



**COMMERCIAL
PRODUCT SPECIFICATIONS**



SEER - 14.00

HSPF - 8.00

3 to 5 Tons

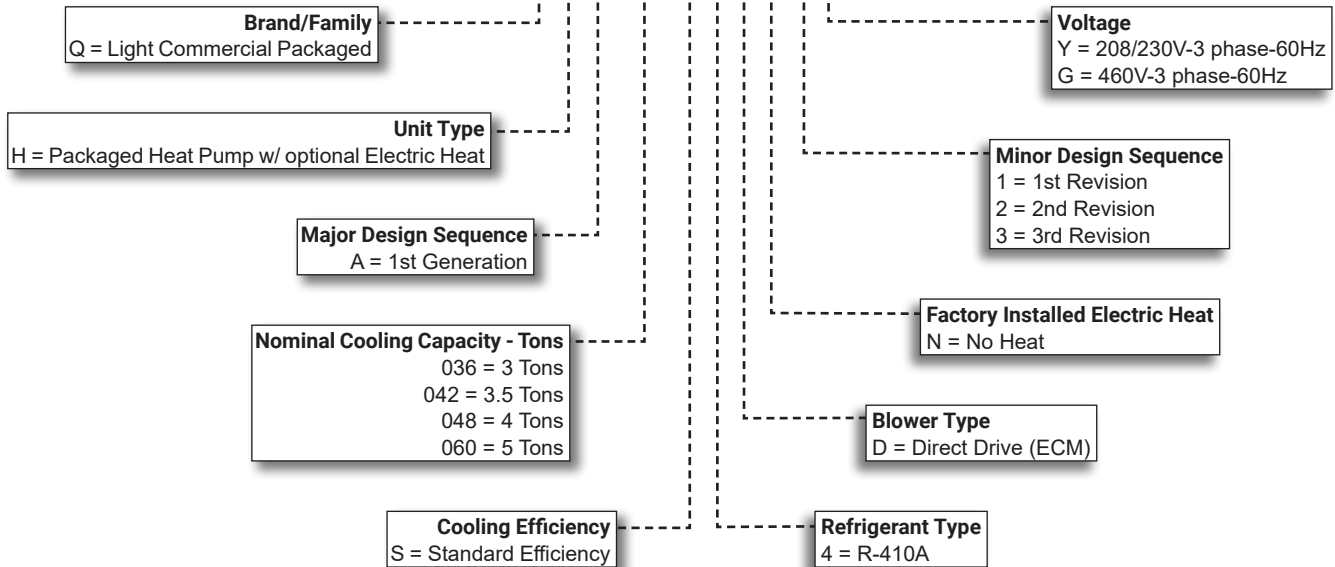
Cooling Capacity - 34,000 to 57,000 Btuh

Heating Capacity - 33,500 to 57,500 Btuh

Optional Electric Heat - 5 to 23 kW

MODEL NUMBER IDENTIFICATION

Q H A 060 S 4 D N 1 Y



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APPROVALS AND WARRANTY

APPROVALS

- AHRI Standard 210/240 certified
- Design Certified by ETL Intertek
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- Optional electric heaters are ETL listed for the US and Canada and are rated and tested according to DOE test procedures and FTC labeling regulations
- All models are ASHRAE 90.1 compliant

WARRANTY

- Compressors - Limited five years
- All other covered components - Limited one year

FEATURES

COOLING SYSTEM

R-410A Refrigerant

- Non-chlorine based
- Ozone-friendly
- Factory pre-charged

Indoor and Outdoor Coils

- Copper tube with aluminum fin coils
- Factory leak tested

Anti-Microbial Condensate Drain Pan

- Anti-Microbial additive resists growth of mold and mildew on drain pan which improves indoor air quality and reduces drain line blockage
- Insulated to reduce condensation
- Side drain connection

Drain Pan Overflow Switch

- Monitors condensate level in drain pan
- Shuts down unit if drain becomes clogged

Outdoor Coil Fan Motor

- Weather protected heavy duty condenser fan motor
- Coated steel fan blades for long life
- Corrosion-resistant coated steel fan guard
- Internally mounted
- Totally enclosed fan motor

Four-Way Reversing Valve

- Rapid changeover of refrigerant flow direction from cooling to heating and vice versa
- Operates on pressure differential between outdoor unit and indoor coil
- Factory installed

High Pressure Switch

- Protects the system from high pressure conditions
- Automatic reset.

Loss of Charge Switch

- Shuts off unit if suction pressure falls below setting
- Loss of charge and freeze-up protection

Service Valves

- Fully serviceable brass valves installed in discharge & liquid lines

COMPRESSOR

Scroll Compressor

- High volumetric efficiency
- Uniform suction flow
- Constant discharge flow
- Quiet operation
- Low gas pulses during compression reduces operational sound levels
- Compressor motor is internally protected from excessive current and temperature
- Compressor is installed in the unit on resilient rubber mounts for vibration free operation

Scroll Compressor Operation

- Two involute spiral scrolls matched together generate a series of crescent-shaped gas pockets between them
- During compression, one scroll remains stationary while the other scroll orbits around it
- Gas is drawn into the outer pocket, the pocket is sealed as the scroll rotates
- As the spiral movement continues, gas pockets are pushed to the center of the scrolls. Volume between the pockets is simultaneously reduced
- When the pocket reaches the center, gas is now at high pressure and is forced out of a port located in the center of the fixed scrolls
- During compression, several pockets are compressed simultaneously resulting in a smooth continuous compression cycle
- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency
- Compressor is tolerant to the effects of slugging and contaminants. If this occurs, scrolls separate, allowing liquid or contaminants to be worked toward the center and discharged
- Muffler in discharge line reduces operating sound levels

Optional Accessories

Field Installed

Compressor Crankcase Heater

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

Compressor Timed-Off Control

- Prevents compressor short-cycling
- Allows time for suction and discharge pressure to equalize
- Permits compressor start-up in an unloaded condition
- Automatic reset
- Five minute delay between compressor shut-off and start-up

Freezestat

- Senses suction line temperature
- Cycles compressor off when suction line temperature falls below its setpoint

Low Ambient Kit (0°F)

- 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

NOTE - Crankcase heater and freezestat are recommended on compressor equipped with a low ambient kit.

FEATURES

CABINET

- Conditioned areas insulated with foil faced insulation to minimize heat loss and reduce operating sound levels
- Powder paint for maximum durability
- Full perimeter heavy-gauge galvanized steel base rails
- Base rails have rigging holes
- Two sides of the base rails have forklift slots
- Raised edges around duct and power entry openings in the bottom of the unit for water protection
- Easy service access
- Steel louvered panels provides complete coil protection

Airflow Choice

- Units are shipped with supply and return air duct covers installed for downflow or horizontal conversion

Electrical Inlets and Service Valves

- Field wiring inlets are located in one central area of the cabinet
- See dimension drawing
- Service valves with gauge ports are located inside the cabinet

Optional Accessories

Field Installed

Bottom Power Entry Kit

- Allows high and low voltage wiring connections through the unit base pan

Base Rail Openings Closure Kit

- Kit consists of panels and hardware to cover rigging holes and forklift slots in unit base rails

Square to Round Duct Adaptor Kits

- Downflow or horizontal kits available
- Converts square supply and return air openings on unit cabinet to round 14 in. diameter

Tool-Less Filter Access Kit

- Converts blower access panel to two-piece design
- One panel is equipped with tool-less latches for ease filter access without removing entire blower panel

CONTROLS

24 Volt Transformer

- 70VA transformer furnished and factory installed in control area

Field Installed

Smoke Detector

- Photoelectric type
- Installed in supply air section or return air section
- Available with one sensor or two sensors

BLOWER

- Direct drive blower
- Blower wheel is statically and dynamically balanced
- Resiliently mounted
- Blower assembly easily removed for servicing

Constant Torque Blower Motor

- DC Brushless Motor
- High Efficiency Constant Torque
- ECM (Electronically Commutated Motor)
- Motor is programmed to provide constant torque at each of the selectable speeds
- Fixed blower "On" delay prevents cold air from entering system during gas heating demand
- See Blower Performance tables

INDOOR AIR QUALITY

Air Filters

- Filter rack furnished as standard
- See Specifications Table for sizes

NOTE - Filters must be field provided.

