



## COMMERCIAL PRODUCT SPECIFICATIONS

PACKAGED GAS / ELECTRIC

**QGA ULNOx**

Q-SERIES™

Standard Efficiency - Three-Phase - 60 Hz

Bulletin No. 310960

March 2022



SEER - 14.00

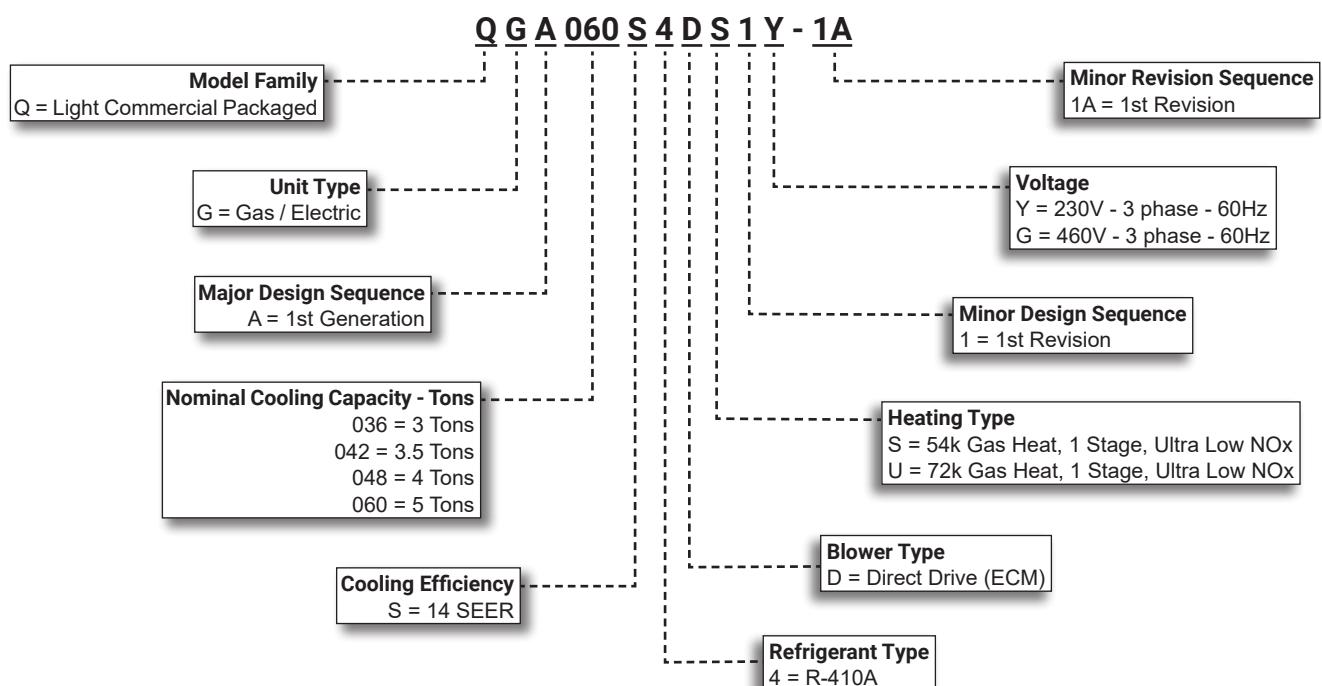
AFUE - 81%

3 to 5 Tons

Cooling Capacity - 34,000 to 57,000 Btuh

Gas Input Heat Capacity - 54,000 to 72,000 Btuh

### MODEL NUMBER IDENTIFICATION



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## APPROVALS AND WARRANTY

### APPROVALS

- AHRI Standard 210/240 certified
- Heating ratings are Certified by AHRI according to U.S. Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations
- Design Certified by ETL Intertek
- Unit and components ETL, NEC and CEC bonded for grounding to meet safety standards for servicing
- All models are ASHRAE 90.1 compliant
- Seismic Certification (with Seismic Strapping Kit applied): Latest Edition of International Building Code, California Building Code, and ASCE 7-16

### California Only

- If installed in South Coast Air Quality Management District (SCAQMD) only:
- This gas unit meets the SCAQMD Rule 1111 NOx emission limit (14 ng/J). This furnace is eligible for the Clean Air Furnace Rebate Program: [www.CleanAirFurnaceRebate.com](http://www.CleanAirFurnaceRebate.com).
- If installed in San Joaquin Valley Air Pollution Control District (SJVAPCD) only:
- This gas unit meets the SJVAPCD Rule 4905 NOx emission limit (14 ng/J)

### WARRANTY

- Heat exchanger - Limited ten years
- Compressors - Limited five years
- All other covered components - Limited one year

## FEATURES AND BENEFITS

### HEATING SYSTEM

#### Heat Exchanger

- Stainless steel tubular steel for superior resistance to corrosion and oxidation
- Round surfaces create minimum air resistance and allow air to surround all surfaces for excellent heat transfer
- Compact design reduces space requirements in cabinet
- Laboratory life cycle tested

#### Pre-Mix Burner

- Burner mixes air and gas in correct proportion for proper combustion
- Inlet screen maintains clean, reliable burner operation

#### Modulating Gas Control Valve

- 24 volt redundant combination gas control valve combines manual shut off valve (On-Off), automatic electric valve (dual) and gas pressure regulation into a compact combination control

#### Variable Speed Combustion Air Inducer

- Heavy duty combustion air inducer prepurges heat exchanger and safely vents flue products
- Blower is controlled by the ignition control board
- Pressure switch proves blower operation before allowing gas valve to open
- Combustion air inducer operates during heating cycle
- Inducer operates for the first 10 seconds of every cooling cycle to prevent insects from nesting in the flue outlet during cooling season

#### Limit Control

- Factory installed behind heat exchanger access panel
- Automatic reset

#### Thermal Switch

- Factory installed on air/fuel intake assembly
- Provides protection from abnormal operating conditions
- Automatic reset

#### Ignition Control Board

- Ignition control board with LED diagnostics

#### Ultra Low NOx

- All models are ultra low NOx (14 ng/J)

### Required Selections

#### Gas Input Choice (1 Stage) - Order one:

- 54,000 Btuh (036)
- 72,000 Btuh (042, 048, 060)

### Optional Accessories

#### Bottom Gas Entry Kit

- Allows gas piping connection through the unit base pan

#### Vertical Vent Extension Kit

- Use to exhaust flue gases vertically above unit
- Required when unit vent is too close to fresh air intakes per building codes

### COOLING SYSTEM

#### R-410A Refrigerant

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

#### Evaporator and Condenser 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

#### 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

## FEATURES AND BENEFITS

### 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 (40°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 40°F

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

### 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

#### Gas Piping/Electrical Inlets and Service Valves

- Electrical and gas lines 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 Gas Entry Kit

- Field installed piping kit to facilitate bottom gas entry

##### 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

**NOTE** - Not for seismic-rated applications.

## FEATURES AND BENEFITS

### CONTROLS

#### 24 Volt Transformer

- 70VA transformer furnished and factory installed in control area

### Field Installed

#### Smoke Detector

- Photoelectric type
- Installed in supply air and/or return air ducts
- 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 (not applicable on 460V models)
- 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

### 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 90.1-2016 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

## **OPTIONS / ACCESSORIES**

### **ECONOMIZER (continued)**

**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 2019 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

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, CO<sub>2</sub> 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

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
- Fully gasketed around curb perimeter and supply and return openings
- Shipped knocked down

All Clip and Adjustable Pitch Curbs

- IBC 2018 compliant
- CBC 2019 compliant
- Seismic rating - SDS 2.0g, z/h=1, Ip=1.5
- Wind rating - 240 mph (Lateral), 214 mph (Uplift)
- Maximum load rating - 800 lbs.

