

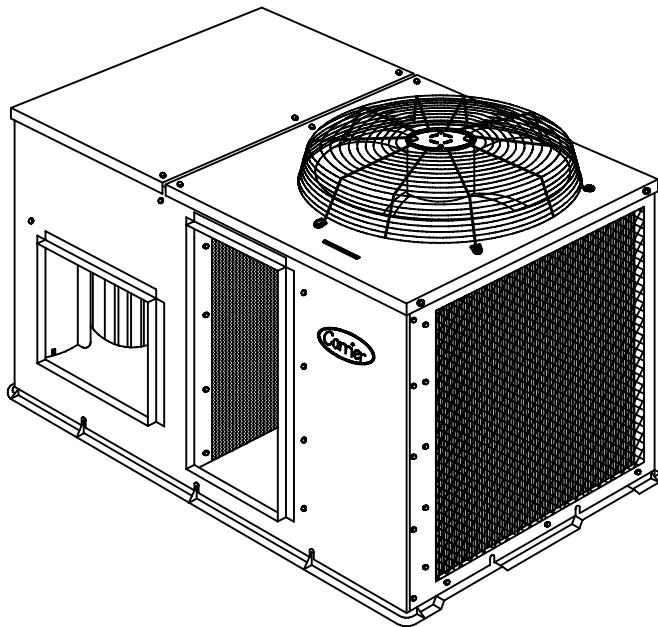
**50EES--ZP (50Hz)
Single Package
Air Conditioners
3 - 5 Nominal Tons**



Turn to the Experts.™

Product Data

The 50EES unit with ZP technology is a package air conditioner for manufactured housing, residential, and light commercial applications. The 50EES unit design is the result of our firm commitment to the development of the finest air conditioners that modern technology can offer. The 50EES unit is built in one basic cabinet size and features rectangular duct configuration on sizes 035-060.



Features/Benefits

FACTORY-ASSEMBLED PACKAGE is a compact, fully self-contained, electric cooling unit with horizontal supply and return ducts. The 50EES units are available in a variety of standard cooling sizes with voltage options to meet residential and light commercial requirements. Unit installs easily on a ground level pad.

EASY TO INSTALL

50EES units are small, compact, and easy to handle. Every 50EES unit has an identical 32 x 51-in. footprint to make planning simple. The concise design uses less sheet metal and makes the 50EES units lighter than other units. The unit can be easily positioned on the jobsite with the hand holds built into the unit basepan. Drop-in cartridge style heaters are utilized to minimize installation time. The 50EES unit was designed with potential safety hazards in mind; with no sharp edges or corners which could injure a worker.

NEW IMPROVED AERODYNAMIC FAN BLADE DESIGN reduces the overall sound by up to 6dB; now as low as 78dB.

TOP COVER SERVICE ACCESS

Makes installation and maintenance quicker and easier. The 50EES units are designed to be serviced from the top. The split-top design allows easy access for installation and maintenance procedures of the unit. Routine maintenance tasks such as coil cleaning are sped up with through-the-top access. Multiple side panels do not need to be removed as with other units.

NO-RUST BASEPAN WITH INTEGRATED DRAIN PAN

Is standard on all units. The 50EES units feature a tough hightech, composite material basepan with integrated drain pan. The composite material eliminates the potential problems of rust and premature replacement which are common with standard metal basepans. Durable oven backed polyester powder painted galvanized steel) protects against harsh weather.



The watertight construction and corrosion-resistant finish of the 50EES unit will keep it looking like new for years. The paint treatment process ensures quality protection against the elements. A compact, low-profile design utilizes an expanded metal coil grill to make coil cleaning easy.

INDOOR AIR QUALITY is designed into the 50EES units. A sloped drain pan minimizes the amount of standing water inside the unit, which limits mold and mildew growth. The drain pan is made of a rust-proof material and will not deteriorate or release foreign matter into the airstream.

LIGHTWEIGHT, COMPACT CONSTRUCTION is ideal for manufactured housing and residential applications. The 50EES unit is one of the lightest, most compact packaged units ever designed. It's light weight (250 lbs for the 50EES 035 unit) makes the unit easier to handle. The low height keeps ductwork connections to a minimum and makes units less visible.

The 50EES units utilize a structural beam design to form the four sides of the cabinet. Only 12 different pieces of sheet metal are used in the unit construction to simplify the unit for greater reliability.

