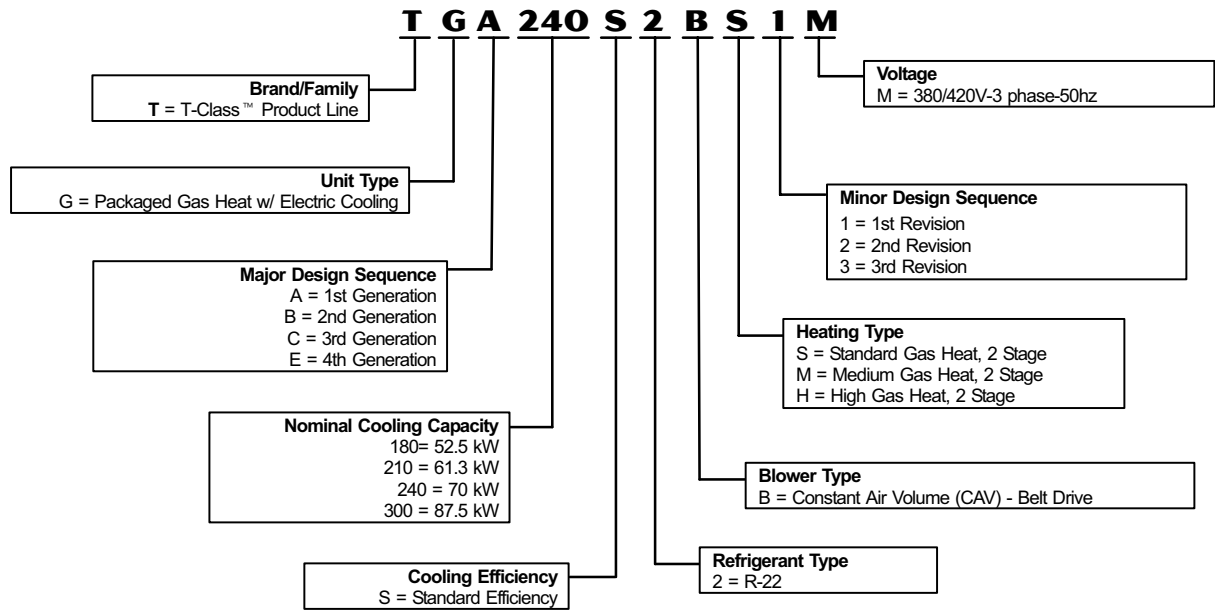


**Net Cooling Capacity - 47.4 to 77.9 kW**  
**Gas Input Heat Capacity - 66.5 to 123.0 kW**

**MODEL NUMBER IDENTIFICATION**



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## FEATURES AND BENEFITS

### PERFORMANCE/QUALITY

Components bonded for grounding to meet safety standards for servicing required by Underwriters Laboratories (UL) and the International Electrotechnical Commission (IEC).

Cooling performance is rated at test conditions included in Air-Conditioning and Refrigeration Institute (ARI) Standard 340/360-2000 while operating at rated voltage and air volumes.

International Organization for Standardization (ISO) 9001 Registered Manufacturing Quality System

### 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 (US patent pending), construction, aluminized steel, life cycle tested.

Stainless Steel Heat Exchanger is required if mixed air temperature is less than 7°C.

#### Fan & Limit Controls

Factory installed with fixed temperature setting.

Heat limit controls protect against overheating.

#### 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 light emitting diode (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:

45.1/66.5 kW (154,000/227,000 Btuh)

low/high fire - Standard Heat Gas Input.

60.3/92.2 kW (206,000/315,000 Btuh)

low/high fire - Medium Gas Heat Input.

79.9/123 kW (273,000/420,000 Btuh)

low/high fire - High Gas Heat Input

#### OPTIONS - Factory Installed

##### Stainless Steel Heat Exchanger

Required if mixed air temperature is below 7°C.

#### ACCESSORIES - Field Installed

##### Combustion Air Intake Extensions

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

##### 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.

System can operate from -1°C to 52°C without any additional controls.

#### 2 Compressors

Resiliently mounted on rubber grommets for quiet operation.

Copeland 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.

#### Outdoor Coil Fan Motors

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

#### Outdoor Coil Fan

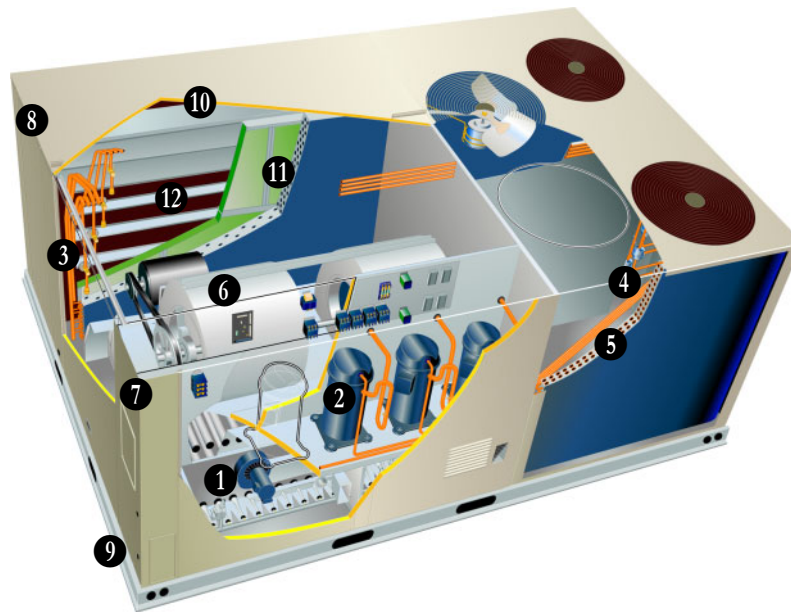
Polyvinyl chloride (PVC) coated fan guard furnished.

### REQUIRED SELECTIONS

#### Cooling Capacity

Specify the nominal cooling capacity of the unit.

## FEATURES AND BENEFITS



### **COOLING - CONTINUED**

#### **ACCESSORIES - Field Installed**

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

Available in copper or polyvinyl chloride (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 -17.8°C.

### **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. 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).

### **CONTROLS**

#### **Unit Controller**

Solid-state microprocessor-based control board that 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 / 3 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.

#### **ACCESSORIES - Field Installed**

##### **Blower Proving Switch**

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

##### **Control Systems**

See Page 18.

##### **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

## FEATURES AND BENEFITS

### CABINET

#### 7 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.

#### 8 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.

#### 9 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 - 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.

### ACCESSORIES - 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.

#### 10 AIR FILTERS

Disposable 51 mm pleated MERV 7 filters (Minimum Efficiency Reporting Value based on American Society of Refrigeration and Air Conditioning Engineers (ASHRAE) 52.2) meet the requirements for ASHRAE 62 for improved indoor air quality.

### ACCESSORIES - Field Installed

#### MERV 11 Filters

Disposable 51 mm MERV 11 filters (Minimum Efficiency Reporting Value based on American Society of Refrigeration and Air Conditioning Engineers (ASHRAE) 52.2) are available for improved indoor air quality.

#### Replaceable Media

Permanent, metal frame filters with 51 mm 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**

#### **11 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 13°C 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 -1°C  
Maximum mixed air temperature in cooling mode: 32°C

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

Monitors CO<sub>2</sub> levels.

#### **Power Exhaust Fans**

C1PWRE20C-1 models have two, 249 W (1/3 hp) motors with 508 mm (20 in.), five blade propeller-type fans with a total power input of 575 Watts and a total air volume of 3395 L/s (7190 cfm) at 0 Pa (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 Control** - Senses outdoor air temperature and enables the economizer if the temperature is less than the set point of the control.

**Differential Sensible Control** - Two temperature sensors allow the control to select between outdoor air or return air, whichever has lower temperature.

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

**Differential Enthalpy 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**

##### **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**

##### **ACCESSORIES - Field Installed**

Nailer strip furnished, mates to unit, shipped knocked down.

##### **Standard Down-Flow**

available in 356 mm (14 inch) and 610 mm (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. Requires Horizontal Return Air Panel. Available in 660 mm (26 inch), 762 mm (30 inch), 940 mm (37 inch) and 1041 mm (41 inch) heights. Optional Insulation Kit is available to help prevent sweating.

##### **Cliplock 1000 Full Perimeter**

##### **Down-Flow**

Available in 356 mm (14 inch), 457 mm (18 inch) and 610 mm (24 inch) heights.

## OPTIONS / ACCESSORIES

Item	180	210	240	300	
<b>COOLING SYSTEM</b>					
Compressor Crankcase Heater	T1CCHT01CD1G	x	x	x	x
Condensate Drain Trap	PVC - LTACDKP09/36	x	x	x	x
	Copper - LTACDKC09/36	x	x	x	x
Corrosion Protection		○	○	○	○
High Pressure Switch	T1SNSR11C-1	x	x	x	x
Low Ambient Kit	T1SNSR12C-1	x	x	x	x
<b>HEATING SYSTEM</b>					
Combustion Air Intake Extensions	LTACA1K10/15	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
Gas Heat Input	Standard - 45.1/66.5 kW input	○	○	○	○
	Medium - 60.3/92.2 kW input	○	○	○	○
	High - 79.9/123 kw input	○	○	○	○
Gas Piping Kit	Thru unit base - C1GPKT01C-1-	x	x	x	x
Propane Conversion Kits	Standard - LTALPGK-130	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
	Medium - LTALPGK-180	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
	High - LTALPGK-240	<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	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
<b>AIR FILTERS - ORDER SIX PER UNIT</b>					
MERV 11 High Efficiency	610 x 610 x 51 mm - C1FLTR10C-1	x	x	x	x
Replaceable Media Filter Kit with Frame	610 x 610 x 51 mm - C1FLTR30C-1	x	x	x	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	x			
	<sup>2</sup> Standard to Low Static Conversion Kit - Drive Kit #2 - C1DRKT004-1		x		
	<sup>2</sup> Standard to Low Static Conversion Kit - Drive Kit #9 - C1DRKT045-1			x	
	<sup>2</sup> Standard to Low Static Conversion Kit - Drive Kit #7 - C1DRKT042-1				x
	<sup>3</sup> High to Standard Static Conversion Kit - Drive Kit #3 - C1DRKT038-1	x			
	<sup>3</sup> High to Standard Static Conversion Kit - Drive Kit #7 - C1DRKT042-1		x		
<b>CABINET</b>					
Coil Guards	C1GARD20C-1	x	x	x	x
Hail Guards	C1GARD10C-1	x	x	x	x
Horizontal Return Air Panel Kit	C1HRAP10C-1	x	x	x	x
<b>CONTROLS</b>					
Control Systems	See Page 18	x	x	x	x
Blower Proving Switch	LTABPSK	x	x	x	x
Dirty Filter Switch	LTADFSK	x	x	x	x
Smoke Detector - Supply	LTASASDK10/36	x	x	x	x
Smoke Detector - Return	LTARASDK10/30	x	x	x	x
<b>Indoor Air Quality (CO<sub>2</sub>) Sensors</b>					
CO <sub>2</sub> Sensor Duct Mounting Kit	LTAIQSDMK03/36	x	x	x	x
Sensor - white case CO <sub>2</sub> display	LTAIAQSWDK03/36	x	x	x	x
Sensor - white case no display	LTAIAQSWN03/36	x	x	x	x
Sensor - black case CO <sub>2</sub> display	LTAIAQSND03/36	x	x	x	x
Sensor - black case, no display	LTAIAQSDMBN03/36	x	x	x	x
Aspiration Box for duct mounting	LTAIAQABD03/36	x	x	x	x
Handheld CO <sub>2</sub> Monitor	LTAIAQSHM03/36	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.