Adaptor Curbs (not shown)

- Adaptor curbs are locally sourced

**NOTE** - Please contact your Allied representative for guidance in your area.

Strapping Kit - Hurricane

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

Strapping Kit - Seismic

- Heavy-gauge galvanized steel
- Kit contains 4 brackets and mounting hardware

## OPTIONS / ACCESSORIES

Item	Catalog No.	Model No.			
		QGA036	QGA042	QGA048	QGA060
<b>COOLING SYSTEM</b>					
Compressor Crankcase Heater 230V 1-ph or 3-ph	11X27	X	X	X	X
Compressor Crankcase Heater 460V 3-ph	21D21	X	X	X	X
Compressor Timed-Off Control	47J27	X	X	X	X
Freezestat	21D23	X	X	X	X
Low Ambient Kit (40°F)	21D20	X	X	X	X
<b>HEATING SYSTEM</b>					
Gas Heat Input	54 kBtuh input	Factory	X		
	72 kBtuh input	Factory		X	X
Bottom Gas Entry Kit	22G63	X	X	X	X
Vertical Vent Extension Kit	21J79	X	X	X	X
<b>CABINET</b>					
Base Rail Openings Closure Kit	21J84	X	X	X	X
Square to Round Duct Adaptor Kits	Downflow	14 in. dia.	20X82	X	
		14 in. dia.	21D26		X
	Horizontal	14 in. dia.	21J92	X	
		14 in. dia.	21D24		X
		16 in. dia.	22U78		X
		18 in. dia.	22U79		X
Tool-Less Filter Access Kit	21J80	X	X	X	X
<b>CONTROLS</b>					
Smoke Detector - Supply or Return (one sensor)	21U21	X	X	X	X
Smoke Detector - Supply and Return (two sensors)	21U22	X	X	X	X
<b>ELECTRICAL</b>					
Bottom Power Entry Kit	21J78	X	X	X	X
<b>ECONOMIZER</b>					
<b>Standard Economizer With Outdoor Air Hood (Not for Title 24)</b>					
Downflow or Horizontal (Includes Barometric Relief Dampers and Exhaust Hood)	21U15	X	X	X	X
<b>High Performance Economizer With Outdoor Air Hood (Approved for California Title 24 Building Standards / AMCA Class 1A Certified)</b>					
Downflow or Horizontal (Includes Barometric Relief Dampers and Exhaust Hood)	21U17	X	X	X	X
<b>Economizer Controls</b>					
Single Enthalpy Control (Standard)	21Z09	X	X	X	X
Single Enthalpy Control (High Performance)	11G21	X	X	X	X
<b>OUTDOOR AIR</b>					
<b>Outdoor Air Dampers With Outdoor Air Hood</b>					
Motorized	21U19	X	X	X	X
Manual	21U20	X	X	X	X

X = Field Installed

## OPTIONS / ACCESSORIES

Item	Catalog No.	Model No.			
		QGA036	QGA042	QGA048	QGA060
<b>ROOF CURBS</b>					
<b>Clip Curbs</b>					
8 in height	<b>21J17</b>	X	X	X	X
14 in height	<b>21J19</b>	X	X	X	X
18 in height	<b>21J20</b>	X	X	X	X
24 in height	<b>21J25</b>	X	X	X	X
<b>Adjustable Pitch Roof Curb (Knock-Down Style)</b>					
14 in height	<b>21U04</b>	X	X	X	X
<b>Adjustable Pitch Roof Curb (Welded Style)</b>					
14 in height	<b>22V55</b>	X	X	X	X
<b>Strapping Kits for Roof Curbs</b>					
Strapping Kit - Hurricane (Slab Mount)	<b>21J74</b>	X	X	X	X
Strapping Kit - Hurricane (Rail Mount)	<b>22G53</b>	X	X	X	X
Strapping Kit - Seismic	<b>21J75</b>	X	X	X	X

X = Field Installed

## SPECIFICATIONS

General Data		Nominal Tonnage	3 Ton	3.5 Ton	4 Ton	5 Ton
Cooling Performance	Model Number	QGA036S4D	QGA042S4D	QGA048S4D	QGA060S4D	
	Efficiency Type	Standard	Standard	Standard	Standard	
	Blower Type	Direct Drive (ECM)	Direct Drive (ECM)	Direct Drive (ECM)	Direct Drive (ECM)	
	Gross Cooling Capacity - Btuh	35,000	41,500	48,000	59,000	
Refrigerant Charge		<sup>1</sup> Net Cooling Capacity - Btuh	34,000	40,000	46,000	57,000
Gas Heating Options		AHRI Rated Air Flow - cfm	1200	1400	1600	1800
Compressor Type		Total Unit Power - kW	2.80	3.26	3.76	4.85
Outdoor Coil Fan		<sup>1</sup> SEER	14.00	14.00	14.00	14.00
Indoor Coil		<sup>1</sup> EER	11.50	11.50	11.50	11.50
Refrigerant Charge		Refrigerant Type	R-410A	R-410A	R-410A	R-410A
Indoor Blower		7 lbs. 0 oz.	6 lbs 14 oz.	7 lbs. 3 oz.	8 lbs. 11 oz.	
See Page 10						
Outdoor Coil		Net face area (total) - sq. ft.	19.53	19.53	19.53	16.60
Indoor Blower		Tube diameter - in.	5/16	5/16	5/16	5/16
<sup>2</sup> Filters		Number of rows	1	1	1	2
Electrical characteristics		Fins per inch	26	26	26	22
Drain connection (Number) and size - in.		Motor - (No.) horsepower	(1) 1/3	(1) 1/3	(1) 1/3	(1) 1/3
Type of filter		Motor rpm	825	825	825	825
Number and size - in.		Total Motor Input - watts	280	280	280	280
Expansion device type		Diameter - (No.) in.	(1) 24	(1) 24	(1) 24	(1) 24
Drain connection (Number) and size - in.		Number of blades	3	3	3	3
Drain connection (Number) and size - in.		Net face area (total) - sq. ft.	6.75	6.75	6.75	6.75
Drain connection (Number) and size - in.		Tube diameter - in.	5/16	5/16	5/16	3/8
Drain connection (Number) and size - in.		Number of rows	3	3	3	3
Drain connection (Number) and size - in.		Fins per inch	15	15	15	15
Drain connection (Number) and size - in.		Expansion device type	(1) 3/4 in. NPT coupling			
Drain connection (Number) and size - in.		Type of filter	Disposable			
Drain connection (Number) and size - in.		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
Drain connection (Number) and size - in.		Expansion device type	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.

<sup>1</sup> AHRI Certified to AHRI Standard 210/240: 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

<sup>2</sup> Filters are not furnished and must be field provided.

## SPECIFICATIONS - GAS HEAT

General Data	Model No.	QGA036S4D	QGA042S4D QGA048S4D QGA060S4D
Heating Capacity Btuh	Input	54,000	72,000
	Output	43,740	58,320
<sup>1</sup> AFUE		81%	81%
Temperature Rise - °F		30-60	25-55
Gas Supply Connection (FPT) - in.		1/2	1/2
Min. Recommended Gas Supply Pressure		5 in. w.g. Natural Gas	

<sup>1</sup> Annual Fuel Utilization Efficiency based on U.S. DOE test procedures and FTC labeling regulations.

## HIGH ALTITUDE DERATE

Units may be installed at altitudes up to 4500 feet above sea level without any modification. Units are not approved for installation above 4500 feet.