EFFICIENT, DEPENDABLE PERFORMANCE with durable compressors designed for efficiency. The 50EES units offer 9.5 SEER (Seasonal Energy Efficiency Ratio) cooling performance efficiencies. This

performance level can reduce cooling expenses by as much as 25% compared to older cooling equipment. A high-efficiency, multi-speed blower motor system ensures quality performance with most duct systems. The computer-designed blower wheel is balanced for quiet operation.

DURABLE, DEPENDABLE, COMPRESSORS are designed for high efficiency. Each compressor is hermetically sealed against contamination to help promote longer life and dependable operation. Vibration isolation provides quiet operation. Compressors have internal high-pressure and overcurrent protection.

DIRECT-DRIVE MULTISPEED, PSC (PERMANENT SPLIT CAPACITOR) BLOWER MOTOR is standard on all models. Direct-drive, PSC condenser-fan motors are designed to help reduce energy consumption and provide for cooling operation down to 40 F.

REFRIGERANT SYSTEM is designed to provide dependability. Liquid refrigerant strainers are used to promote clean, unrestricted operation. Each unit leaves the factory with a full refrigerant charge. Refrigerant service connections make checking operating pressures easier.

FIELD-INSTALLED ACCESSORY DESCRIPTION AND USAGE

Electric Heater — Heater module slides into keyed mounting slots in the fan inlet. Heater

sizes range from 5.0 to 20.0 kW. Design allows for single-point supply for entire unit. Heaters provide heating capability when required.

Corporate Thermostat — These provide cooling control for unit. Autochangeover and manual changeover types are available.

The MotorMaster II Low Ambient Kit — Kit permits operation down to 0° F. Use when mechanical cooling is required when outdoor-air temperature is between 40°F and 0°F.

Crankcase Heater — Warms crankcase oil to reduce refrigerant migration and ensure proper compressor lubrication.

Solid-State Time Guard® Device — Package consists of a control to be field-wired into the unit controls, and provides a 5-minute delay in compressor operation between cooling cycles. Prevents compressor short cycling when rapid compressor cycles may be a problem.

Controls Upgrade Kit — Contains high- and low-pressure switches to protect the unit from running at unsuitable pressures. Provides additional safety features when needed.

Outdoor Thermostat — Accessory provides control when outdoor-air temperature falls below set point. Helps to bring second stage of 2-stage electric heater on line.

ARI* capacity ratings

UNIT 50EES-ZP	NET COOLING CAPACITY†	STANDARD CFM	SEER**	SOUND RATINGS†† (dB)
035	34,200	1200	9.5	78
040	40,000	1400	9.5	78
050	46,000	1600	9.5	78
060	57,000	2000	9.5	80



LEGEND

- db — Dry Bulb
- dB — decibels
- SEER — Seasonal Energy Efficiency Ratio
- wb — Wet Bulb

* Air Conditioning & Refrigeration Institute.
 † Rated in accordance with U.S. Government DOE Department of Energy) test procedures and/or ARI Standard 210/240-89.

** All units have factory-installed time-delay relay.
 †† Rated in accordance with ARI Standard 270-84.

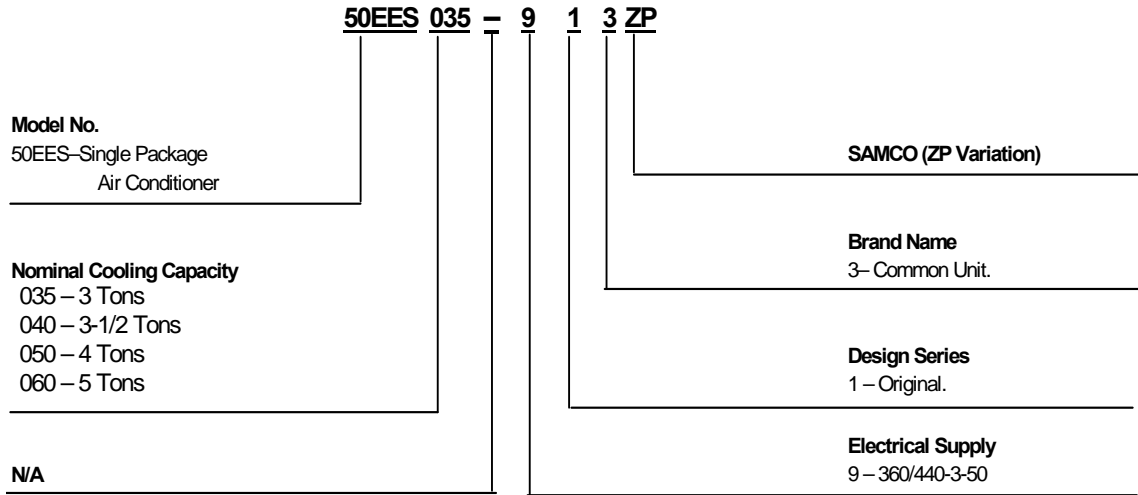
NOTES:

1. Ratings are net values, reflecting the effects of circulating fan heat.
2. Cooling capacity ratings are based on cooling standard: 80°F db/67°F wb indoor air entering temperature 95°F db air entering outdoor unit

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MODEL NUMBER NOMENCLATURE



50EES-ZP

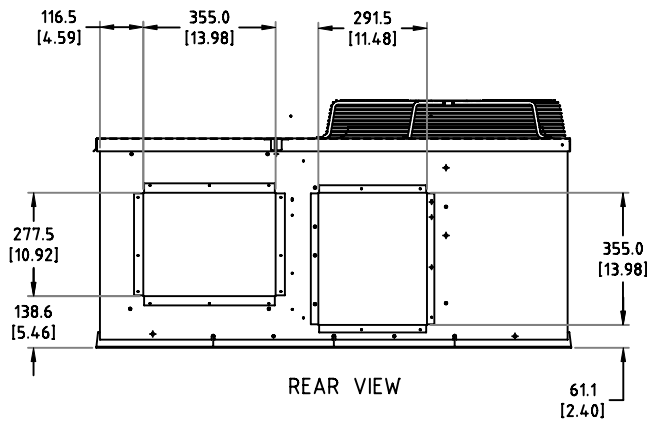
Physical data

UNIT SIZE 50EES -ZP	035	040	050	060
OPERATING WEIGHT (lb)	250	297	310	368
COMPRESSOR TYPE	Reciprocating			
REFRIGERANT	R – 22			
CHARGE (lb)	4.2	5.0	6.1	8.1
REFRIGERANT METERING DEVICE	Acutrol™ System			
CONDENSER COIL Rows – Fins/in. Total Face Area (sq ft)	Copper Tubes, Aluminum Plate Fins			
	2 – 17 6.2	1 – 17 11.1	2 – 17 8.6	2 – 17 10.7
CONDENSER MOTOR FAN	Propeller			
Condenser Cfm	2200	2800	2800	3000
Nominal Rpm	1100	1100	1100	1100
Motor Hp (Rpm)	1/4	1/4	1/4	1/4
Diameter (in.)	20	20	20	20
EVAPORATOR COIL	Copper Tubes, Aluminum Plate Fins			
Rows – Fins/in.	3 – 15	3 – 15	3 – 15	4 – 15
Total Face Area (sq ft)	3.1	3.9	4.3	4.9
EVAPORATOR – FAN MOTOR	Direct Drive			
Blower Motor Size (in.)	10 X 8	10 X 9	10 X 9	10 X 10
Nominal Cfm	1200	1400	1600	2300
Rpm Range	800 – 1050	800 – 1050	100 – 1100	950 – 1100
Number of Speeds Factory Speed	3	3	2	2
Setting	Low	Med	Low	Low
Motor Hp	1/2	1/2	3/4	1
CONNECTING DUCT SIZES	Square			
Supply Air (in.)	13.9 x 13.9			13.9 x 19 13.9 x
Return Air (in.)	13.9 x 13.9			32
FIELD-SUPPLIED RETURN AIR FILTER* Throwaway	24 x 24 x 1	24 x 24 x 1	24 x 30 x 1	24 x 30 x 1

* Required filter sizes shown are based on the ARI (Air Conditioning & Refrigeration Institute) rated airflow at a velocity of 300 ft/minute for throwaway type or 450 ft/minute for high-capacity type. Recommended filters are 1-in. thick.

Dimensional drawings — 50EES 035 – ZP

DIMENSIONS ARE IN mm. [] ARE IN INCHES



REQUIRED CLEARANCE TO COMBUSTIBLE MAT'L.

	INCHES (mm)
TOP OF UNIT	0
DUCT SIDE OF UNIT	0
SIDE OPPOSITE DUCTS	0
BOTTOM OF UNIT	0

NEC. REQUIRED CLEARANCES.