## OPTIONS / ACCESSORIES

Item	180	210	240	300S	
<b>ELECTRICAL</b>					
Voltage - 50 hz	380/420V - 3 phase	○	○	○	○
<b>ECONOMIZER / OUTDOOR AIR</b>					
Economizer - Order Hood Separately	T1ECON10C-1	⊗	⊗	⊗	⊗
<b>Economizer Controls</b>					
Differential Enthalpy	C1SNSR07AE1-	x	x	x	x
Single Enthalpy	C1SNSR06AE1-	⊗	⊗	⊗	⊗
Sensible	TASEK03/36	x	x	x	x
Differential Sensible	TASEK03/36	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x	<sup>1</sup> x
<b>Barometric Relief</b>					
Down-Flow Barometric Relief Dampers - Order Hood Separately	LAGED18/24	⊗	⊗	⊗	⊗
Hood for Down-Flow LAGED	C1HOOD20C-1	x	x	x	x
Horizontal Barometric Relief Dampers - Hood Furnished	LAGEDH18/24	x	x	x	x
<b>Outdoor Air Dampers</b>					
Damper Section (down-flow) - Automatic - Order Hood Separately	T1DAMP20C-1	⊗	⊗	⊗	⊗
Damper Section (down-flow) - Manual - Order Hood Separately	LAOAD18/24	⊗	⊗	⊗	⊗
<b>Outdoor Air Hoods</b>					
Outdoor Air Hood (down-flow) includes 3 - 406 x 635 x 25 mm filters	C1HOOD10C-1	⊗	⊗	⊗	⊗
<b>Power Exhaust</b>					
Standard Static	380/420V - C1PWRE20C-1M	x	x	x	x
<b>ROOF CURBS - CLIPLOCK 1000</b>					
<b>Down-Flow</b>					
356 mm height	LARMF18/30S-14	x	x	x	x
457 mm height	LARMF18/30S-18	x	x	x	x
610 mm height	LARMF18/30S-24	x	x	x	x
<b>Horizontal</b>					
660 mm height	LARMFH18/24S-26	x	x	x	x
940 mm height	LARMFH18/24S-37	x	x	x	x
<b>ROOF CURBS - STANDARD</b>					
<b>Down-Flow</b>					
356 mm height	LARMF18/36-14	x	x	x	x
610 mm height	LARMF18/36-24	x	x	x	x
<b>Horizontal</b>					
660 mm height	LARMFH18/24-26	x	x	x	x
940 mm height	LARMFH18/24-37	x	x	x	x
<b>Insulation Kits for Standard Horizontal Roof Curbs</b>					
for LARMFH18/24-26	C1INSU11C-1	x	x	x	x
for LARMFH18/24-37	C1INSU13C-1	x	x	x	x
<b>CEILING DIFFUSERS</b>					
Step-Down	RTD11-185	x			
Order one	RTD11-275		x	x	x
Flush	FD11-185	x			
Order one	FD11-275		x	x	x
Transitions - (Supply and Return)	LASRT18	x			
Order one	LASRT21/24		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). 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

## SPECIFICATIONS

General Data		Model No.	TGA180S2B	TGA210S2B	TGA240S2B	TGA300S2B
		Efficiency Type	Standard	Standard	Standard	Standard
<b>Cooling Performance</b>	Gross Cooling Capacity - kW (Btuh)		49.6 (169,300)	58.8 (200,800)	65.2 (222,500)	81.4 (278,000)
	<sup>1</sup> Net Cooling Capacity - kW (Btuh)		47.4 (162,000)	56.2 (192,000)	62.4 (213,000)	77.9 (266,000)
	Total Unit Power - kW		16.7	19.8	21.1	26.4
	<sup>1</sup> EER (Btuh/Watt)		9.7	9.7	10.1	10.1
	<sup>2</sup> Integrated Part Load Value (Btuh/Watt)		10.6	10.6	11.4	10.2
		Refrigerant Type	R-22	R-22	R-22	R-22
		Refrigerant Charge Furnished	Circuit 1 4.08 kg. (9 lbs. 0 oz.)	Circuit 2 3.63 kg (8 lbs. 0 oz.)	Circuit 3 5.22 kg (11 lbs. 8 oz.)	Circuit 4 4.99 kg (11 lbs. 0 oz.)
			Circuit 2 4.08 kg. (9 lbs. 0 oz.)	Circuit 3 3.63 kg (8 lbs. 0 oz.)	Circuit 4 5.22 kg (11 lbs. 8 oz.)	Circuit 1 4.99 kg (11 lbs. 0 oz.)
			Circuit 3 4.08 kg. (9 lbs. 0 oz.)	Circuit 4 3.63 kg (8 lbs. 0 oz.)	Circuit 1 5.22 kg (11 lbs. 8 oz.)	Circuit 2 4.99 kg (11 lbs. 0 oz.)
			---	---	---	4.99 kg (11 lbs. 0 oz.)
<b>Gas Heating Options - See Table Below</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 - m <sup>2</sup> (sq. ft.) total		5.2 (56.0)	5.2 (56.0)	5.2 (56.0)	5.2 (56.0)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		1	1	2	2
	Fins per M (inch)		787 (20)	787 (20)	787 (20)	787 (20)
<b>Outdoor Coil Fans</b>	Motor Watts (horsepower)		(4) 249 (1/3)	(4) 373 (1/2)	(4) 249 (1/3)	(4) 373 (1/2)
	Motor rpm		896	896	896	896
	Total Motor watts		1065	1375	1065	1375
	Diameter - mm (in.) - Number of blades		(4) 610 (24) - 3	(4) 610 (24) - 3	(4) 610 (24) - 3	(4) 610 (24) - 3
	Total Air volume - L/s (cfm)		6235 (13,210)	6275 (13,300)	6075 (12,875)	6275 (13,300)
<b>Indoor Coils</b>	Net face area - m <sup>2</sup> (sq. ft.) total		2.07 (22.3)	2.07 (22.3)	2.07 (22.3)	2.07 (22.3)
	Tube diameter - mm (in.)		9.5 (3/8)	9.5 (3/8)	9.5 (3/8)	9.5 (3/8)
	Number of rows		3	3	3	4
	Fins per m (inch)		551 (14)	551 (14)	551 (14)	551 (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 size	Low Static	2.2 kW (3 hp)	3.7 kW (5 hp)	3.7 kW (5 hp)	5.6 kW (7.5 hp)
		Standard Static	2.2 kW (3 hp)	3.7 kW (5 hp)	5.6 kW (7.5 hp)	7.5 kW (10 hp)
		High Static	3.7 kW (5 hp)	5.6 kW (7.5 hp)	7.5 kW (10 hp)	N/A
	Drive Kit	Low Static	#A - 446-604 rpm	#2 - 571-721 rpm	#2 - 571-721 rpm	#7 - 708-871 rpm
		Standard Static	#1 - 592-804 rpm	#3 - 708-871 rpm	#7 - 708-871 rpm	#6 - 871-1071 rpm
		High Static	#4 - 788-988 rpm	#6 - 871-1071 rpm	#6 - 871-1071 rpm	N/A
	Field Installed Drive Kits	Standard to Low Static	#A - 446-604 rpm	#2 - 571-721 rpm	#9 - 571-721 rpm	#7 - 708-871 rpm
High to Standard Static		#3 - 708-871 rpm	#7 - 708-871 rpm			
Blower wheel nominal diameter x width			(2) 381 x 381 mm (15 x 15 in.)		(2) 381 x 381 mm (15 x 15 in.)	
<b>Filters</b>	Type of filter		Disposable, pleated MERV 7			
	No. and size - in. (mm)		(6) 610 x 610 x 51 (24 x 24 x 2)		(6) 610 x 610 x 51 (24 x 24 x 2)	
<b>Electrical characteristics</b>			380/420V - 50 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> Rating test conditions are those included in Air-Conditioning and Refrigeration Institute (ARI) Standard 340/360 while operating at rated voltage and air volumes, 35°C (95°F) outdoor air temperature and 27°C (80°F) db/19°C (67°F) wb entering evaporator air; minimum external duct static pressure.

<sup>2</sup> Integrated Part Load Value rated at 27°C (80°F) outdoor air temperature, 27°C (80°F) db/19°C (67°F) wb indoor air temperature.

<sup>3</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 - GAS HEAT

Gas Heating Performance		Heat Input Type	Standard (2 Stage)	Medium (2 Stage)	High (2 Stage)
Input - kW (Btuh)		First Stage	45.1 (154,000)	60.3 (206,000)	79.9 (273,000)
		Second Stage	66.5 (227,000)	92.2 (315,000)	123.0 (420,000)
Output - kW (Btuh)		Second Stage	53.9 (184,000)	74.7 (255,000)	99.6 (340,000)
		Thermal Efficiency	80.0%		
		Gas Supply Connections	1 in. NPT		
		Recommended Gas Supply Pressure - Natural	1.7 kPa (7 in. w.g.)		
		LPG/Propane	2.7 kPa (11 in. w.g.)		



