

ASHRAE 90.1
COMPLIANT



15 to 20 Tons
Net Cooling Capacity - 182,000 to 220,000 Btuh
Net Heating Capacity - 192,000 to 220,000 Btuh
Optional Electric Heat - 15 to 90 kW

MODEL NUMBER IDENTIFICATION

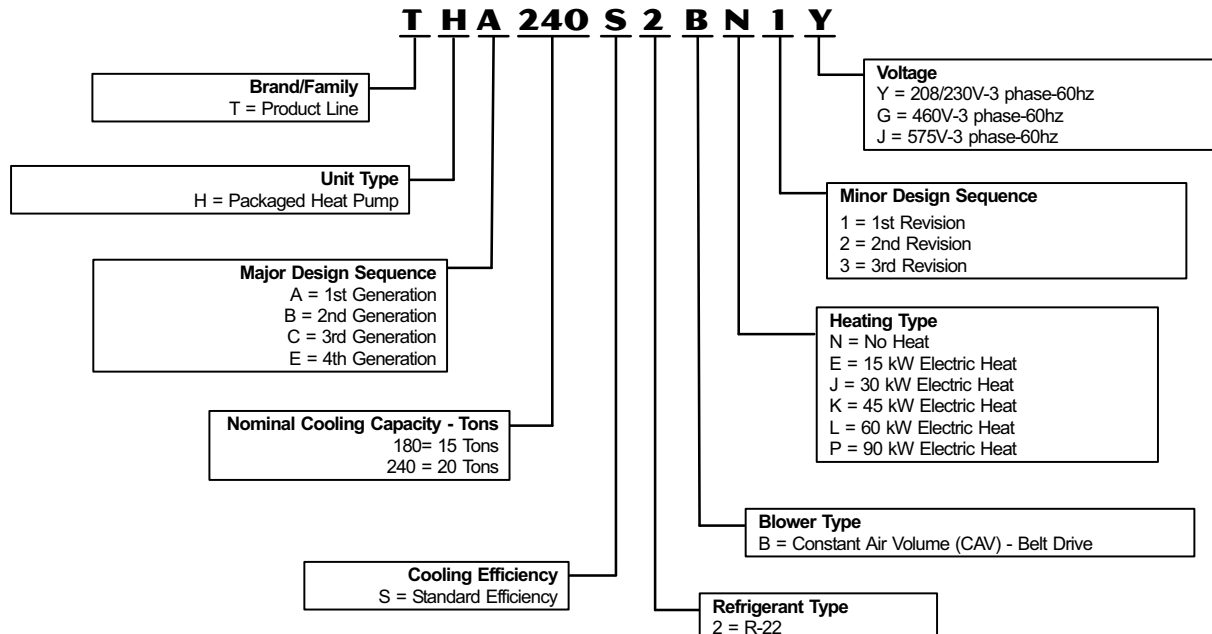


TABLE OF CONTENTS

Blower Data	Pages 12-15
Cooling and Heating Ratings	Pages 10-11
Dimensions	Pages 19-25
Electric Heat Capacities	Page 16
Electrical / Electric Heat Data	Pages 16-17
Features and Benefits	Pages 2-4
Installation Clearances	Page 15
Model Number Identification	Page 1
Options / Accessories	Pages 5-8
Specifications	Page 9
Sound Data	Page 17
Weight Data	Page 18

FEATURES AND BENEFITS

APPROVALS

ETL and CSA listed.

Components bonded for grounding to meet safety standards for servicing required by UL, CSA and National and Canadian Electrical Codes.

Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360-2000.

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

ISO 9001 Registered Manufacturing Quality System.

WARRANTY

Limited five years on compressors.

Limited one year all other covered components.

COOLING/HEATING SYSTEM

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

System can operate from 30°F to 125°F without any additional controls.

1 Compressors

Resiliently mounted on rubber grommets for quiet operation.

Scroll compressors for high performance, reliability and quiet operation.

Compressor Crankcase Heaters

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

2 Check/Thermal Expansion Valves

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

Filter/Driers

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

Freezestats

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

High Pressure Switches

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

Low Pressure Switches

Protects the compressor from low pressure conditions such as low refrigerant charge, or low/no air flow.

Defrost Control

Provides a defrost cycle, if needed, every 30 or 60 or 90 minutes (adjustable) of compressor "on" time at outdoor coil temperature below 35°F. Pressure switch mounted on outdoor coil vapor line terminates defrost cycle.

3 Reversing Valves

4-way interchange reversing valve effects a rapid change in direction of refrigerant flow resulting in quick changeover from cooling to heating and vice versa.

4 Coil Construction

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

Indoor Coil

Cross row circuiting with rifled copper tubing optimizes both sensible and latent cooling capacity. Low fin per inch count minimizes air pressure drop.

Outdoor Coil

Two independent formed coils allows separation for cleaning.

Condensate Drain Pan

Painted, galvanized pan with positive slope.

Drain connection extends outside unit.

5 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

Capacity

Specify the nominal capacity of the unit.

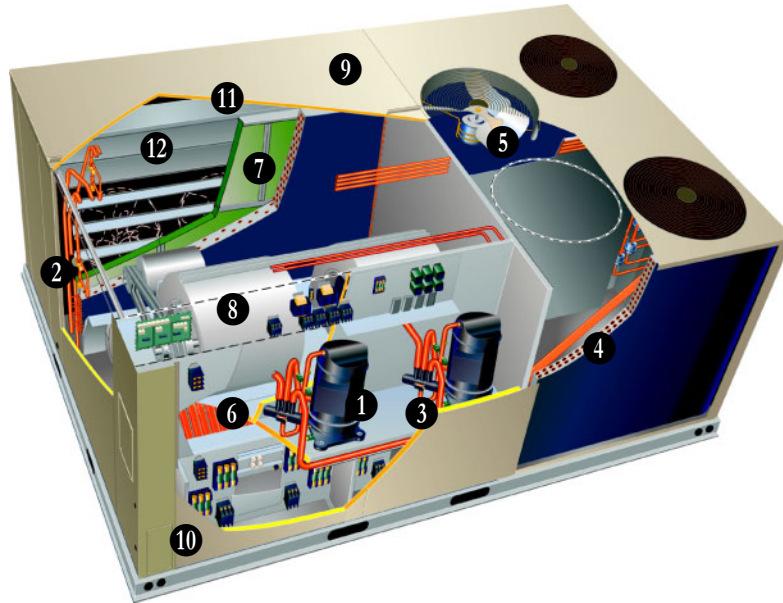
OPTIONS/ACCESSORIES

Field Installed

Condensate Drain Trap - Available in copper or PVC.

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.

FEATURES AND BENEFITS



ELECTRICAL

REQUIRED SELECTIONS

Voltage Choice

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

OPTIONS/ACCESSORIES

Factory or Field Installed

6 Electric Heat

Helix wound nichrome elements, time delay for element staging, individual element limit controls, wiring harness, may be two-stage controlled. The following must be ordered extra when field installed electric heat is used: Unit Fuse Block and Electric Heat Control Module. See Electrical / Electric Heat tables for ordering information.

Field Installed

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. See Optional Electrical / Electric Heat tables for field installed disconnect switches.

GFI Service Outlets (2)

115v ground fault circuit interrupter (GFCI) type, field wired. Mounted internal to cabinet.

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 / 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

Thermostats

Control system and thermostat options. Aftermarket unit controller options.

INDOOR AIR QUALITY

7 Air Filters

Disposable 2 inch filters furnished as standard.

OPTIONS/ACCESSORIES

Field Installed

Indoor Air Quality (CO₂) Sensor

Monitors CO₂ levels.

Replaceable Media Filter Kit With Frame

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

FEATURES AND BENEFITS

8 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 EFACT 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 drive kit (See Blower Data Tables for specifications).

CABINET

9 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.

10 Power Entry

Electrical 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.

11 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.

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.

Check/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 - 20 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.

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.

Standard roof curb corners fasten together with furnished hardware.

Cliplock curbs use interlocking tabs to fasten together. No tools required.

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. Requires Horizontal Return Air Panel. Available in 26, 30, 37 and 41 inch heights. Optional Insulation Kit is available to help prevent sweating.