## 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 - QGA036S4D

Entering Wet Bulb Tem- perature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F					95°F					105°F					115°F					125°F				
		Total Cool Cap. cfm	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)						
				Dry	Bulb			Dry	Bulb			Dry	Bulb			Dry	Bulb			Dry	Bulb					
59°F	1050	34.2	1.93	.94	1.00	1.00	32.8	2.21	.96	1.00	1.00	31.2	2.52	.98	1.00	1.00	29.6	2.89	1.00	1.00	1.00	27.6	3.32	1.00	1.00	1.00
	1200	35.6	1.93	.97	1.00	1.00	34.0	2.21	.99	1.00	1.00	32.4	2.52	1.00	1.00	1.00	30.6	2.89	1.00	1.00	1.00	28.6	3.33	1.00	1.00	1.00
	1350	36.8	1.94	1.00	1.00	1.00	35.2	2.21	1.00	1.00	1.00	33.6	2.53	1.00	1.00	1.00	31.6	2.90	1.00	1.00	1.00	29.4	3.33	1.00	1.00	1.00
63°F	1050	35.0	1.93	.76	.91	1.00	33.2	2.20	.78	.93	1.00	31.6	2.52	.80	.95	1.00	29.6	2.88	.83	.98	1.00	27.6	3.32	.86	1.00	1.00
	1200	36.0	1.93	.79	.95	1.00	34.4	2.21	.82	.97	1.00	32.6	2.53	.84	.99	1.00	30.6	2.90	.86	1.00	1.00	28.6	3.32	.90	1.00	1.00
	1350	37.0	1.94	.83	.98	1.00	35.2	2.22	.85	1.00	1.00	33.6	2.53	.87	1.00	1.00	31.6	2.90	.90	1.00	1.00	29.4	3.32	.93	1.00	1.00
67°F	1050	37.0	1.94	.60	.74	.88	35.2	2.21	.61	.76	.90	33.4	2.53	.61	.78	.92	31.2	2.90	.63	.80	.95	28.8	3.33	.66	.84	.98
	1200	38.0	1.95	.62	.77	.92	36.0	2.21	.63	.79	.94	34.0	2.53	.64	.82	.96	31.8	2.89	.65	.84	.99	29.4	3.32	.69	.88	1.00
	1350	38.5	1.95	.64	.80	.95	36.8	2.22	.64	.83	.97	34.6	2.53	.66	.85	1.00	32.4	2.90	.68	.88	1.00	30.0	3.33	.71	.92	1.00
71°F	1050	39.0	1.95	.45	.59	.72	37.2	2.22	.45	.60	.73	35.2	2.53	.46	.59	.75	33.0	2.90	.45	.61	.78	30.6	3.33	.46	.63	.82
	1200	40.0	1.95	.46	.61	.75	38.0	2.23	.46	.62	.77	36.0	2.54	.47	.62	.79	33.8	2.90	.47	.64	.82	31.0	3.33	.47	.68	.86
	1350	41.0	1.96	.47	.63	.79	39.0	2.23	.47	.64	.81	36.6	2.54	.48	.65	.83	34.2	2.90	.48	.67	.86	31.6	3.33	.48	.71	.90

### 3.5 TON - QGA042S4D

Entering Wet Bulb Tem- perature	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F					95°F					105°F					115°F					125°F				
		Total Cool Cap. cfm	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)		Total Cool Cap. kBtuh	Comp. Motor Input	Sensible/Total Ratio (S/T)						
				Dry	Bulb			Dry	Bulb			Dry	Bulb			Dry	Bulb			Dry	Bulb					
59°F	1225	40.0	2.33	.93	1.00	1.00	38.0	2.67	.95	1.00	1.00	36.4	3.06	.97	1.00	1.00	34.4	3.49	.99	1.00	1.00	32.2	3.99	1.00	1.00	1.00
	1400	41.5	2.33	.96	1.00	1.00	39.5	2.67	.98	1.00	1.00	37.8	3.05	1.00	1.00	1.00	35.6	3.48	1.00	1.00	1.00	33.4	3.98	1.00	1.00	1.00
	1575	42.5	2.33	.99	1.00	1.00	41.0	2.66	1.00	1.00	1.00	39.0	3.04	1.00	1.00	1.00	36.8	3.49	1.00	1.00	1.00	34.4	3.98	1.00	1.00	1.00
63°F	1225	40.5	2.33	.76	.91	1.00	39.0	2.67	.77	.92	1.00	36.8	3.05	.80	.94	1.00	34.6	3.50	.82	.97	1.00	32.2	3.99	.85	.99	1.00
	1400	42.0	2.33	.79	.94	1.00	40.0	2.67	.81	.96	1.00	37.8	3.05	.83	.98	1.00	35.8	3.49	.86	1.00	1.00	33.4	3.98	.89	1.00	1.00
	1575	43.0	2.33	.82	.97	1.00	41.0	2.66	.84	.99	1.00	39.0	3.05	.87	1.00	1.00	36.8	3.49	.89	1.00	1.00	34.4	3.97	.92	1.00	1.00
67°F	1225	43.0	2.33	.60	.73	.87	41.0	2.67	.60	.75	.90	39.0	3.05	.61	.77	.92	36.4	3.48	.63	.80	.94	33.6	3.98	.65	.83	.97
	1400	44.0	2.32	.62	.76	.91	42.0	2.66	.63	.79	.93	39.5	3.04	.63	.81	.95	37.0	3.49	.65	.84	.98	34.4	3.98	.68	.87	1.00
	1575	45.0	2.32	.64	.80	.95	43.0	2.66	.64	.82	.96	40.5	3.04	.65	.85	.98	37.6	3.48	.68	.88	1.00	35.0	3.98	.71	.90	1.00
71°F	1225	45.5	2.32	.45	.59	.72	43.0	2.66	.46	.60	.73	41.0	3.05	.46	.60	.75	38.5	3.48	.45	.61	.78	35.4	3.96	.45	.65	.81
	1400	46.5	2.32	.46	.61	.75	44.5	2.65	.46	.62	.76	42.0	3.04	.45	.62	.78	39.0	3.47	.46	.64	.82	36.2	3.98	.47	.67	.85
	1575	47.5	2.31	.46	.63	.78	45.0	2.65	.46	.63	.80	42.5	3.03	.46	.65	.83	40.0	3.47	.47	.67	.86	36.8	3.97	.50	.70	.89

## 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 - QGA048S4D

Entering Wet Bulb Tem- pera- ture	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F						95°F						105°F						115°F						
		Total Cool Cap. Input	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	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	1400	44.0	2.70	.91	1.00	1.00	42.5	3.08	.93	1.00	1.00	40.5	3.52	.95	1.00	1.00	38.5	4.07	.97	1.00	1.00	35.8	4.68	.99	1.00	1.00
	1600	46.5	2.70	.95	1.00	1.00	44.5	3.08	.97	1.00	1.00	42.0	3.52	.98	1.00	1.00	40.0	4.05	.99	1.00	1.00	37.2	4.65	1.00	1.00	1.00
	1800	48.0	2.69	.98	1.00	1.00	46.0	3.07	.99	1.00	1.00	43.5	3.52	1.00	1.00	1.00	41.0	4.04	1.00	1.00	1.00	38.5	4.66	1.00	1.00	1.00
63°F	1400	46.0	2.70	.75	.88	.99	43.5	3.07	.76	.90	.99	41.5	3.52	.77	.92	1.00	38.5	4.06	.79	.95	1.00	36.0	4.68	.82	.97	1.00
	1600	47.5	2.70	.77	.92	1.00	45.0	3.07	.78	.94	1.00	42.5	3.52	.80	.96	1.00	40.0	4.05	.82	.98	1.00	37.4	4.67	.86	.99	1.00
	1800	48.5	2.70	.80	.95	1.00	46.0	3.07	.81	.97	1.00	44.0	3.51	.83	.98	1.00	41.0	4.04	.86	.99	1.00	38.5	4.67	.89	1.00	1.00
67°F	1400	49.0	2.70	.58	.72	.85	46.5	3.06	.60	.74	.87	44.0	3.52	.60	.75	.89	41.0	4.05	.62	.77	.92	38.0	4.67	.64	.80	.95
	1600	50.5	2.69	.61	.75	.88	48.0	3.07	.61	.76	.91	45.0	3.52	.63	.78	.93	42.0	4.04	.64	.80	.96	39.0	4.66	.65	.83	.98
	1800	51.5	2.70	.62	.78	.92	48.5	3.06	.63	.79	.95	46.0	3.51	.64	.81	.97	43.0	4.03	.66	.84	.98	39.5	4.65	.68	.87	1.00
71°F	1400	52.0	2.69	.43	.57	.70	49.5	3.06	.43	.58	.71	47.0	3.51	.44	.59	.73	44.0	4.03	.45	.60	.75	40.5	4.65	.43	.62	.77
	1600	53.5	2.69	.44	.59	.73	51.0	3.06	.44	.61	.74	48.0	3.49	.45	.61	.76	45.0	4.02	.44	.63	.78	41.5	4.64	.45	.65	.81
	1800	54.5	2.68	.45	.61	.75	52.0	3.06	.45	.62	.77	49.0	3.50	.45	.63	.79	46.0	4.02	.46	.65	.82	42.5	4.63	.46	.67	.85