# 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 - TGA180S - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	2.26	4800	33.9	115.7	6.45	.70	.85	.99	33.0	112.7	7.06	.70	.86	.99	32.0	109.1	7.78	.71	.88	1.00	30.8	105.2	8.61	.73	.89	1.00
	2.83	6000	35.1	119.9	6.53	.75	.93	1.00	34.3	116.9	7.15	.76	.94	1.00	33.2	113.3	7.87	.78	.96	1.00	32.0	109.3	8.69	.79	.98	1.00
	3.40	7200	36.2	123.6	6.61	.81	.99	1.00	35.4	120.7	7.22	.83	1.00	1.00	34.3	117.2	7.95	.84	1.00	1.00	33.3	113.5	8.79	.86	1.00	1.00
19°C (67°F)	2.26	4800	35.9	122.6	6.59	.54	.67	.81	35.0	119.5	7.20	.55	.68	.82	33.9	115.8	7.92	.55	.69	.84	32.7	111.6	8.74	.56	.70	.86
	2.83	6000	37.0	126.2	6.66	.58	.73	.90	36.0	123.0	7.28	.58	.74	.91	34.9	119.1	8.00	.59	.75	.93	33.6	114.7	8.82	.60	.77	.95
	3.40	7200	37.7	128.8	6.72	.61	.79	.97	36.8	125.4	7.33	.62	.81	.98	35.6	121.5	8.04	.62	.82	.99	34.3	117.0	8.88	.64	.84	1.00
22°C (71°F)	2.26	4800	38.2	130.3	6.75	.41	.53	.65	37.2	127.1	7.36	.41	.53	.66	36.1	123.2	8.08	.41	.54	.67	34.8	118.8	8.91	.41	.55	.68
	2.83	6000	39.2	133.6	6.82	.42	.56	.71	38.2	130.4	7.43	.42	.57	.72	37.0	126.4	8.15	.42	.58	.73	35.7	121.8	8.98	.43	.59	.74
	3.40	7200	39.9	136.0	6.88	.43	.60	.77	38.9	132.7	7.48	.43	.61	.78	37.7	128.6	8.20	.44	.62	.80	36.3	123.8	9.03	.44	.63	.82

## 15 TON STANDARD EFFICIENCY - TGA180S - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	2.26	4800	47.2	161.1	11.88	.73	.88	1.00	45.5	155.3	13.15	.74	.90	1.00	43.7	149.0	14.59	.75	.92	1.00	41.9	142.8	16.23	.77	.95	1.00
	2.83	6000	49.0	167.2	12.02	.79	.97	1.00	47.3	161.3	13.28	.81	.98	1.00	45.5	155.1	14.75	.83	1.00	1.00	43.7	149.2	16.39	.85	1.00	1.00
	3.40	7200	50.7	173.0	12.15	.85	1.00	1.00	49.1	167.5	13.43	.87	1.00	1.00	47.3	161.4	14.90	.89	1.00	1.00	45.5	155.3	16.56	.92	1.00	1.00
19°C (67°F)	2.26	4800	50.1	171.0	12.10	.57	.71	.85	48.3	164.7	13.36	.57	.72	.87	46.3	158.0	14.83	.58	.73	.89	44.3	151.2	16.48	.59	.75	.91
	2.83	6000	51.5	175.8	12.23	.60	.77	.94	49.6	169.3	13.49	.61	.78	.95	47.6	162.4	14.94	.62	.80	.98	45.5	155.3	16.60	.63	.82	.99
	3.40	7200	52.6	179.4	12.29	.64	.83	1.00	50.6	172.7	13.58	.65	.85	1.00	48.5	165.6	15.03	.66	.87	1.00	46.5	158.5	16.70	.68	.90	1.00
22°C (71°F)	2.26	4800	53.3	181.9	12.35	.42	.55	.68	51.4	175.4	13.63	.42	.56	.69	49.3	168.3	15.11	.42	.57	.71	47.2	161.1	16.77	.43	.58	.73
	2.83	6000	54.7	186.6	12.46	.43	.59	.75	52.7	179.8	13.74	.44	.60	.76	50.6	172.5	15.21	.44	.61	.78	48.3	164.9	16.89	.45	.62	.80
	3.40	7200	55.7	189.9	12.54	.45	.63	.81	53.6	182.8	13.81	.45	.64	.83	51.3	175.2	15.29	.46	.65	.85	49.1	167.5	16.97	.46	.67	.87

## 17.5 TON STANDARD EFFICIENCY - TGA210S - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	2.64	5600	38.2	130.3	9.06	.69	.84	.98	36.8	125.7	10.13	.70	.86	.99	35.4	120.8	11.34	.71	.88	1.00	33.8	115.4	12.73	.72	.91	1.00
	3.30	7000	39.5	134.9	9.17	.74	.93	1.00	38.1	130.1	10.25	.76	.95	1.00	36.7	125.2	11.45	.78	.97	1.00	35.1	119.7	12.85	.80	.99	1.00
	3.96	8400	40.7	138.8	9.26	.80	.98	1.00	39.3	134.2	10.35	.82	1.00	1.00	37.9	129.4	11.57	.84	1.00	1.00	36.3	124.0	12.99	.87	1.00	1.00
19°C (67°F)	2.64	5600	40.4	137.8	9.23	.54	.66	.81	38.9	132.9	10.30	.54	.68	.83	37.4	127.5	11.52	.55	.69	.85	35.6	121.6	12.93	.56	.70	.87
	3.30	7000	41.4	141.4	9.32	.57	.72	.89	40.0	136.4	10.40	.57	.73	.91	38.3	130.8	11.63	.58	.75	.94	36.6	124.8	13.01	.60	.78	.96
	3.96	8400	42.3	144.2	9.39	.60	.78	.96	40.7	139.0	10.48	.61	.80	.98	39.0	133.2	11.69	.62	.82	.99	37.2	127.1	13.09	.63	.85	1.00
22°C (71°F)	2.64	5600	42.9	146.3	9.44	.40	.52	.64	41.4	141.1	10.53	.40	.53	.65	39.7	135.4	11.75	.40	.54	.67	37.9	129.2	13.17	.41	.54	.68
	3.30	7000	43.9	149.9	9.53	.41	.56	.70	42.3	144.4	10.61	.41	.56	.71	40.6	138.5	11.86	.42	.57	.73	38.7	132.0	13.27	.42	.59	.75
	3.96	8400	44.7	152.4	9.59	.42	.59	.76	43.0	146.7	10.69	.43	.60	.78	41.2	140.6	11.93	.43	.61	.80	39.3	134.0	13.33	.44	.63	.83

## 17.5 TON STANDARD EFFICIENCY - TGA210S - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	2.64	5600	56.3	192.0	13.78	.71	.87	1.00	54.3	185.2	15.41	.72	.88	1.00	52.1	177.9	17.25	.74	.91	1.00	49.8	169.9	19.38	.75	.93	1.00
	3.30	7000	58.3	198.8	13.95	.77	.94	1.00	56.2	191.7	15.60	.78	.96	1.00	54.0	184.4	17.43	.80	.98	1.00	51.7	176.3	19.57	.82	1.00	1.00
	3.96	8400	60.0	204.6	14.09	.83	1.00	1.00	58.0	197.8	15.75	.85	1.00	1.00	55.9	190.6	17.62	.87	1.00	1.00	53.5	182.6	19.79	.89	1.00	1.00
19°C (67°F)	2.64	5600	59.5	203.0	14.05	.56	.69	.83	57.4	195.7	15.68	.56	.70	.85	55.0	187.7	17.53	.57	.72	.87	52.4	178.9	19.68	.58	.73	.89
	3.30	7000	61.0	208.3	14.18	.59	.75	.91	58.8	200.8	15.83	.60	.76	.93	56.4	192.5	17.71	.61	.78	.95	53.8	183.6	19.81	.62	.80	.98
	3.96	8400	62.2	212.4	14.29	.62	.81	.98	60.0	204.6	15.95	.63	.82	.99	57.5	196.1	17.80	.64	.85	1.00	54.8	187.0	19.94	.66	.87	1.00
22°C (71°F)	2.64	5600	63.2	215.5	14.37	.41	.54	.67	60.9	207.8	16.03	.42	.55	.68	58.4	199.3	17.90	.42	.56	.69	55.7	190.1	20.05	.42	.57	.71
	3.30	7000	64.7	220.8	14.51	.43	.58	.73	62.3	212.6	16.16	.43	.59	.74	59.7	203.8	18.06	.43	.60	.76	56.9	194.1	20.21	.44	.61	.78
	3.96	8400	65.8	224.4	14.60	.44	.61	.78	63.3	215.9	16.27	.44	.62	.80	60.6	206.9	18.17	.45	.64	.83	57.7	197.0	20.31	.45	.65	.85

# 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 - TGA240S - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	3.02	6400	46.0	156.8	7.91	.67	.82	.96	44.6	152.3	8.79	.68	.84	.98	43.2	147.5	9.81	.69	.85	.99	41.8	142.5	10.95	.70	.87	1.00
	3.77	8000	47.6	162.4	8.01	.72	.90	1.00	46.2	157.7	8.89	.73	.92	1.00	44.8	152.8	9.90	.75	.93	1.00	43.3	147.6	11.07	.76	.95	1.00
	4.53	9600	48.9	167.0	8.09	.78	.96	1.00	47.6	162.4	8.98	.79	.98	1.00	46.1	157.4	9.99	.81	.99	1.00	44.6	152.2	11.16	.83	1.00	1.00
19°C (67°F)	3.02	6400	48.7	166.3	8.07	.52	.65	.78	47.3	161.4	8.95	.53	.65	.80	45.7	156.1	9.96	.53	.66	.81	44.2	150.7	11.12	.54	.67	.83
	3.77	8000	50.1	170.9	8.16	.55	.69	.87	48.6	165.7	9.04	.56	.71	.88	47.0	160.3	10.04	.56	.72	.90	45.3	154.6	11.20	.57	.74	.92
	4.53	9600	51.1	174.3	8.23	.58	.75	.94	49.5	169.0	9.10	.59	.77	.95	47.9	163.4	10.11	.59	.79	.97	46.2	157.6	11.27	.60	.80	.98
22°C (71°F)	3.02	6400	51.8	176.9	8.27	.39	.51	.62	50.3	171.7	9.15	.39	.51	.63	48.7	166.1	10.16	.40	.52	.64	46.9	160.2	11.33	.40	.53	.65
	3.77	8000	53.2	181.5	8.36	.40	.54	.67	51.6	176.0	9.23	.40	.55	.69	49.9	170.1	10.25	.41	.55	.70	48.1	164.0	11.41	.41	.56	.71
	4.53	9600	54.1	184.7	8.42	.41	.57	.73	52.4	178.9	9.30	.42	.58	.74	50.7	173.0	10.30	.42	.59	.76	48.8	166.6	11.47	.42	.60	.78