	INCHES (mm)
BETWEEN UNITS, POWER ENTRY SIDE	42.00 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE ...	36.00 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER	
GROUND SURFACES, POWER ENTRY SIDE	42.00 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING.

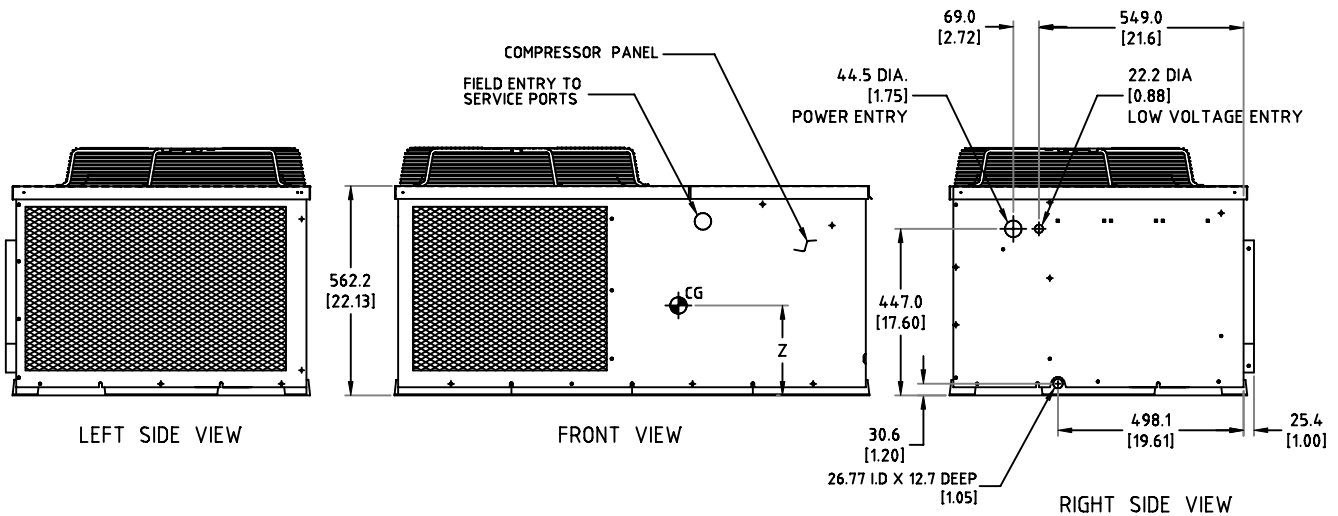
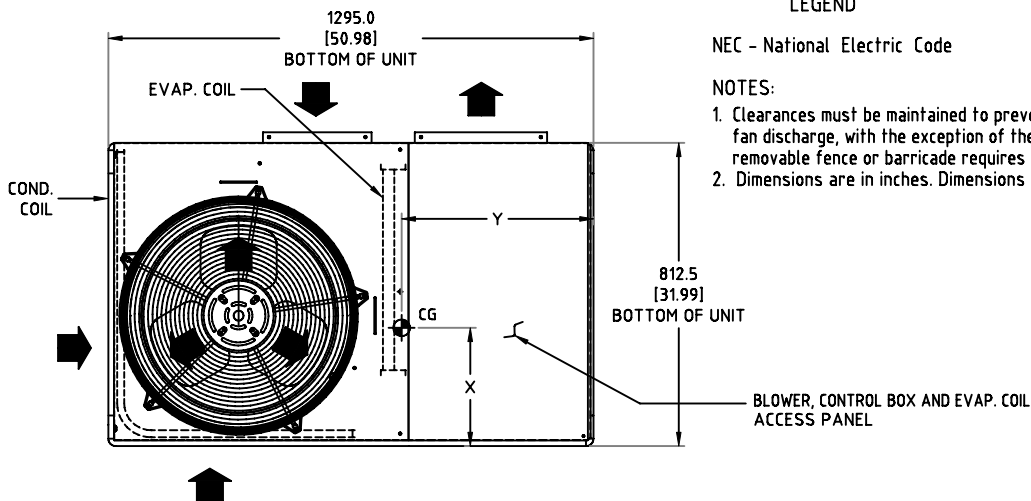
	INCHES (mm)
CONDENSER COIL ACCESS SIDE	30.00 [762.0]
POWER ENTRY SIDE	30.00 [762.0]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	30.00 [762.0]