OPTIONS / ACCESSORIES

Item	Catalog No	180	240	
COOLING/HEATING SYSTEM				
Condensate Drain Trap	PVC - LTACDKP09/36	76M18	x	x
	Copper - LTACDKC09/36	76M19	x	x
Efficiency	Standard	○	○	
Low Ambient Kit	TALAK10/15	73M78	x	x
BLOWER - SUPPLY AIR - See Blower Data Tables for Specifications				
	Low Static Motor/Drive Combination		○	○
	Standard Static Motor/Drive Combination (stock unit)		○	○
	High Static Motor/Drive Combination		○	○
¹ Standard to Low Static Conversion Kit	Drive Kit #A - C1DRKT044-1	90M53	x	
	Drive Kit #2 - C1DRKT045-1	90M54		x
² High to Standard Static Conversion Kit	Drive Kit #3 - C1DRKT038-1	90M47	x	
ELECTRICAL				
Voltage 60 hz	208/230V - 3 phase		○	○
	460V - 3 phase		○	○
	575V - 3 phase		○	○
HACR Circuit Breakers	T1HACR***-1- (***)indicates size)		x	x
Disconnect Switch	See Electrical/Electric Heat Tables for selection		x	x
GFI Service Outlets	LTAGFIK10/15	74M70	x	x
ELECTRIC HEAT				
15 kW	208/230V-3ph - ³ EHA240-7.5-Y	99J16	⊗	⊗
	EHA240S-7.5-Y	99J17	⊗	⊗
	460V-3ph - ³ EHA240-7.5-G	99J18	⊗	⊗
	EHA240S-7.5-G	99J19	⊗	⊗
	575V-3ph - ³ EHA240-7.5-J	99J20	⊗	⊗
	EHA240S-7.5-J	99J21	⊗	⊗
30 kW	208/230V-3ph - ³ EHA360-15-Y	99J22	⊗	⊗
	EHA360S-15-Y	99J23	⊗	⊗
	460V-3ph - ³ EHA360-15-G	99J24	⊗	⊗
	EHA360S-15-G	99J25	⊗	⊗
	208/230V-3ph - ³ EHA360-15-J	99J26	⊗	⊗
	EHA360S-15-J	99J27	⊗	⊗
45 kW	208/230V-3ph - ⁴ EHA360-22.5-Y	99J28	⊗	⊗
	460V-3ph - ⁴ EHA360-22.5-G	99J29	⊗	⊗
	575V-3ph - ⁴ EHA360-22.5-J	99J30	⊗	⊗
60 kW	208/230V-3ph - ⁴ EHA150-30-Y	99J07	⊗	⊗
	460V-3ph - ⁴ EHA150-30-G	99J08	⊗	⊗
	575V-3ph - ⁴ EHA150-30-J	99J09	⊗	⊗
90 kW	208/230V-3ph - ⁴ EHA360-45-Y	99J31		⊗
	460V-3ph - ⁴ EHA360-45-G	99J32		⊗
	575V-3ph - ⁴ EHA360-45-J	99J33		⊗
ELECTRIC HEAT ACCESSORIES/OPTIONS - See Electrical/Electric Heat Tables for selection				
Electric Heat Control Kit	208/230V-3ph - T1EHKT01C-1Y	85M32	⊗	⊗
	460V-3ph - T1EHKT01C-1G	85M33	⊗	⊗
	575V-3ph - T1EHKT01C-1J	85M34	⊗	⊗
Unit Fuse Block			⊗	⊗

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.

¹ Standard static drive can be converted to low static drive with field installed kit.

² High static drive can be converted to standard static drive with field installed kit.

³ Order one of each.

⁴ Order two of each

OPTIONS / ACCESSORIES

Item	Catalog No	180	240
CONTROLS			
Blower Proving Switch	C0SWCH01AE-1 30K49	x	x
Dirty Filter Switch	C0SWCH00AE-1 30K48	x	x
Smoke Detector - Supply	LTASASDK10/36 70K87	x	x
Smoke Detector - Return	LTARASDK10/30 70K86	x	x
CABINET			
Coil Guards	C1GARD20C-1 88K55	x	x
Corrosion Protection		○	○
Hail Guards	C1GARD10C-1 88K28	x	x
Hinged Access Panels		○	○
¹ Horizontal Return Air Panel Kit	C1HRAP10C-1 87M00	x	x
ECONOMIZER			
Economizer			
Economizer - Order Hood Separately	T1ECON10C-1 86M31	⊗	⊗
Hood for Economizer	C1HOOD10C 85M25	x	x
Economizer Controls			
Differential Enthalpy (dual)	C1SNSR07AE 86M33	x	x
Sensible (order two kits for Differential)	TASEK10/15 76M37	⊗	⊗
Single Outdoor Enthalpy	C1SNSR06AE 86M32	x	x
Barometric Relief			
Down-Flow Barometric Relief Dampers - Order Hood Separately	LAGED18/24 16K98	⊗	⊗
Hood for Down-Flow LAGED	C1HOOD20C-1 85M26	x	x
Horizontal Barometric Relief Dampers - Hood Furnished	LAGEDH18/24 16K99	x	x
OUTDOOR AIR			
Outdoor Air Dampers			
Damper Section (down-flow) - Order Hood Separately	Motorized - T1DAMP20C-1 86M30	⊗	⊗
	Manual - LAOAD18/24 16K93	⊗	⊗
Outdoor Air Hoods			
Outdoor Air Hood (down-flow) includes (3) 16 x 25 x 1 in. filters	C1HOOD10C-1 85M25	⊗	⊗
Power Exhaust			
Standard Static	208/230V - C1PWRE20C-1Y 85M37	x	x
	460V - C1PWRE20C-1G 85M38	x	x
	575V - C1PWRE20C-1J 85M39	x	x
INDOOR AIR QUALITY			
Air Filters			
Replaceable Media Filter Kit with Frame	24 x 24 x 2 order 6 per unit - C1FLTR30C-1 44N61	x	x
Indoor Air Quality (CO₂) Sensors			
CO ₂ Sensor Duct Mounting Kit	C0MISC19AE1- 85L43	x	x
Sensor - white case CO ₂ display	C0SNSR50AE1L 77N39	x	x
Sensor - white case no display	C0SNSR52AE1L 87N53	x	x
Sensor - black case CO ₂ display	C0SNSR51AE1L 87N52	x	x
Sensor - black case, no display	C0SNSR53AE1L 87N54	x	x
Aspiration Box for duct mounting	C0MISC16AE-1 90N43	x	x
Handheld CO ₂ Monitor	LTIAAQSHM03/36 70N93	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.

¹ Required for horizontal applications with Horizontal Roof Curb.

OPTIONS / ACCESSORIES

Item	Item	Catalog No.	180	240
CEILING DIFFUSERS				
Step-Down Order one	RTD11-185	29G06	x	
	(Canada Only) RTD11-150/180S	13K63	x	
	RTD11-275(S)	29G07		x
	(Canada Only) RTD11-275S	13K64		x
Flush Order one	FD11-185	29G10	x	
	(Canada Only) FD11-150/180S	13K58	x	
	FD11-275-R	29G11		x
	(Canada Only) FD11-275S	13K59		x
Transitions - (Supply and Return) Order one	LASRT18	19K01	x	
	(Canada Only) LASRT18S	33K48	x	
	LASRT21/24	19K02		x
	(Canada Only) LASRT21/24S	33K49		x
ROOF CURBS - CLIPLOCK 1000				
Down-Flow				
8 in. height	C1CURB40CN1-	26W32	x	x
14 in. height	LARMF18/30S-14	33K44	x	x
18 in. height	LARMF18/30S-18	33K45	x	x
24 in. height	LARMF18/30S-24	33K46	x	x
Horizontal				
26 in. height	LARMFH18/24S-26	33K47	x	x
37 in. height	LARMFH18/24S-37	45K70	x	x
ROOF CURBS - STANDARD				
Down-Flow				
14 in. height	LARMF18/36-14	16K87	x	x
24 in. height	LARMF18/36-24	16K88	x	x
Horizontal				
26 in. height	LARMFH18/24-26	97J33	x	x
37 in. height	LARMFH18/24-37	33K79	x	x
Insulation Kits for Standard Horizontal Roof Curbs				
for LARMFH18/24-26	C1INSU11C-1	73K32	x	x
for LARMFH18/24-37	C1INSU13C-1	73K34	x	x

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

X - Field Installed.

SPECIFICATIONS

General Data		Model No.	THA180S2B	THA240S2B
		Efficiency Type	Standard	Standard
		Nominal Tonnage	15 Ton	20 Ton
Cooling Performance	Gross Cooling Capacity - Btuh		187,000	227,000
	¹ Net Cooling Capacity - Btuh		182,000	220,000
	ARI Rated Air Flow - cfm		5700	7000
	Total Unit Power		19.6	24.5
	¹ EER (Btuh/Watt)		9.3	9.0
	² Integrated Part Load Value (Btuh/Watt)		9.7	9.4
Refrigerant Charge Furnished (R-22)	Circuit 1		24 lbs. 8 oz.	26 lbs. 0 oz.
	Circuit 2		24 lbs. 8 oz.	26 lbs. 0 oz.
Heating Performance	¹ Total High Heating Capacity - Btuh		192,000	220,000
	Total Unit Power		18.1	20.8
	¹ C.O.P.		3.1	3.1
	¹ Total Low Heating Capacity - Btuh		106,000	118,000
	Total Unit Power		15.7	17.3
	¹ C.O.P.		2.0	2.0
Electric Heat Available		See page 16 for capacities		
Compressor Type (No.)			Scroll (2)	Scroll (2)
Outdoor Coil	Net face area - sq. ft.		57.0	57.0
	Tube diameter - in.		3/8	3/8
	Number of rows		2	2
	Fins per inch		20	20
	Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head	
Outdoor Fans	Motor horsepower		(4) 1/3	(4) 1/3
	Motor rpm		1075	1075
	Total Motor watts		1395	1395
	Diameter - in.		(4) 24	(4) 24
	Number of blades		3	3
	Total Air volume - cfm		15,450	15,450
Indoor Coil	Net face area - sq. ft.		22.3	22.3
	Tube diameter - in.		3/8	3/8
	Number of rows		3	4
	Fins per inch		14	14
	Condensate Drain - number & size		(1) 1 in. NPT coupling	(1) 1 in. NPT coupling
	Expansion device type		Balanced Port Thermostatic Expansion Valve, removeable power head	
^{3, 4} Indoor Blower and Drive Selection	Nominal motor HP	Low Static	3 hp	5 hp
		Standard Static	3 hp	7.5 hp
		High Static	5 hp	10 hp
	Max. usable motor output (US Only)	Low Static	3.45 hp	5.75 hp
		Standard Static	3.45 hp	8.63 hp
		High Static	5.75 hp	11.5 hp
	Drive Kit	Low Static	#A - 535-725 rpm	#2 - 685- 865 rpm
		Standard Static	#1 - 710-965 rpm	#7 - 850-1045 rpm
		High Static	#4 - 945-1185 rpm	#6 - 1045-1285 rpm
	Field Installed Drive Kits	Standard to Low Static	#A - 535-725 rpm	#9 - 685-865 rpm
High to Standard Static		#3 - 850-1045 rpm	- - -	
	Wheel nominal diameter x width		(2) 15 x 15 in.	(2) 15 x 15 in.
Filters	Type of filter		Disposable	
	Number and size - in.		(6) 24 x 24 x 2	
Electrical characteristics			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.