OPTIONS / ACCESSORIES

ELECTRIC HEAT (5-23 KW)

Optional Accessories

Field Installed

- Field installed internal to unit cabinet
- Available in several voltages and kW sizes
- Helix wound nichrome heating elements exposed directly in air stream
- Instant heat transfer
- Low element temperatures and long service life
- Cutoff limit control provides positive protection in case of excessive temperatures
- Factory assembled with controls installed and wired

ECONOMIZER

Field Installed

Economizer

(Standard and High Performance Common Features)

- Convertible to downflow or horizontal
- Outdoor Air Hood is furnished
- Includes Barometric Relief Dampers with Exhaust Hood
- Barometric Relief Dampers allow relief of excess air,
- Aluminum blade dampers prevent blow back and outdoor air infiltration during off cycle
- Exhaust hood with bird screen furnished
- Single temperature control is furnished with Economizer
- Outdoor air sensor enables Economizer if the outdoor temperature is less than the setpoint of the control

Standard Economizer Features (Not for Title 24)

- Gear-driven action
- Return air and outdoor air dampers
- Plug-in connections to unit
- Nylon bearings
- Neoprene seals
- 24-volt
- Fully-modulating spring return motor

Standard Economizer Control Module

The Standard Economizer Control Module can be adjusted to operate based on outdoor air temperatures

Economizer Controls:

- **Damper Minimum Position** - Can be set lower than traditional minimum air requirements resulting in cost savings
- **Free Cool LED** - A steady green LED indicates outdoor air is suitable for free cooling

NOTE - Free Cooling runs when outdoor air temperature is lower than the set temperature on the economizer control.

NOTE: The Free Cooling default setting for outdoor air temperature sensor is 55°F.





High Performance Economizer Features

- Approved for California Title 24 building standards
- Low leakage dampers are Air Movement and Control Association International (AMCA) Class 1A Certified - Maximum 3 cfm per sq. ft. leakage at 1 in. w.g.
- ASHRAE 90.1-2010 compliant
- Gear-driven action
- High torque 24-volt fully-modulating spring return damper motor
- Return air and outdoor air dampers
- Plug-in connections to unit
- Stainless steel bearings
- Enhanced neoprene blade edge seals
- Flexible stainless steel jamb seals minimize air leakage

NOTE - High Performance Economizers are not approved for use with enthalpy controls in Title 24 applications.

NOTE - The Free Cooling setpoint for Title 24 applications must be set based on the Climate Zone where the system is installed. See Section 140.4 "Prescriptive Requirements for Space Conditioning Systems" of the California Energy Commission's 2013 Building Energy Efficiency Standards. Refer to Installation Instructions for complete setup information and menu parameters available.

High Performance Economizer Control Module

- Module provides inputs and outputs to control economizer based on parameter settings
- Module automatically detects sensors by polling to determine which sensors are installed in system
- Module displays any alarm messages (fault detection and diagnostics) as an aid in troubleshooting
- Non-volatile memory retains parameter settings in case of power failure
- Keypad with four navigation buttons and LCD screen is furnished for setting economizer parameters
 - Menu Up/Exit  button returns to the main menu
 - Arrow Up  button moves to the previous or next parameter within the selected menu
 - Arrow Down  button moves to the next parameter within the selected menu
 - Select (enter)  button confirms parameter selection

OPTIONS / ACCESSORIES

ECONOMIZER (continued)

High Performance Economizer Control Module (continued)
Main Menu Structure:

- STATUS (economizer and system operation status)
- SETPOINTS (settings for various setpoint parameters)
- SYSTEM SETUP (settings/information about the system)
- ADVANCED SETUP (freeze protection, CO₂ settings, stage 3 delay, and additional calibration settings)
- CHECKOUT (damper positions)
- ALARMS (output signal that can be configured for remote alarm monitoring)

NOTE - Refer to Installation Instructions for complete setup information and menu parameters available.

Field Installed

Single Enthalpy Temperature Control (Not for Title 24)

- Outdoor air enthalpy sensor enables Economizer if the outdoor enthalpy is less than the setpoint of the control

OUTDOOR AIR

Field Installed

Outdoor Air Dampers - Downflow

- Single blade damper
- 0 to 25% (fixed) outdoor air adjustable
- Installs in unit
- Outdoor air hood is furnished
- Automatic model features fully modulating spring return damper motor with plug-in connection
- Manual model features a slide damper

NOTE - Maximum mixed air temperature in cooling mode is 100°F.

ROOF CURBS

Field Installed

Clip Curb (Full Perimeter)

- Interlocking tabs fasten corners together
- No tools required
- Fully gasketed around curb perimeter and supply and return openings
- Available in 8, 14, 18 and 24 inch heights
- Shipped knocked down
- Wind rating - 240mph (Lateral), 214mph (Uplift)

Adjustable Pitch Roof Curb (Full Perimeter)

Standard Curb

- Fully adjustable pitch curb provides a level platform for packaged units
- Allows flexible installations on roofs with sloped or uneven angles
- Adjustable from 2/12 to 6/12 pitch
- Constructed of heavy-gauge galvanized steel with fully welded seams and corners
- Rounded corners on flange prevent damage to roof shingles
- Built-in drip edge
- IAPMO/UMC listed
- CBC 2013 compliant (California) Maximum load rating – 800 lbs.
- Wind rating - 240mph (Lateral), 214mph (Uplift)

Adaptor Curbs (not shown)

- Curbs are regionally sourced
- Dimensions vary based upon the source

NOTE - Contact your local sales representative for a detailed cut sheet with applicable dimensions.

Strapping Kit - Hurricane

- Galvanized steel .07 in. thick minimum
- Attaches unit base rails to host structure

OPTIONS / ACCESSORIES

Item	Catalog No.	Model No.			
		QHA036	QHA042	QHA048	QHA060
COOLING SYSTEM					
Compressor Crankcase Heater	21D21	X	X	X	X
Compressor Timed-Off Control	47J27	X	X	X	X
Freezestat	21D23	X	X	X	X
Low Ambient Kit (0°F)	21D20	X	X	X	X
CABINET					
Base Rail Openings Closure Kit	21J84	X	X	X	X
Square to Round Duct Adaptor Kits (14 in. diameter)	Downflow 21D26	X	X	X	X
	Horizontal 21D24	X	X	X	X
Tool-Less Filter Access Kit	21J80	X	X	X	X
CONTROLS					
Smoke Detector - Supply or Return (one sensor)	21U21	X	X	X	X
Smoke Detector - Supply or Return (two sensors)	21U22	X	X	X	X
ELECTRICAL					
Bottom Power Entry Kit	21J78	X	X	X	X
ELECTRIC HEAT					
5 kW	208/230V-3ph 21J30	X	X	X	X
	460V-3ph 21J37	X	X	X	X
10 kW	208/230V-3ph 21J33	X	X	X	X
	460V-3ph 21J38	X	X	X	X
15 kW	208/230V-3ph 21J34	X	X	X	X
	460V-3ph 21J39	X	X	X	X
20 kW	208/230V-3ph 21J35		X	X	X
	460V-3ph 21J40		X	X	X
23 kW	208/230V-3ph 21J36				X
	460V-3ph 21J41				X
ECONOMIZER					
Standard Economizer With Outdoor Air Hood (Not for Title 24)					
Downflow or Horizontal (Includes Barometric Relief Dampers and Exhaust Hood)	21U15	X	X	X	X
High Performance Economizer With Outdoor Air Hood (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)					
Downflow or Horizontal (Includes Barometric Relief Dampers and Exhaust Hood)	21U17	X	X	X	X
Economizer Controls					
Single Enthalpy Control (Standard)	53W64	X	X	X	X
Single Enthalpy Control (High Performance)	11G21	X	X	X	X

X = Field Installed

OPTIONS / ACCESSORIES

Item	Catalog No.	Model No.			
		QHA036	QHA042	QHA048	QHA060
OUTDOOR AIR					
Outdoor Air Dampers With Outdoor Air Hood					
Motorized	21U19	X	X	X	X
Manual	21U20	X	X	X	X
ROOF CURBS					
Clip Curbs					
8 in height	21J17	X	X	X	X
14 in height	21J19	X	X	X	X
18 in height	21J20	X	X	X	X
24 in height	21J25	X	X	X	X
Adjustable Pitch Roof Curb					
14 in height	21J26	X	X	X	X
Strapping Kits for Roof Curbs					
Strapping Kit - Hurricane	21J74	X	X	X	X