### 5 TON - QGA060S4D

Entering Wet Bulb Tem- pera- ture	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																								
		85°F						95°F						105°F						115°F						
		Total Cool Cap. Input	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	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	1700	54.5	3.42	.88	.99	1.00	52.0	3.89	.90	.99	1.00	49.5	4.44	.91	1.00	1.00	47.0	5.05	.94	1.00	1.00	44.0	5.78	.96	1.00	1.00
	1800	55.5	3.43	.89	.99	1.00	53.0	3.90	.91	1.00	1.00	50.5	4.44	.93	1.00	1.00	48.0	5.07	.95	1.00	1.00	45.0	5.76	.97	1.00	1.00
	2250	59.5	3.43	.95	1.00	1.00	57.0	3.91	.96	1.00	1.00	54.0	4.41	.98	1.00	1.00	51.0	5.05	.99	1.00	1.00	47.5	5.76	1.00	1.00	1.00
63°F	1700	57.0	3.42	.72	.85	.96	54.5	3.90	.73	.86	.98	51.5	4.42	.75	.88	.99	48.0	5.04	.77	.90	1.00	45.0	5.76	.78	.93	1.00
	1800	58.0	3.43	.73	.86	.98	55.0	3.89	.74	.88	.99	52.0	4.42	.76	.90	.99	48.5	5.05	.77	.92	1.00	45.5	5.78	.80	.95	1.00
	2250	60.5	3.43	.77	.92	1.00	57.5	3.90	.78	.93	1.00	54.5	4.43	.80	.96	1.00	51.0	5.05	.82	.98	1.00	48.0	5.77	.85	.99	1.00
67°F	1700	60.5	3.42	.58	.70	.82	57.5	3.89	.58	.71	.83	54.5	4.43	.59	.72	.85	51.0	5.04	.61	.74	.87	47.5	5.75	.62	.76	.90
	1800	61.5	3.43	.58	.71	.83	58.0	3.90	.59	.72	.85	55.0	4.42	.60	.74	.87	51.5	5.04	.61	.76	.89	48.0	5.75	.62	.77	.92
	2250	64.0	3.43	.61	.75	.89	60.5	3.90	.62	.77	.91	57.5	4.43	.63	.78	.93	53.5	5.05	.64	.80	.96	49.5	5.76	.65	.83	.98
71°F	1700	64.5	3.44	.42	.56	.68	61.0	3.89	.43	.57	.69	58.0	4.43	.43	.58	.70	54.0	5.05	.44	.59	.72	50.0	5.77	.45	.61	.74
	1800	65.0	3.43	.42	.57	.69	61.5	3.90	.44	.58	.70	58.5	4.44	.44	.58	.71	54.5	5.03	.44	.60	.73	50.5	5.76	.45	.62	.75
	2250	68.0	3.44	.44	.59	.73	64.0	3.90	.45	.61	.74	60.5	4.42	.45	.61	.76	56.5	5.03	.46	.64	.78	52.5	5.78	.47	.65	.81

## BLOWER DATA

Model	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	
QGA036	Tap 1 Fan Only	SCFM	925	810	690	630	595	500	435	385	---	---
		RPM	566	580	601	647	688	732	769	803	---	---
		Watts	134	122	115	123	130	137	144	150	---	---
	Tap 2 Cooling (Low Static)	SCFM	1245	1210	1170	1124	1080	1040	1000	960	915	870
		RPM	711	740	769	802	829	860	890	922	952	982
		Watts	267	277	286	297	307	318	328	340	349	360
	Tap 3 Cooling (High Static)	SCFM	1515	1480	1445	1405	1375	1335	1295	1260	1225	1195
		RPM	836	862	887	910	934	958	983	1007	1033	1062
		Watts	445	456	469	481	492	503	516	526	538	553
	Tap 4 Heating (Low Static)	SCFM	975	890	840	790	735	N/A	N/A	N/A	N/A	N/A
		Rise	42	46	48	52	55	N/A	N/A	N/A	N/A	N/A
		RPM	585	609	648	688	726	N/A	N/A	N/A	N/A	N/A
		Watts	146	154	163	172	180	N/A	N/A	N/A	N/A	N/A
	Tap 5 Heating (High Static)	SCFM	N/A	1225	1180	1140	1095	1055	1015	975	935	890
		Rise	N/A	33	34	36	37	39	40	42	44	46
		RPM	N/A	749	776	806	836	866	896	926	957	987
		Watts	N/A	286	296	306	317	328	339	349	359	370
QGA042	Tap 1 Fan Only	SCFM	1115	970	800	540	460	380	315	---	---	---
		RPM	532	549	567	592	650	693	730	---	---	---
		Watts	145	132	118	98	106	113	118	---	---	---
	Tap 2 Cooling (Low Static)	SCFM	1470	1430	1380	1340	1295	1250	1205	1160	1115	1065
		RPM	659	689	721	752	784	815	847	879	911	944
		Watts	281	293	305	318	331	344	355	368	381	393
	Tap 3 Cooling (High Static)	SCFM	1755	1720	1670	1635	1595	1555	1515	1475	1435	1395
		RPM	757	784	812	838	864	892	918	944	971	998
		Watts	444	456	471	485	499	514	527	540	553	567
	Tap 4 Heating (Low Static)	SCFM	1420	1375	1325	1280	1235	1195	1145	1100	1045	N/A
		Rise	38	39	41	42	44	46	47	49	52	N/A
		RPM	640	671	706	736	770	801	834	868	904	N/A
		Watts	257	268	281	292	304	316	328	341	354	N/A
	Tap 5 Heating (High Static)	SCFM	1735	1690	1645	1605	1565	1530	1495	1450	1410	1370
		Rise	31	32	33	34	35	36	36	38	39	40
		RPM	749	778	807	834	858	886	913	940	966	993
		Watts	427	442	456	471	482	497	511	524	539	552