¹ Certified in accordance with the ULE certification program, which is based on ARI Standard 340/360.

Cooling Ratings - 95°F outdoor air temperature and 80°F db/67°F wb entering indoor coil air.

High Temperature Heating Ratings - 47°F db/43°F wb outdoor air temperature and 70°F entering indoor coil air.

Low Temperature Heating Ratings - 17°F db/15°F wb outdoor air temperature and 70°F entering indoor coil air.

² Integrated Part Load Value rated at 80°F outdoor air temperature.

³ 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.

⁴ 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.

COOLING AND HEATING 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 - COOLING CAPACITY - ONE COMPRESSOR OPERATING

THA180S

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	91.3	26.8	6.00	.63	.77	.91	88.8	26.0	6.59	.64	.78	.93	86.1	25.2	7.30	.65	.80	.95	83.1	24.4	8.13	.65	.81	.97
	6000	2830	95.1	27.9	6.07	.67	.85	.99	92.4	27.1	6.66	.69	.86	1.00	89.5	26.2	7.38	.70	.88	1.00	86.4	25.3	8.20	.71	.90	1.00
	7200	3400	98.1	28.8	6.12	.73	.92	1.00	95.3	27.9	6.72	.74	.93	1.00	92.4	27.1	7.42	.76	.95	1.00	89.2	26.1	8.25	.77	.97	1.00
67°F (19°C)	4800	2265	97.6	28.6	6.11	.50	.61	.73	94.9	27.8	6.70	.50	.61	.74	91.9	26.9	7.41	.51	.62	.76	88.7	26.0	8.24	.51	.63	.77
	6000	2830	101.0	29.6	6.17	.52	.65	.81	98.2	28.8	6.77	.53	.66	.82	95.0	27.8	7.47	.53	.67	.84	91.6	26.8	8.30	.54	.68	.86
	7200	3400	103.5	30.3	6.22	.55	.70	.88	100.5	29.5	6.81	.55	.71	.90	97.3	28.5	7.52	.56	.73	.92	93.7	27.5	8.35	.57	.75	.94
71°F (22°C)	4800	2265	104.3	30.6	6.23	.38	.48	.58	101.4	29.7	6.82	.38	.49	.59	98.3	28.8	7.53	.38	.49	.60	94.9	27.8	8.36	.38	.50	.61
	6000	2830	107.9	31.6	6.29	.39	.51	.63	104.8	30.7	6.89	.39	.51	.63	101.5	29.7	7.60	.39	.52	.64	97.8	28.7	8.41	.39	.52	.66
	7200	3400	110.3	32.3	6.33	.40	.53	.67	107.1	31.4	6.93	.40	.54	.69	103.6	30.4	7.63	.40	.55	.70	99.8	29.2	8.46	.41	.56	.72

15 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING

THA180S

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	176.9	51.8	14.72	.68	.82	.95	170.7	50.0	16.39	.69	.83	.97	164.0	48.1	18.30	.70	.85	.99	156.5	45.9	20.46	.71	.88	1.00
	6000	2830	184.0	53.9	14.88	.73	.89	1.00	177.6	52.0	16.54	.74	.91	1.00	170.5	50.0	18.43	.76	.93	1.00	163.0	47.8	20.57	.78	.96	1.00
	7200	3400	189.9	55.7	14.96	.78	.96	1.00	183.3	53.7	16.63	.80	.97	1.00	176.4	51.7	18.53	.82	.99	1.00	169.1	49.6	20.68	.84	1.00	1.00
67°F (19°C)	4800	2265	188.9	55.4	14.94	.53	.65	.78	182.3	53.4	16.61	.54	.66	.80	174.9	51.3	18.50	.55	.67	.81	166.9	48.9	20.67	.55	.69	.84
	6000	2830	195.3	57.2	15.06	.56	.70	.86	188.2	55.2	16.74	.57	.71	.87	180.6	52.9	18.63	.58	.73	.90	172.2	50.5	20.77	.59	.75	.92
	7200	3400	199.9	58.6	15.16	.59	.76	.93	192.6	56.4	16.83	.60	.77	.94	184.8	54.2	18.71	.61	.79	.96	176.1	51.6	20.84	.62	.82	.98
71°F (22°C)	4800	2265	202.0	59.2	15.19	.40	.52	.63	195.0	57.1	16.86	.41	.52	.64	187.2	54.9	18.73	.41	.53	.65	178.6	52.3	20.89	.41	.54	.66
	6000	2830	208.5	61.1	15.32	.41	.55	.68	201.0	58.9	16.96	.42	.55	.69	192.8	56.5	18.87	.42	.56	.71	183.9	53.9	20.99	.42	.57	.72
	7200	3400	212.9	62.4	15.39	.42	.58	.73	205.1	60.1	17.06	.43	.59	.75	196.7	57.6	18.93	.43	.60	.77	187.5	55.0	21.07	.44	.61	.79

15 TON STANDARD EFFICIENCY - HEATING CAPACITY

THA180S

Indoor Coil Air Volume 70°F db (21°C db)		Air Temperature Entering Outdoor Coil														
		65°F (18°C)			45°F (7°C)			25°F (-4°C)			5°F (-15°C)			-15°F (-26°C)		
cfm	L/s	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input
		kBtuh	kW		kBtuh	kW		kBtuh	kW		kBtuh	kW		kBtuh	kW	
4800	2265	241.4	70.7	17.50	181.7	53.3	16.09	120.5	35.3	14.72	74.0	21.7	12.70	38.0	11.1	9.62
6000	2830	244.2	71.6	16.35	184.5	54.1	14.94	123.3	36.1	13.57	76.8	22.5	11.55	40.8	12.0	8.47
7200	3400	246.8	72.3	16.58	187.1	54.8	15.17	125.9	36.9	13.80	79.4	23.3	11.78	43.4	12.7	8.70

15 TON STANDARD EFFICIENCY - THA180S - HEATING PERFORMANCE at 6000 cfm (2830 L/s) Indoor Coil Air Volume

*Outdoor Temperature		Compressor Motor kW Input	Total Output	
°F	°C		kBtuh	kW
65	18	16.35	244.2	71.6
60	16	15.99	229.8	67.3
55	13	15.62	215.4	63.1
50	10	15.25	201.0	58.9
47	8	15.03	192.4	56.4
45	7	14.94	184.5	54.1
40	4	14.71	164.8	48.3
35	2	14.48	145.0	42.5
30	-1	14.02	134.2	39.3
25	-4	13.57	123.3	36.1
20	-7	13.11	112.5	33.0
17	-8	12.83	106.0	31.1
15	-9	12.69	100.2	29.4
10	-12	12.32	85.8	25.1
5	-15	11.55	76.8	22.5
0	-18	10.78	67.8	19.9
-5	-21	10.01	58.8	17.2
-10	-23	9.24	49.8	14.6
-15	-26	8.47	40.8	12.0
-20	-29	7.70	31.8	9.3

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F(21°C).

COOLING AND HEATING 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 - COOLING CAPACITY - ONE COMPRESSOR OPERATING

THA240S

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)	6000	2830	216.5	63.4	18.42	.71	.86	1.00	209.2	61.3	20.33	.72	.88	1.00	201.2	59.0	22.48	.73	.90	1.00	192.5	56.4	24.98	.75	.93	1.00
	7500	3540	225.2	66.0	18.62	.77	.95	1.00	217.5	63.7	20.54	.78	.97	1.00	209.3	61.3	22.72	.80	.99	1.00	200.4	58.7	25.20	.82	1.00	1.00
	9000	4250	232.6	68.2	18.80	.83	1.00	1.00	225.4	66.1	20.71	.85	1.00	1.00	217.3	63.7	22.92	.87	1.00	1.00	208.8	61.2	25.42	.90	1.00	1.00
67°F (19°C)	6000	2830	230.1	67.4	18.74	.56	.69	.82	222.2	65.1	20.67	.56	.70	.84	213.4	62.5	22.86	.57	.71	.86	204.1	59.8	25.29	.58	.72	.89
	7500	3540	237.4	69.6	18.94	.59	.74	.92	229.2	67.2	20.83	.60	.76	.94	220.2	64.5	23.00	.61	.77	.96	210.1	61.6	25.49	.62	.80	.99
	9000	4250	242.7	71.1	19.07	.62	.81	1.00	234.2	68.6	20.99	.63	.83	1.00	224.8	65.9	23.16	.64	.85	1.00	214.6	62.9	25.60	.66	.88	1.00
71°F (22°C)	6000	2830	245.2	71.9	19.13	.42	.54	.66	236.9	69.4	21.05	.42	.54	.67	227.7	66.7	23.21	.42	.55	.68	217.7	63.8	25.68	.42	.56	.70
	7500	3540	252.1	73.9	19.34	.43	.58	.72	243.5	71.4	21.22	.43	.58	.73	233.8	68.5	23.38	.43	.59	.75	223.1	65.4	25.87	.44	.61	.77
	9000	4250	256.9	75.3	19.46	.44	.61	.78	247.9	72.7	21.36	.45	.62	.80	237.9	69.7	23.50	.45	.64	.82	227.0	66.5	25.96	.46	.65	.85