## 20 TON STANDARD EFFICIENCY - TGA240S - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	3.02	6400	62.3	212.5	14.99	.72	.88	1.00	60.1	205.2	16.74	.73	.90	1.00	57.9	197.4	18.76	.75	.92	1.00	55.4	189.1	21.08	.76	.94	1.00
	3.77	8000	64.5	220.1	15.13	.78	.96	1.00	62.3	212.6	16.92	.79	.98	1.00	60.0	204.7	18.94	.81	1.00	1.00	57.6	196.6	21.23	.84	1.00	1.00
	4.53	9600	66.5	226.8	15.28	.84	1.00	1.00	64.3	219.3	17.06	.86	1.00	1.00	62.0	211.7	19.09	.88	1.00	1.00	59.7	203.6	21.45	.90	1.00	1.00
19°C (67°F)	3.02	6400	65.9	224.8	15.23	.56	.70	.85	63.6	216.9	17.00	.57	.71	.86	61.1	208.4	19.00	.58	.72	.88	58.4	199.4	21.32	.58	.74	.91
	3.77	8000	67.6	230.8	15.35	.59	.76	.93	65.2	222.5	17.12	.60	.77	.95	62.7	213.8	19.15	.61	.79	.97	59.9	204.3	21.49	.62	.81	.99
	4.53	9600	69.0	235.3	15.46	.63	.82	.99	66.5	226.8	17.23	.64	.84	1.00	63.8	217.8	19.28	.65	.86	1.00	61.0	208.3	21.59	.66	.88	1.00
22°C (71°F)	3.02	6400	70.1	239.2	15.54	.42	.55	.68	67.6	230.6	17.33	.42	.55	.69	64.9	221.6	19.37	.42	.56	.70	62.1	212.0	21.68	.42	.57	.72
	3.77	8000	71.8	244.9	15.68	.43	.58	.73	69.2	236.0	17.45	.43	.59	.75	66.4	226.6	19.50	.44	.60	.77	63.4	216.5	21.82	.44	.61	.79
	4.53	9600	73.0	249.0	15.76	.44	.62	.79	70.2	239.7	17.55	.45	.63	.81	67.4	230.1	19.57	.45	.64	.84	64.4	219.6	21.94	.46	.66	.86

## 25 TON STANDARD EFFICIENCY - TGA300S - TWO COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			18°C (65°F)						24°C (75°F)						29°C (85°F)						35°C (95°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	3.77	8000	40.1	136.8	7.40	.59	.78	.99	38.8	132.4	8.30	.60	.81	1.00	37.5	128.0	9.26	.61	.83	1.00	36.1	123.2	10.34	.62	.86	1.00
	4.72	10000	41.6	142.0	7.50	.65	.91	1.00	40.3	137.4	8.40	.67	.93	1.00	38.9	132.8	9.38	.69	.96	1.00	37.5	128.0	10.46	.72	.98	1.00
	5.66	12000	43.0	146.6	7.58	.74	.99	1.00	41.6	142.0	8.50	.76	1.00	1.00	40.3	137.6	9.48	.79	1.00	1.00	39.0	133.0	10.60	.82	1.00	1.00
19°C (67°F)	3.77	8000	42.4	144.6	7.54	.46	.57	.73	41.0	140.0	8.44	.47	.58	.75	39.6	135.0	9.44	.47	.59	.78	38.1	130.0	10.52	.48	.60	.81
	4.72	10000	43.6	148.8	7.62	.49	.62	.86	42.1	143.8	8.52	.50	.63	.89	40.7	138.8	9.52	.50	.66	.92	39.1	133.4	10.62	.51	.68	.95
	5.66	12000	44.5	152.0	7.68	.52	.70	.96	43.0	146.8	8.60	.53	.73	.98	41.5	141.6	9.60	.54	.76	1.00	39.9	136.0	10.70	.55	.79	1.00
22°C (71°F)	3.77	8000	45.1	153.8	7.70	.34	.45	.55	43.6	148.6	8.62	.35	.46	.56	42.0	143.4	9.64	.35	.46	.57	40.4	137.8	10.74	.35	.47	.59
	4.72	10000	46.2	157.8	7.76	.35	.48	.61	44.7	152.4	8.72	.36	.49	.62	43.0	146.8	9.72	.36	.50	.63	41.3	141.0	10.82	.36	.50	.65
	5.66	12000	47.0	160.4	7.82	.37	.51	.67	45.4	154.8	8.76	.37	.52	.70	43.7	149.2	9.78	.37	.53	.73	42.0	143.2	10.88	.38	.54	.76

## 25 TON STANDARD EFFICIENCY - TGA300S - ALL COMPRESSORS OPERATING

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			29°C (85°F)						35°C (95°F)						41°C (105°F)						46°C (115°F)					
			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		
			kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F	kW	kBtuh		24°C 75°F	27°C 80°F	29°C 85°F
17°C (63°F)	3.77	8000	78.1	266.6	18.64	.72	.90	1.00	75.3	256.8	20.80	.73	.92	1.00	72.2	246.4	23.26	.74	.95	1.00	68.9	235.0	26.04	.76	.98	1.00
	4.72	10000	81.1	276.6	18.86	.77	1.00	1.00	78.1	266.6	21.04	.80	1.00	1.00	75.1	256.4	23.54	.82	1.00	1.00	72.0	245.6	26.36	.86	1.00	1.00
	5.66	12000	83.9	286.4	19.08	.86	1.00	1.00	81.1	276.8	21.32	.88	1.00	1.00	78.0	266.2	23.82	.91	1.00	1.00	74.7	254.8	26.64	.95	1.00	1.00
19°C (67°F)	3.77	8000	82.4	281.2	19.00	.55	.69	.85	79.4	270.8	21.16	.56	.71	.88	76.0	259.4	23.62	.57	.72	.90	72.4	247.0	26.46	.58	.74	.94
	4.72	10000	84.7	289.0	19.16	.59	.75	.96	81.5	278.0	21.38	.60	.77	.99	78.0	266.2	23.86	.61	.80	1.00	74.2	253.2	26.66	.62	.83	1.00
	5.66	12000	86.4	294.8	19.32	.63	.83	1.00	83.1	283.4	21.54	.64	.86	1.00	79.5	271.4	24.02	.65	.89	1.00	75.7	258.2	26.82	.67	.92	1.00
22°C (71°F)	3.77	8000	87.5	298.6	19.40	.41	.54	.67	84.2	287.4	21.60	.41	.55	.68	80.7	275.2	24.10	.41	.56	.70	76.7	261.8	26.96	.42	.57	.72
	4.72	10000	89.6	305.8	19.56	.42	.58	.74	86.2	294.0	21.80	.43	.59	.75	82.4	281.2	24.30	.43	.60	.77	78.4	267.4	27.12	.44	.62	.80
	5.66	12000	91.1	310.8	19.70	.44	.62	.81	87.5	298.4	21.90	.44	.63	.83	83.6	285.4	24.44	.45	.65	.86	79.5	271.2	27.26	.46	.67	.90

**BLOWER DATA**

**TGA180**

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

**FOR ALL UNITS ADD:** Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 15 Then determine from table the blower motor output and drive required.

**50 to 325 Pa**

**TGA180**

Air Volume L/s	External Static (Pa)																							
	50		75		100		125		150		175		200		225		250		275		300		325	
	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>Low - 2.2 kW, Drive Kit A</b>		<b>Standard Static - 2.2 kW, Drive Kit 1</b>										<b>High Static - 3.7 kW, Drive Kit 4</b>											
2265	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
2360	585	1.25	628	1.43	670	1.60	710	1.78	750	1.95	783	2.13	815	2.30	848	2.50	880	2.70	910	2.88	940	3.05	968	3.23
2595	605	1.45	648	1.65	690	1.85	728	2.05	765	2.25	800	2.45	835	2.65	865	2.85	895	3.05	925	3.25	955	3.45	983	3.65
2830	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	998	4.13
3065	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	1013	4.63
3305	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	1030	5.18
3540	687	2.55	725	2.81	763	3.06	798	3.33	833	3.60	866	3.86	898	4.11	926	4.36	954	4.61	984	4.90	1013	5.19	1038	5.44

**350 to 600 Pa**

**TGA180**

Air Volume L/s	External Static (Pa)																					
	350		375		400		425		450		475		500		525		550		575		600	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>High - 3.7 kW, Drive Kit 4</b>		<b>Field Furnished Drive</b>																			
2265	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
2360	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
2595	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
2830	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
3065	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
3305	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
3540	1063	5.68	1088	5.94	1113	6.19	1136	6.44	1159	6.69	1182	6.96	1204	7.23	1226	7.50	1248	7.77	1269	8.03	1289	8.28

**AIR RESISTANCE (Pa) - Options**

Air Volume - L/s	Gas Heat Exchanger		Economizer	Horizontal Roof Curb	MERV 11 Filter
	Med. Heat	High Heat			
2265	20	25	---	20	2
2360	22	27	---	20	2
2595	25	32	---	25	5
2830	30	37	---	27	5
3065	32	42	5	32	5
3305	37	47	10	37	7
3540	40	50	12	40	7

**BLOWER DATA**

**TGA210**

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

**FOR ALL UNITS ADD:** Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 15  
Then determine from table the blower motor output and drive required.

**25 to 300 Pa**

**TGA210**

Air Volume L/s	External Static (in. w.g.)																									
	25		50		75		100		125		150		175		200		225		250		275		300			
	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	BHP
	Low Static - 3.7 kW, Drive Kit 2						Standard Static - 3.7 kW, Drive Kiy 3						High Static - 5.6 kW, Drive Kit 6													
2645	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	985	3.74		
2830	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	998	4.13		
3065	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	1013	4.63		
3305	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	1030	5.18		
3540	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	1048	5.78		
3775	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	1065	6.40		
3965	746	3.55	783	3.87	819	4.18	853	4.49	886	4.80	916	5.12	946	5.43	974	5.73	1001	6.03	1029	6.35	1056	6.66	1081	6.96		

**325 to 575 Pa**

**TGA210**

Air Volume L/s	External Static (Pa)																							
	325		350		375		400		425		450		475		500		525		550		575			
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	High Static - 5.6 kW, Drive Kit 6						Field Furnished Drive																	
2645	1012	3.95	1037	4.15	1062	4.35	1087	4.575	1112	4.80	1135	5	1157	5.20	1180	5.41	1202	5.62	1223	5.83	1244	6.04		
2830	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		
3065	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		
3305	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		
3540	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		
3775	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		
3965	1106	7.26	1131	7.58	1156	7.89	1179	8.19	1201	8.49	1224	8.79	1246	9.09	1266	9.38	1286	9.67	1307	9.98	1328	10.29		

**AIR RESISTANCE (Pa) - Options**

Air Volume - L/s	Gas Heat Exchanger		Economizer	Horizontal Roof Curb	MERV 11 Filter
	Med. Heat	High Heat			
2645	25	32	---	25	5
2830	30	37	---	27	5
3065	32	42	5	32	5
3305	37	47	10	37	8
3540	42	52	15	42	8
3775	47	60	22	47	10
3965	50	65	27	52	10

**BLOWER DATA**

**TGA240**

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

**FOR ALL UNITS ADD:** Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 15 Then determine from table the blower motor output and drive required.