X = Field Installed

SPECIFICATIONS

General Data		Nominal Tonnage	3 Ton	3.5 Ton	4 Ton	5 Ton
	Model Number		QHA036S4D	QHA042S4D	QHA048S4D	QHA060S4D
	Efficiency Type		Standard	Standard	Standard	Standard
	Blower Type		Direct Drive (ECM)	Direct Drive (ECM)	Direct Drive (ECM)	Direct Drive (ECM)
Cooling Performance	Gross Cooling Capacity - Btuh		35,000	41,500	48,000	59,000
	¹ Net Cooling Capacity - Btuh		34,000	40,000	46,000	57,000
	AHRI Rated Air Flow - cfm		1200	1400	1600	2000
	Total Unit Power - kW		2.80	3.26	3.76	4.85
	¹ SEER		14.00	14.00	14.00	14.00
	¹ EER		11.50	11.50	11.50	11.50
Heating Performance	¹ Total High Heating Capacity - Btuh		33,500	40,100	46,300	57,500
	Total Unit Power - kW		32,400	39,000	45,000	56,000
	¹ COP		3.70	3.60	3.70	3.70
	¹ HSPF - Region IV (Region V)		8.00 / 6.95	8.00 / 6.95	8.00 / 6.95	8.00 / 6.95
	¹ Total Low Heating Capacity - Btuh		18,000	22,000	26,000	34,000
	Total Unit Power - kW		2.42	2.87	3.37	4.56
	¹ COP		2.30	2.30	2.30	2.40
Refrigerant Charge	Refrigerant Type		R-410A	R-410A	R-410A	R-410A
			9 lbs. 13 oz.	9 lbs. 13 oz.	10 lbs. 10 oz.	11 lbs. 9 oz.
Electric Heat Available - See			5, 10, and 15 kW	5, 10, 15, and 20 kW	5, 10, 15, and 20 kW	5, 10, 15, 20, and 23 kW
Compressor Type			Scroll (1)	Scroll (1)	Scroll (1)	Scroll (1)
Outdoor Coil	Net face area (total) - sq. ft.		16.60	16.60	16.60	18.60
	Tube diameter - in.		5/16	5/16	5/16	5/16
	Number of rows		2	2	2	2
	Fins per inch		22	22	22	22
Outdoor Coil Fan	Motor - (No.) horsepower		(1) 1/4	(1) 1/4	(1) 1/4	(1) 1/4
	Motor rpm		825	825	825	825
	Total Motor Input - watts		280	280	280	280
	Diameter - (No.) in.		(1) 24	(1) 24	(1) 24	(1) 24
	Number of blades		3	3	3	3
Indoor Coil	Net face area (total) - sq. ft.		6.75	6.75	6.75	6.75
	Tube diameter - in.		3/8	3/8	3/8	3/8
	Number of rows		3	3	3	3
	Fins per inch		15	15	15	15
	Drain connection (Number) and size - in.		(1) 3/4 in. NPT coupling			
	Expansion device type		Refrigerant Metering Orifice			Balanced Port TXV
Indoor Blower	Nominal motor HP		0.75 HP (ECM)	0.75 HP (ECM)	1.0 HP (ECM)	1.0 HP (ECM)
	Blower wheel nominal diameter x width - in.		(1) 12 x 9	(1) 12 x 9	(1) 12 x 9	(1) 12 x 10
² Filters	Type of filter		Disposable			
	Number and size - in.		(2) 20 x 20 x 1	(2) 20 x 20 x 1	(2) 20 x 20 x 1	(2) 20 x 20 x 1
Electrical characteristics			208/230V or 460V-60Hz -3ph			

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

¹ AHRI Certified to AHRI Standard 210/240:

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 Filters are not furnished and must be field provided.

COOLING / 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.

3 TON COOLING - QHA036S4D

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																													
		85°F						95°F						105°F						115°F						125°F					
		Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)							
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb							
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F						
59°F	1050	33.0	1.83	.93	1.00	1.00	31.8	2.08	.95	1.00	1.00	30.4	2.38	.97	1.00	1.00	28.8	2.71	1.00	1.00	1.00	27.0	3.10	1.00	1.00	1.00					
	1200	34.4	1.83	.96	1.00	1.00	33.0	2.09	.99	1.00	1.00	31.6	2.37	1.00	1.00	1.00	29.8	2.71	1.00	1.00	1.00	28.0	3.10	1.00	1.00	1.00					
	1350	35.6	1.83	.99	1.00	1.00	34.2	2.09	1.00	1.00	1.00	32.6	2.37	1.00	1.00	1.00	30.8	2.71	1.00	1.00	1.00	28.8	3.10	1.00	1.00	1.00					
63°F	1050	34.2	1.83	.76	.89	1.00	32.4	2.08	.77	.92	1.00	30.8	2.37	.79	.94	1.00	28.8	2.70	.81	.97	1.00	27.0	3.10	.85	1.00	1.00					
	1200	35.0	1.83	.78	.93	1.00	33.4	2.09	.80	.96	1.00	31.6	2.37	.82	.98	1.00	29.8	2.71	.85	1.00	1.00	28.0	3.10	.88	1.00	1.00					
	1350	35.8	1.83	.81	.97	1.00	34.2	2.09	.83	.99	1.00	32.6	2.38	.85	1.00	1.00	30.8	2.71	.88	1.00	1.00	28.8	3.10	.92	1.00	1.00					
67°F	1050	36.0	1.83	.60	.73	.86	34.4	2.09	.60	.75	.88	32.6	2.38	.61	.76	.91	30.6	2.71	.63	.79	.94	28.2	3.09	.65	.82	.98					
	1200	37.0	1.83	.61	.76	.90	35.2	2.09	.62	.78	.93	33.4	2.38	.64	.80	.96	31.2	2.71	.65	.83	.98	28.8	3.10	.67	.86	1.00					
	1350	37.8	1.84	.63	.79	.94	35.8	2.09	.64	.81	.97	34.0	2.38	.65	.83	.99	31.8	2.71	.67	.86	1.00	29.4	3.10	.69	.90	1.00					
71°F	1050	38.0	1.83	.44	.58	.71	36.2	2.09	.45	.59	.73	34.4	2.38	.46	.61	.74	32.2	2.72	.46	.62	.77	30.0	3.10	.46	.63	.80					
	1200	39.0	1.84	.46	.60	.74	37.2	2.10	.47	.61	.76	35.2	2.39	.47	.63	.78	33.0	2.72	.48	.64	.81	30.6	3.10	.49	.66	.84					
	1350	40.0	1.84	.46	.62	.77	37.8	2.10	.46	.63	.79	35.8	2.39	.48	.65	.81	33.6	2.72	.49	.66	.84	31.0	3.10	.49	.69	.88					

3 TON HEATING - QHA036S4D

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
1050	43.7	2.17	32.9	2.02	21.8	1.87	13.8	1.66	7.2	1.23
1200	43.9	2.10	33.2	1.95	22.0	1.80	14.1	1.59	7.5	1.16
1350	44.1	2.05	33.4	1.90	22.2	1.75	14.3	1.54	7.7	1.11

3.5 TON COOLING - QHA042S4D

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																													
		85°F						95°F						105°F						115°F						125°F					
		Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)							
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb							
cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F						
59°F	1200	38.5	2.30	.92	1.00	1.00	37.2	2.62	.94	1.00	1.00	35.4	2.99	.97	1.00	1.00	33.6	3.41	.99	1.00	1.00	31.4	3.87	1.00	1.00	1.00					
	1400	40.5	2.29	.96	1.00	1.00	39.0	2.62	.98	1.00	1.00	37.2	2.98	1.00	1.00	1.00	35.2	3.39	1.00	1.00	1.00	32.8	3.86	1.00	1.00	1.00					
	1600	42.5	2.29	1.00	1.00	1.00	40.5	2.61	1.00	1.00	1.00	38.5	2.98	1.00	1.00	1.00	36.4	3.39	1.00	1.00	1.00	34.0	3.86	1.00	1.00	1.00					
63°F	1200	40.0	2.30	.75	.89	1.00	38.5	2.62	.76	.91	1.00	36.2	2.99	.79	.94	1.00	34.0	3.40	.81	.96	1.00	31.4	3.87	.84	1.00	1.00					
	1400	41.5	2.29	.78	.93	1.00	39.5	2.61	.80	.96	1.00	37.2	2.98	.82	.98	1.00	35.2	3.40	.85	1.00	1.00	33.0	3.87	.88	1.00	1.00					
	1600	42.5	2.29	.81	.97	1.00	40.5	2.61	.83	.99	1.00	38.5	2.97	.86	1.00	1.00	36.4	3.39	.89	1.00	1.00	34.0	3.86	.93	1.00	1.00					
67°F	1200	42.5	2.29	.60	.73	.85	40.5	2.61	.60	.74	.88	38.5	2.98	.61	.76	.90	36.0	3.39	.63	.78	.94	33.2	3.86	.65	.81	.97					
	1400	44.0	2.28	.61	.76	.90	41.5	2.60	.62	.78	.93	39.5	2.97	.64	.80	.95	36.8	3.38	.65	.83	.99	34.2	3.86	.67	.86	1.00					
	1600	45.0	2.28	.63	.79	.94	42.5	2.60	.64	.81	.97	40.0	2.97	.66	.84	.99	37.6	3.38	.68	.87	1.00	34.6	3.85	.70	.91	1.00					
71°F	1200	44.5	2.27	.45	.58	.71	42.5	2.60	.45	.59	.72	40.5	2.97	.45	.60	.74	38.0	3.38	.46	.62	.76	35.2	3.85	.47	.63	.80					
	1400	46.0	2.27	.46	.60	.74	44.0	2.59	.46	.61	.76	41.5	2.96	.47	.63	.78	39.0	3.37	.47	.64	.81	36.0	3.84	.48	.66	.84					
	1600	47.0	2.27	.47	.62	.77	45.0	2.59	.47	.64	.79	42.5	2.95	.48	.65	.82	39.5	3.37	.49	.67	.85	36.6	3.84	.50	.69	.88					

3.5 TON HEATING - QHA042S4D

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
1200	50.0	2.61	38.0	2.41	25.7	2.22	16.6	1.95	8.7	1420
1200	50.0	2.61	38.0	2.41	25.7	2.22	16.6	1.95	8.7	1420
1600	50.8	2.44	38.8	2.24	26.5	2.05	17.4	1.78	9.5	1250

COOLING / 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.