20 TON STANDARD EFFICIENCY - COOLING CAPACITY - ALL COMPRESSORS OPERATING

THA240S

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)	6000	2830	216.5	63.4	18.42	.71	.86	1.00	209.2	61.3	20.33	.72	.88	1.00	201.2	59.0	22.48	.73	.90	1.00	192.5	56.4	24.98	.75	.93	1.00
	7500	3540	225.2	66.0	18.62	.77	.95	1.00	217.5	63.7	20.54	.78	.97	1.00	209.3	61.3	22.72	.80	.99	1.00	200.4	58.7	25.20	.82	1.00	1.00
	9000	4250	232.6	68.2	18.80	.83	1.00	1.00	225.4	66.1	20.71	.85	1.00	1.00	217.3	63.7	22.92	.87	1.00	1.00	208.8	61.2	25.42	.90	1.00	1.00
67°F (19°C)	6000	2830	230.1	67.4	18.74	.56	.69	.82	222.2	65.1	20.67	.56	.70	.84	213.4	62.5	22.86	.57	.71	.86	204.1	59.8	25.29	.58	.72	.89
	7500	3540	237.4	69.6	18.94	.59	.74	.92	229.2	67.2	20.83	.60	.76	.94	220.2	64.5	23.00	.61	.77	.96	210.1	61.6	25.49	.62	.80	.99
	9000	4250	242.7	71.1	19.07	.62	.81	1.00	234.2	68.6	20.99	.63	.83	1.00	224.8	65.9	23.16	.64	.85	1.00	214.6	62.9	25.60	.66	.88	1.00
71°F (22°C)	6000	2830	245.2	71.9	19.13	.42	.54	.66	236.9	69.4	21.05	.42	.54	.67	227.7	66.7	23.21	.42	.55	.68	217.7	63.8	25.68	.42	.56	.70
	7500	3540	252.1	73.9	19.34	.43	.58	.72	243.5	71.4	21.22	.43	.58	.73	233.8	68.5	23.38	.43	.59	.75	223.1	65.4	25.87	.44	.61	.77
	9000	4250	256.9	75.3	19.46	.44	.61	.78	247.9	72.7	21.36	.45	.62	.80	237.9	69.7	23.50	.45	.64	.82	227.0	66.5	25.96	.46	.65	.85

20 TON STANDARD EFFICIENCY - HEATING CAPACITY

THA240S

Indoor Coil Air Volume 70°F db (21°C db)		Air Temperature Entering Outdoor Coil																			
		65°F (18°C)				45°F (7°C)				25°F (-4°C)				5°F (-15°C)				-15°F (-26°C)			
		Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input	Total Heating Capacity		Comp. Motor kW Input					
kBtuh	kW	kBtuh	kW		kBtuh	kW		kBtuh	kW		kBtuh	kW		kBtuh	kW						
6000	2830	278.7	81.7	20.14	207.4	60.8	17.81	134.5	39.4	15.48	79.8	23.4	12.94	40.8	12.0	9.82					
7500	3540	283.1	83.0	19.36	211.8	62.1	17.03	138.9	40.7	14.70	84.2	24.7	12.16	45.2	13.2	9.04					
9000	4250	287.6	84.3	18.37	216.3	63.4	16.04	143.4	42.0	13.71	88.7	26.0	11.17	49.7	14.6	8.05					

20 TON STANDARD EFFICIENCY - THA240S - HEATING PERFORMANCE at 7500 cfm (3540 L/s) Indoor Coil Air Volume

*Outdoor Temperature		Compressor Motor kW Input	Total Output	
°F	°C		kBtuh	kW
65	18	19.36	283.1	83.0
60	16	18.78	265.9	77.9
55	13	18.20	248.7	72.9
50	10	17.61	231.5	67.8
47	8	17.26	221.2	64.8
45	7	17.03	211.8	62.1
40	4	16.45	188.4	55.2
35	2	15.86	165.0	48.4
30	-1	15.28	151.9	44.5
25	-4	14.70	138.9	40.7
20	-7	14.11	125.8	36.9
17	-8	13.76	118.0	34.6
15	-9	13.53	111.1	32.6
10	-12	12.95	93.9	27.5
5	-15	12.16	84.2	24.7
0	-18	11.38	74.4	21.8
-5	-21	10.60	64.7	19.0
-10	-23	9.82	54.9	16.1
-15	-26	9.04	45.2	13.2
-20	-29	8.26	35.4	10.4

*Outdoor temperature 70% relative humidity. Indoor temperature 70°F (21°C).

BLOWER DATA

15 TON

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH WET INDOOR COIL & AIR FILTERS IN PLACE.
FOR ALL UNITS ADD:**

- 1 - Any factory installed options air resistance (electric heat, economizer, etc.). See table below
 - 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 14
- Then determine from table the blower motor output and drive required.

0.40 to 1.50 in. w.g.

THA180

Air Volume cfm	External Static (in. w.g.)																								
	0.40		0.50		0.60		0.70		0.80		0.90		1.00		1.10		1.20		1.30		1.40		1.50		
	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
	Low Static - 3 HP, Drive Kit A						Standard Static - 3 HP, Drive Kit 1																		
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	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	
5500	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	
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	998	4.13	
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	1013	4.63	
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	1030	5.18	
7200	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	

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.

1.60 to 2.60 in. w.g.

THA180

Air Volume cfm	External Static (in. w.g.)																					
	1.60		1.70		1.80		1.90		2.00		2.10		2.20		2.30		2.40		2.50		2.60	
	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 HP, Drive Kit 4										Field Furnished Drive											
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	1193	5.88	1215	6.10	1235	6.33	1255	6.55
6500	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	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
7200	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

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

AIR RESISTANCE (in. w.g.) - Factory Installed Options

Air Volume - cfm	Electric Heat	Economizer	Horizontal Roof Curb
4800	---	---	.08
5000	---	---	.08
5500	---	---	.10
6000	.01	---	.11
6500	.01	.02	.13
7000	.01	.04	.15
7200	.01	.05	.16

BLOWER DATA

20 TON

**BLOWER TABLE INCLUDES RESISTANCE FOR BASE UNIT WITH WET INDOOR COIL & AIR FILTERS IN PLACE.
FOR ALL UNITS ADD:**

- 1 - Any factory installed options air resistance (electric heat, economizer, etc.). See table below
 - 2 - Any field installed accessories air resistance (duct resistance, diffuser, etc.). See page 14
- Then determine from table the blower motor output and drive required.

0.30 to 1.30 in. w.g.

THA240

Air Volume cfm	External Static (in. w.g.) Covered By Drive At Nominal Air With Economizer, Standard Filters And Wet Indoor Coil																							
	.30		0.40		0.50		0.60		0.70		0.80		0.90		1.00		1.10		1.20		1.30			
	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 - 5 HP, Drive Kit 2										Standard Static - 7.5 HP, Drive Kit 7													
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		

1.40 to 2.50 in. w.g.

THA240

Air Volume cfm	External Static (in. w.g.) Covered By Drive At Nominal Air With Economizer, Standard Filters And Wet Indoor Coil																								
	1.40		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	RPM	BHP	RPM
	Standard Static						High Static - 10 HP, Drive Kit 6																		
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	Electric Heat	Economizer	Horizontal Roof Curb
6400	.01	.02	.13
7000	.01	.04	.15
7500	.01	.06	.17
8000	.02	.09	.19
8500	.02	.11	.21
9000	.04	.14	.24
9600	.05	.16	.26

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

POWER EXHAUST FANS

Return Duct Negative Static Pressure - in. w.g.	Air Volume Exhausted - cfm
0	8630
0.05	8210
0.10	7725
0.15	7110
0.20	6470
0.25	5790
0.30	5060
0.35	4300
0.40	3510
0.45	2690
0.50	1840

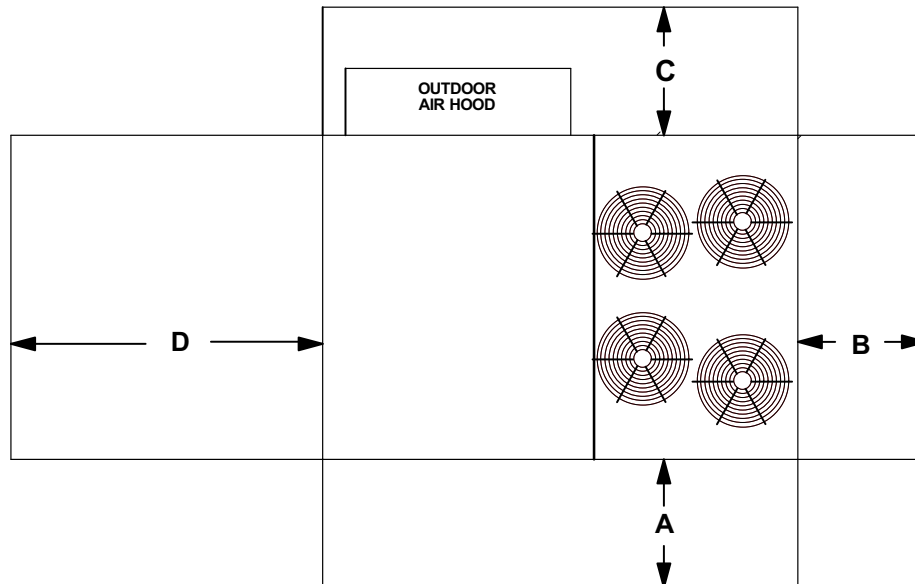
BLOWER DATA

CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume cfm	¹ Effective Throw Range - ft.	
		Step-Down	Flush
180 Models	Diffuser Model	RTD11-185	FD11-185
	5600	39 - 49	28 - 37
	5800	42 - 51	29 - 38
	6000	44 - 54	40 - 50
	6200	45 - 55	42 - 51
	6400	46 - 55	53 - 52
240 Models	Diffuser Model	RTD11-275	FD11-275
	7200	33 - 38	26 - 35
	7400	35 - 40	28 - 37
	7600	36 - 41	29 - 38
	7800	38 - 43	40 - 50
	8000	39 - 44	42 - 51
	8200	41 - 46	43 - 52
	8400	43 - 49	44 - 54
	8600	44 - 50	46 - 57
	8800	47 - 55	48 - 59

¹ Throw is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. per minute. Four sides open.

