	23.4	36.6	54
<b><sup>1</sup> Maximum Over-current Protection</b>	Unit Only	80	90	110	40	40	50	30	35	40
	with power exhaust	90	90	110	40	45	50	35	35	40
<b><sup>2</sup> Minimum Circuit Ampacity</b>	Unit Only	71	77	84	35	37	41	28	30	33
	with power exhaust	76	82	89	37	40	43	30	32	35
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

**17.5 TON STANDARD EFFICIENCY (R-22)****TGA210S2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (3)</b>	Rated Load Amps (total)	20.2 (60.6)			9.7 (29.1)			8 (24)		
	Locked Rotor Amps (total)	156 (468)			75 (225)			54 (162)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	3 (12)			1.5 (6)			1.2 (4.8)		
	Locked Rotor Amps (total)	6 (24)			3 (12)			2.9 (11.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>
	Rated Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
	Locked Rotor Amps	66	105	152	26.8	45.6	66	23.4	36.6	54
<b><sup>1</sup> Maximum Over-current Protection</b>	with power exhaust	110	110	125	50	50	60	40	45	50
	Unit Only	100	110	125	50	50	50	40	40	45
<b><sup>2</sup> Minimum Circuit Ampacity</b>	with power exhaust	94	100	107	45	48	52	37	39	42
	Unit Only	89	95	102	43	46	49	35	37	40
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

<sup>1</sup> HACR type breaker or fuse.<sup>2</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

**ELECTRICAL DATA**

**17.5 TON**

**17.5 TON HIGH EFFICIENCY (R-22)**

**TGA210H2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (4)</b>	Rated Load Amps (total)	14.7 (58.8)			7.1 (28.4)			5.1 (20.4)		
	Locked Rotor Amps (total)	91 (364)			50 (200)			37 (148)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Locked Rotor Amps (total)	4.7 (18.8)			2.4 (9.6)			1.9 (7.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>	<b>3</b>	<b>5</b>	<b>7.5</b>
	Rated Load Amps	10.6	16.7	24.2	4.8	7.6	11	3.9	6.1	9
	Locked Rotor Amps	66	105	152	26.8	45.6	66	23.4	36.6	54
<b><sup>1</sup> Maximum Over-current Protection</b>	with power exhaust	100	110	125	45	50	60	35	40	45
	Unit Only	90	100	110	45	50	50	30	35	40
<b><sup>2</sup> Minimum Circuit Ampacity</b>	with power exhaust	88	94	102	43	46	49	32	34	37
	Unit Only	83	89	97	41	43	47	30	32	35
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

**20 TON STANDARD EFFICIENCY (R-22)**

**TGA240S2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (3)</b>	Rated Load Amps (total)	22.4 (67.2)			10.9 (32.7)			8.3 (24.9)		
	Locked Rotor Amps (total)	164 (492)			100 (300)			78 (234)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Locked Rotor Amps (total)	4.7 (18.8)			2.4 (9.6)			1.9 (7.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>
	Rated Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
	Locked Rotor Amps	105	152	193	45.6	66	84	36.6	54	66
<b><sup>1</sup> Maximum Over-current Protection</b>	Unit Only	110	125	125	50	60	60	45	45	50
	with power exhaust	125	125	150	60	60	70	45	50	50
<b><sup>2</sup> Minimum Circuit Ampacity</b>	Unit Only	100	107	114	49	52	55	38	40	42
	with power exhaust	104	112	118	51	55	58	40	42	44
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

**20 TON HIGH EFFICIENCY (R-22)**

**TGA240H2**

Voltage - 60hz - 3 phase		208/230V			460V			575V		
<b>Compressors (4)</b>	Rated Load Amps (total)	17.3 (69.2)			9 (36)			7.1 (28.4)		
	Locked Rotor Amps (total)	123 (492)			62 (248)			50 (200)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	2.4 (9.6)			1.3 (5.2)			1 (4)		
	Locked Rotor Amps (total)	4.7 (18.8)			2.4 (9.6)			1.9 (7.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>
	Rated Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
	Locked Rotor Amps	105	152	193	45.6	66	84	36.6	54	66
<b><sup>1</sup> Maximum Over-current Protection</b>	Unit Only	110	125	125	60	60	70	45	50	50
	with power exhaust	110	125	150	60	60	70	45	50	50
<b><sup>2</sup> Minimum Circuit Ampacity</b>	Unit Only	100	108	114	52	55	58	41	44	46
	with power exhaust	105	113	119	54	58	61	43	46	48
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

<sup>1</sup> HACR type breaker or fuse.

<sup>2</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

**ELECTRICAL/ELECTRIC HEAT DATA****25 TON****25 TON STANDARD EFFICIENCY (R-22)****TGA300S2**

<b>Voltage - 60hz - 3 phase</b>		<b>208/230V</b>			<b>460V</b>			<b>575V</b>		
<b>Compressors (4)</b>	Rated Load Amps (total)	19.8 (79.2)			9.6 (38.4)			7.8 (31.2)		
	Locked Rotor Amps (total)	156 (624)			75 (300)			54 (216)		
<b>Outdoor Fan Motors (4)</b>	Full Load Amps (total)	3 (12)			1.5 (6)			1.2 (4.8)		
	Locked Rotor Amps (total)	6 (24)			3 (12)			2.9 (11.6)		
<b>Optional Power Exhaust Fan (2)</b>	Horsepower	1/3			1/3			1/3		
	Full Load Amps (total)	4.8 (9.6)			2.6 (5.2)			2 (4)		
	Locked Rotor Amps (total)	9.4 (18.8)			4.8 (9.6)			3.8 (7.6)		
<b>Service Outlet 115V GFI</b>		15 Amps			15 Amps			15 Amps		
<b>Indoor Blower Motor</b>	Horsepower	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>	<b>5</b>	<b>7.5</b>	<b>10</b>
	Rated Load Amps	16.7	24.2	30.8	7.6	11	14	6.1	9	11
	Locked Rotor Amps	105	152	193	45.6	66	84	36.6	54	66
<b><sup>1</sup> Maximum Over-current Protection</b>	Unit Only	125	125	150	60	60	70	50	50	60
	with power exhaust	125	150	150	60	70	70	50	50	60
<b><sup>2</sup> Minimum Circuit Ampacity</b>	Unit Only	108	116	122	52	56	59	43	46	48
	with power exhaust	113	121	127	55	58	61	45	48	50
<b>Disconnect</b>		<b>84M14</b>			<b>84M13</b>			<b>84M13</b>		

NOTE - Extremes of operating range are plus and minus 10% of line voltage.

<sup>1</sup> HACR type breaker or fuse.<sup>2</sup> Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.



## OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS - FIELD INSTALLED

### COMMERCIAL TOUCHSCREEN THERMOSTAT



Intuitive Touchscreen Interface - **Two Stage Heating / Two Stage Cooling Conventional or Heat Pump** - Seven Day Programmable - Four Time Periods/Day - Economizer Output - Title 24 Compliant - ENERGY STAR® Qualified - Backlit Display - Automatic Changeover

C0STAT02AE1L

#### **Sensors For Touchscreen Thermostat**

- 1 Remote non-adjustable wall mount 20k temperature sensor ..... C0SNZN01AE2-
- 1 Remote non-adjustable wall mount 10k averaging temperature sensor ..... C0SNZN73AE2-
- 1 Remote non-adjustable duct mount temperature sensor ..... C0SNDC00AE1-
- Outdoor temperature sensor ..... C0SNSR03AE1-

#### **Accessories For Touchscreen Thermostat**

- Locking cover (clear) ..... C0MISC15AE1-

*<sup>1</sup> Remote sensors for C0STAT02AE1L can be applied in the following combinations: (1) C0SNZN01AE1-, (2) C0SNZN73AE1-, (2) C0SNZN01AE1- and (1) C0SNZN73AE1-, (4) C0SNZN01AE1-, (3) C0SNZN01AE1- and (2) C0SNZN73AE1.*

### DIGITAL NON-PROGRAMMABLE THERMOSTATS



Intuitive Interface - Automatic Changeover - Simple Up and Down Temperature Control

**Two-stage heating / cooling** conventional systems ..... C0STAT10AE1L

#### **Sensor For Digital Non-Programmable Thermostats Above**

- Remote wall mounted temperature sensor ..... C0SNZN00AE1-



Intuitive Interface - Automatic Changeover - Backlit Display - Simple Up and Down Temperature Control

**One-stage heating / cooling** conventional systems ..... C0STAT12AE1L

#### **Sensor For Digital Non-Programmable Thermostats Above**

- Outdoor temperature sensor ..... C0SNSR04AE1-

#### **Accessories For Digital Non-Programmable Thermostats Above**

- Optional wall mounting plate ..... C0MISC17AE1-

**WEIGHT DATA**

Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
180S/210S Base Unit	2251	1021	2451	1112
180S/210S Max. Unit	2441	1107	2641	1197
180H/240S Base Unit	2345	1064	2545	1154
180H/240S Max. Unit	2535	1150	2735	1241
210H/240H/300 Base Unit	2470	1120	2670	1211
210H/240H/300 Max. Unit	2660	1207	2860	1297

**OPTIONS / ACCESSORIES**

		Weight	
		lbs.	kg.
<b>CEILING DIFFUSERS</b>			
Step-Down	RTD11-185	392	178
	RTD11-275	403	183
Flush	FD11-185	289	135
	FD11-275	363	165
Transitions	LASRT18	80	36
	LASRT21/24	75	34

**ECONOMIZER / OUTDOOR AIR / EXHAUST**

<b>Economizer</b>	T1ECON10C-1	86	39
<b>Barometric Relief</b>			
Down-Flow Barometric Relief Dampers	LAGED18/24	30	14
Horizontal Barometric Relief Dampers	LAGEDH18/24	20	9
<b>Outdoor Air Dampers</b>			
Damper Section (down-flow) - Automatic	T1DAMP20C-1	52	24
Damper Section (down-flow) - Manual	LAOAD18/24	49	22
Outdoor Air Hood (down-flow)	C1HOOD10C-1	65	29
Power Exhaust	LAPEF18/24	62	28

**HEAT EXCHANGER**

Medium Heat Heat Exchanger		95	43
High Heat Heat Exchanger		105	48

**PACKAGING**

LTL Packaging (less than truck load)		280	127
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**ROOF CURBS - STANDARD**

<b>Down-Flow</b>			
14 in. height	LARMF18/36-14	160	73
24 in. height	LARMF18/36-24	220	100
<b>Horizontal</b>			
26 in. height	LARMFH18/24-26	420	191
37 in. height	LARMFH18/24-37	580	263

**ROOF CURBS - CLIPLOCK 1000**

<b>Down-Flow</b>			
14 in. height	LARMF18/30S-14	164	74
18 in. height	LARMF18/30S-18	187	85
24 in. height	LARMF18/30S-24	222	101
<b>Horizontal</b>			
26 in. height	LARMFH18/24S-26	335	152
37 in. height	LARMFH18/24S-37	445	202

Base Unit - The unit with low fire heat exchanger NO OPTIONS.

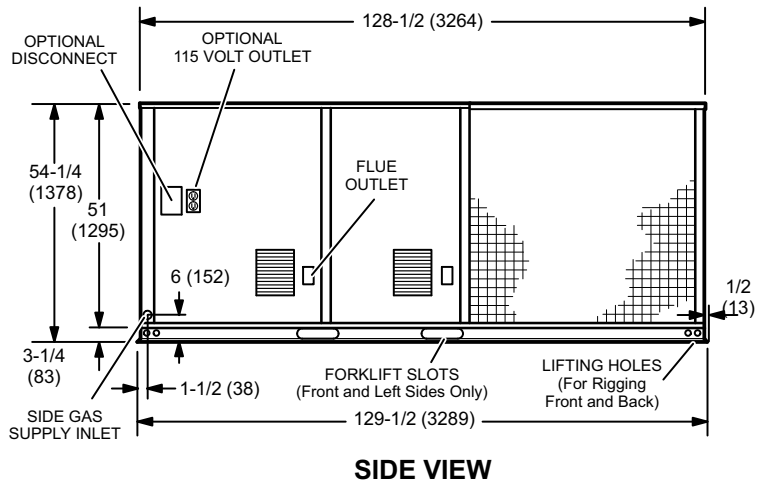
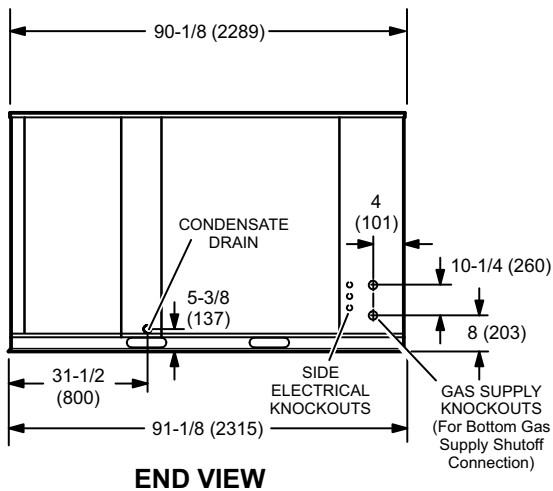
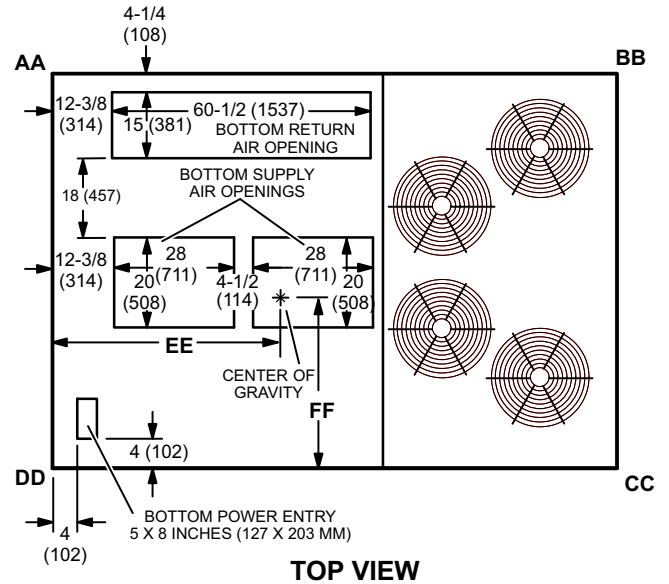
Max. Unit - The unit with ALL OPTIONS Installed. (High Input Heat Exchanger, Economizer, Power Exhaust Fans, Controls)