LEGEND

NEC - National Electric Code

NOTES:

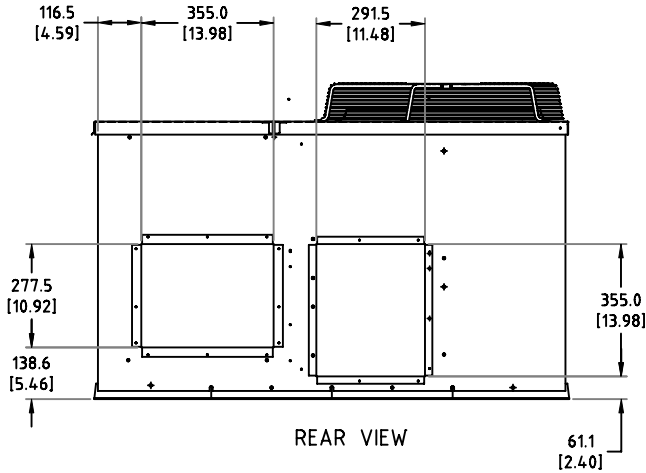
- Clearances must be maintained to prevent recirculation of air from outdoor-fan discharge, with the exception of the condenser coil (36.00 in [914.0 mm]). A removable fence or barricade requires no clearance.
- Dimensions are in inches. Dimensions in [] are in millimeters.



UNIT 50EES-ZP	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		CENTER OF GRAVITY in. [mm]		
		lb.	kg.	X	Y	Z
035	400V / 3PH / 50HZ	250	114	355.6 (14.00)	508.0 (20.00)	24.13 (9.50)

Dimensional drawings — 50EES 040 – ZP

DIMENSIONS ARE IN mm. [] ARE IN INCHES



REQUIRED CLEARANCE TO COMBUSTIBLE MAT'L.

	INCHES (mm)
TOP OF UNIT	0
DUCT SIDE OF UNIT	0
SIDE OPPOSITE DUCTS	0
BOTTOM OF UNIT	0

NEC. REQUIRED CLEARANCES.

	INCHES (mm)
BETWEEN UNITS, POWER ENTRY SIDE	42.00 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE ...	36.00 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER GROUNDED SURACES, POWER ENTRY SIDE	42.00 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING.

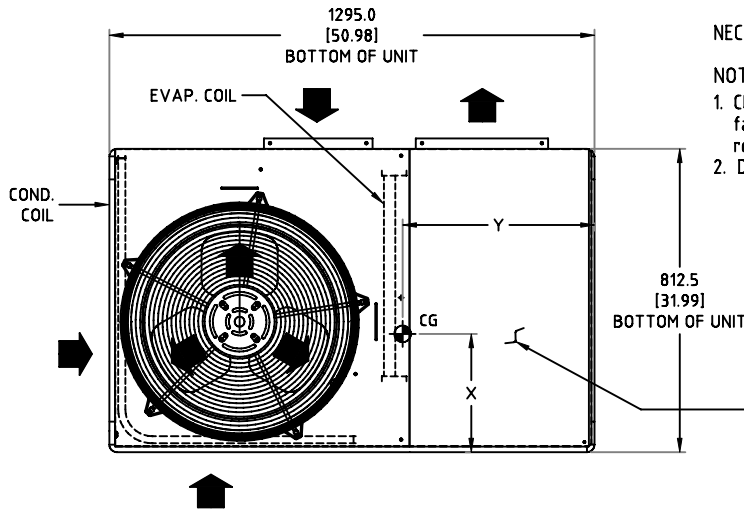
	INCHES (mm)
CONDENSER COIL ACCESS SIDE	30.00 [762.0]
POWER ENTRY SIDE	30.00 [762.0]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	30.00 [762.0]