UNIT CLEARANCES - INCHES (MM)



¹ Unit Clearance	A		B		C		D		Top Clearance
	in.	mm	in.	mm	in.	mm	in.	mm	
Service Clearance	60	1524	36	914	36	914	66	1676	Unobstructed
Minimum Operation Clearance	45	1143	36	914	36	914	41	1041	

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

¹ **Service Clearance** - Required for removal of serviceable parts.

Minimum Operation Clearance - Required clearance for proper unit operation.

ELECTRIC HEAT CAPACITIES

Input Voltage	15 kW			30 kW			45 kW			60 kW			90 kW		
	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output	No of Steps	kW input	Btuh Output
208	1	11.3	38,600	1	22.5	76,800	1	33.8	115,300	1	45.0	153,600	1	67.6	230,700
220	1	12.6	43,000	1	25.2	86,000	1	37.8	129,000	1	50.4	172,000	1	75.6	258,000
230	1	13.8	47,100	1	27.5	93,900	1	41.3	141,000	1	55.1	188,000	1	82.7	282,200
240	1	15.0	51,200	1	30.0	102,400	1	45.0	153,600	1	60.0	204,800	1	90.0	307,100
440	1	12.6	43,000	1	25.2	86,000	1	37.8	129,000	1	50.4	172,000	1	75.6	258,000
460	1	13.8	47,100	1	27.5	93,900	1	41.3	141,000	1	55.1	188,000	1	82.7	282,200
480	1	15.0	51,200	1	30.0	102,400	1	45.0	153,600	1	60.0	204,800	1	90.0	307,100
550	1	12.6	43,000	1	25.2	86,000	1	37.8	129,000	1	50.4	172,000	1	75.6	258,000
575	1	13.8	47,100	1	27.5	93,900	1	41.3	141,000	1	55.1	188,000	1	82.7	282,200
600	1	15.0	51,200	1	30.0	102,400	1	45.0	153,600	1	60.0	204,800	1	90.0	307,100

ELECTRICAL/ELECTRIC HEAT DATA

THA180

Voltage - 60hz - 3 phase				208/230V			460V			575V		
Compressors (2)	Rated Load	each		28.8			14.7			10.8		
	Amps	total		57.6			29.4			21.6		
	Locked Rotor	each		195			95			80		
	Amps	total		390			190			160		
Outdoor Fan Motors (4)	Full Load	each		2.4			1.3			1.0		
	Amps	total		9.6			5.2			4.0		
	Locked Rotor	each		4.7			2.4			1.9		
	Amps	total		18.8			9.6			7.6		
Optional-Power Exhaust Fans (2)	Horsepower			1/3			1/3			1/3		
	Full Load			4.8			2.6			2.0		
	Locked Rotor			9.4			4.8			3.8		
Service Outlet 115V GFI				15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower			3	5	7.5	3	5	7.5	3	5	7.5
	Rated Load			10.6	16.7	24.2	4.8	7.6	11.0	3.9	6.1	9.0
	Amps			66	105	152	26.8	45.6	66	23.4	26.6	54
¹ Maximum Overcurrent Protection	Unit Only			110	110	125	50	60	60	40	45	45
	with power exhaust	0 kW		110	110	125	60	60	60	45	45	50
		15 kW		150	150	150	70	80	80	60	60	60
		30 kW	³ 200	³ 200	³ 200	100	100	100	100	80	80	80
		45 kW	³ 250	³ 250	³ 250	125	125	125	125	90	100	100
	60 kW	³ 250	³ 250	³ 250	125	125	125	125	100	100	100	
² Minimum Circuit Ampacity	Unit Only			85	92	99	44	46	50	33	35	38
	with power exhaust	0 kW		90	96	104	46	49	52	35	37	40
		15 kW		135	142	149	69	71	75	53	55	58
		30 kW		181	187	194	91	94	97	71	73	76
		45 kW		226	232	239	114	117	120	89	91	94
	60 kW		235	241	248	118	121	125	92	95	97	
Unit Fuse Block- only used with Electric Heat	Unit Only			56K96	25K15	25K18	25K10	25K10	25K13	25K08	25K09	25K10
	with power exhaust			25K15	25K15	25K18	25K10	25K11	25K13	25K09	25K09	25K10
Disconnect	0 kW			80M01	80M01	80M01	80M00	80M00	80M00	80M00	80M00	80M00
	15 kW			80M01	80M01	80M01	80M00	80M00	80M00	80M00	80M00	80M00
	30 kW			80M02	80M02	80M02	80M01	80M01	80M01	80M00	80M00	80M00
	45 kW			80M02	80M02	80M02	80M01	80M01	80M01	80M01	80M01	80M01
	60 kW			N/A	N/A	N/A	80M01	80M01	80M01	80M01	80M01	80M01
Electric Heat Control Kit - only used with Electric Heat				85M32	85M32	85M32	85M33	85M33	85M33	85M34	85M34	85M34

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

¹ HACR type breaker or fuse.

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

³ Factory installed circuit breaker not available.

ELECTRICAL/ELECTRIC HEAT DATA

THA240

Voltage - 60hz - 3 phase			208/230V			460V			575V		
Compressors (2)	Rated Load	each	30.1			15.5			12.1		
	Amps	total	60.2			31.0			24.2		
	Locked Rotor	each	225			114			80		
	Amps	total	450			228			160		
Outdoor Fan Motors (4)	Full Load Amps	each	2.4			1.3			1.0		
		total	9.6			5.2			4.0		
	Locked Rotor	each	4.7			2.4			1.9		
	Amps	total	18.8			9.6			7.6		
Optional Power Exhaust Fans (2)	Horsepower		1/3			1/3			1/3		
	Full Load Amps		4.8			2.6			2.0		
	Locked Rotor Amps		9.4			4.8			3.8		
Service Outlet 115V GFI			15 Amps			15 Amps			15 Amps		
Indoor Blower Motor	Horsepower		5	7.5	10	5	7.5	10	5	7.5	10
	Rated Load Amps		16.7	24.2	30.8	7.6	11.0	14.0	6.1	9.0	11.0
	Locked Rotor Amps		105	152	193	45.6	66	84	36.6	54	66
¹ Maximum Overcurrent Protection	Unit Only		110	125	125	60	60	60	45	50	50
	with power exhaust	0 kW	125	125	125	60	60	70	50	50	50
		15 kW	150	175	175	80	80	90	60	70	70
		30 kW	³ 200	³ 200	³ 225	100	100	110	80	80	90
		45 kW	³ 250	³ 250	³ 250	125	125	125	100	100	100
		60 kW	³ 250	³ 300	³ 300	125	150	150	100	110	110
		90 kW	³ 350	³ 350	³ 350	175	175	175	150	150	150
² Minimum Circuit Ampacity	Unit Only		95	102	109	48	52	55	38	41	43
	with power exhaust	0 kW	99	107	113	51	54	57	40	43	45
		15 kW	144	152	159	73	77	80	58	61	63
		30 kW	190	197	204	96	99	102	76	79	81
		45 kW	235	242	249	118	122	125	94	97	99
		60 kW	244	251	258	123	126	129	98	100	102
		90 kW	316	323	330	159	162	162	126	129	131
Unit Fuse Block- only used with Electric Heat	Unit Only		25K18	25K19	25K19	25K13	25K14	25K14	25K11	25K11	25K13
	with power exhaust		25K19	25K19	35K01	25K14	25K14	35K03	25K11	25K13	25K13
Disconnect	0 kW		80M01	80M01	80M01	80M00	80M00	80M00	80M00	80M00	80M00
	15 kW		80M01	80M02	80M02	80M00	80M00	80M00	80M00	80M00	80M00
	30 kW		80M02	80M02	80M02	80M01	80M01	80M01	80M00	80M00	80M00
	45 kW		80M02	80M02	80M02	80M01	80M01	80M01	80M01	80M01	80M01
	60 kW		N/A	N/A	N/A	80M01	80M01	80M01	80M01	80M01	80M01
	90 kW		N/A	N/A	N/A	80M02	80M02	80M02	80M01	80M01	80M01
Electric Heat Control Kit - only used with Electric Heat			85M32	85M32	85M32	85M33	85M33	85M33	85M34	85M34	85M34

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

¹ HACR type breaker or fuse.

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

³ Factory installed circuit breaker not available.