**DIMENSIONS - INCHES (MM)**

Model Number	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	inch	mm	inch	mm
180S/210S Base Unit	602	273	470	213	502	228	677	307	51-1/2	1308	39-1/2	1003
180S/210S Max. Unit	673	305	518	235	536	243	714	324	51-1/2	1308	42-1/2	1080
180H Base Unit	607	275	498	226	544	247	696	316	54	1372	38	965
180H Max. Unit	681	309	552	250	575	261	727	330	54	1372	42	1067
210H Base Unit	646	293	520	236	565	256	740	336	53	1346	38-1/4	972
210H Max. Unit	721	327	573	260	597	271	770	350	53	1346	42	1067
240S Base Unit	613	278	501	227	541	245	690	313	54	1372	39	991
240S Max. Unit	690	313	543	246	565	256	737	334	52-1/2	1334	42	1067
240H/300S Base Unit	636	288	531	241	579	262	724	328	55	1397	38-1/4	972
240H/300S Max. Unit	708	321	571	259	605	274	777	352	53-1/2	1359	40-1/2	1029

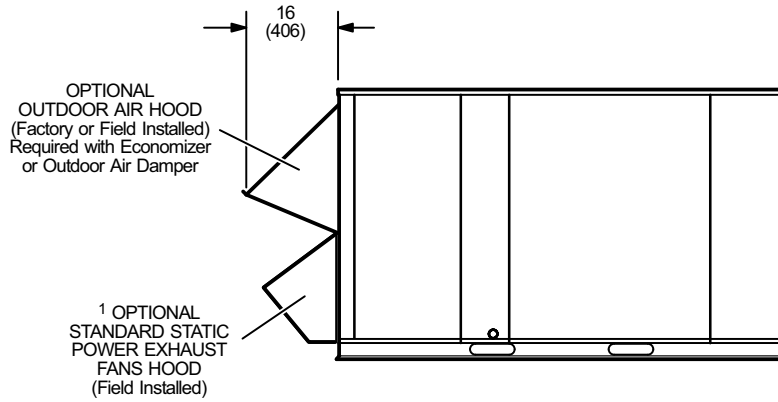
Base Unit - Unit with NO OPTIONS.

Max. Unit - Unit with ALL OPTIONS Installed. (Economizer, Power Exhaust Fans, Controls)



## ACCESSORY DIMENSIONS - INCHES (MM)

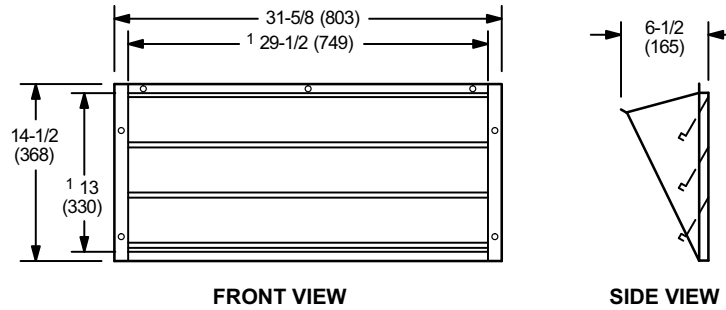
### OPTIONAL OUTDOOR AIR HOOD DETAIL WITH STANDARD STATIC POWER EXHAUST FANS



<sup>1</sup> Field Installed in Return Air Duct for Horizontal Applications.

### HORIZONTAL BAROMETRIC RELIEF DAMPERS

(Field installed in horizontal return air duct adjacent to unit)



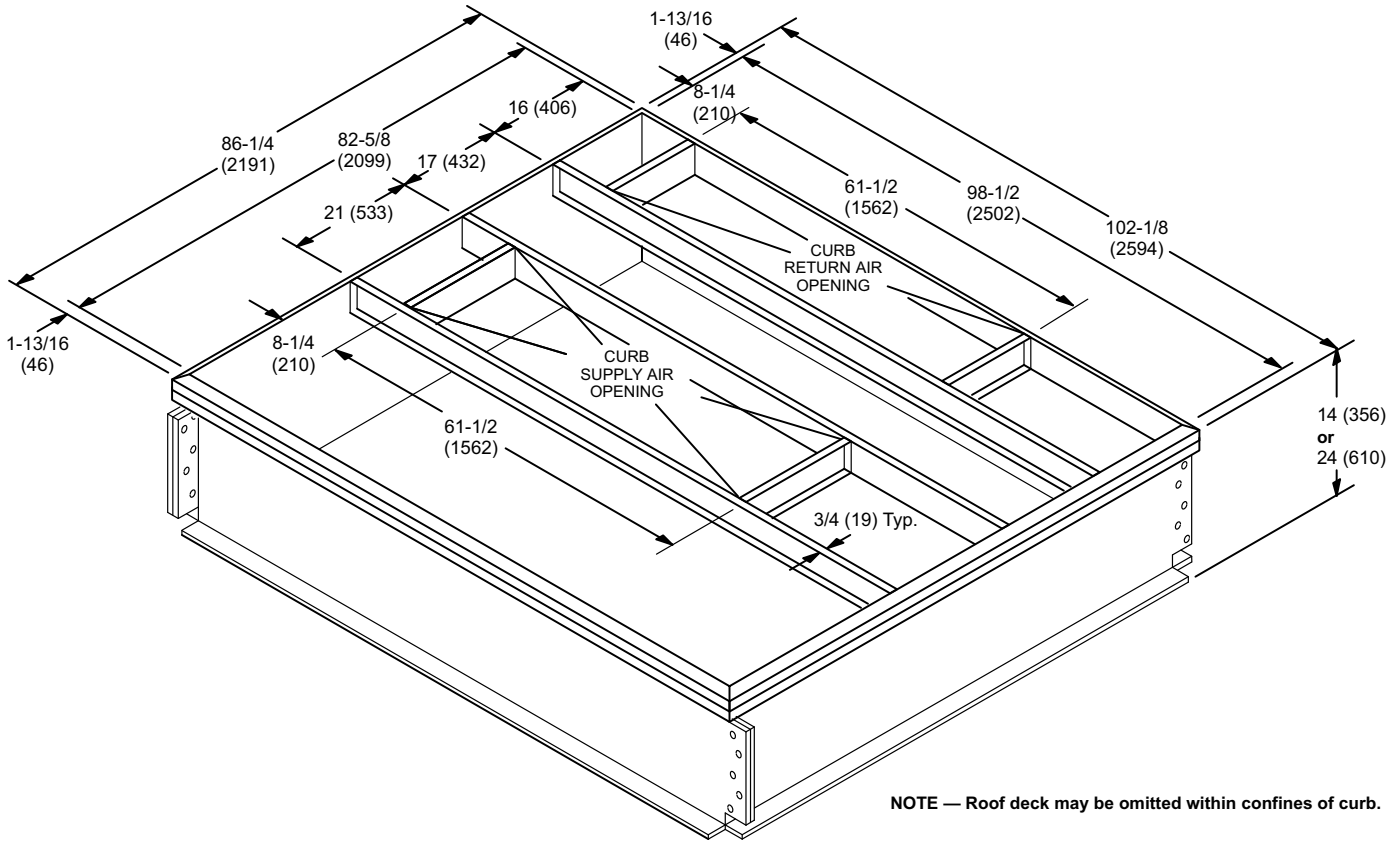
NOTE - Two furnished per order no.