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

## BLOWER DATA

Model	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	
QGA048	Tap 1 Fan Only	SCFM	1230	1080	965	910	845	760	695	630	570	505
		RPM	569	582	605	645	689	736	772	810	857	895
		Watts	179	163	158	167	177	188	197	205	217	225
	Tap 2 Cooling (Low Static)	SCFM	1675	1640	1600	1560	1515	1470	1430	1390	1345	1295
		RPM	730	754	782	810	844	869	897	921	948	977
		Watts	393	403	420	432	448	460	473	485	498	512
	Tap 3 Cooling (High Static)	SCFM	1935	1895	1855	1815	1785	1745	1710	1675	1635	1595
		RPM	817	844	864	891	918	944	969	990	1012	1036
		Watts	571	587	601	615	633	648	664	674	689	702
	Tap 4 Heating (Low Static)	SCFM	1420	1370	1320	1275	1235	1190	1135	1080	1020	N/A
		Rise	38	40	41	43	44	46	48	50	53	N/A
		RPM	637	667	706	736	768	797	831	864	903	N/A
		Watts	255	266	281	291	303	313	327	339	352	N/A
QGA060	Tap 5 Heating (High Static)	SCFM	1745	1705	1660	1620	1575	1540	1500	1460	1420	1370
		Rise	31	32	33	34	34	35	36	37	38	40
		RPM	751	777	805	835	865	889	915	938	965	989
		Watts	433	446	460	476	492	502	516	528	541	553
	Tap 1 Fan Only	SCFM	1275	1230	1170	1115	1065	1000	945	865	795	735
		RPM	591	626	662	701	739	781	822	867	909	964
		Watts	181	190	199	209	220	232	242	256	267	281
	Tap 2 Cooling (Low Static)	SCFM	1880	1840	1800	1760	1715	1675	1640	1595	1555	1520
		RPM	798	824	851	874	902	929	951	979	1007	1035
		Watts	466	477	493	506	519	532	543	558	572	587
	Tap 3 Cooling (High Static)	SCFM	1790	1830	1865	1900	1945	1980	2020	2055	2095	2140
		RPM	887	911	936	951	977	1000	1026	1049	1067	1096
		Watts	652	669	683	693	709	724	740	754	765	782
	Tap 4 Heating (Low Static)	SCFM	1415	1365	1315	1260	1225	1175	1120	1065	1005	N/A
		Rise	38	40	41	43	44	46	49	51	54	N/A
		RPM	639	675	707	741	774	810	848	886	924	N/A
		Watts	230	240	252	262	273	285	298	309	322	N/A
	Tap 5 Heating (High Static)	SCFM	1745	1705	1660	1620	1575	1540	1495	1450	1410	1365
		Rise	31	32	33	33	34	35	36	37	39	40
		RPM	759	782	814	839	871	893	920	948	979	1009
		Watts	391	402	416	427	442	452	464	476	490	504

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

## 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

### DUCT ADAPTER RESISTANCE DATA - in. w.g.

Air Volume cfm	Rectangular to Round Duct Adaptor Kits					
	Downflow		Horizontal			
	14 in. Diameter		14 in. Diameter		16 in. Diameter	18 in. Diameter
	24, 30, 36	42, 48, 60	24, 30, 36	42, 48, 60	42, 48, 60	42, 48, 60
500	0.03	---	0.04	---	---	---
600	0.05	---	0.07	---	---	---
700	0.08	0.13	0.08	0.13	---	---
800	0.10	0.17	0.12	0.16	---	---
900	0.12	0.21	0.15	0.21	---	---
1000	0.17	0.24	0.19	0.25	0.11	0.03
1100	0.18	0.30	0.23	0.30	0.11	0.03
1200	0.20	0.36	0.29	0.37	0.13	0.03
1300	0.26	0.43	0.31	0.43	0.17	0.03
1400	0.31	0.50	0.39	0.51	0.20	0.03
1500	---	0.57	---	0.57	0.21	0.05
1600	---	0.63	---	0.65	0.26	0.05
1700	---	0.71	---	0.72	0.30	0.06
1800	---	0.80	---	0.81	0.30	0.06
1900	---	0.91	---	0.90	0.40	0.06
2000	---	0.99	---	1.01	0.41	0.06

## ELECTRICAL DATA

Model No.		QGA036S4D	
<b>1 Voltage - 60Hz</b>		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	9	5.8
	Locked Rotor Amps	71	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
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	25	15
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	19.2	11.6

Model No.		QGA042S4D	
<b>1 Voltage - 60Hz</b>		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	11.2	5.6
	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
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	30	15
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	22	11.4

Model No.		QGA048S4D	
<b>1 Voltage - 60Hz</b>		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	13.8	6.1
	Locked Rotor Amps	83	43
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	1.0	1.0
	Type	ECM	ECM
	Full Load Amps	7.6	4
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	40	15
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	26.8	12.8

Model No.		QGA060S4D	
<b>1 Voltage - 60Hz</b>		208/230V-3ph	460V-3ph
Compressor	Rated Load Amps	13.2	6.3
	Locked Rotor Amps	93	60
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	1.0	1.0
	Type	ECM	ECM
	Full Load Amps	7.6	4
<sup>2</sup> Maximum Overcurrent Protection (MOCP)	Unit Only	35	15
<sup>3</sup> Minimum Circuit Ampacity (MCA)	Unit Only	26.1	13.2

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

<sup>1</sup> Extremes of operating range are plus and minus 10% of line voltage.

<sup>2</sup> HACR type breaker or fuse.

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

WEIGHT DATA					UNIT
Model Number	Net		Shipping		
	lbs.	kg	lbs.	kg	
QGA036	511	232	517	235	
QGA042	536	243	542	246	
QGA048	542	246	548	249	
QGA060	560	254	566	257	

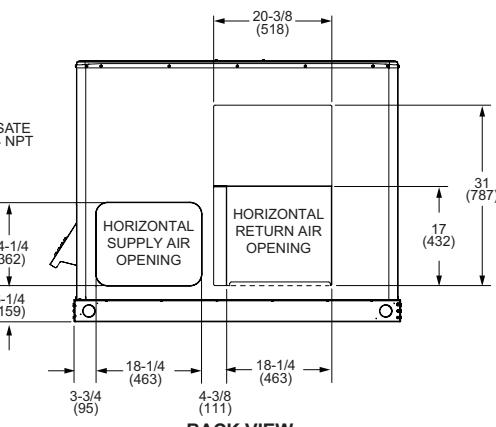
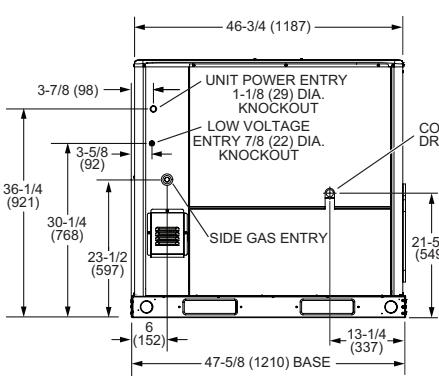
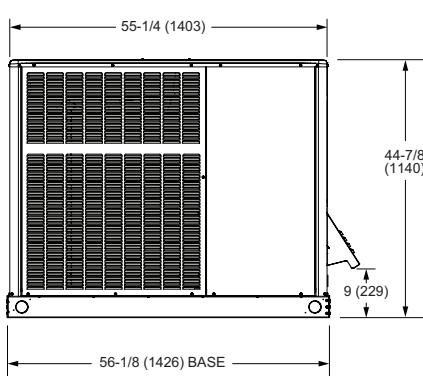
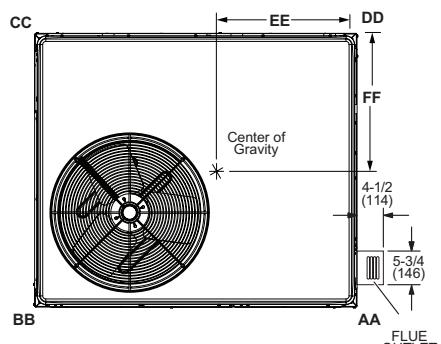
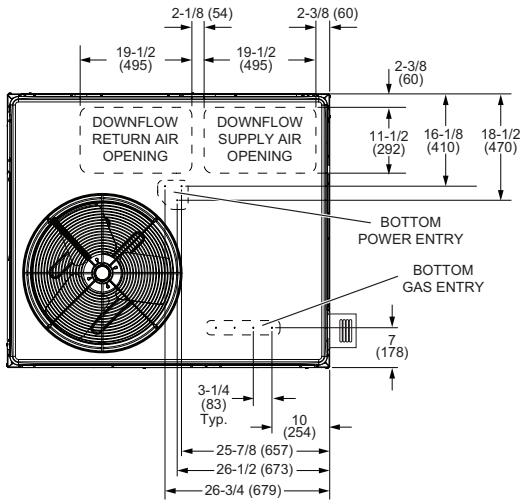
WEIGHT DATA		OPTIONS / ACCESSORIES	
		Shipping	
		lbs.	kg
<b>CABINET</b>			
Tool-Less Filter Access Kit		20	9
<b>ECONOMIZER / OUTDOOR AIR</b>			
<b>Economizer</b>			
Economizer, Includes Barometric Relief Dampers and Exhaust Hood		95	43
<b>Outdoor Air Dampers</b>			
Motorized		35	16
Manual		28	13
<b>ROOF CURBS</b>			
<b>Clip Curbs</b>			
8 in. height		63	29
14 in. height		77	35
18 in. height		99	45
24 in. height		132	60
<b>Adjustable Pitch Roof Curb (Knock-Down Style), Downflow</b>			
14 in. height		95	43
<b>Adjustable Pitch Roof Curb (Welded), Downflow</b>			
14 in. height		68	31