OUTDOOR SOUND DATA

Unit Model No.	Operating Mode	Octave Band Sound Power Levels dB, re 10 ⁻¹² Watts							¹ Sound Rating Number (dB)
		Center Frequency - HZ							
		125	250	500	1000	2000	4000	8000	
180	Cooling	75	81	87	89	86	81	69	93
	Heating	76	81	87	89	87	81	70	93
240	Cooling	77	81	87	89	86	80	67	93
	Heating	78	81	88	89	87	81	67	93

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

WEIGHT DATA

Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
180 Base Unit	2290	1039	2570	1166
180 Max. Unit	2560	1161	2840	1288
240 Base Unit	2340	1060	2615	1186
240 Max. Unit	2600	1179	2875	1304

OPTIONS / ACCESSORIES

		Weight	
		lbs.	kg.
CEILING DIFFUSERS			
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

Economizer	T1ECON10C-1	86	39
Barometric Relief			
Down-Flow Barometric Relief Dampers	LAGED18/24	30	14
Horizontal Barometric Relief Dampers	LAGEDH18/24	20	9
Outdoor Air Dampers			
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	C1-PWRE20C-1	62	28

ELECTRIC HEAT

15 kW		59	27
30 kW		59	27
45 kW		76	35
60 kW		76	35
90 kW		84	38

PACKAGING

LTL Packaging (less than truck load)		280	127
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ROOF CURBS - CLIPLOCK 1000

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

ROOF CURBS - STANDARD

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

Base Unit - The unit with NO OPTIONS.

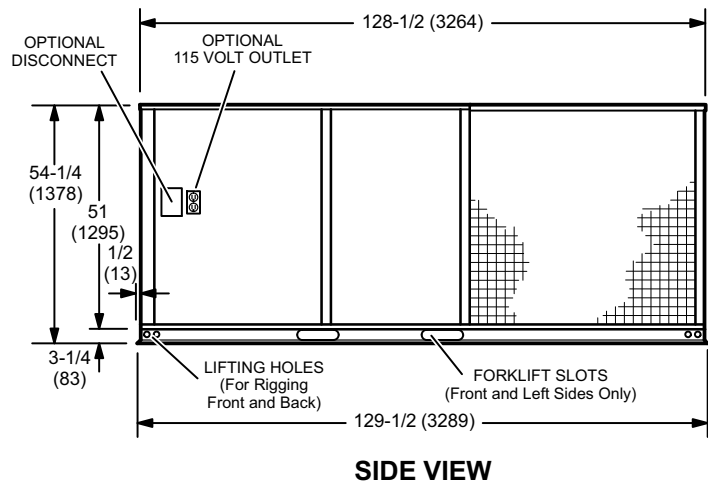
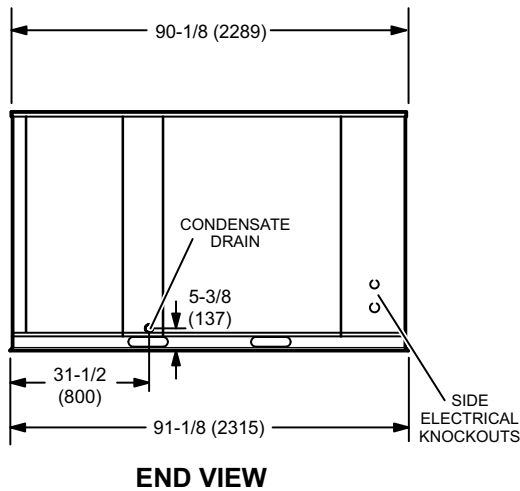
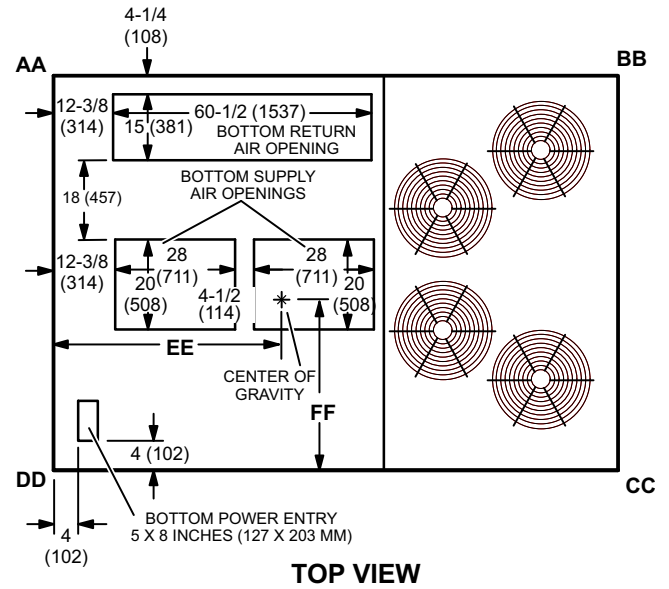
Max. Unit - The unit with ALL OPTIONS Installed. (Electric Heat, Economizer, Power Exhaust Fans, Controls)

DIMENSIONS - INCHES (MM)

Model Number Model Number 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
180 Base Unit	550	249	440	200	580	263	720	327	58	1473	39-1/2	1003
180 Max. Unit	670	304	510	231	590	268	790	358	56	1422	42	1067
240 Base Unit	570	259	460	209	580	263	730	331	57-1/2	1461	40	1016
240 Max. Unit	690	313	520	236	600	272	790	358	55-1/2	1410	42-1/2	1080

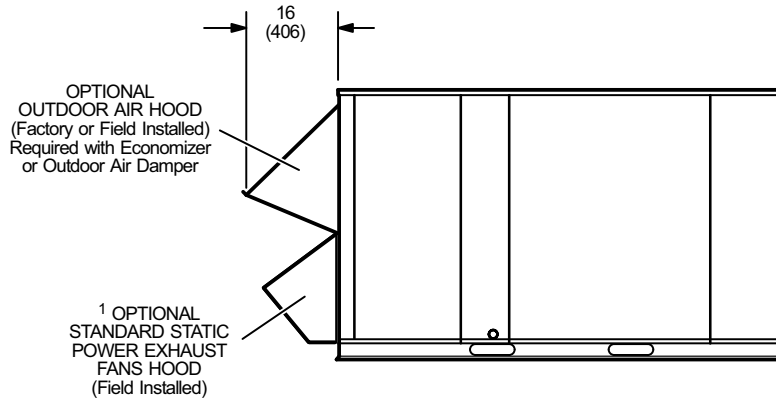
Base Unit - Unit with NO OPTIONS.

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



ACCESSORY DIMENSIONS - INCHES (MM)