<sup>1</sup> NOTE - Opening size required in return air duct.

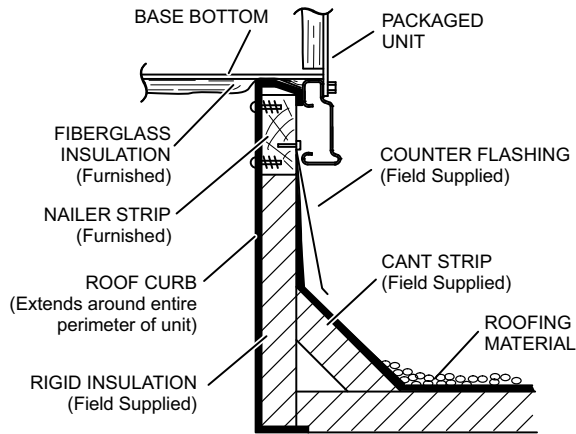


# ACCESSORY DIMENSIONS - INCHES (MM)

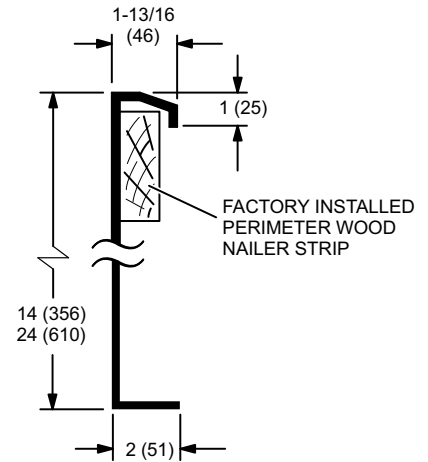
## STANDARD ROOF CURBS - DOUBLE DUCT OPENING



### TYPICAL FLASHING DETAIL FOR ROOF CURB

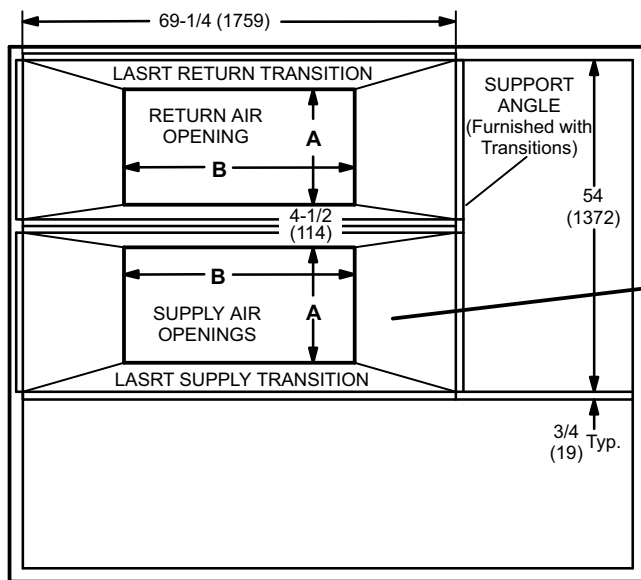


### DETAIL ROOF CURB

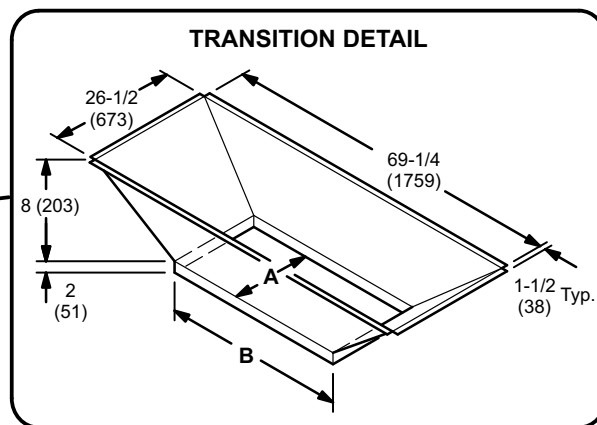


## ACCESSORY DIMENSIONS - INCHES (MM)

### ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS



TOP VIEW

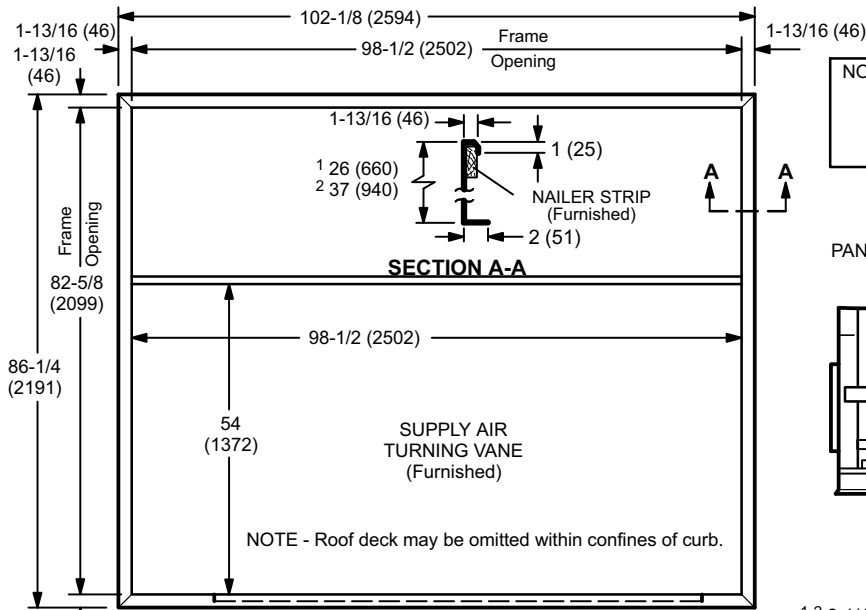


TRANSITION OPENING SIZES

Model Number	A		B	
	inch	mm	inch	mm
LASRT18	18	457	36	914
LASRT21/24	24	610	48	1219

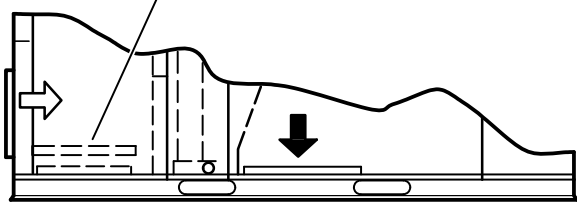
# ACCESSORY DIMENSIONS - INCHES (MM)