4 TON COOLING - QHA048S4D

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F					95°F					105°F					115°F					125°F				
		Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
		cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F
59°F	1400	44.5	2.72	.94	1.00	1.00	43.0	3.07	.96	1.00	1.00	41.0	3.50	.99	1.00	1.00	38.5	4.00	1.00	1.00	1.00	36.0	4.57	1.00	1.00	1.00
	1600	46.5	2.72	.98	1.00	1.00	44.5	3.08	1.00	1.00	1.00	42.5	3.50	1.00	1.00	1.00	40.0	3.99	1.00	1.00	1.00	37.4	4.57	1.00	1.00	1.00
	1800	48.5	2.72	1.00	1.00	1.00	46.0	3.09	1.00	1.00	1.00	44.0	3.50	1.00	1.00	1.00	41.5	4.00	1.00	1.00	1.00	38.5	4.57	1.00	1.00	1.00
63°F	1400	46.0	2.72	.76	.90	1.00	44.0	3.08	.78	.93	1.00	41.5	3.50	.80	.96	1.00	38.5	4.00	.83	.99	1.00	36.0	4.57	.86	1.00	1.00
	1600	47.5	2.72	.79	.95	1.00	45.0	3.09	.81	.97	1.00	42.5	3.50	.84	1.00	1.00	40.0	4.00	.87	1.00	1.00	37.4	4.58	.91	1.00	1.00
	1800	48.5	2.72	.82	.98	1.00	46.0	3.08	.84	1.00	1.00	44.0	3.51	.87	1.00	1.00	41.5	4.00	.91	1.00	1.00	38.5	4.57	.95	1.00	1.00
67°F	1400	49.0	2.73	.60	.74	.87	46.5	3.09	.61	.76	.90	44.0	3.51	.62	.78	.93	41.0	4.00	.64	.81	.96	37.8	4.57	.66	.84	1.00
	1600	50.5	2.73	.62	.77	.92	48.0	3.09	.63	.79	.94	45.0	3.51	.64	.81	.97	42.0	4.00	.66	.84	1.00	38.5	4.57	.69	.88	1.00
	1800	51.5	2.73	.64	.80	.95	48.5	3.09	.65	.82	.98	46.0	3.51	.67	.85	1.00	42.5	4.00	.69	.88	1.00	39.5	4.57	.72	.93	1.00
71°F	1400	52.0	2.74	.45	.59	.72	49.0	3.09	.46	.60	.74	46.5	3.51	.46	.61	.76	43.5	4.01	.47	.62	.78	40.0	4.57	.47	.65	.82
	1600	53.0	2.74	.46	.61	.75	50.5	3.10	.47	.62	.77	47.5	3.51	.47	.63	.79	44.5	4.00	.48	.65	.82	41.0	4.58	.49	.68	.86
	1800	54.0	2.74	.46	.63	.78	51.5	3.10	.48	.64	.80	48.5	3.51	.49	.66	.83	45.0	4.01	.49	.68	.86	41.5	4.57	.51	.71	.91

4 TON HEATING - QHA048S4D

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
1400	57.2	2.95	43.4	2.78	28.9	2.59	19.9	2.39	10.2	1.76
1600	57.6	2.85	43.8	2.68	29.3	2.49	20.3	2.29	10.6	1.66
1800	58.1	2.78	44.3	2.61	29.7	2.43	20.7	2.23	11.0	1.60

5 TON COOLING - QHA060S4D

Entering Wet Bulb Temperature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F					95°F					105°F					115°F					125°F				
		Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)			Total Cool Cap.	Comp. Motor Input	Sensible/Total Ratio (S/T)		
				Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb		
		cfm	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F	85°F	kBtuh	kW	75°F	80°F
59°F	1700	56.0	3.40	.92	1.00	1.00	53.5	3.84	.95	1.00	1.00	51.0	4.35	.97	1.00	1.00	48.5	4.88	1.00	1.00	1.00	45.5	5.54	1.00	1.00	1.00
	1800	57.0	3.41	.94	1.00	1.00	54.5	3.85	.96	1.00	1.00	52.0	4.35	.99	1.00	1.00	49.0	4.90	1.00	1.00	1.00	46.0	5.55	1.00	1.00	1.00
	2000	58.5	3.42	.97	1.00	1.00	56.0	3.87	.99	1.00	1.00	53.5	4.35	1.00	1.00	1.00	50.5	4.91	1.00	1.00	1.00	47.5	5.54	1.00	1.00	1.00
63°F	1700	58.0	3.42	.75	.89	1.00	55.0	3.86	.77	.91	1.00	52.0	4.34	.79	.94	1.00	49.0	4.89	.81	.97	1.00	45.5	5.54	.84	1.00	1.00
	1800	59.0	3.42	.76	.91	1.00	56.0	3.86	.78	.93	1.00	52.5	4.35	.80	.96	1.00	49.5	4.90	.83	.99	1.00	46.0	5.54	.86	1.00	1.00
	2000	60.0	3.43	.79	.94	1.00	57.0	3.87	.81	.96	1.00	53.5	4.36	.83	.99	1.00	50.5	4.90	.86	1.00	1.00	47.5	5.55	.90	1.00	1.00
67°F	1700	61.5	3.44	.59	.73	.86	58.5	3.88	.60	.75	.88	55.0	4.37	.62	.77	.91	52.0	4.92	.63	.79	.94	48.0	5.55	.65	.82	.98
	1800	62.5	3.44	.60	.74	.87	59.0	3.88	.61	.76	.90	56.0	4.37	.63	.78	.93	52.5	4.92	.64	.80	.96	48.5	5.55	.66	.84	.99
	2000	63.5	3.45	.61	.76	.91	60.5	3.88	.63	.78	.93	57.0	4.38	.64	.81	.96	53.0	4.93	.66	.83	.99	49.0	5.56	.68	.88	1.00
71°F	1700	64.5	3.45	.44	.57	.71	61.5	3.89	.45	.58	.72	58.5	4.39	.45	.60	.74	54.5	4.93	.46	.62	.77	50.5	5.57	.46	.64	.80
	1800	65.5	3.45	.45	.58	.72	62.5	3.90	.45	.60	.74	59.0	4.39	.46	.61	.76	55.0	4.96	.46	.63	.78	51.0	5.58	.46	.65	.81
	2000	67.0	3.47	.46	.60	.74	63.5	3.90	.46	.61	.76	60.0	4.41	.47	.63	.78	56.0	4.97	.47	.65	.81	52.0	5.59	.48	.67	.85

5 TON HEATING - QHA060S4D

Indoor Coil Air Volume 70°F Dry Bulb cfm	Air Temperature Entering Outdoor Coil									
	65°F		45°F		25°F		5°F		-15°F	
	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input	Total Heating Capacity	Comp. Motor Input
	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW	kBtuh	kW
1700	73.8	4.25	56.9	3.97	39.6	3.68	26.2	3.27	13.5	2.39
1800	74.0	4.20	57.2	3.91	39.9	3.63	26.5	3.21	13.8	2.34
2000	74.4	4.11	57.6	3.82	40.3	3.54	26.9	3.12	14.2	2.25

BLOWER DATA

QHA036S4D

Blower Tap	External Static (in.w.g.)										
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Tap 1 (Fan Only)	Cfm	839	756	658	531	446	366	---	---	---	---
	RPM	431	481	540	606	655	702	---	---	---	---
	Watts	66	72	78	86	91	97	---	---	---	---
Tap 2 (Low Cooling)	Cfm	1444	1391	1342	1291	1244	1207	1152	1095	1038	965
	RPM	631	668	702	735	769	798	835	871	909	954
	Watts	226	237	246	256	266	276	286	297	307	322
Tap 3 (High Cooling)	Cfm	1792	1751	1709	1665	1626	1584	1542	1505	1471	1429
	RPM	752	778	808	838	866	894	921	950	971	1000
	Watts	404	416	429	442	455	466	481	493	503	516
1 Tap 4 (Low Electric Heat)	Cfm	1440	1387	1335	1286	1237	1200	1142	1084	1027	945
	RPM	629	665	699	734	766	794	833	870	907	954
	Watts	224	234	244	254	264	272	283	293	304	318
1 Tap 5 (High Electric Heat)	Cfm	1793	1748	1707	1664	1622	1582	1542	1504	1467	1423
	RPM	750	779	806	836	865	893	920	944	970	999
	Watts	404	416	429	441	453	466	481	488	499	512

NOTE - All air data is measured external to unit with dry coil and without air filters.