INSTALLATION CLEARANCES			MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL		
	in.	mm		in.	mm
Front (heat exchanger access)	24	610	Front	0	0
Right Side (blower and evaporator coil access)	24	610	Back	0	0
Left Side (compressor access)	24	610	Right Side (vent cover)	12	305
Back	0	0	Left Side	0	0
Top	48	1219	Top	0	0
			Below Unit	0	0

## DIMENSIONS

UNIT

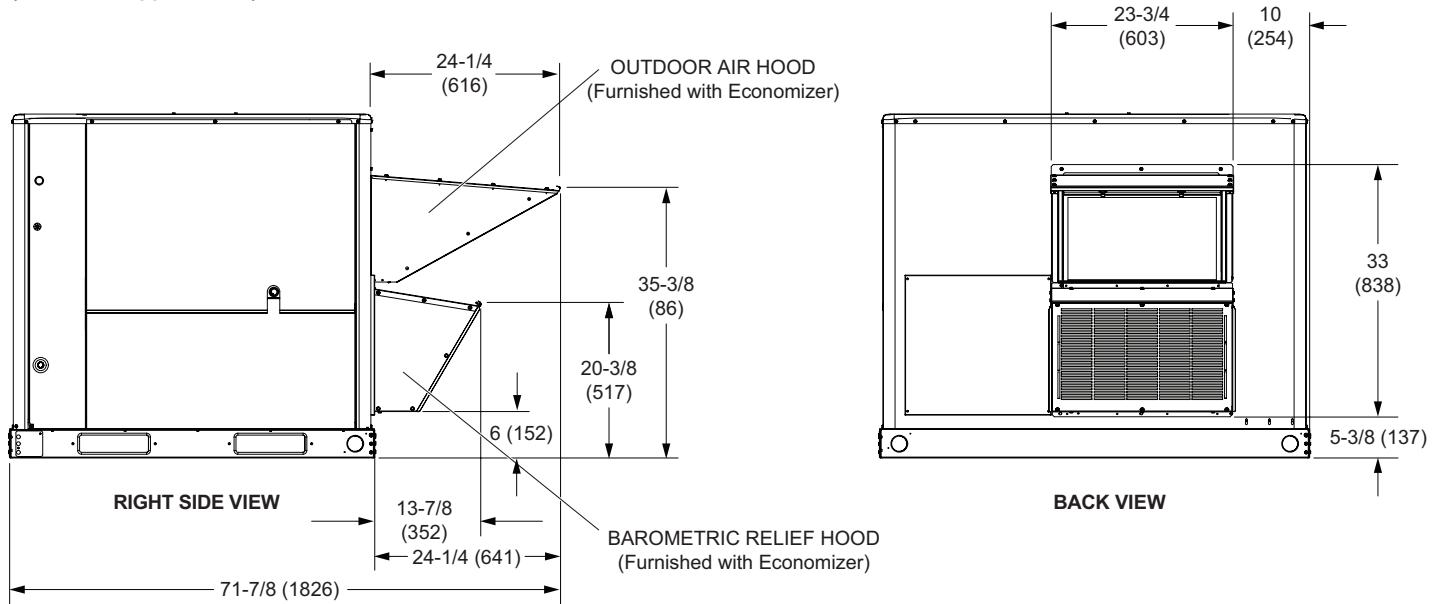
Model Number	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
QGA036	125	57	124	56	134	61	134	61	32-1/2	826	22-3/4	579
QGA042	129	59	129	59	143	65	142	64	32-1/2	826	22-3/4	579
QGA048	133	60	130	59	143	65	143	65	32-1/2	826	22-3/4	579
QGA060	137	62	135	61	147	67	147	67	32-1/2	826	22-3/4	579



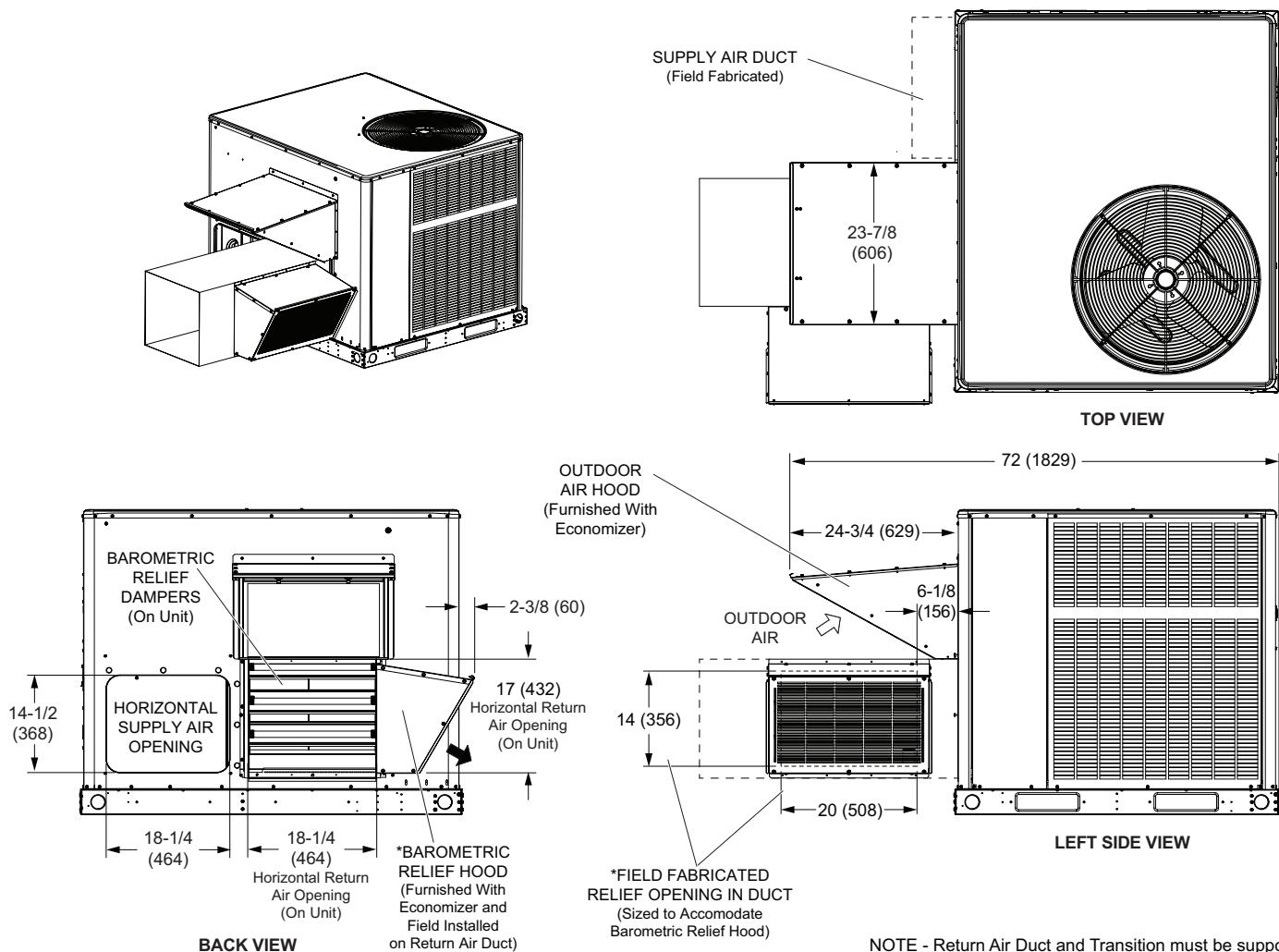
## DIMENSIONS

## ACCESSORIES

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



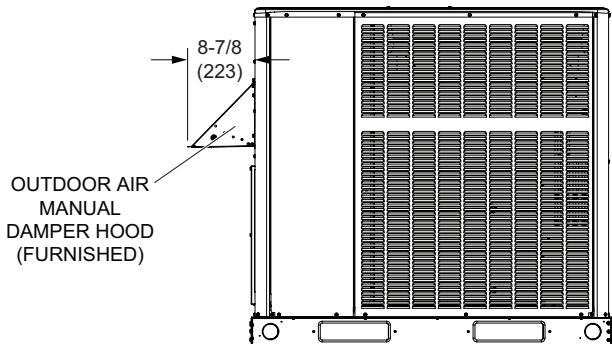
**OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER WITH BAROMETRIC RELIEF DAMPERS  
(Horizontal Applications)**



NOTE - Return Air Duct and Transition must be supported.