## HORIZONTAL ROOF CURBS - Requires Optional Horizontal Return Air Panel Kit

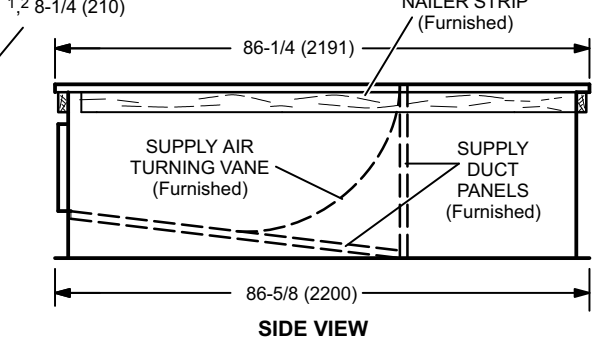
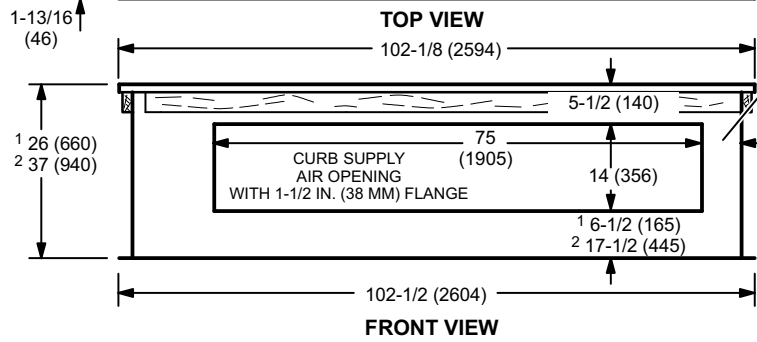


NOTE LARMFH18/24-26 is designed for horizontal discharge when unit is mounted on a slab.  
LARMFH18/24-37 is designed for horizontal discharge when unit is mounted on a rooftop.

PANEL TO COVER RETURN AIR OPENING IN BOTTOM OF UNIT  
(Furnished With Optional Horizontal Return Air Panel Kit)

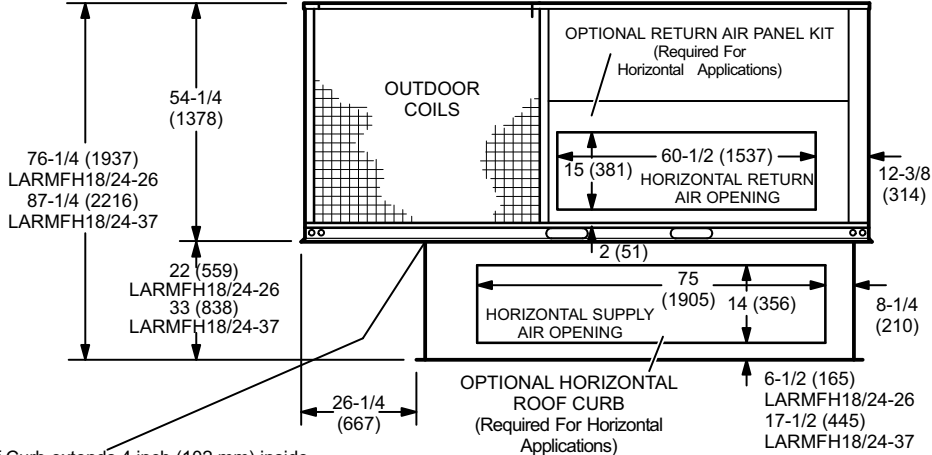


**SIDE VIEW  
(Packaged Unit)**



- 1 LARMFH18/24-26
- 2 LARMFH18/24-37

## HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB



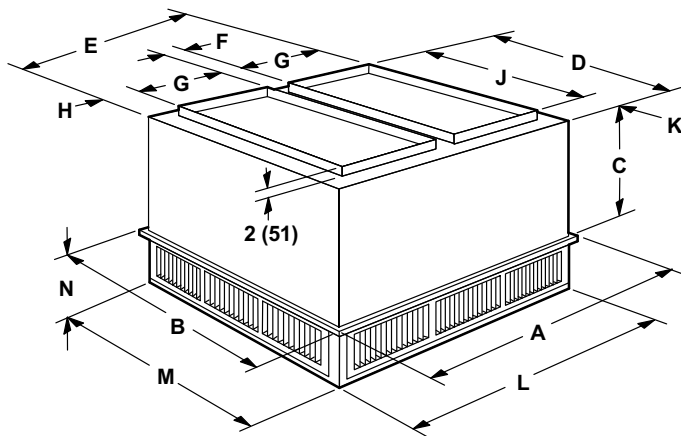
NOTE - Top of Roof Curb extends 4 inch (102 mm) inside bottom of unit base. See Typical flashing detail.



## ACCESSORY DIMENSIONS - INCHES (MM)

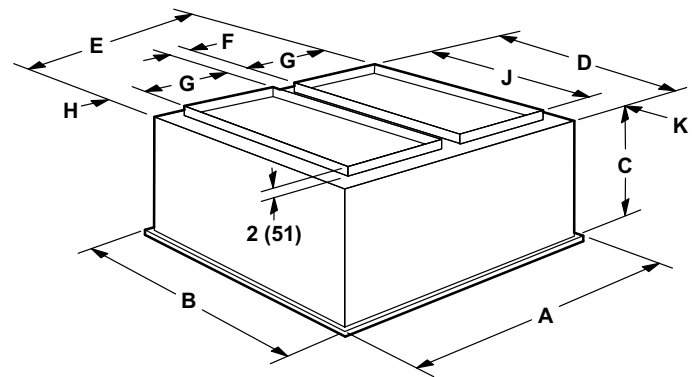
### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

#### STEP-DOWN CEILING DIFFUSER



Model Number		RTD11-185	RTD11-275
A	in.	47-5/8	59-5/8
	mm	1210	1514
B	in.	47-5/8	59-5/8
	mm	1210	1514
C	in.	24-5/8	30-5/8
	mm	625	778
D	in.	45-1/2	57-1/2
	mm	1156	1461
E	in.	45-1/2	57-1/2
	mm	1156	1461
F	in.	4-1/2	4-1/2
	mm	114	114
G	in.	18	24
	mm	457	610
H	in.	2-1/2	2-1/2
	mm	64	64
J	in.	36	48
	mm	914	1219
K	in.	4-3/4	4-3/4
	mm	121	121
L	in.	45-1/2	57-1/2
	mm	1156	1461
M	in.	45-1/2	57-1/2
	mm	1156	1461
N	in.	10-1/8	11-1/8
	mm	257	283
Duct Size	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

#### FLUSH CEILING DIFFUSER



Model Number		FD11-185	FD11-275
A	in.	47-5/8	59-5/8
	mm	1210	1514
B	in.	47-5/8	59-5/8
	mm	1210	1514
C	in.	29-1/4	35-1/4
	mm	743	895
D	in.	45	57
	mm	1143	1148
E	in.	45	57
	mm	1143	1448
F	in.	4-1/2	4-1/2
	mm	114	114
G	in.	18	24
	mm	457	610
H	in.	2-1/4	2-1/4
	mm	57	57
J	in.	36	48
	mm	914	1219
K	in.	4-1/2	4-1/2
	mm	114	114
Duct Size	in.	18 x 36	24 x 48
	mm	457 x 914	610 x 1219

# GUIDE SPECIFICATIONS

## SECTION 15730

### UNITARY AIR CONDITIONING EQUIPMENT

#### PART 1 GENERAL

##### PART 1.01 SUMMARY

- A. Section Includes: Packaged rooftop units and commercial packaged, gas/electric, electric/electric and electric/heat pumps.