¹ Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection.

QHA042S4D

Blower Tap	External Static (in.w.g.)										
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Tap 1 (Fan Only)	Cfm	833	758	676	569	493	406	346	---	---	---
	RPM	441	493	547	605	659	708	745	---	---	---
	Watts	67	73	79	87	92	99	103	---	---	---
Tap 2 (Low Cooling)	Cfm	1677	1624	1577	1526	1481	1432	1385	1336	1279	1226
	RPM	698	729	759	789	816	843	872	902	934	968
	Watts	335	347	359	370	380	390	401	412	425	438
Tap 3 (High Cooling)	Cfm	1970	1930	1885	1841	1800	1760	1722	1681	1645	1604
	RPM	797	823	853	880	903	929	951	974	997	1024
	Watts	532	545	560	575	587	601	613	623	634	648
1 Tap 4 (Low Electric Heat)	Cfm	1673	1624	1570	1519	1477	1431	1382	1330	1277	1226
	RPM	698	730	762	793	817	843	873	903	934	967
	Watts	335	347	359	371	380	389	399	411	423	435
1 Tap 5 (High Electric Heat)	Cfm	1953	1914	1871	1825	1780	1745	1708	1669	1630	1588
	RPM	799	819	846	877	903	927	947	974	995	1024
	Watts	530	540	554	572	584	595	606	620	630	647

NOTE - All air data is measured external to unit with dry coil and without air filters.

¹ Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection.

BLOWER DATA

QHA048S4D

Blower Tap	External Static (in.w.g.)										
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Tap 1 (Fan Only)	Cfm	1129	1066	1006	939	871	808	703	645	576	509
	RPM	531	571	611	652	695	739	787	827	867	903
	Watts	124	132	139	147	155	164	173	180	188	195
Tap 2 (Low Cooling)	Cfm	1818	1772	1726	1680	1638	1599	1562	1518	1475	1429
	RPM	751	780	806	833	861	884	907	931	962	988
	Watts	396	410	420	433	445	455	465	476	489	500
Tap 3 (High Cooling)	Cfm	2093	2055	2015	1973	1931	1894	1857	1827	1795	1762
	RPM	850	873	893	921	944	968	991	1011	1031	1051
	Watts	588	603	612	629	642	657	670	683	693	703
1 Tap 4 (Low Electric Heat)	Cfm	1807	1763	1724	1680	1640	1603	1563	1522	1477	1434
	RPM	761	793	816	843	872	899	926	951	978	1006
	Watts	400	414	425	436	449	463	475	486	497	511
1 Tap 5 (High Electric Heat)	Cfm	1961	1922	1880	1844	1806	1769	1735	1698	1663	1627
	RPM	828	853	879	904	928	953	976	1000	1026	1048
	Watts	552	565	578	591	603	616	628	642	654	666

NOTE - All air data is measured external to unit with dry coil and without air filters.

¹ Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection.

QHA060S4D

Blower Tap	External Static (in.w.g.)										
		0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0
Tap 1 (Fan Only)	Cfm	1378	1320	1269	1223	1160	1099	1030	965	899	833
	RPM	603	639	668	699	740	778	816	855	894	931
	Watts	181	191	197	205	214	224	233	242	251	261
Tap 2 (Low Cooling)	Cfm	1980	1936	1893	1852	1816	1780	1740	1703	1660	1615
	RPM	806	833	862	887	903	927	951	971	1002	1029
	Watts	460	472	484	498	504	516	526	536	551	564
Tap 3 (High Cooling)	Cfm	2340	2300	2259	2224	2187	2158	2139	2108	2079	2038
	RPM	931	958	981	1004	1027	1047	1063	1081	1099	1116
	Watts	742	760	775	790	805	820	829	841	852	858
1 Tap 4 (Low Electric Heat)	Cfm	2232	2194	2154	2129	2089	2057	2026	1991	1960	1926
	RPM	897	917	946	970	993	1012	1028	1048	1068	1089
	Watts	653	666	683	696	708	722	731	743	755	767
1 Tap 5 (High Electric Heat)	Cfm	2329	2291	2256	2220	2183	2153	2136	2102	2075	2035
	RPM	931	954	980	1000	1025	1044	1061	1081	1102	1116
	Watts	742	757	773	785	804	815	828	841	855	858

NOTE - All air data is measured external to unit with dry coil and without air filters.

¹ Taps 4 and 5 are used with Optional Electric Heat. Refer to Electric Heat nameplate for proper heat tap selection.

BLOWER DATA

AIR RESISTANCE DATA - in. w.g.

Air Volume cfm	Wet Indoor Coil			Optional Economizer
	036, 042	048	060	
600	0.01	0.01	---	0.02
700	0.01	0.01	0.01	0.03
800	0.01	0.01	0.01	0.04
900	0.02	0.01	0.01	0.05
1000	0.02	0.02	0.02	0.06
1100	0.02	0.02	0.02	0.07
1200	0.03	0.02	0.02	0.08
1300	0.03	0.03	0.03	0.10
1400	0.04	0.03	0.03	0.12
1500	0.05	0.04	0.03	0.13
1600	0.05	0.05	0.03	0.15
1700	0.05	0.05	0.04	0.18
1800	0.06	0.05	0.04	0.20
1900	0.06	0.06	0.04	0.21
2000	0.07	0.06	0.05	0.24

NOTE - Optional Electric Heat has no appreciable air resistance.

ELECTRICAL/ELECTRIC HEAT DATA

3 TON

Model No.		QHA036S4D	
¹ Voltage - 60Hz		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	14	9
	Locked Rotor Amps	71.7	38
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	0.75	0.75
	Type	ECM	ECM
	Full Load Amps	6	3.2
² Maximum Overcurrent Protection (MOCP)	Unit Only	25	15
³ Minimum Circuit Ampacity (MCA)	Unit Only	19	11.4

ELECTRIC HEAT DATA

Electric Heat Voltage			208V	240V	480V
² Maximum Overcurrent Protection (MOCP)	Unit +	5 kW	25	25	15
	Electric Heat	10 kW	40	40	20
		15 kW	60	60	30
³ Minimum Circuit Ampacity (MCA)	Unit +	5 kW	22.5	22.5	11.5
	Electric Heat	10 kW	37.6	37.6	19
		15 kW	52.6	52.6	26.6

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

¹ Extremes of operating range are plus and minus 10% of line voltage.

² HACR type breaker or fuse.

³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA

3.5 TON

Model No.		QHA042S4D	
¹ Voltage - 60Hz		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	17.5	8.8
	Locked Rotor Amps	84	44
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	0.75	0.75
	Type	ECM	ECM
	Full Load Amps	6	3.2
² Maximum Overcurrent Protection (MOCP)	Unit Only	30	15
³ Minimum Circuit Ampacity (MCA)	Unit Only	21.8	11.2

ELECTRIC HEAT DATA

Electric Heat Voltage			Ckt 1 208V	Ckt 1 240V	Ckt 2 208V	Ckt 2 240V	Ckt 1 480V	Ckt 2 480V
² Maximum Overcurrent Protection (MOCP)	Unit +	5 kW	25	25	---	---	15	---
	Electric Heat	10 kW	40	40	---	---	20	---
		15 kW	60	60	---	---	30	---
		20 kW	60	60	30	30	30	15
³ Minimum Circuit Ampacity (MCA)	Unit +	5 kW	22.5	22.5	---	---	11.5	---
	Electric Heat	10 kW	37.6	37.6	---	---	19	---
		15 kW	52.6	52.6	---	---	26.6	---
		20 kW	52.6	52.6	26	26	26.6	13

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

¹ Extremes of operating range are plus and minus 10% of line voltage.

² HACR type breaker or fuse.

³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA

4 TON

Model No.

QHA048S4D

¹ Voltage - 60Hz		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	21.5	9.5
	Locked Rotor Amps	83.1	43
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	0.75	0.75
	Type	ECM	ECM
	Full Load Amps	7.6	4
² Maximum Overcurrent Protection (MOCP)	Unit Only	40	15
³ Minimum Circuit Ampacity (MCA)	Unit Only	26.6	12.6

ELECTRIC HEAT DATA

Electric Heat Voltage			Ckt 1 208V	Ckt 1 240V	Ckt 2 208V	Ckt 2 240V	Ckt 1 480V	Ckt 2 480V
² Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	5 kW	25	25	---	---	15	---
		10 kW	40	40	---	---	25	---
		15 kW	60	60	---	---	30	---
		20 kW	60	60	30	30	30	15
³ Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	5 kW	24.5	24.5	---	---	12.5	---
		10 kW	39.6	39.6	---	---	20	---
		15 kW	54.6	54.6	---	---	27.6	---
		20 kW	54.6	54.6	26	26	27.6	13

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

¹ Extremes of operating range are plus and minus 10% of line voltage.² HACR type breaker or fuse.³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRICAL/ELECTRIC HEAT DATA

5 TON

Model No.