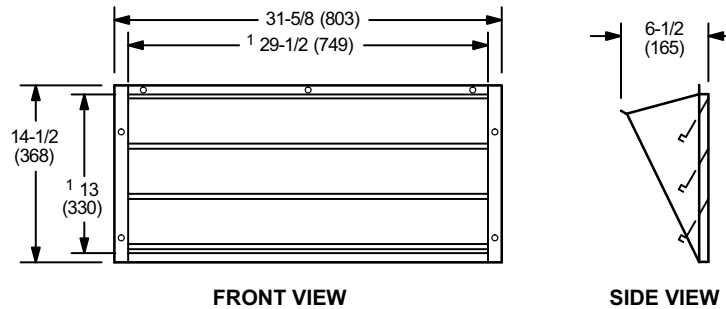
OPTIONAL OUTDOOR AIR HOOD DETAIL WITH STANDARD STATIC POWER EXHAUST FANS



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

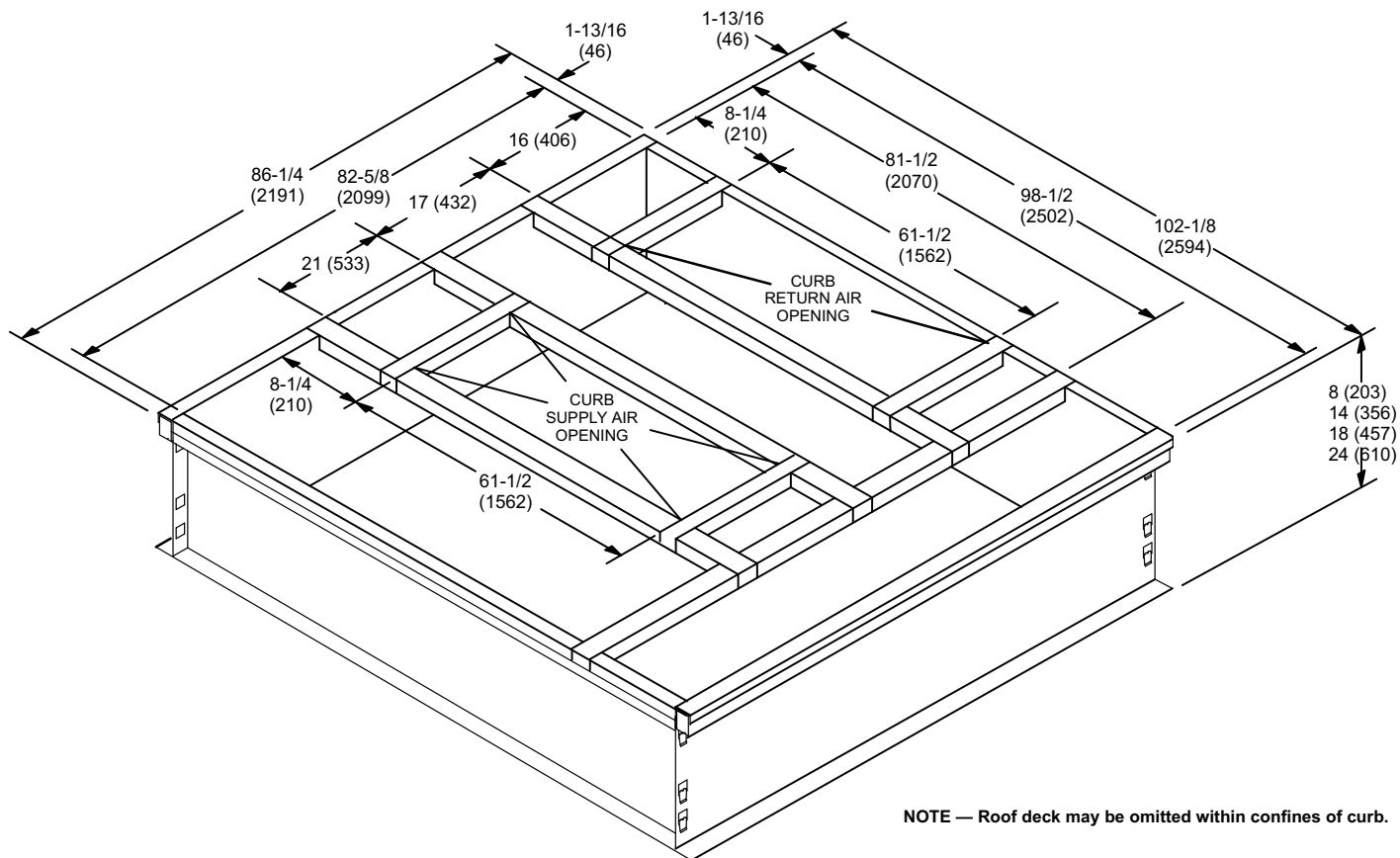
SIDE VIEW

NOTE - Two furnished per order no.

¹ NOTE - Opening size required in return air duct.

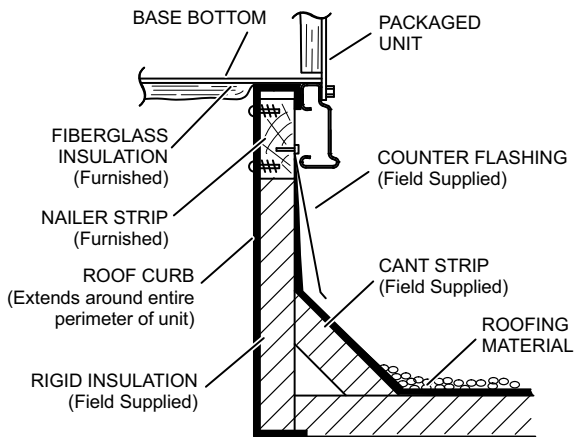
ACCESSORY DIMENSIONS - INCHES (MM)

CLIPLOCK 1000 ROOF CURBS - DOUBLE DUCT OPENING

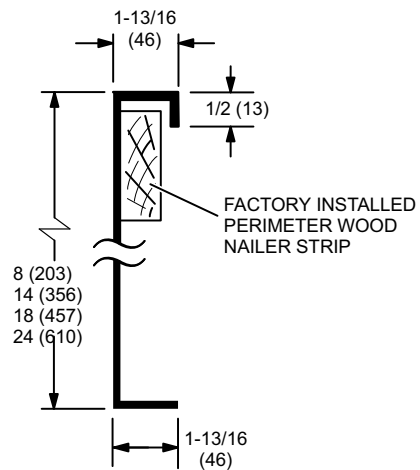


NOTE — Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB

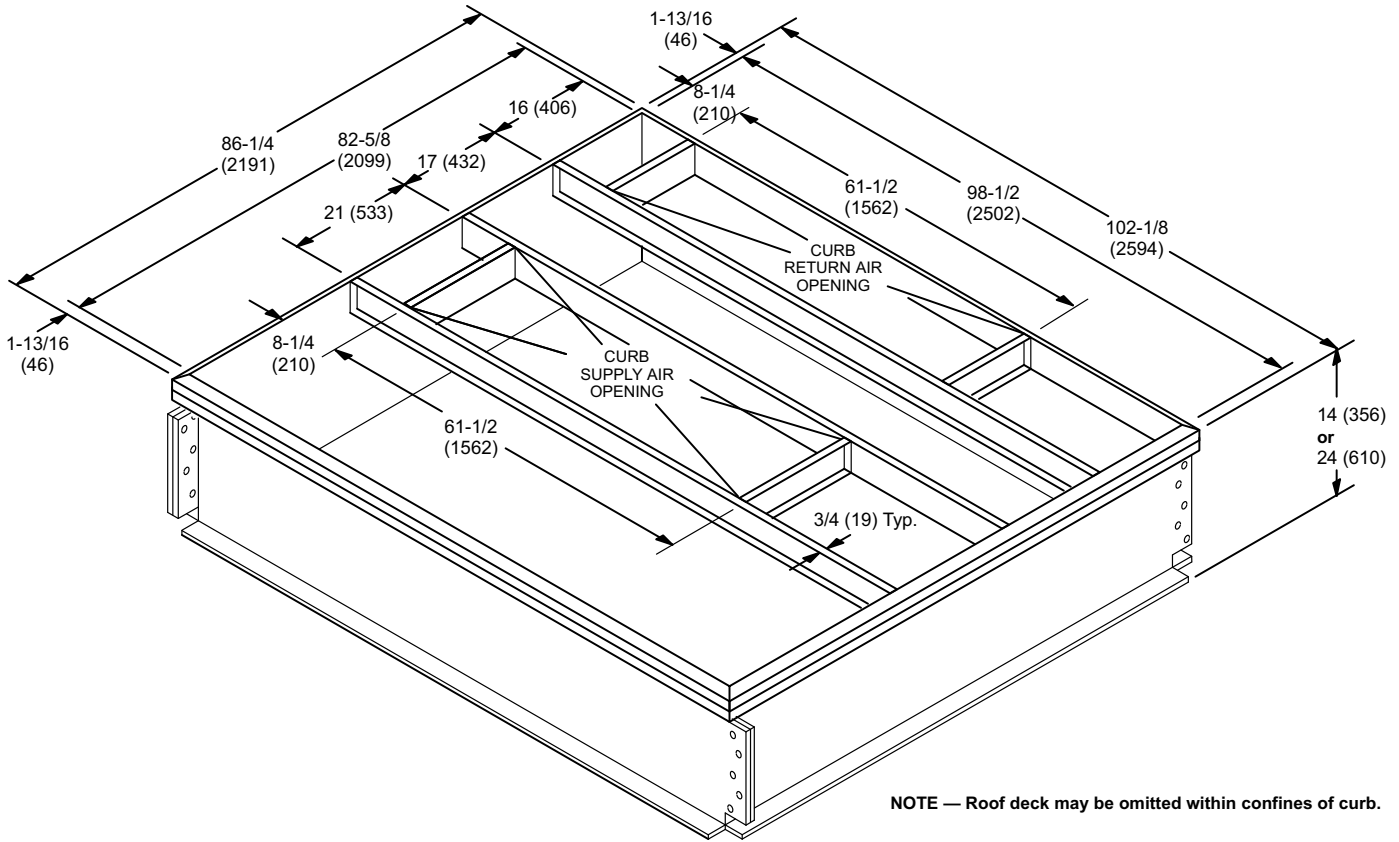


DETAIL ROOF CURB

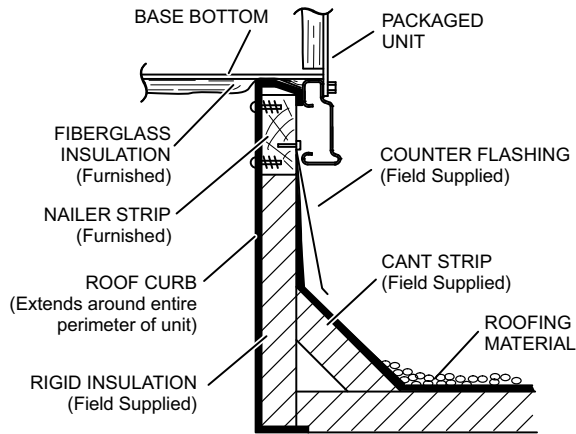


ACCESSORY DIMENSIONS - INCHES (MM)

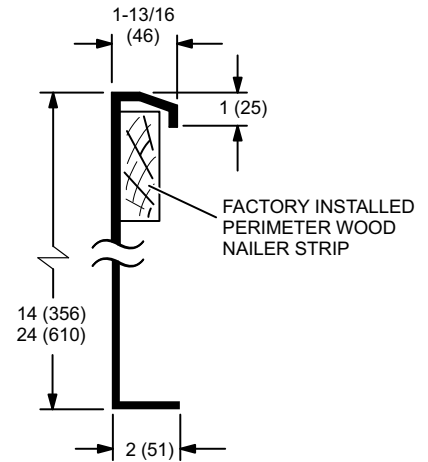
STANDARD ROOF CURBS - DOUBLE DUCT OPENING