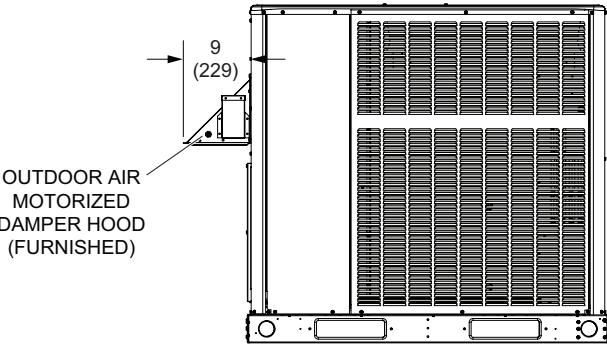
## OUTDOOR AIR HOOD DETAIL FOR OPTIONAL OUTDOOR AIR DAMPERS

MANUAL OUTDOOR AIR DAMPERS

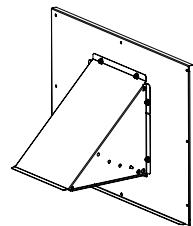


LEFT SIDE VIEW

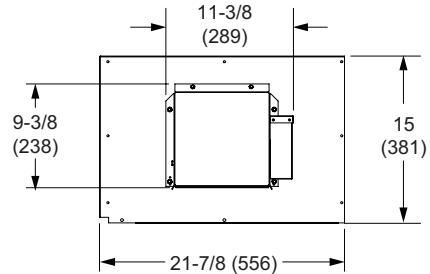
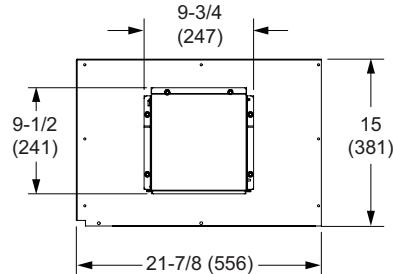
MOTORIZED OUTDOOR AIR DAMPERS

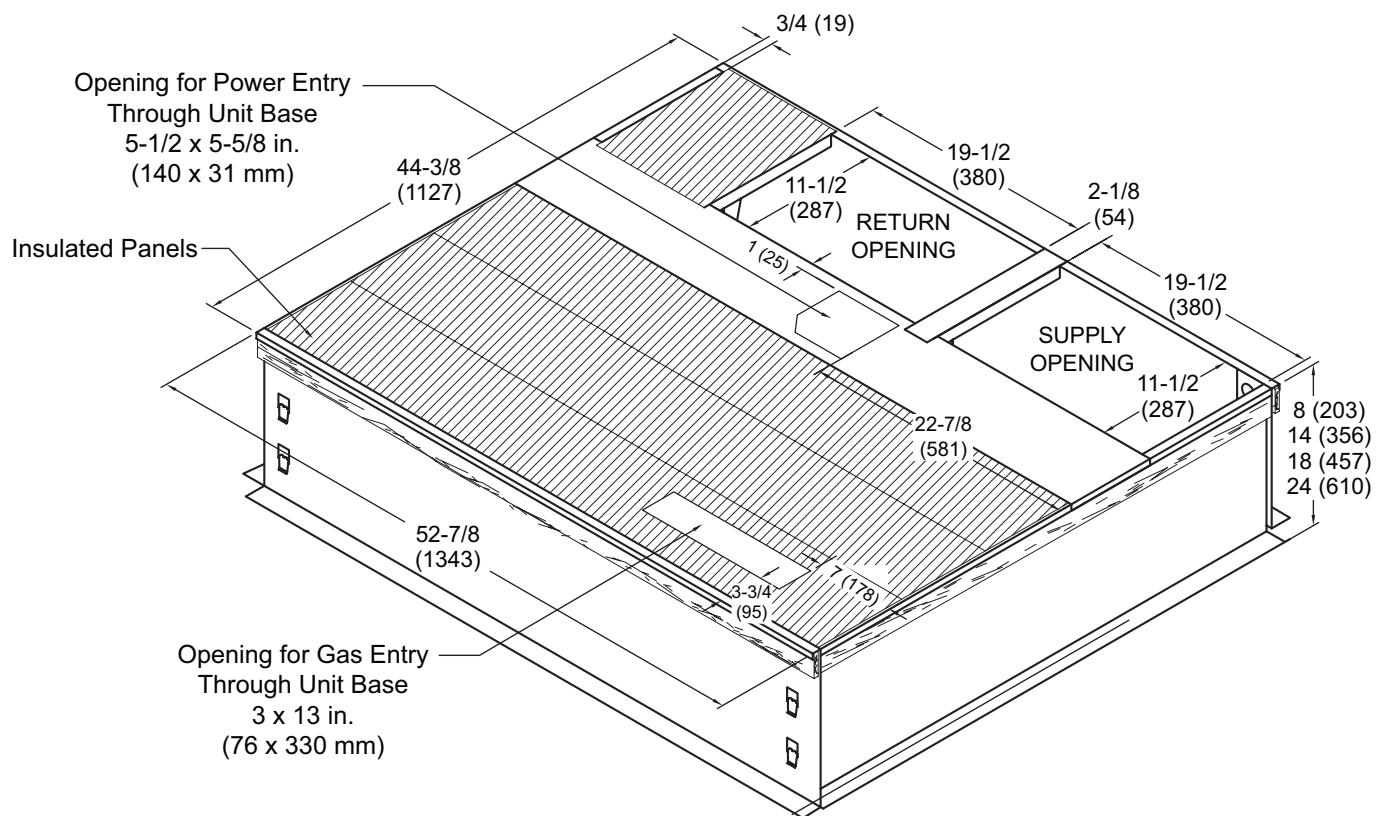


LEFT SIDE VIEW



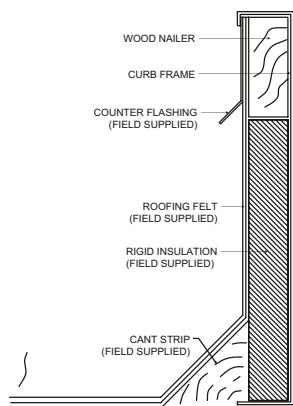
NOTE - Outdoor Air Hood and Panel  
replaces existing panel on unit.