**Specifier Note: Revise paragraph below to suit project requirements. Add section numbers and titles per CSI MasterFormat and specifier's practice.**

- B. Related Sections:

**Specifier Note: Article below may be omitted when specifying manufacturer's proprietary products and recommended installation. Retain Reference Article when specifying products and installation by an industry reference standard. If retained, list standard(s) referenced in this section. Indicate issuing authority name, acronym, standard designation and title. Establish policy for indicating edition date of standard referenced. Conditions of the Contract or Division 1 References Section may establish the edition date of standards. This article does not require compliance with standard, but is merely a listing of references used. Article below should list only those industry standards referenced in this section. Retain only those reference standards to be used within the text of this Section. Add and delete as required for specific project.**

##### PART 1.02 REFERENCES

- A. Agency Listings:
1. Intertek ETL.
  2. Canadian Standards Association (CSA).
- B. Safety Standards:
1. Underwriters Laboratories (UL).
  2. Underwriters Laboratories of Canada (ULC).
  3. National Electric Code (NEC).
  4. Canadian Electric Code (CEC).
- C. Air-Conditioning and Refrigerating Institute (ARI):
1. ARI 340/360 Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment.
  2. ARI 370 Sound Rating of Large Outdoor Refrigerating and Air Conditioning Equipment.
  3. ARI 210/240 Performance Rating of Unitary Air Conditioning and Air-Source Heat Pump Equipment.
- D. American Society for Testing and Materials (ASTM):
1. ASTM B117 – Standard Practice for Operating Salt Spray.
  2. ASTM 1153 – Standard Method for Methyl Isobutyl Ketone.
- E. ISO 9001, Quality Management Systems.
- F. Meet Military Specification MIL-P-53084

**Specifier Note: Article below should be restricted to statements describing design or performance requirements and functional (not dimensional) tolerances of a complete system. Limit descriptions to composite and operational properties required to link components of a system together and to interface with other systems.**

##### PART 1.03 SYSTEM DESCRIPTION

- A. Performance Requirements:

**Specifier Note: Article below should be restricted to T-Class (TH), heat pumps packaged roof top units only.**

1. [2, 2.5, 3, 4, 5, 6, 7.5, 8.5, 10, 12.5, 15 and 20 ton capacity.]

**Specifier Note: Article below should be restricted to T-Class (TG) gas/electric packaged roof top units or T-Class (TC) electric/electric packaged roof top units.**

2. [2, 2.5, 3, 4, 5, 6, 7.5, 8.5, 10, 12.5, 15, 17.5, 20 and 25 ton capacity.]
3. Electrical Characteristics:
  - a. 60 Hz

**Specifier Note: 208/230 volt 1 phase is only available on 2, 2.5, 3, 4 and 5 ton standard efficiency models. All other voltages are available on 3-25 ton T-Class RTU's.**

- b. [208/230 v – 1 Phase] [208/230 v – 3 Phase] [460 v – 3 Phase] [575 v – 3 Phase]

**Specifier Note: Article below includes submittal of relevant data to be furnished by Contractor before, during or after construction. Coordinate this article with Architect's and Contractor's duties and responsibilities in Conditions of the Contract and Division 1 Submittal Procedures Section.**

##### PART 1.04 SUBMITTALS

- A. General: Submit listed submittals in accordance with Conditions of the Contract and Division 1 Submittal Procedures.
- B. Product Data: Submit product data for specified products.

## GUIDE SPECIFICATIONS

- C. Shop Drawings:
1. Submit shop drawings in accordance with Section 01330 - Submittal Procedures.
  2. Indicate:
    - a. Equipment, piping and connections, together with valves, strainers, control assemblies, thermostatic controls, auxiliaries and hardware, and recommended ancillaries which are mounted, wired and piped ready for final connection to building system, its size and recommended bypass connections.
    - b. Piping, valves and fittings shipped loose showing final location in assembly.
    - c. Control equipment shipped loose, showing final location in assembly.
    - d. Dimensions, internal and external construction details, recommended method of installation with proposed structural steel support, mounting curb details, sizes and location of mounting bolt holes; include mass distribution drawings showing point loads.
    - e. Detailed composite wiring diagrams for control systems showing factory installed wiring and equipment on packaged equipment or required for controlling devices or ancillaries, accessories and controllers.
    - f. Fan performance curves.
    - g. Details of vibration isolation.
    - h. Estimate of sound levels to be expected across individual octave bands in dB.
    - i. Type of refrigerant used.
    - j. Plan view, front view end view, back view and curb detail with dimensions.
- D. Quality Assurance:
1. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.
  2. Certificates: Product certificates signed by manufacturer certifying materials comply with specified performance characteristics and criteria and physical requirements.
  3. Manufacturer's Instructions: Manufacturer's installation instructions.

**Specifier Note: Coordinate paragraph below with Part 3 Field Quality Requirements Article herein. Retain or delete as applicable.**

- E. Manufacturer's Field Reports: Manufacturer's field reports specified.
- F. Closeout Submittals: Submit following:
1. Warranty: Warranty documents specified.
  2. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products and precautions against cleaning materials and methods detrimental to finishes and performance. Include names and addresses of spare part suppliers.
  3. Provide brief description of unit, with details of function, operation, control and component service.
  4. Provide equipment inspection report and equipment operation test report.
  5. Commissioning Report: Submit commissioning reports, report forms and schematics in accordance with Section 01810 - Commissioning.

### PART 1.05 QUALITY ASSURANCE

- A. Qualifications:
1. Installer experienced in performing work of this section who has specialized in installation of work similar to that required for this project.

### PART 1.06 DELIVERY, STORAGE & HANDLING

- A. General: Comply with Division 1 Product Requirements.
- B. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.
- C. Packing, Shipping, Handling and Delivery:
1. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
  2. Ship, handle and unload units according to manufacturer's instructions.
- D. Storage and Protection:
1. Store materials protected from exposure to harmful weather conditions.
  2. Factory shipping covers to remain in place until installation.

### PART 1.07 PROJECT CONDITIONS

- A. Installation Location: **[Confirm design conditions and temperature.]**

**Specifier Note: Coordinate article below with Conditions of the Contract and with Division 1 Closeout Submittals (Warranty).**

### PART 1.08 WARRANTY

- A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.
- B. Manufacturer's Warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to, and not a limitation of, other rights Owner may have under Contract Documents.

## GUIDE SPECIFICATIONS

**Specifier Note:** “Aluminized Heat Exchanger” and “Stainless steel Heat Exchanger” limited warranty is only available on T-Class (TG) Gas/Electric models. “Compressor” and “Other System Components” are covered on all T-Class units.

- C. Warranty: Commencing on Date of Installation.
  - 1. Compressors: 5 years (limited).
  - 2. Other Covered System Components: 1 year (limited).
  - 3. [Aluminized Heat Exchangers: 10 years (limited).] [Stainless Steel Heat Exchangers: 15 years (limited).]

### PART 2 PRODUCTS

**Specifier Note:** Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards and descriptions as applicable. Use of such phrases as “or equal” or “or approved equal” or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining “or equal” products.

#### PART 2.01 ROOFTOP UNITS

- A. Manufacturer: Lennox Industries.
  - 1. Contact: 2100 Lake Park Blvd., Richardson, TX 75080; Telephone: (800) 453-6669; website: [www.lennox.com](http://www.lennox.com).
- B. Proprietary Products/Systems: Lennox T-Class Packaged Rooftop Units, including the following equipment:
  - 1. Cabinet:
    - a. Heavy gauge steel panels.
    - b. Pre-painted steel panels.
    - c. Heavy Gauge galvanized steel base rail.
    - d. Rigging holes on all four corners.
    - e. Forklift slots (on three sides, not directly below condenser coil) on base rail.
    - f. Raised or flanged edges around duct and power entry openings.