**0 to 275 Pa**

**TGA240**

Air Volume L/s	External Static (Pa)																								
	0		25		50		75		100		125		150		175		200		225		250		275		
	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 - 3.7 kW, Drive Kit 2</b>				<b>Standard Static - 5.6 kW, Drive Kit 7</b>								<b>High Static - 7.5 kW, Drive Kit 6</b>												
3020	648	1.99	688	2.22	728	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	1008	4.53	
3305	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	1030	5.18	
3540	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	1048	5.78	
3775	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	1065	6.40	
4010	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	1085	7.10	
4250	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	1105	7.83	
4530	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	1129	8.77	

**300 to 550 Pa**

**TGA240**

Air Volume L/s	External Static (Pa)																						
	300		325		350		375		400		425		450		475		500		525		550		
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM
	<b>High Static - 7.5 kW, Drive Kit 6</b>				<b>Field Furnished Drive</b>																		
3020	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	
3305	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	
3540	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	
3775	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	
4010	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	
4250	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	11.4	
4530	1154	9.13	1177	9.46	1199	9.78	1222	10.14	1244	10.50	1267	10.87	1289	11.23	---	---	---	---	---	---	---	---	

**AIR RESISTANCE (Pa) - Options**

Air Volume - L/s	Gas Heat Exchanger		Economizer	Horizontal Roof Curb	MERV 11 Filter
	Med. Heat	High Heat			
3020	32	42	5	32	5
3305	37	47	10	37	7
3540	42	52	15	42	7
3775	47	60	22	47	10
4010	50	65	27	52	10
4250	57	72	35	60	10
4530	62	80	40	65	12

**BLOWER DATA**

**TGA300S**

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

**FOR ALL UNITS ADD:** Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 15 Then determine from table the blower motor output and drive required.

**0 to 225 Pa**

**TGA300**

Air Volume L/s	External Static (Pa)																			
	0		25		50		75		100		125		150		175		200		225	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Low - 5.6 kW, Drive Kit 7</b>		<b>Standard Static - 7.5 kW, Drive Kit 6</b>												<b>Field Furnished Drive</b>					
3775	865	4.35	898	4.65	930	4.95	958	5.23	985	5.50	1013	5.80	1040	6.10	1065	6.40	1090	6.70	1115	6.98
4010	890	4.90	920	5.23	950	5.55	978	5.85	1005	6.15	1033	6.48	1060	6.80	1085	7.10	1110	7.40	1135	7.73
4365	925	5.85	955	6.20	985	6.55	1013	6.88	1040	7.20	1065	7.53	1090	7.85	1115	8.20	1140	8.55	1163	8.88
4720	960	6.85	988	7.23	1015	7.60	1043	7.98	1070	8.35	1095	8.70	1120	9.05	1145	9.43	1170	9.80	1193	10.15
5075	1000	8.05	1028	8.45	1055	8.85	1080	9.25	1105	9.65	1130	10.05	1155	10.45	1178	10.83	1200	11.20	1222	11.57
5425	1040	9.25	1068	9.68	1095	10.10	1118	10.53	1140	10.95	1165	11.40	1190	11.85	1210	12.23	1230	12.60	---	---
5665	1050	9.70	1075	10.15	1100	10.60	1125	10.98	1150	11.35	1173	11.80	1195	12.25	---	---	---	---	---	---

**250 to 450 Pa**

**TGA300**

Air Volume L/s	External Static (Pa)																	
	250		275		300		325		350		375		400		425		450	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
	<b>Field Furnished Drive</b>																	
3775	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
4010	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
4365	1185	9.20	1208	9.53	1230	9.85	1253	10.20	1275	10.55	1295	10.88	1315	11.20	---	---	---	---
4720	1215	10.50	1238	10.88	1260	11.25	1283	11.62	---	---	---	---	---	---	---	---	---	---

**AIR RESISTANCE (Pa) - Factory Installed Options**

Air Volume - L/s	Gas Heat Exchanger		Economizer	Horizontal Roof Curb	MERV 11 Filter
	Med. Heat	High Heat			
3775	47	60	22	32	10
4010	50	65	27	37	10
4365	60	75	37	45	12
4720	67	87	47	52	15
5075	75	84	57	62	15
5425	77	99	62	67	17

**POWER EXHAUST FANS**

Pa	Return Duct Negative Static Pressure		Air Volume Exhausted	
	Pa	in. w.g.	L/s	cfm
0	0	0	4070	8630
12		0.05	3875	8210
25		0.10	3645	7725
37		0.15	3355	7110
50		0.20	3055	6470
62		0.25	2730	5790
75		0.30	2390	5060
87		0.35	2030	4300
100		0.40	1655	3510
112		0.45	1270	2690
125		0.50	870	1840

## BLOWER DATA

### CEILING DIFFUSER AIR RESISTANCE

Air Volume		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		Pa	in. w.g.	Pa	in. w.g.
L/s	cfm	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.
2360	5000	127	.51	109	.44	97	.39	---	---	---	---	---	---	67	.27	---	---
2455	5200	139	.56	119	.48	104	.42	---	---	---	---	---	---	75	.30	---	---
2550	5400	152	.61	129	.52	112	.45	---	---	---	---	---	---	82	.33	---	---
2645	5600	164	.66	139	.56	119	.48	---	---	---	---	---	---	90	.36	---	---
2735	5800	177	.71	147	.59	127	.51	---	---	---	---	---	---	97	.39	---	---
2830	6000	189	.76	157	.63	137	.55	90	.36	77	.31	67	.27	104	.42	72	.29
2925	6200	199	.80	169	.68	147	.59	---	---	---	---	---	---	114	.46	---	---
3020	6400	214	.86	179	.72	157	.63	---	---	---	---	---	---	124	.50	---	---
3065	6500	---	---	---	---	---	---	104	.42	90	.36	77	.31	---	---	85	.34
3115	6600	229	.92	191	.77	167	.67	---	---	---	---	---	---	134	.54	---	---
3210	6800	246	.99	206	.83	174	.72	---	---	---	---	---	---	144	.58	---	---
3305	7000	256	1.03	216	.87	189	.76	122	.49	102	.41	90	.36	154	.62	99	.40
3400	7200	271	1.09	229	.92	199	.80	---	---	---	---	---	---	164	.66	---	---
3490	7400	286	1.15	241	.97	209	.84	---	---	---	---	---	---	174	.70	---	---
3540	7500	---	---	---	---	---	---	127	.51	114	.46	102	.41	---	---	112	.45
3585	7600	301	1.20	254	1.02	219	.88	---	---	---	---	---	---	184	.74	---	---
3775	8000	---	---	---	---	---	---	147	.59	122	.49	107	.43	---	---	124	.50
4010	8500	---	---	---	---	---	---	172	.69	144	.58	124	.50	---	---	142	.57
4245	9000	---	---	---	---	---	---	196	.79	167	.67	144	.58	---	---	164	.66
4485	9500	---	---	---	---	---	---	221	.89	186	.75	162	.65	---	---	184	.74
4720	10,000	---	---	---	---	---	---	249	1.00	209	.84	182	.73	---	---	201	.81
4955	10,500	---	---	---	---	---	---	273	1.10	229	.92	199	.80	---	---	221	.89
5190	11,000	---	---	---	---	---	---	301	1.21	251	1.01	219	.88	---	---	239	.96

### CEILING DIFFUSER AIR THROW DATA

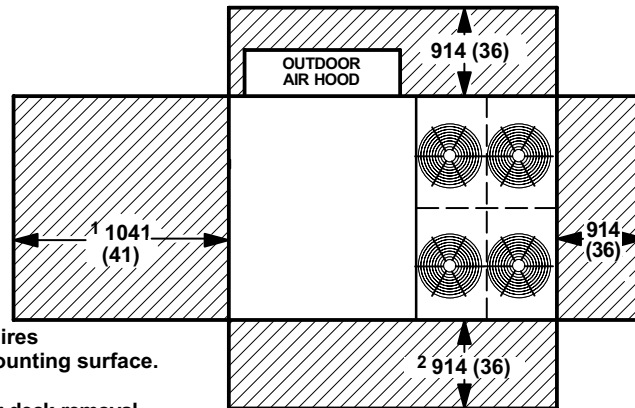
Model No.	Air Volume		1 Effective Throw Range				Model No.	Air Volume		1 Effective Throw Range			
			Step-Down		Flush					Step-Down		Flush	
	L/s	cfm	m	ft.	m	ft.		L/s	cfm	m	ft.	m	ft.
180 Models	Diffuser Model		RTD11-185		FD11-185		210, 240, 300S Models	Diffuser Model		RTD11-275		FD11-275	
	2645	5600	12 - 15	39 - 49	9 - 11	28 - 37		3400	7200	10 - 12	33 - 38	8 - 11	26 - 35
	2740	5800	13 - 16	42 - 51	9 - 12	29 - 38		3490	7400	11 - 12	35 - 40	9 - 11	28 - 37
	2830	6000	13 - 17	44 - 54	12 - 15	40 - 50		3585	7600	11 - 13	36 - 41	9 - 12	29 - 38
	2925	6200	14 - 17	45 - 55	13 - 16	42 - 51		3680	7800	11 - 13	38 - 43	12 - 15	40 - 50
	3020	6400	14 - 17	46 - 55	13 - 16	53 - 52		3775	8000	12 - 13	39 - 44	13 - 16	42 - 51
	3115	6600	14 - 17	57 - 56	14 - 17	45 - 56		3870	8200	12 - 14	41 - 46	13 - 16	43 - 52
						3965	8400	13 - 15	43 - 49	13 - 17	44 - 54		
						4060	8600	13 - 15	44 - 50	14 - 17	46 - 57		
						4155	8800	14 - 17	47 - 55	15 - 18	48 - 59		

## 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	97	92	91	88	83	79	72	93
210, 240	94	91	90	87	83	79	72	92
300S	96	93	90	87	82	76	65	93

<sup>1</sup> Tested according to ARI Standard 270-95 test conditions and ANSI Standard S1.32-1981.

## INSTALLATION CLEARANCES - MM (INCHES)



NOTE - Top Clearance 1524 mm (60 in.)  
 NOTE - Entire perimeter of unit base requires support when elevated above mounting surface.

<sup>1</sup> NOTE - 1676 mm (66 in.)

Recommended service clearance for blower deck removal

<sup>2</sup> NOTE - 1524 mm (60 in.) Recommended service clearance for heat exchanger removal

## HIGH ALTITUDE DERATE

Units may be installed at altitudes up to 610 m (2000 feet) above sea level without any modification. At altitudes above 610 m (2000 feet), units must be derated to match gas manifold pressures shown in table below. NOTE - This is the only permissible derate for these units.