LEGEND

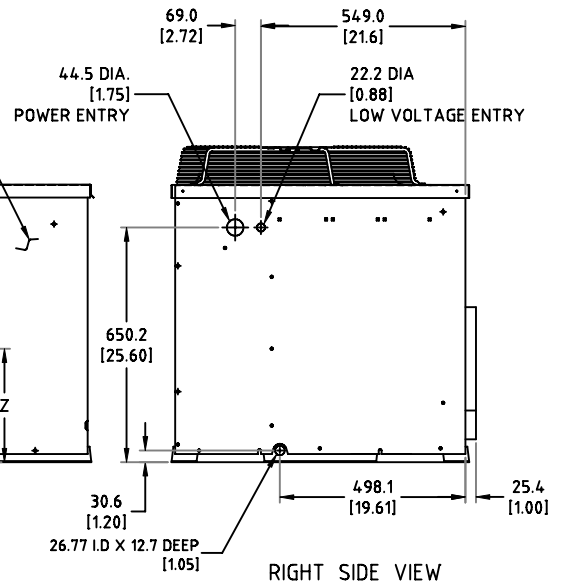
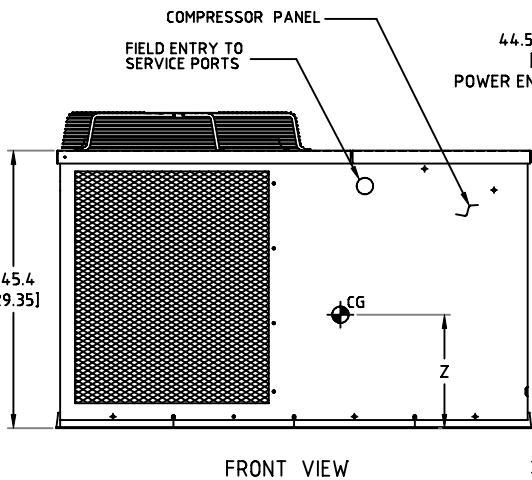
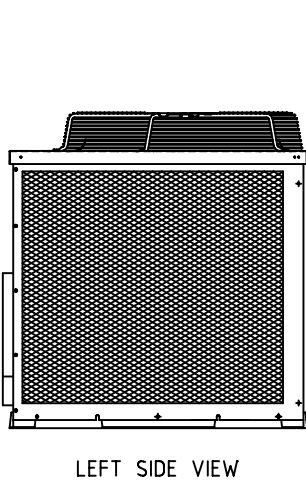
NEC - National Electric Code

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BLOWER, CONTROL BOX AND EVAP. COIL ACCESS PANEL

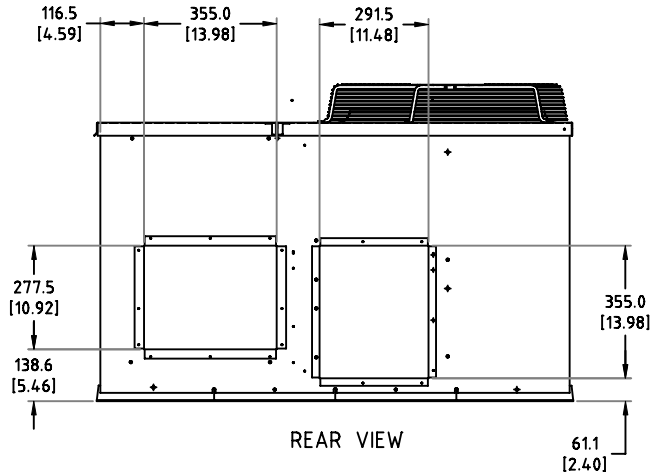


UNIT 50EES-ZP	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		CENTER OF GRAVITY in. [mm]		
		lb.	kg.	X	Y	Z
040	400V / 3PH / 50HZ	297	135	355.6 (14.00)	508.0 (20.00)	304.8 (12.00)

50EES-ZP

Dimensional drawings — 50EES 050 – ZP

DIMENSIONS ARE IN mm. [] ARE IN INCHES



REQUIRED CLEARANCE TO COMBUSTIBLE MAT'L.

	INCHES (mm)
TOP OF UNIT	0
DUCT SIDE OF UNIT	0
SIDE OPPOSITE DUCTS	0
BOTTOM OF UNIT	0

NEC. REQUIRED CLEARANCES.

	INCHES (mm)
BETWEEN UNITS, POWER ENTRY SIDE	42.00 [1066.8]
UNIT AND UNGROUNDED SURFACES, POWER ENTRY SIDE ...	36.00 [914.0]
UNIT AND BLOCK OR CONCRETE WALLS AND OTHER	
GROUNDING SURFACES, POWER ENTRY SIDE	42.00 [1066.8]

REQUIRED CLEARANCE FOR OPERATION AND SERVICING.