TYPICAL FLASHING DETAIL FOR ROOF CURB

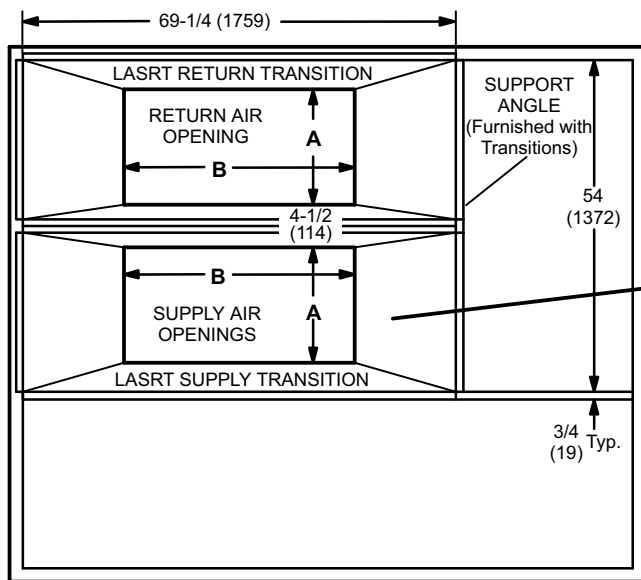


DETAIL ROOF CURB

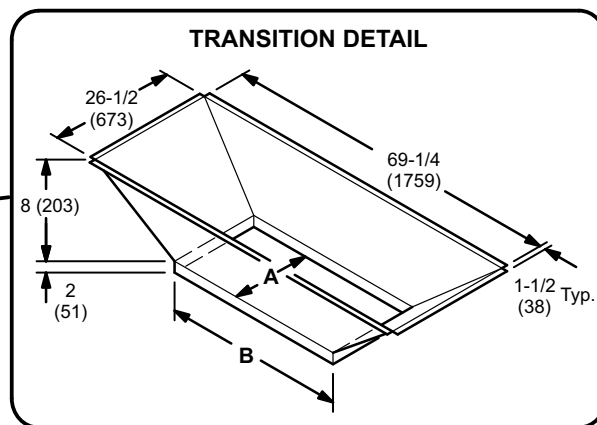


ACCESSORY DIMENSIONS - INCHES (MM)

ROOF CURBS WITH SUPPLY & RETURN AIR TRANSITIONS FOR CEILING DIFFUSERS



TOP VIEW

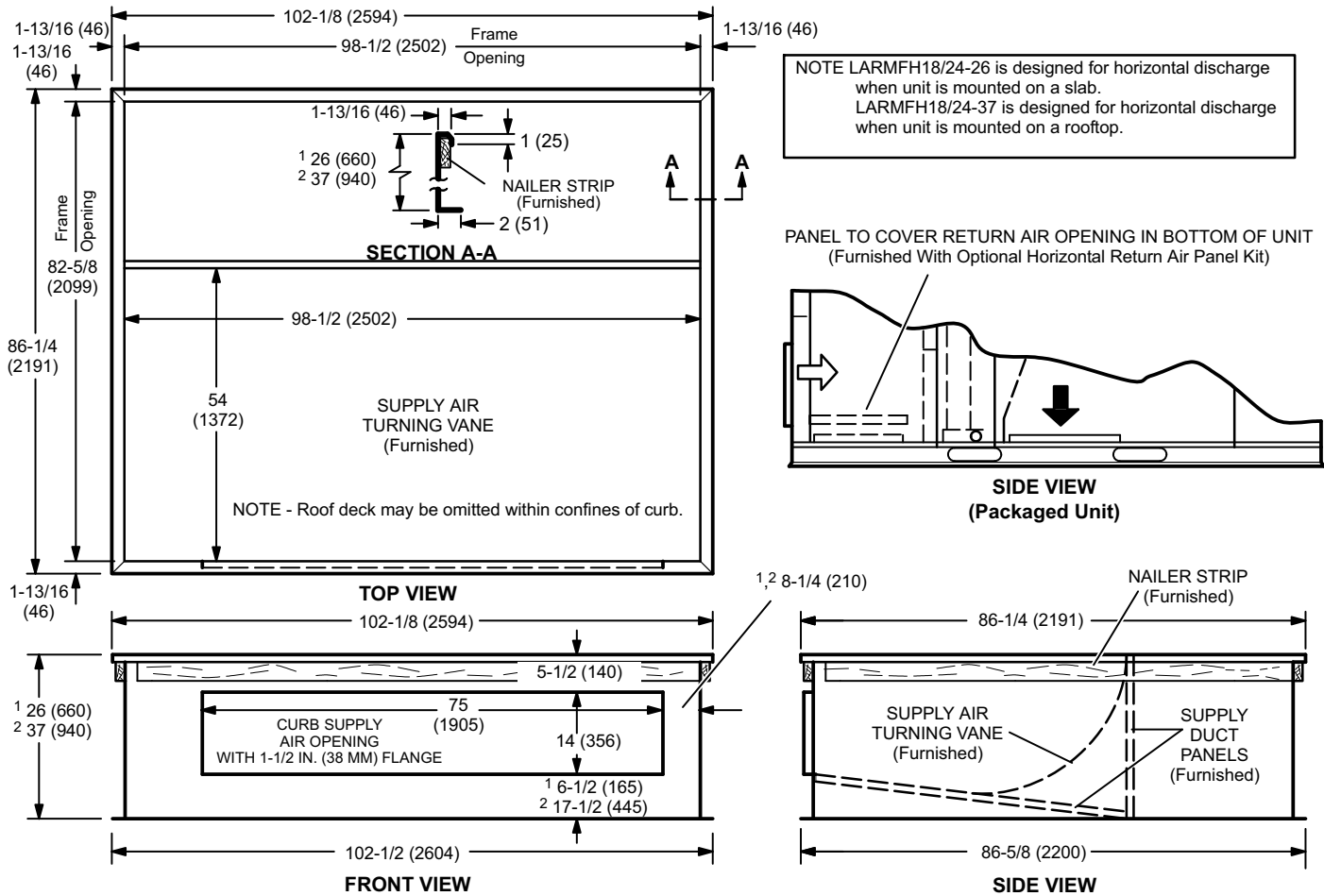


TRANSITION OPENING SIZES

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

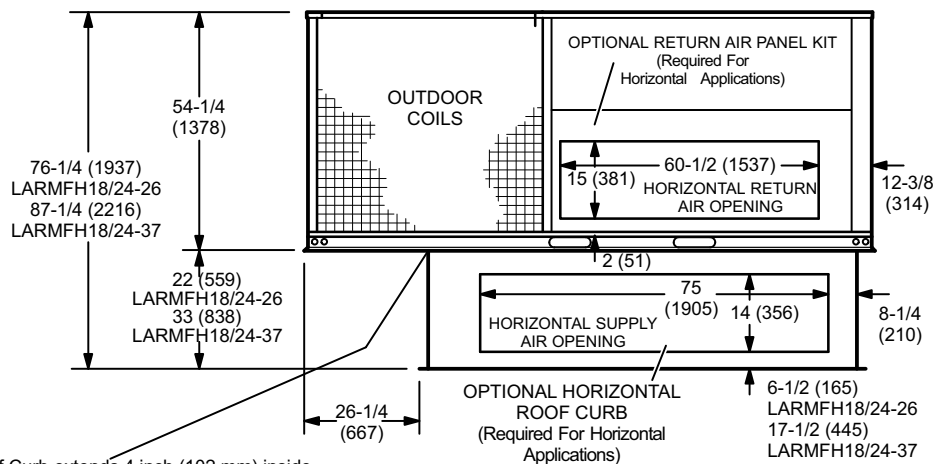
ACCESSORY DIMENSIONS - INCHES (MM)

HORIZONTAL ROOF CURBS - Requires Optional Horizontal Return Air Panel Kit



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

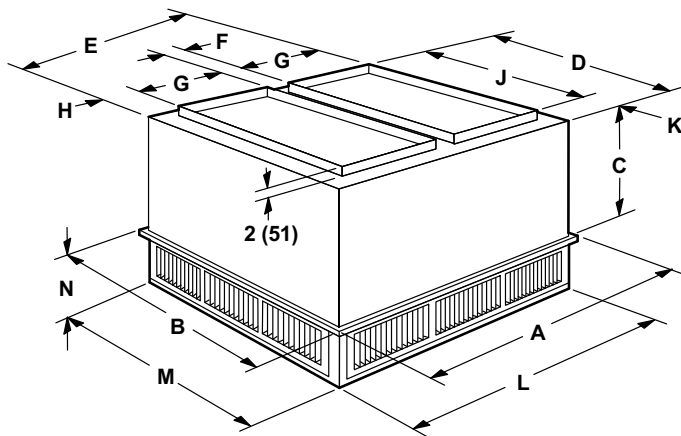
HORIZONTAL SUPPLY AND RETURN AIR OPENINGS WITH HORIZONTAL ROOF CURB



ACCESSORY DIMENSIONS - INCHES (MM)

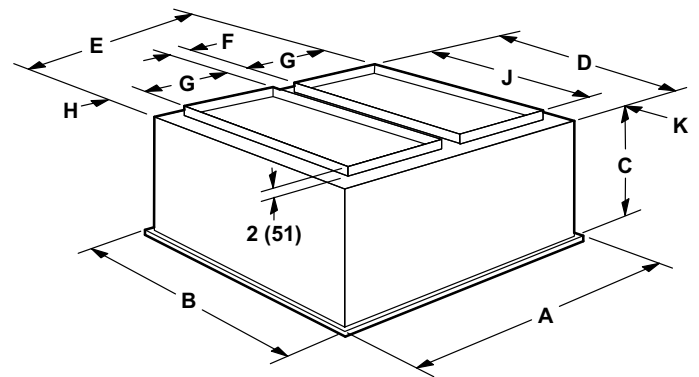
COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

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



ALLIED
Commercial

NOTE - Due to our 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.