Altitude - m (feet)	Natural Gas	
	kPa	in. w.g.
610 - 915 (2001 - 3000)	0.67	2.7
915 - 1220 (3001 - 4000)	0.65	2.6
1220 - 1525 (4001 - 5000)	0.62	2.5
1525 - 1830 (5001 - 6000)	0.60	2.4
1830 - 2135 (6001 - 7000)	0.57	2.3
2135 - 2440 (7001 - 8000)	0.55	2.2
2440 - 3048 (8001 - 10,000)	Contact Technical Support	



## ELECTRICAL DATA

		TGA180S			TGA210S			TGA240S			TGA300S		
<b>Line voltage data - 50 Hz - 3 phase</b>		380/420V			380/420V			380/420V			380/420V		
<b>Compressors</b>	Number of Compressors	3			3			3			4		
	Rated load amps each (total)	7.5 (22.5)			9.7 (29.1)			10.9 (32.7)			9.6 (38.4)		
	Locked rotor amps each (total)	59.6 (178.8)			75 (225)			100 (300)			75 (300)		
<b>Condenser Fan Motors (4)</b>	Full load amps (total)	1.3 (5.2)			1.5 (6)			1.3 (5.2)			1.5 (6)		
	Locked rotor amps (total)	2.4 (9.6)			3 (12)			2.4 (9.6)			3 (12)		
<b>Evaporator Blower Motor</b>	Motor Output - kW	2.2	3.7	5.6	2.2	3.7	5.6	3.7	5.6	7.5	3.7	5.6	7.5
	hp	3	5	7.5	3	5	7.5	5	7.5	10	5	7.5	10
	Full load amps	5.0	7.8	11.8	5.0	7.8	11.8	7.8	11.8	15.2	7.8	11.8	15.2
	Locked rotor amps	27	46	66	27	46	66	46	66	84	46	66	84
<b><sup>1</sup> Maximum Overcurrent Protection (amps)</b>	With Standard PEF	40	45	50	50	50	60	60	60	70	60	70	80
	No PEF	40	45	50	50	50	60	50	60	70	60	70	70
<b><sup>2</sup> Minimum Circuit Ampacity</b>	With Standard PEF	38	40	44	46	48	52	52	56	59	58	62	65
	No PEF	35	38	42	43	46	50	49	53	56	55	59	62
<b>Optional Power Exhaust Fans</b>	(No.) Horsepower (W)	(2) 249 (1/3)			(2) 249 (1/3)			(2) 249 (1/3)			(2) 249 (1/3)		
	Full load amps (total)	2.6 (5.2)			2.6 (5.2)			2.6 (5.2)			2.6 (5.2)		
	Locked rotor amps (total)	4.8 (9.6)			4.8 (9.6)			4.8 (9.6)			4.8 (9.6)		

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

<sup>1</sup> HACR (heating, air conditioning, refrigeration) type breaker or fuse.

<sup>2</sup> Refer to local codes to determine wire, fuse and disconnect size requirements.

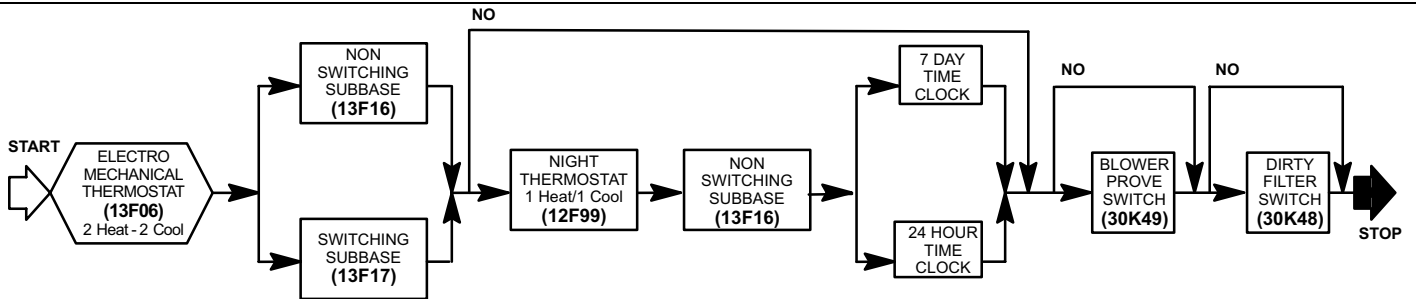
# OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS - FIELD INSTALLED

## System and Component Description

Field Installed  
Catalog No.

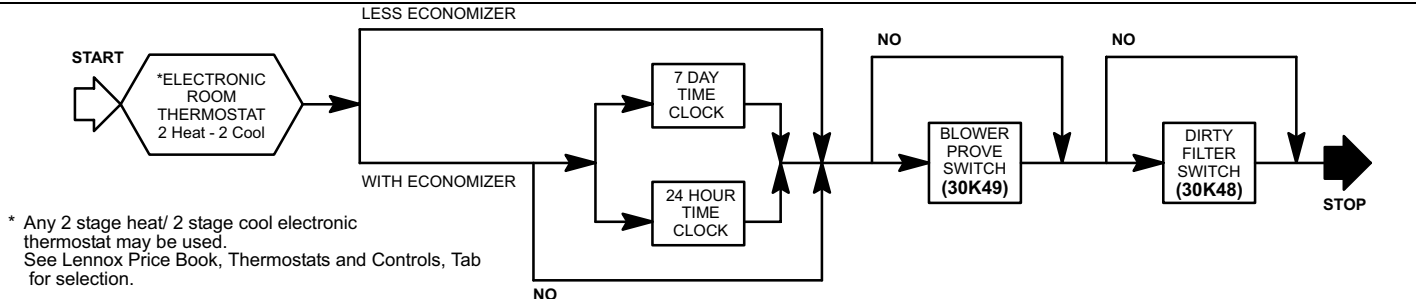
### ELECTRO-MECHANICAL THERMOSTAT

<b>Thermostat</b> - Two stage heat & two stage cool with dual temperature levers, subbase choice .....	13F06
<b>Subbase</b> - Manual system switch (Off-Heat-Auto-Cool), fan switch (Auto-On) .....	13F17
<b>Subbase</b> - Non-switching .....	13F16
<b>Night Setback Operation</b> - Order components below	
<b>Heating Thermostat</b> - Single stage heat / Single stage cool .....	12F99
<b>Subbase</b> - Non-switching .....	13F16
<b>Time Clock</b> - 7 day operation, indicates day and night periods, 2 hour increments, battery back-up .....	See Price Book
<b>Time Clock</b> - 24 hour night setback operation, 15 minute increments, battery back-up .....	See Price Book
<b>Blower Proving Switch</b> - Monitors blower operation, locks out unit in case of blower failure .....	30K49
<b>Dirty Filter Switch</b> - Senses static pressure increase indicating a dirty filter condition .....	30K48



### ELECTRONIC THERMOSTAT

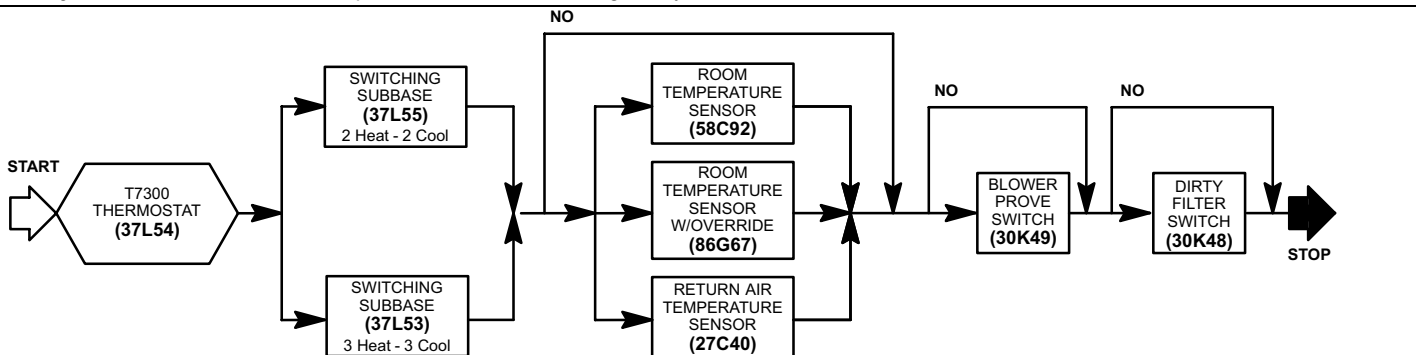
<b>Electronic Thermostat</b> - Any two stage heat/ two stage cool electronic thermostat may be used. ....	See Price Book
<b>Time Clock</b> - 7 day operation, indicates day and night periods, 2 hour increments, battery back-up .....	See Price Book
<b>Time Clock</b> - 24 hour night setback operation, 15 minute increments, battery back-up .....	See Price Book
<b>Blower Proving Switch</b> - Monitors blower operation, locks out unit in case of blower failure .....	30K49
<b>Dirty Filter Switch</b> - Senses static pressure increase indicating a dirty filter condition .....	30K48



\* Any 2 stage heat/ 2 stage cool electronic thermostat may be used.  
See Lennox Price Book, Thermostats and Controls, Tab for selection.

### HONEYWELL T7300 THERMOSTAT

<b>Thermostat</b> - Programmable, internal or optional remote temperature sensing (sensor required), touch sensitive keyboard, automatic switching, °F or °C readout, no anticipator, droop/no droop selection, indicator LED's, hour/day programming, override capabilities, time and operational mode readout, stage status indicators, battery back-up, subbase choice, manual system switch (Heat-Off-Auto-Cool), fan switch (Auto-On) .....	37L54
<b>Subbase</b> - Selectable staging, indicator LED's, auxiliary relay output for economizer operation	
2 Heat / 2 Cool .....	37L55
3 Heat / 3 Cool .....	37L53
<b>Sensor</b> - Room temperature .....	58C92
<b>Sensor</b> - Room temperature with 3 hour override and setpoint adjustment .....	86G67
<b>Sensor</b> - Return air temperature .....	27C40
<b>Blower Proving Switch</b> - Monitors blower operation, locks out unit in case of blower failure .....	30K49
<b>Dirty Filter Switch</b> - Senses static pressure increase indicating a dirty filter condition .....	30K48



**WEIGHT DATA**

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

**OPTIONS / ACCESSORIES**

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

**ECONOMIZER / OUTDOOR AIR / EXHAUST**

<b>Economizer</b>	T1ECON10C-1	39	86
<b>Barometric Relief</b>			
Down-Flow Barometric Relief Dampers	LAGED18/24	14	30
Horizontal Barometric Relief Dampers	LAGEDH18/24	9	20
<b>Outdoor Air Dampers</b>			
Damper Section (down-flow) - Automatic	T1DAMP20C-1	24	52
Damper Section (down-flow) - Manual	LAOAD18/24	22	49
Outdoor Air Hood (down-flow)	C1HOOD10C-1	29	65
Power Exhaust	C1PWRE20C-1M	28	62

**HEAT EXCHANGER**

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

**PACKAGING**

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

<b>Down-Flow</b>			
356 mm height	LARMF18/36-14	73	160
610 mm height	LARMF18/36-24	100	220
<b>Horizontal</b>			
660 mm height	LARMFH18/24-26	191	420
940 mm height	LARMFH18/24-37	263	580