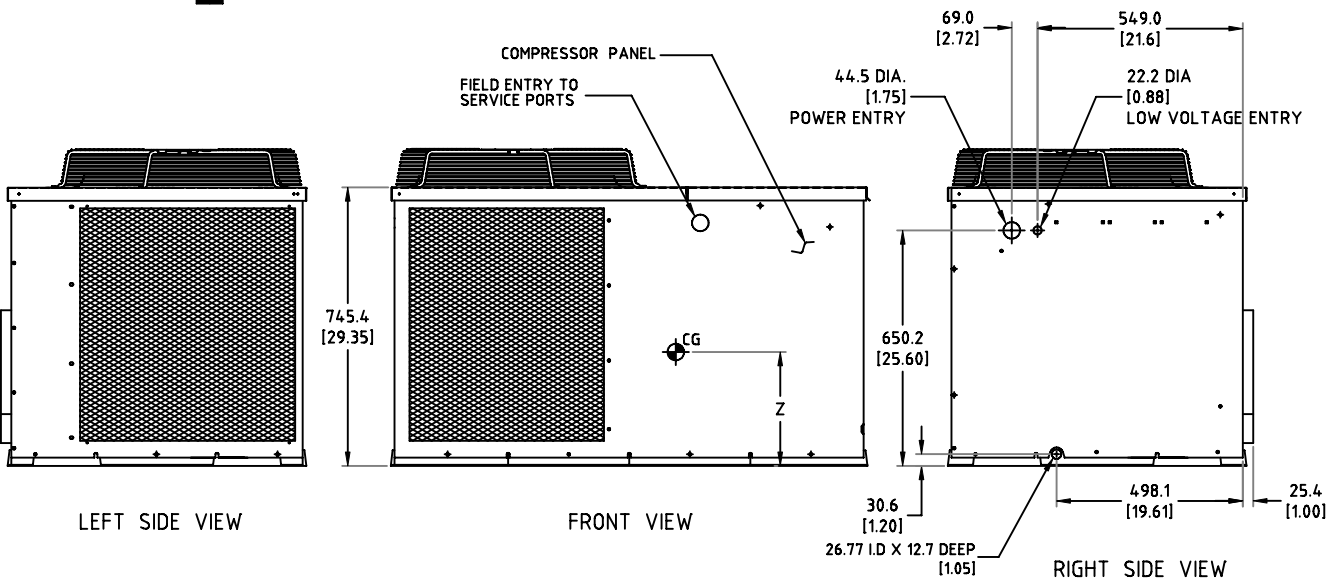
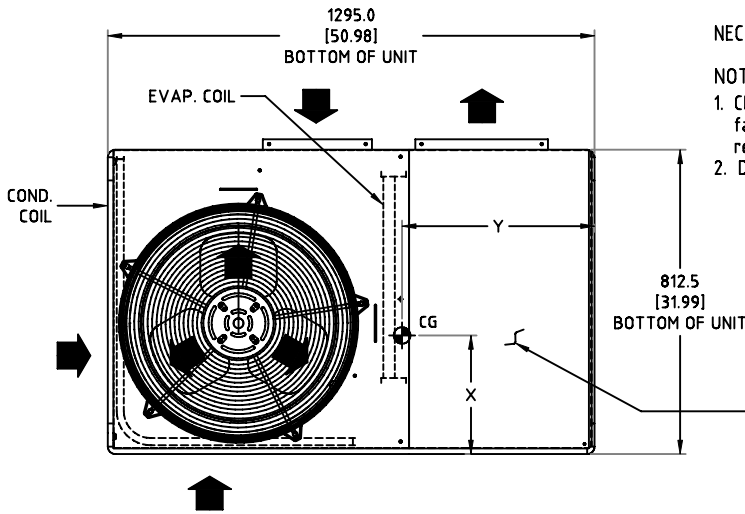
	INCHES (mm)
CONDENSER COIL ACCESS SIDE	30.00 [762.0]
POWER ENTRY SIDE	30.00 [762.0]
(EXCEPT FOR NEC REQUIREMENTS)	
UNIT TOP	48.00 [1219.2]
SIDE OPPOSITE DUCTS	30.00 [762.0]

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- Dimensions are in inches. Dimensions in [] are in millimeters.



UNIT 50EES-ZP	ELECTRICAL CHARACTERISTICS	UNIT WEIGHT		CENTER OF GRAVITY in. [mm]		
		lb.	kg.	X	Y	Z
050	400V / 3PH / 50HZ	310	141	355.6 (14.00)	508.0 (20.00)	304.8 (12.00)