**Specifier Note:** “Down Flow” is the standard configuration that all T-Class units are shipped as.

**Specifier Note:** “Horizontal Flow” is an option for all T-Class models. T-Class TH, TG and TC models of tonnages 2, 2.5, 3, 4, 5 and 6 can be converted, in the field, to horizontal flow without the need of a conversion kit. If applied horizontally with an economizer, a conversion kit is required.

**Specifier Note:** “Horizontal Flow” is an option for all T-Class models. T-Class TH, TG and TC models of tonnages 7.5, 8.5, 10 and 12.5 can be converted, in the field, with a separate to Horizontal Conversion Kit.

**Specifier Note:** “Horizontal Flow” is an option for all T-Class models. T-Class TH, TG and TC models of tonnages 15, 17.5, 20 and 25 require a roof curb that allows for horizontal air flow. A Horizontal Air Panel Kit is also required if converting a down-flow configured unit to horizontal air flow.

- g. [Down-Flow] [Horizontal] Air Flow configuration

**Specifier Note:** add the “and gas lines” only if using a T-Class (TG) gas/electric model.

- h. Electrical lines [and gas lines] can be brought through the base of the unit or through horizontal knockouts.
- i. Insulation:
  - 1) All panels adjacent to conditioned air are fully insulated with non-hygroscopic fiberglass insulation.
  - 2) Unit base is fully insulated.
  - 3) Unit has insulation also serves as a roof curb seal.
- j. Access Panels:
  - 1) Provided for economizer/filter section.
  - 2) Provided for Heating/blower section.
- k. Condensate Drain Pan.

**Specifier Note:** “Factory Installed Options” are options that can be selected for the T-Class roof top units. The “Factory Installed Options” are installed at the Lennox manufacturing facility.

- l. [Factory Installed Options]:
  - 1) [Corrosion Protection, meets standards:
    - a) Military Specification MIL-P-53084.
    - b) ASTM B117
    - c) ASTM 1153]
    - 2) [Hinged Access panels]
    - 3) [GFI Service Outlets (field wired)]

**Specifier Note:** “Field Installed Accessories” are options that can be selected for the T-Class roof top units. The “Field Installed Accessories” are shipped separately and installed in the field.

- m. [Field Installed Accessories:]

## GUIDE SPECIFICATIONS

**Specifier Note:** Of the selections below, [Coil Guards] [Hail Guards], only one can be selected.

- 1) [Coil Guards] [Hail Guards].
- 2) [Horizontal Return Air Panel Kit].

**Specifier Note:** “Circuit Breakers(up to 175 amps)” is not available on 2-6 ton models.

- 3) [Circuit Breakers (up to 175 amps)]
  - 4) [Disconnect Switch (up to 250 amps)]
  - 5) [Condensate drain trap]
2. Cooling System:
- a. Capable of operating from 30 - 125 degrees F (-1 - 52 degrees C) without installation of additional controls.
  - b. Compressors:

**Specifier Note:** The TG/TC036B unit uses a reciprocating compressor instead of a scroll type.

- 1) Scroll Type.
  - 2) Resiliently mounted on rubber mounts for vibration isolation.
  - 3) Overload Protected
  - 4) Internal excessive current and temperature protection.
  - 5) Isolated from condenser fan air stream.
  - 6) Refrigerant cooled.
- c. TXV
  - d. Freezestat
  - e. High capacity filter driers

**Specifier Note:** Include following 2 articles for T-Class (TH) packaged heat pumps models.

- f. Reversing Valves: Four-way interchange reversing valve.
- g. Defrost Control.

**Specifier Note:** 2-2.5 ton models are only available in Standard efficiency, 3-6 ton models are available in Basic or Standard efficiencies only, and 7.5-20 ton models are available in Standard or High efficiencies only.

**Specifier Note:** The 12.5 ton model is available in standard efficiency only.

- h. Efficiency: [Basic] [and]/[or] [Standard] [and]/[or] [High].
- i. [Low ambient kit: Field installed]

**Specifier Note:** High pressure switch is available to be field installed on all units except the T-Class model TH on tonnages 15-20.

- j. [High pressure switch: Field installed]

**Specifier Note:** Crankcase heater is available to be field installed on all units except the T-Class model TH on tonnages 2-6 and 15-20.

- k. [Crankcase heater: field installed]

3. Coil Construction:
- a. Condensing/evaporator coil general construction:
    - 1) Aluminum Rippled and Lanced fins.
    - 2) Copper tube construction.
    - 3) Aluminum fins mechanically bonded to copper tubes.
    - 4) All coils are high pressure leak tested at manufacturing facility.
  - b. Evaporator Coils:
    - 1) With balanced port thermal expansion valves, freeze protection on each compressor circuit, pressure and leak tested to 500 psi, and maximum 14 fins per inch.
    - 2) Each compressor circuit on coil divided across face of coil and active through full depth of coil.
    - 3) [With flexible immersed coating electrodeposited by dry film process].
  - c. Condenser Coils:
    - 1) [With flexible immersed coating electrodeposited by dry film process] on corrosion hardened units only.

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4. Wiring:
  - a. Color coded and continuously marked to identify point-to-point component connections.
  - b. Not in contact with hot-gas refrigerant lines or sharp metal edges.
5. Cooling Controls:
  - a. Provide minimum compressor on time of 4 minutes.

**Specifier Note: “4 Stages of cooling from thermostat” is only available for models that have 4 independent refrigerant circuits. 2-6 ton models have 1 circuit, 7.5-12.5 ton models have 2 circuits, and 15-25 ton models have several models with 4 circuits.**

- b. Support up to 4 stages of cooling from thermostat or external DDC controller. (4 independent refrigerant circuits required.)

**Specifier Note: T-Class units with Gas Heating Systems are TG models.**

6. Gas Heating System:
  - a. Induced draft
  - b. Natural gas fired system with direct spark ignition
  - c. Electronic flame sensors
  - d. Flame rollout switches
  - e. High heat limit switches
  - f. Induced draft failure switch and capable of operating to altitude of 2000 feet (610 m) with no derate to manifold pressure.
  - g. Service access for controls, burners and heat exchanger.
  - h. Heat Exchanger:
    - 1) Tubular Design
    - 2) **[Aluminized steel] [Stainless steel].**
  - i. Gas piping system tight and free of leaks when pressurized to maximum supply pressure.
  - j. Gas Valve: Two-stage, redundant type gas heat valve with manual shutoff.

**Specifier Note: One Stage Gas valve only available on 2-6 ton models.**

- k. Gas Valve: Single-stage.
    - l. Gas Burners: Aluminized steel inshot-type gas burners.
    - m. Direct spark pilot ignition.
    - n. Fan and Limit Controls.
    - o. Safety Switches.
    - p. Gas piping system tight and free of leaks when.