**ROOF CURBS - CLIPLOCK 1000**

<b>Down-Flow</b>			
356 mm height	LARMF18/30S-14	74	164
457 mm height	LARMF18/30S-18	85	187
610 mm height	LARMF18/30S-24	101	222
<b>Horizontal</b>			
660 mm height	LARMFH18/24S-26	152	335
940 mm height	LARMFH18/24S-37	202	445

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

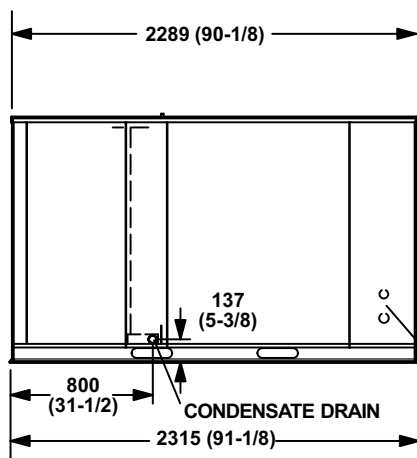
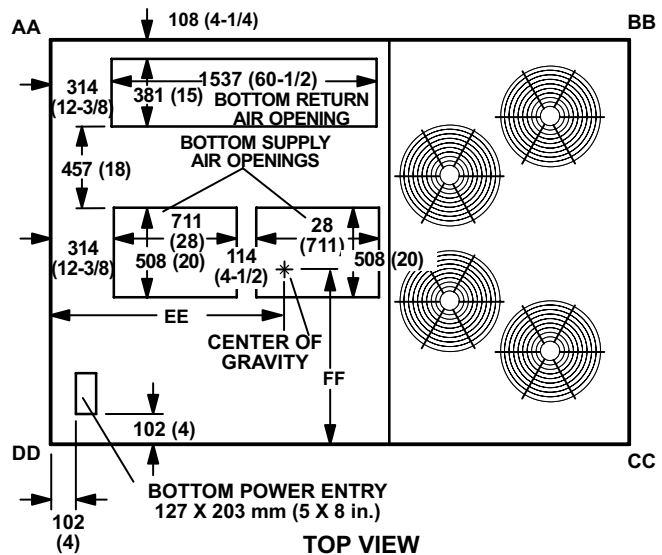
Max. Unit - The unit with ALL OPTIONS Installed. (High Input Heat Exchanger, Economizer, Power Exhaust Fans, Controls)

## DIMENSIONS - MM (INCHES)

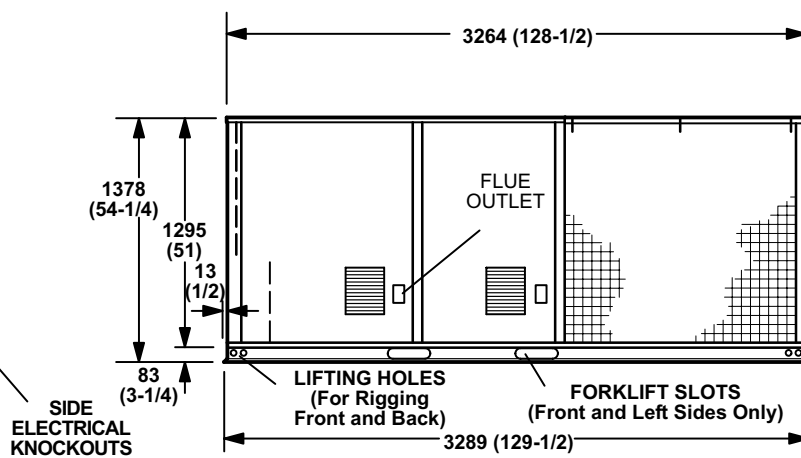
Model Number	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	kg	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	mm	inch	mm	inch
180/210 Base Unit	273	602	213	470	228	502	307	677	1308	51-1/2	1003	39-1/2
180/210 Max. Unit	305	673	235	518	243	536	324	714	1308	51-1/2	1080	42-1/2
240 Base Unit	278	613	227	501	245	541	313	690	1372	54	991	39
240 Max. Unit	313	690	246	543	256	565	334	737	1334	52-1/2	1067	42
300 Base Unit	288	636	241	531	262	579	328	724	1397	55	972	38-1/4
300 Max. Unit	321	708	259	571	274	605	352	777	1359	53-1/2	1029	40-1/2

Base Unit - Unit with NO OPTIONS.

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



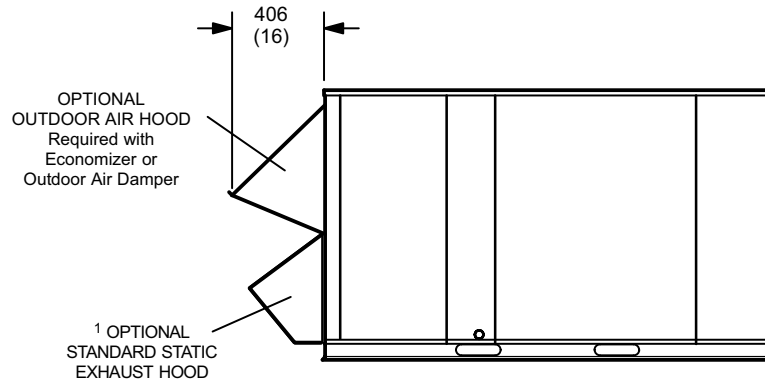
**END VIEW**



**SIDE VIEW**

## ACCESSORY DIMENSIONS - MM (INCHES)

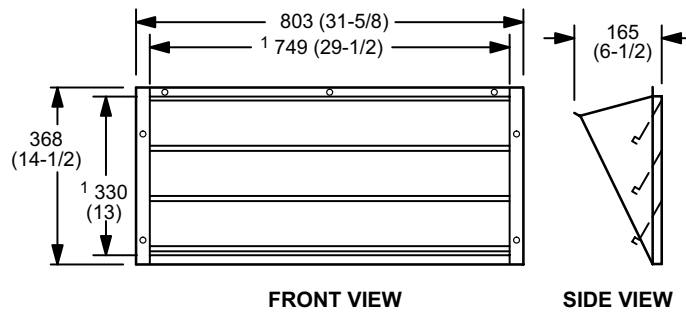
### OPTIONAL OUTDOOR AIR HOOD DETAIL



1 Field Installed in Return Air Duct for Horizontal Applications.

### HORIZONTAL BAROMETRIC RELIEF DAMPERS

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



FRONT VIEW

SIDE VIEW

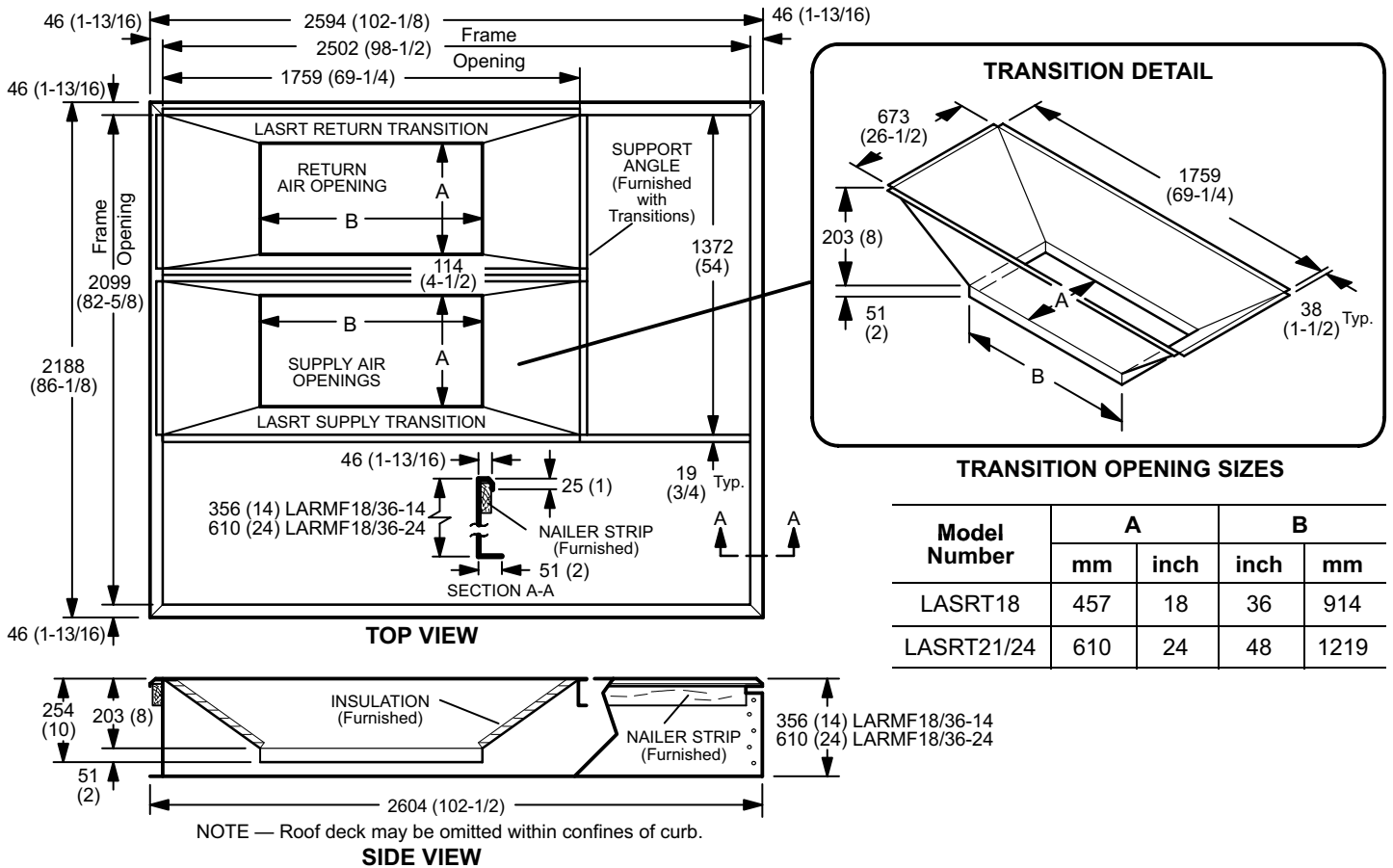
NOTE - Two furnished per order no.

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



# ACCESSORY DIMENSIONS - MM (INCHES)

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



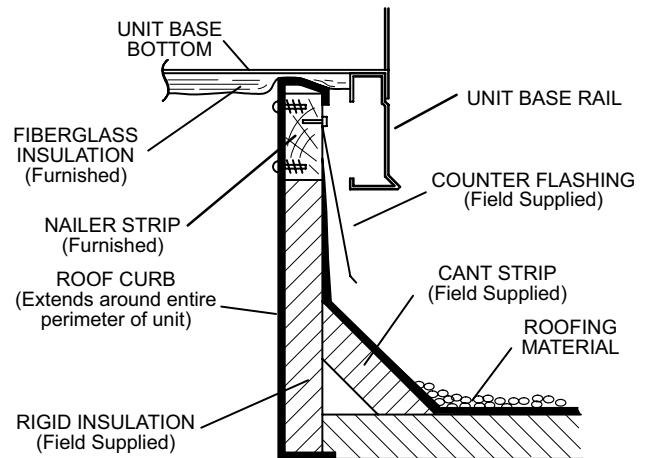
### ROOF CURB SPECIFICATIONS

Roof Curb is rigid enough to be spanned over its entire length or cantilevered if supported on both sides of center of gravity.