QHA060S4D

¹ Voltage - 60Hz		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	20.6	9.9
	Locked Rotor Amps	93	60
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	0.75	0.75
	Type	ECM	ECM
	Full Load Amps	7.6	4
² Maximum Overcurrent Protection (MOCP)	Unit Only	35	15
³ Minimum Circuit Ampacity (MCA)	Unit Only	25.9	12.9

ELECTRIC HEAT DATA

Electric Heat Voltage			Ckt 1 208V	Ckt 1 240V	Ckt 2 208V	Ckt 2 240V	Ckt 1 480V	Ckt 2 480V
² Maximum Overcurrent Protection (MOCP)	Unit + Electric Heat	5 kW	25	25	---	---	15	---
		10 kW	40	40	---	---	25	---
		15 kW	60	60	---	---	30	---
		20 kW	60	60	30	30	30	15
		23 kW	60	60	40	40	35	15
³ Minimum Circuit Ampacity (MCA)	Unit + Electric Heat	5 kW	24.5	24.5	---	---	12.5	---
		10 kW	39.6	39.6	---	---	20	---
		15 kW	54.6	54.6	---	---	27.6	---
		20 kW	54.6	54.6	26	26	27.6	13
		23 kW	51.9	51.9	39.5	39.5	30.9	15

NOTE - All units have a minimum Short Circuit Current Rating (SCCR) of 5000 amps.

¹ Extremes of operating range are plus and minus 10% of line voltage.² HACR type breaker or fuse.³ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements.

ELECTRIC HEAT CAPACITIES

Input Voltage	5 kW			10 kW			15 kW			20 kW			23 kW		
	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output	No of Stages	kW input	Btuh Output
208	1	3.8	12,800	1	7.5	25,600	1	11.2	38,400	1	17.3	59,100	1	19.9	68,000
220	1	4.2	14,300	1	8.4	28,700	1	12.6	43,000	1	18.3	62,600	1	21.1	71,900
230	1	4.6	15,700	1	9.2	31,400	1	13.8	47,000	1	19.2	65,400	1	22.0	75,200
240	1	5.0	17,100	1	10.0	34,200	1	15.0	51,200	1	20.0	68,200	1	23.0	78,500
440	1	4.2	14,300	1	8.4	28,700	1	12.6	43,000	1	18.3	62,600	1	21.1	71,900
460	1	4.6	15,700	1	9.2	31,400	1	13.8	47,000	1	19.2	65,400	1	22.0	75,200
480	1	5.0	17,100	1	10.0	34,200	1	15.0	51,200	1	20.0	68,200	1	23.0	78,500

INSTALLATION CLEARANCES

	in.	mm
Front	24	610
Right Side (blower access)	24	610
Left Side (evaporator coil access)	24	610
Back	0	0
Top	48	1219

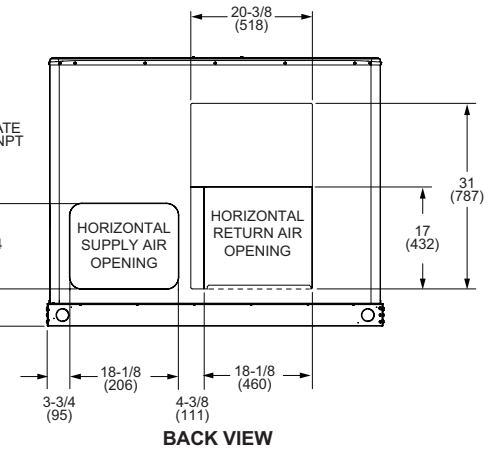
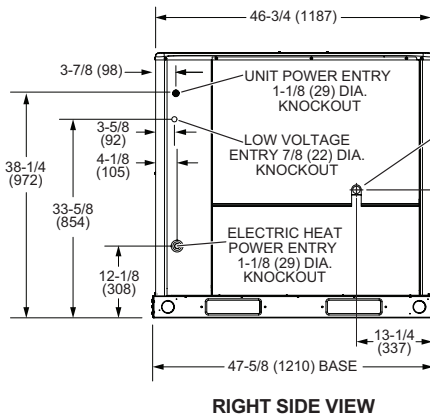
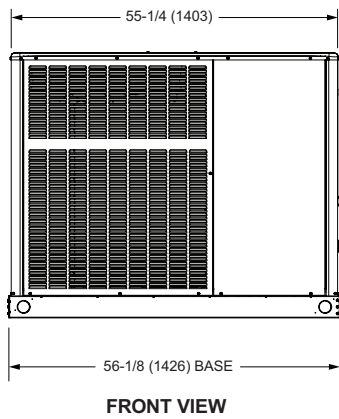
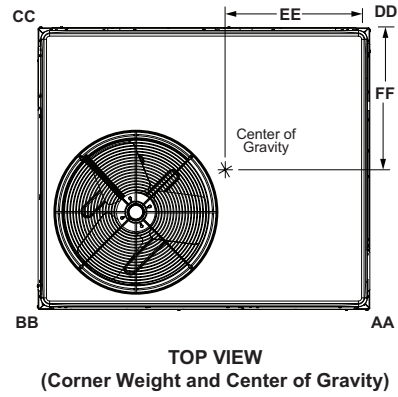
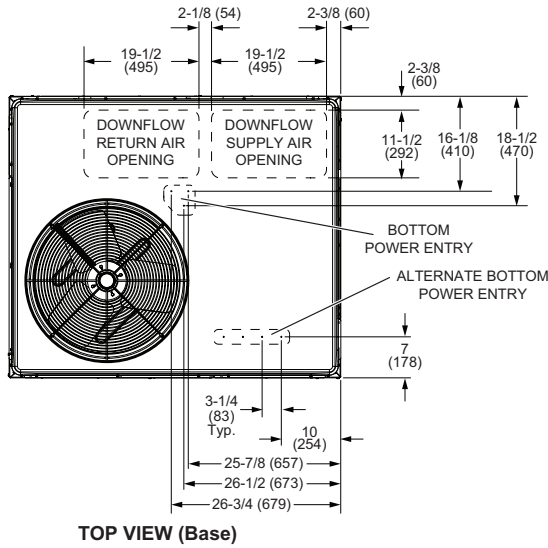
WEIGHT DATA			UNIT	
Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
QHA036	505	229	515	234
QHA042	517	235	527	239
QHA048	526	239	536	243
QHA060	536	243	546	248

WEIGHT DATA		OPTIONS / ACCESSORIES	
		Shipping	
		lbs.	kg
CABINET			
Tool-Less Filter Access Kit		20	9
ECONOMIZER / OUTDOOR AIR			
Economizer			
Economizer, Includes Barometric Relief Dampers and Exhaust Hood		95	43
Outdoor Air Dampers			
Motorized		35	16
Manual		28	13
ELECTRIC HEAT			
5 kW		6	3
7.5 kW		7	3
10 kW		8	4
15 kW		8	4
20 kW		8	4
23 kW		9	4
ROOF CURBS			
Clip Curbs			
8 in. height		63	29
14 in. height		77	35
18 in. height		99	45
24 in. height		132	60
Adjustable Pitch Curb, Downflow			
14 in. height		95	43