**Specifier Note: “Cold Weather Kit” is only available for field mounting on the T-Class (TG) Gas/Electric models of tonnages 15 – 25 or factory mounting on the T-Class (TG) Gas/Electric models of tonnages 7.5 – 12.**

- q. **[Cold Weather Kit:] [field] [factory]**

**Specifier Note: “Field Installed Accessories” are options that can be selected for the T-Class TG Gas/Electric models. The “Field Installed Accessories” are shipped separately and installed in the field.**

- r. **[Field Installed Accessories:]**
      - 1) **[Combustion Air Intake Extensions].**
      - 2) **[Vertical Vent Extension Kit].**
      - 3) **[LPG/Propane Kit].**

**Specifier Note: “Low Temperature Vestibule Heater” is only available for the T-Class (TG) Gas/Electric models of tonnages 2, 2.5, 3, 4, 5 and 6.**

- 4) **[Low Temperature Vestibule Heater].**

**Specifier Note: The “Electric Heating System” is an option for T-Class (TH), heat pump, and T-Class (TC), electric/electric models only. The “Electric Heating System” can be either factory or field installed.**

7. Electric Heating System:
  - a. Electrical resistance heater.
  - b. **[Factory] [Field]** installed.
  - c. **[Factory] [Field]** installed Fuse Block.
  - d. Reset thermal limit protection.
  - e. Single point power supply.
  - f. Heater Element:
    - 1) Nickel chromium wire.
    - 2) Individually fused.

## GUIDE SPECIFICATIONS

g. Electric heater slides out of unit for service.

8. Heating Controls:

**Specifier Note: 2 stages of heating control are only available on T-Class (TG) gas/electric models of tonnages 4-6, on two stage units.**

- a. Support 2 stages of heating control from thermostat or DDC.
- b. With delay time of 30 seconds between low and high heat stages.

9. Supply Air Fan Motor and Drives:

- a. Permanently lubricated ball bearings (for belt drive motors).
- b. Thermal overload protected motors with automatic reset.

**Specifier Note: Slide out accessibility is only available on T-Class models of tonnages 7.5-25.**

- c. Adjustable sheaves on belt drive motors for blower speed adjustment.
- d. Optional low and high static motor/drive combinations and optional drive kits.

10. Supply Air Fan:

- a. Double inlet type, G90 (Z275) galvanized steel with forward curved blades.
- b. Statically and dynamically balanced.
- c. Slide-out accessibility unit for servicing and belt tension adjustment.
- d. Continuous or automatic control for occupied periods.

11. Supply Air Filters:

- a. Disposable 2 inch.

**Specifier Note: Permanent metal frame filters with 2 inch polyester replaceable media are only available on T-Class models of tonnages 15-25 tons.**

- b. **[Permanent metal frame filters with 2 inch polyester replaceable media].**

12. Condenser Fan Motor:

**Specifier Note: T-Class 2-4 ton models have sleeve bearings.**

- a. Direct drive with permanently lubricated ball bearings.
- b. Watertight with thermal overload protection and automatic reset.
- c. Motor mount isolated from fan safety guard.

13. Condenser Fans:

- a. Corrosion resistant propeller type with vertical discharge and finger safety guard.

14. Microprocessor Based Unit Controller System:

- a. Solid state, microprocessor based control board to control unit cooling operations.
- b. Green blinking LED to indicate normal operation.
- c. Pushbutton reset.
- d. Four-position DIP switch to select unit operating mode/unit type.
- e. Test mode for quick operation checks.
- f. Up to 2-stage heat/4-stage cool thermostat or DDC capable thermostat operation.
- g. Digital Inputs:

- 1) Low cool demand
- 2) High cool demand
- 3) Low heat demand
- 4) Supply fan demand
- 5) Primary heat limit (2)
- 6) Flame rollout switch (2)
- 7) Induced draft motor switch (2)
- 8) Gas valve sense switch (2)

**Specifier Note: T-Class models of tonnages 15-25 have four Freeze protection switches. 7.5 - 12 ton models have two. 2-6 ton models have one.**

- 9) Freeze protection switch (2), (4).

h. Digital Outputs:

- 1) Supply air fan motor
- 2) compressor 1
- 3) compressor 2
- 4) condenser fans
- 5) inducer fan motor 1

**Specifier Note: T-Class 7.5 - 25 ton models only.**

## GUIDE SPECIFICATIONS

- 6) heat 1
- 7) critical diagnostic fault code occurrence.

i. **[Control Options:]**

- 1) **[Single Enthalpy Control] : [Field] [Factory]**
- 2) **[Differential Enthalpy Control : Field]**

**Specifier Note:** The factory mounted CO2 sensor is only available T-Class models of tonnages 15 - 25. All other models can be field mounted only.

- 3) **[CO2 Sensor:] [Field] [Factory]**

**Specifier Note:** Economizer Control: Field is only available for T-Class models of tonnages 7.5 - 25.

- 4) **[Economizer Control: Field]**

15. **[Accessories:]**

- a. **[Economizer]: [Field] [Factory]**

**Specifier Note:** Motorized outdoor air damper is only available in a field mounted version for the T-Class models of tonnages 2, 2.5, 3, 4, 5 and 6. All other models can be factory or field.

- b. **[Motorized outdoor air damper]: [Field] [Factory]**

**Specifier Note:** Manual outdoor air damper is only available in a field mounted version for the T-Class models of tonnages 2, 2.5, 3, 4, 5 and 6. All other models can be factory or field.

- c. **[Manual outdoor air damper]: [Field] [Factory]**

**Specifier Note:** Barometric relief damper is included with factory or field installed economizer on 2-6 ton models. All other models can be factory or field installed separately.

- d. **[Barometric relief damper]: [Field] [Factory]**

**Specifier Note:** The factory mounted Power Exhaust Fan is only available on the versions of T-Class models of tonnages 15-25. All other models can be field mounted.

- e. **[Power exhaust fan]: [Field] [Factory]**

- f. **[Dirty filter switch: Field]**

**Specifier Note:** The field mounted Blower Proving Switch is only available on T-Class models of tonnages 7.5-25.

- g. **[Blower proving switch]: [Field] [Factory]**

- h. **[Smoke detectors: Field]**

- i. **[Roof curb: Field]**

- j. **[Outdoor air hood: Field]**

- k. **[Barometric relief damper hood: Field]**

**Specifier Note:** Edit article below to suit project requirements. If substitutions are permitted, edit text below. Add text to refer to Division 1 Project Requirements (Product Substitutions Procedures) Section.

### PART 2.02 PRODUCT SUBSTITUTIONS

- A. Substitutions: No substitutions permitted.

### PART 3 EXECUTION

#### PART 3.01 MANUFACTURER'S INSTRUCTIONS

**Specifier Note:** Revise article below to suit project requirements and specifier's practice.

- A. Compliance: Comply with manufacturer's written data, including product technical bulletins, product catalog installation instructions, product carton installation instructions and manufacturer's SPEC-DATA® sheets.

#### PART 3.02 EXAMINATION

- A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions

#### PART 3.03 INSTALLATION

- A. Install **[Packaged rooftop units] [And] [Commercial packaged, gas/electric, electric/electric and electric/heat pumps]** in accordance with manufacturer's instructions **[On roof curbs provided by manufacturer] [As indicated]**.

**END OF SECTION**



**REVISIONS**

<b>Sections</b>	<b>Description of Change</b>
Optional Accessories	Updated Information - High Pressure Switches, Low Ambient Kit and Horizontal 37 in. Roof Curb.
Sound Data	Octave Band Sound Power Levels updated.







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