Roof Curb	LARMF18/36-14	LARMF18/36-24
<sup>1</sup> Moment of inertia (I) - cm <sup>4</sup> (in. <sup>4</sup> )	1634 (39)	6639 (160)
<sup>1</sup> Section Modulus $\frac{I}{C}$ cm <sup>3</sup> (in. <sup>3</sup> )	5.5 (90)	512 (13.1)
Curb weight. (kg/m) (lb/ft) of length	5.5 (8.2)	12.7 (8.5)
Design strength (kPa) (psi)	137,900 (20,000)	

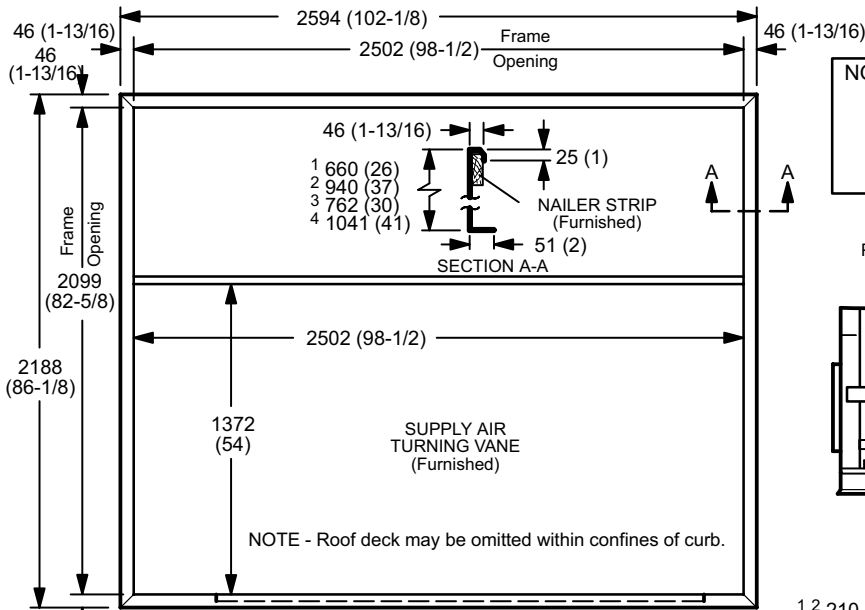
<sup>1</sup> Includes both sides of curb.

### TYPICAL FLASHING DETAIL FOR ROOF CURBS

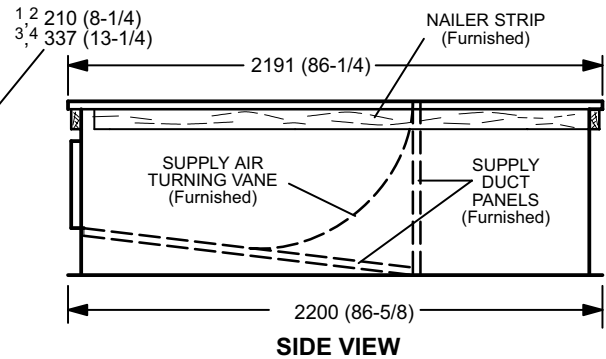
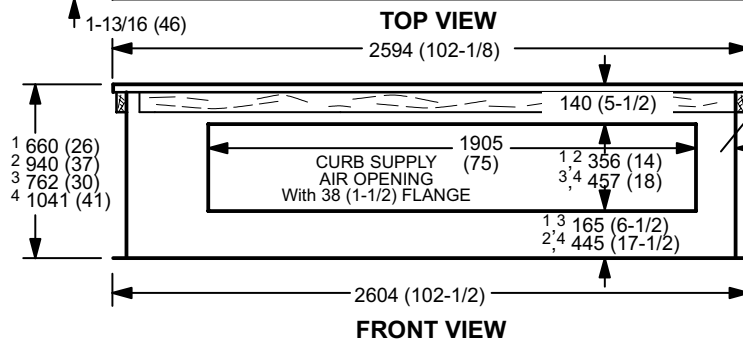
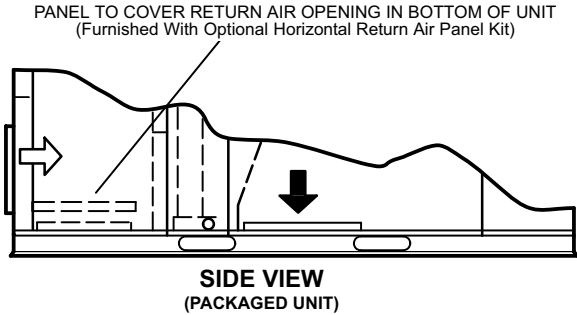


# ACCESSORY DIMENSIONS - MM (INCHES)

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

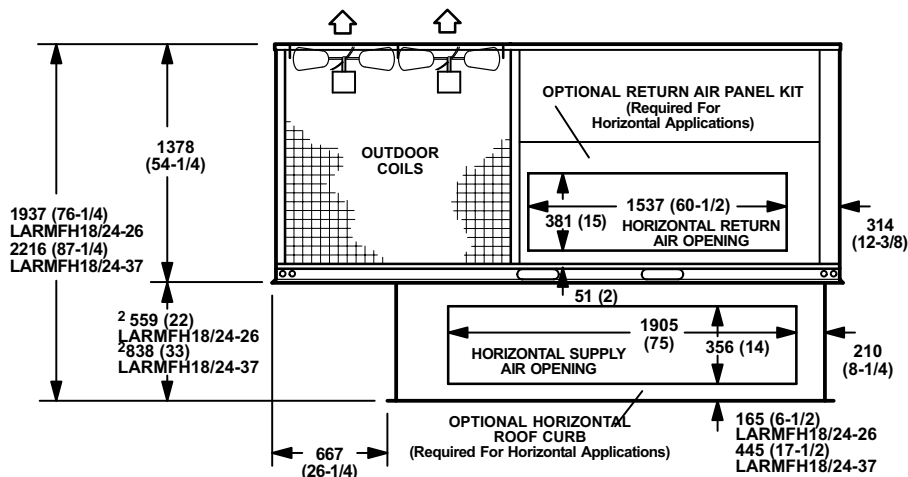


NOTE LARMFH18/24-26 and LARMFH30/36-30 are designed for horizontal discharge when unit is mounted on a slab. LARMFH18/24-37 and LARMFH30/36-41 are designed for horizontal discharge when unit is mounted on a rooftop.



- 1 LARMFH18/24-26    2 LARMFH18/24-37    3 LARMFH30/36-30 (used with 300S Models)    4 LARMFH30/36-40 (used with 300S Models)

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



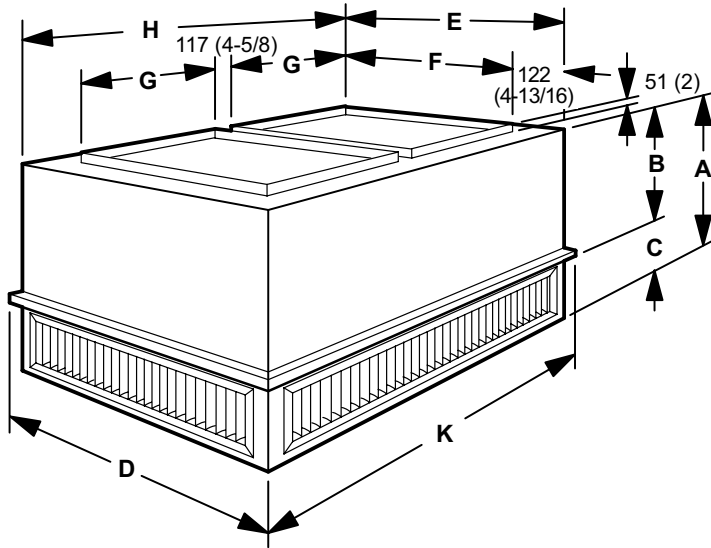
<sup>2</sup> NOTE - Top of Roof Curb extends 102 mm (4 inch) inside bottom of unit base. See Typical flashing detail.



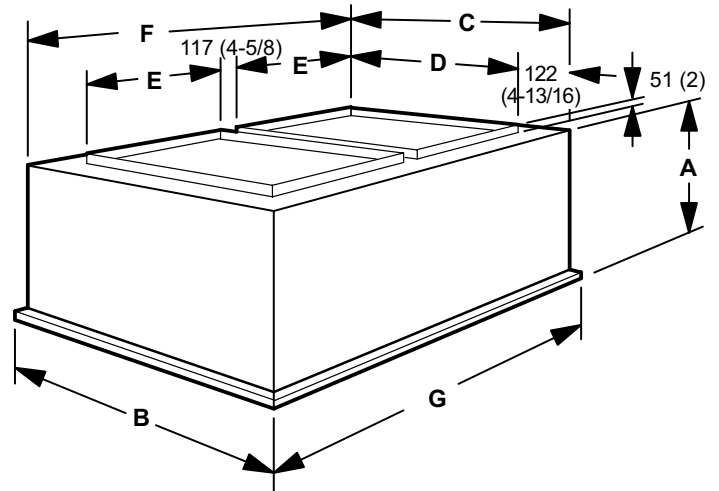
## ACCESSORY DIMENSIONS - MM (INCHES)

### COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

STEP-DOWN CEILING DIFFUSER



FLUSH CEILING DIFFUSER



Model Number		RTD11-185	RTD11-275
A	mm	864	1016
	in.	34	40
B	mm	606	225
	in.	23-7/8	28-7/8
C	mm	257	283
	in.	10-1/8	11-1/8
D	mm	1210	1514
	in.	47-5/8	59-5/8
E	mm	1159	1470
	in.	45-5/8	57-7/8
F	mm	914	1219
	in.	36	48
G	mm	457	610
	in.	18	24
H	mm	1159	1464
	in.	45-5/8	57-5/8
K	mm	1210	1521
	in.	47-5/8	59-5/8

Model Number		FD11-185	FD11-275
A	mm	613	918
	in.	30-1/8	36-1/8
B	mm	1210	1514
	in.	47-5/8	59-5/8
C	mm	1159	1464
	in.	45-5/8	57-5/8
D	mm	914	1219
	in.	36	48
E	mm	457	610
	in.	18	24
F	mm	1159	1464
	in.	45-5/8	57-5/8
G	mm	1210	1521
	in.	47-5/8	59-5/8



NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

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