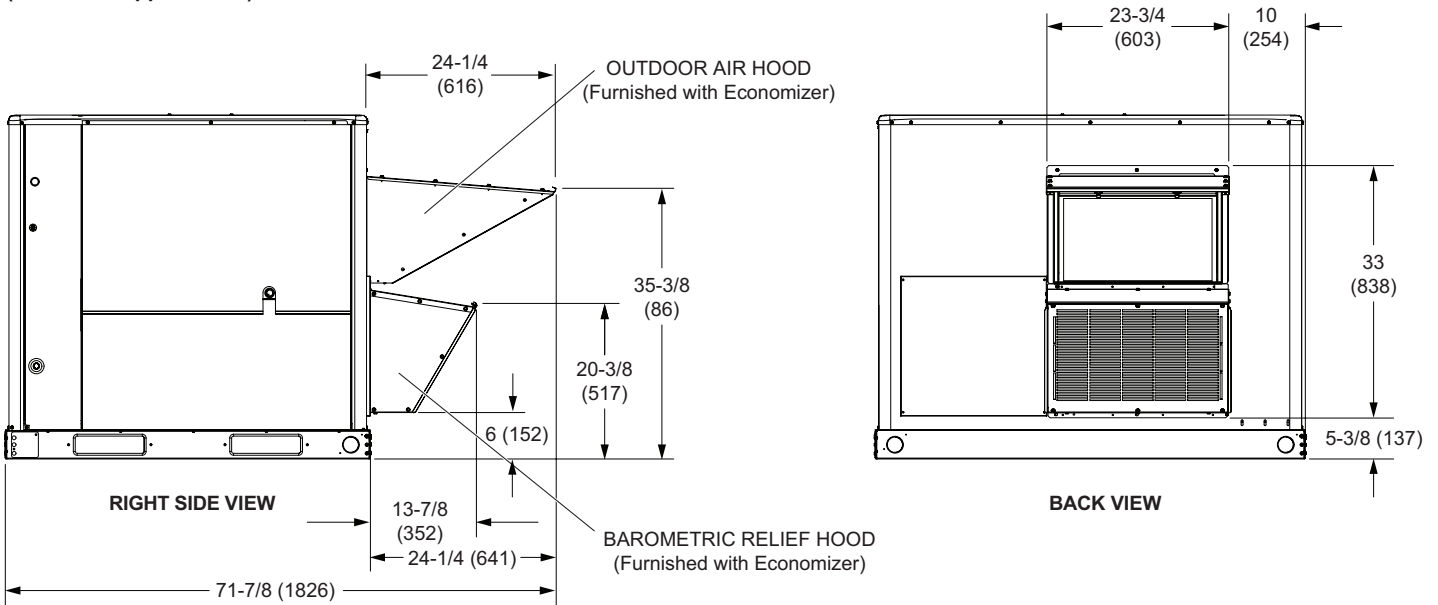
DIMENSIONS

UNIT

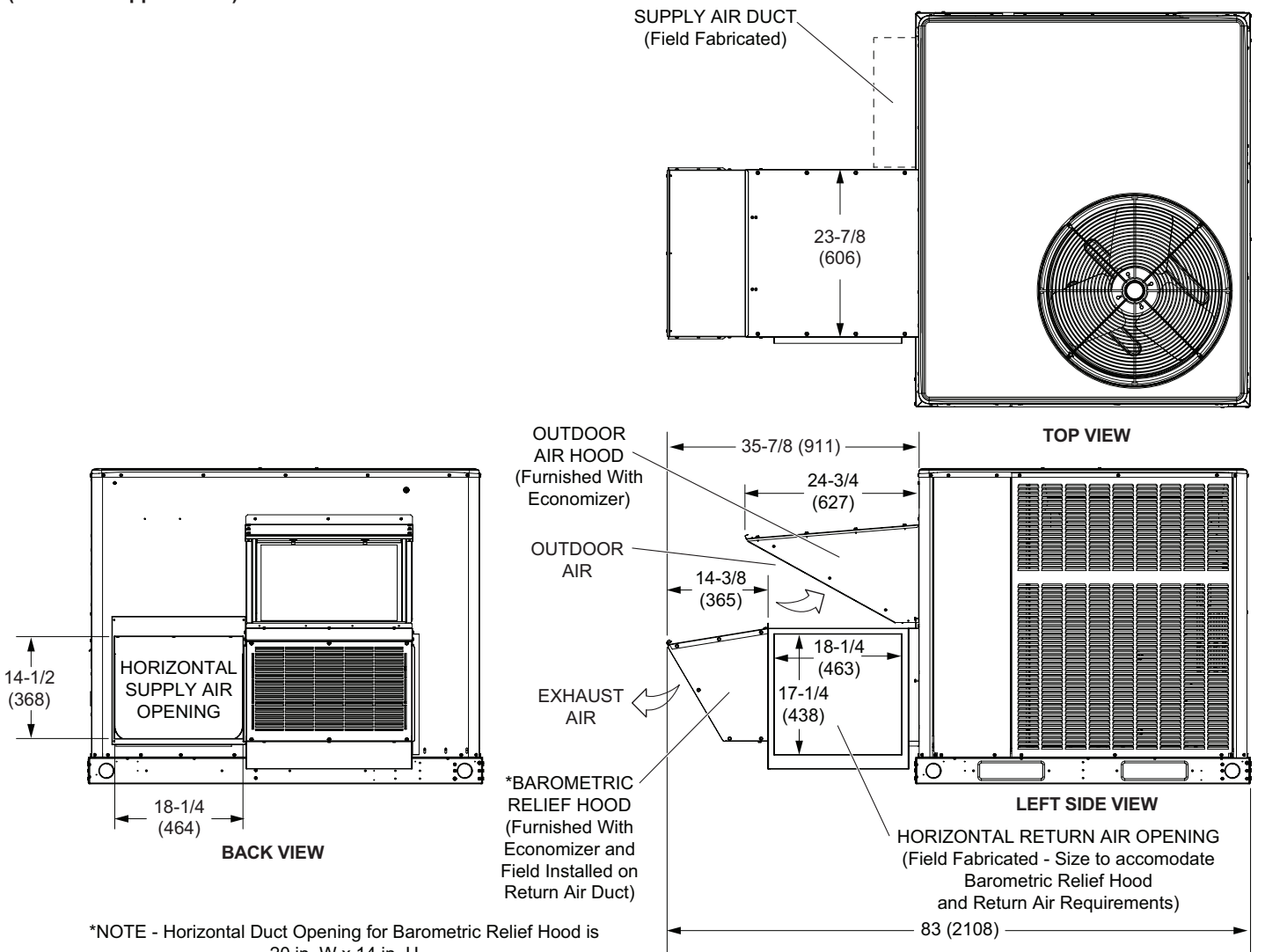
Model Number	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
QHA036	116	53	126	57	137	62	126	57	25.25	641	21.50	546
QHA042	118	54	129	59	140	64	129	59	25.25	641	21.50	546
QHA048	120	54	132	60	143	65	131	59	25.25	641	21.50	546
QHA060	123	56	134	61	145	66	134	61	25.25	641	21.50	546



**OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER WITH BAROMETRIC RELIEF DAMPERS
(Downflow Applications)**



**OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER WITH BAROMETRIC RELIEF DAMPERS
(Horizontal Applications)**

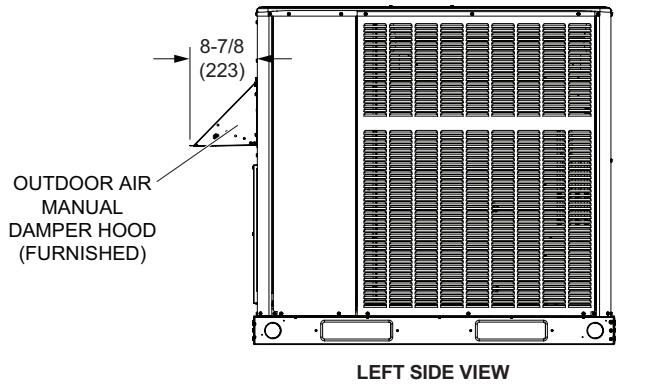


*NOTE - Horizontal Duct Opening for Barometric Relief Hood is 20 in. W x 14 in. H

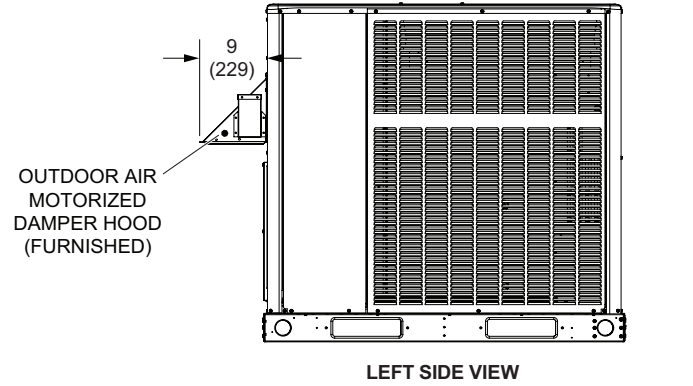
NOTE - Return Air Duct and Transition must be supported.

OUTDOOR AIR HOOD DETAIL FOR OPTIONAL OUTDOOR AIR DAMPERS

MANUAL OUTDOOR AIR DAMPERS

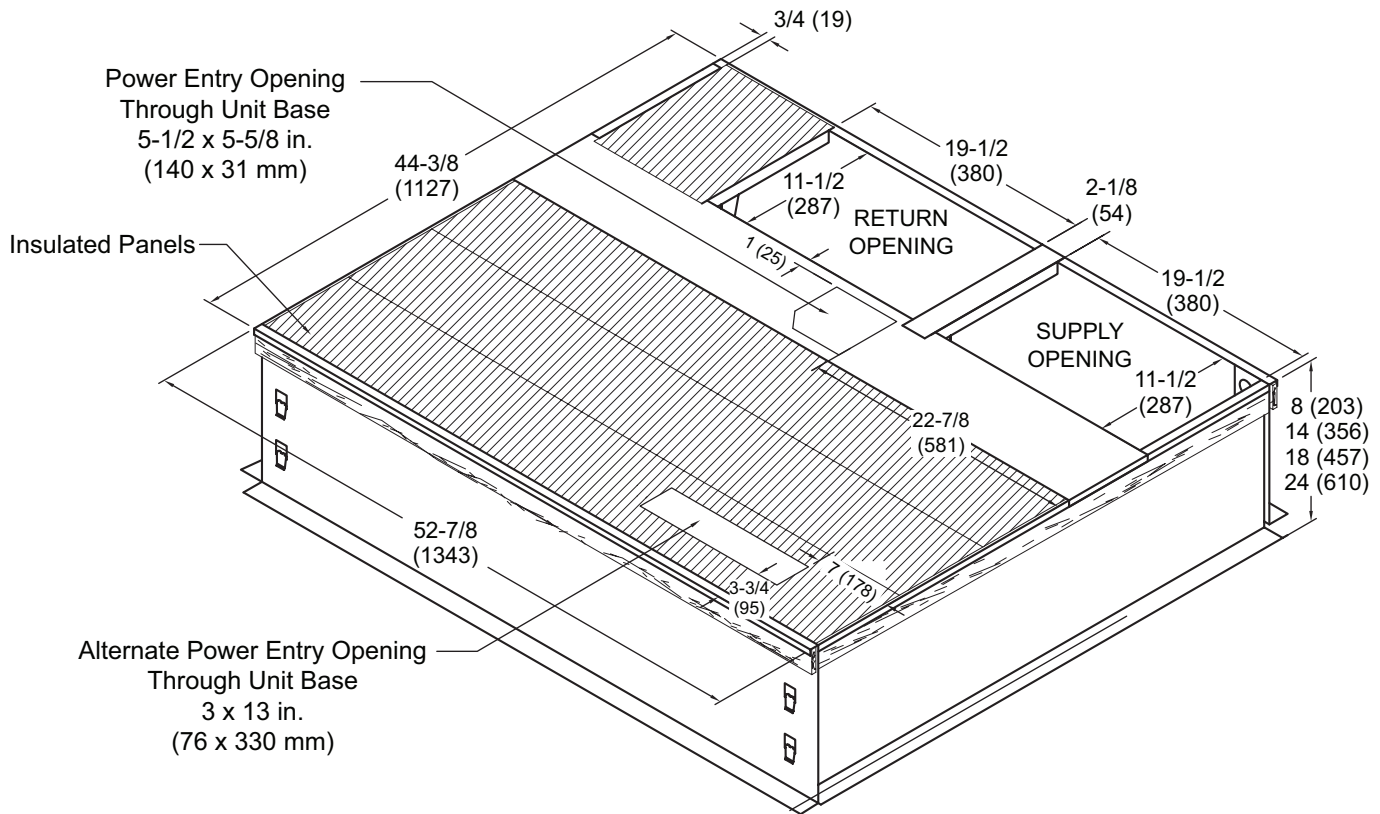


MOTORIZED OUTDOOR AIR DAMPERS



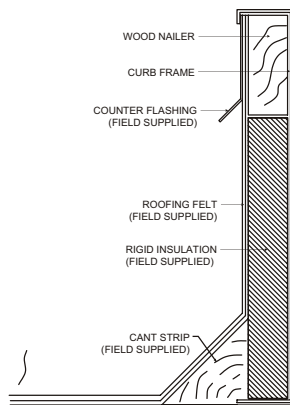
NOTE - Outdoor Air Hood and Panel replaces existing panel on unit.

CLIP CURB

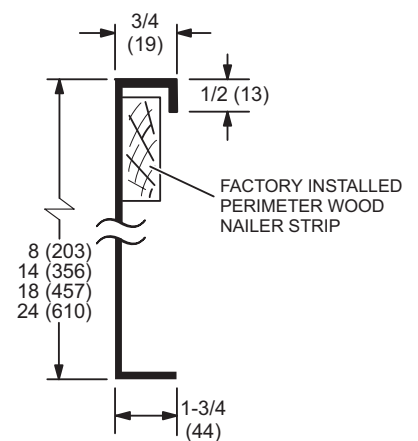


NOTE - Roof deck may be omitted within confines of curb.

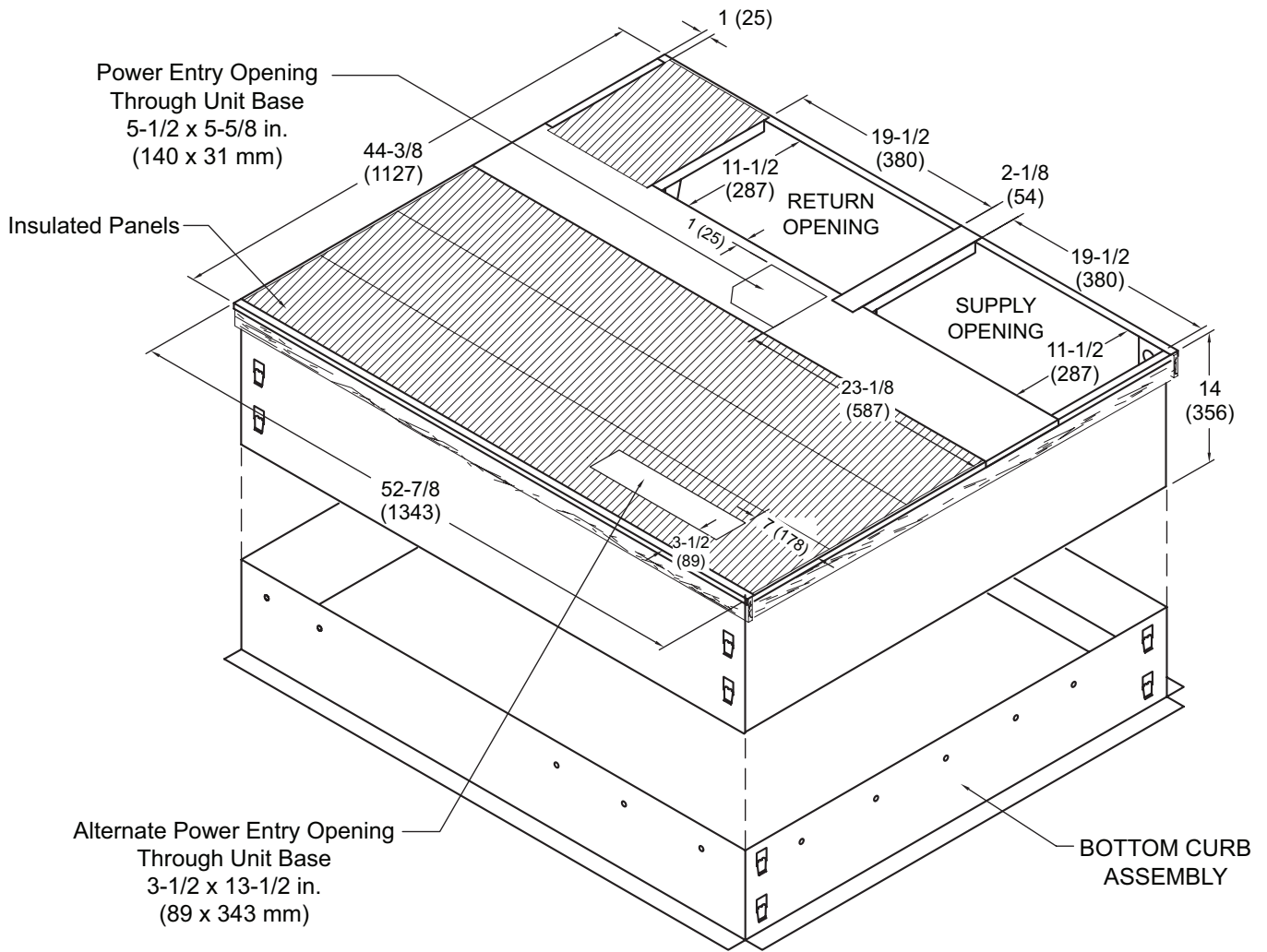
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

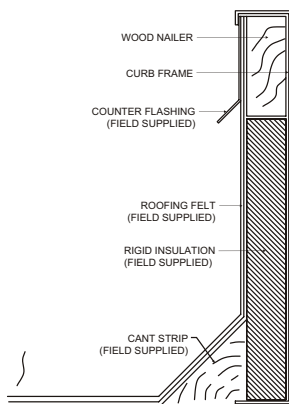


ADJUSTABLE PITCH ROOF CURB

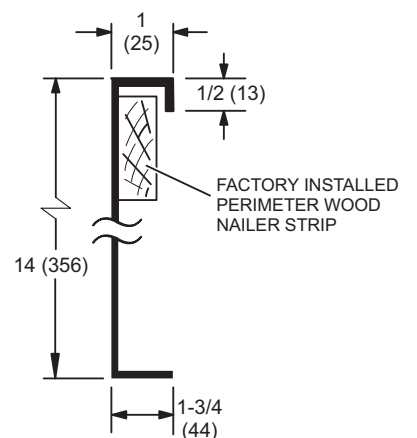


NOTE - Roof deck may be omitted within confines of curb.

TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB





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