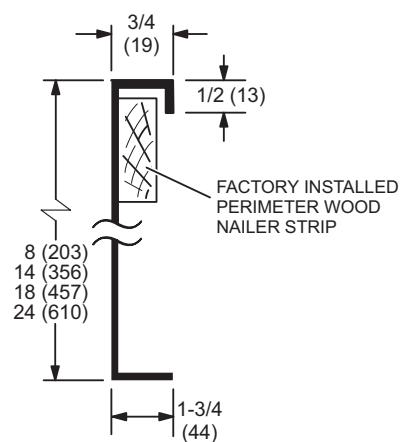
CLIP CURB

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

## TYPICAL FLASHING DETAIL FOR ROOF CURB



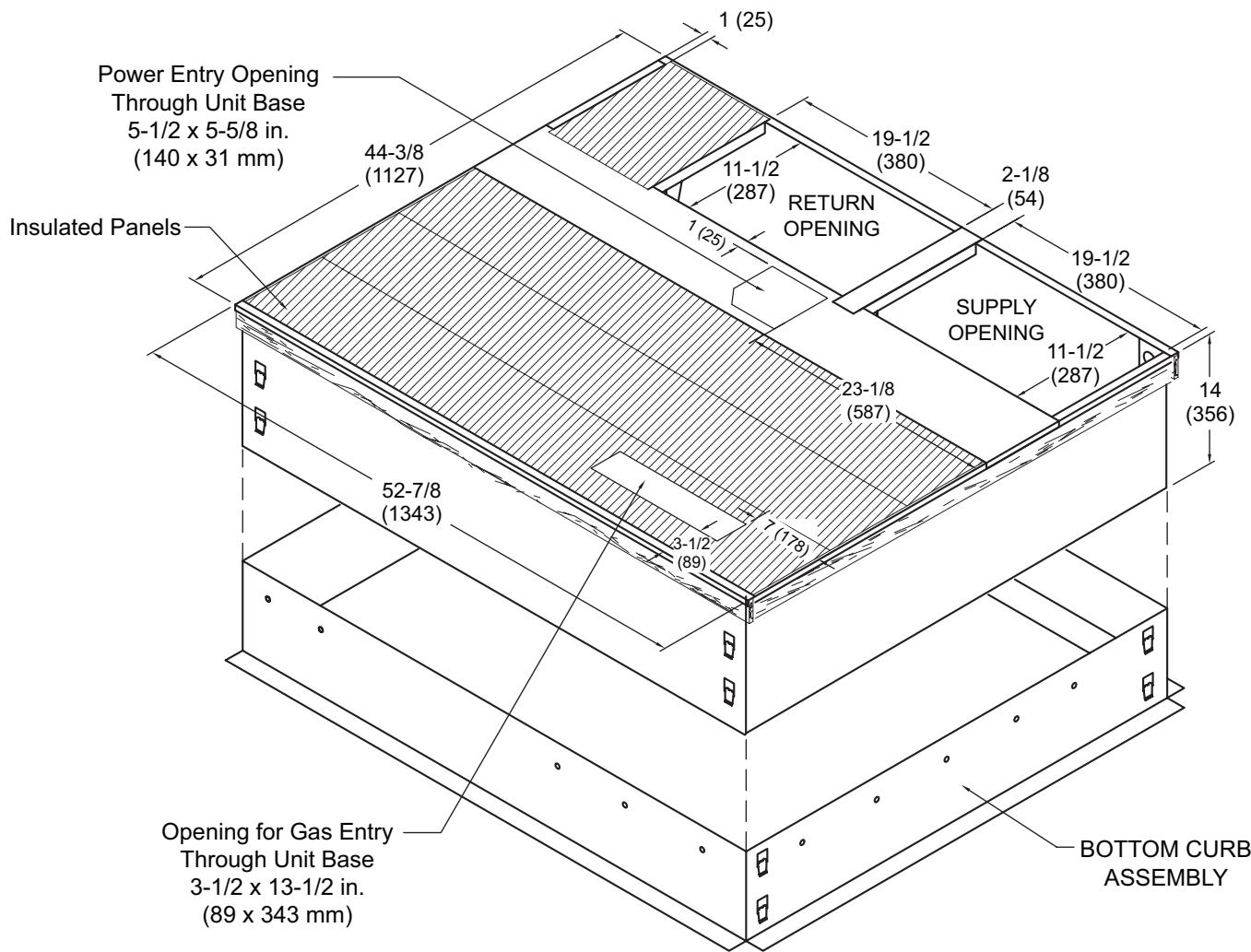
## DETAIL ROOF CURB



## DIMENSIONS

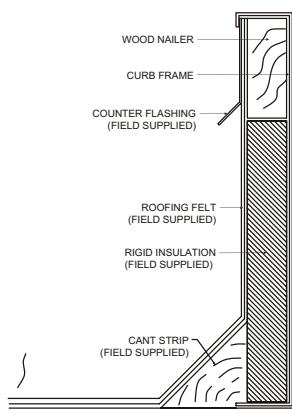
## ACCESSORIES

### ADJUSTABLE PITCH ROOF CURB (KNOCK-DOWN STYLE)

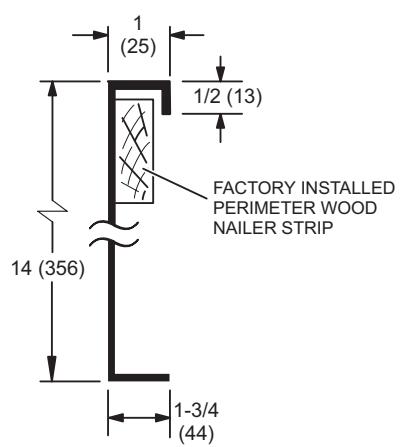


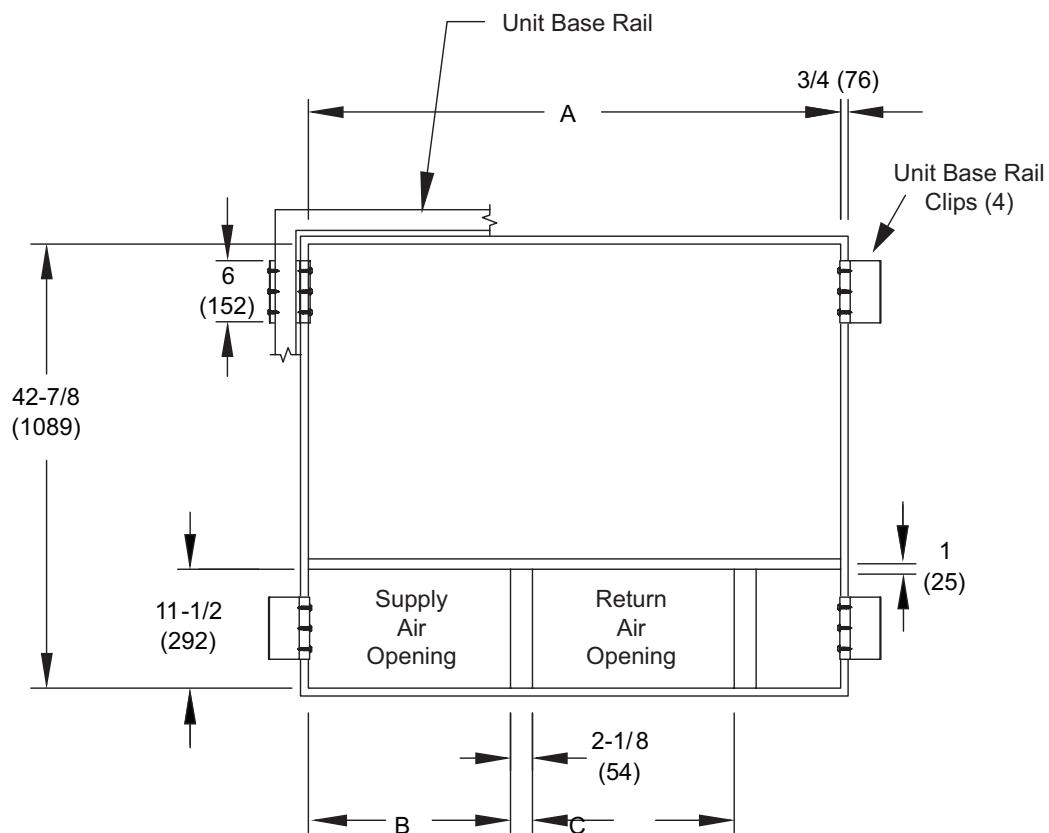
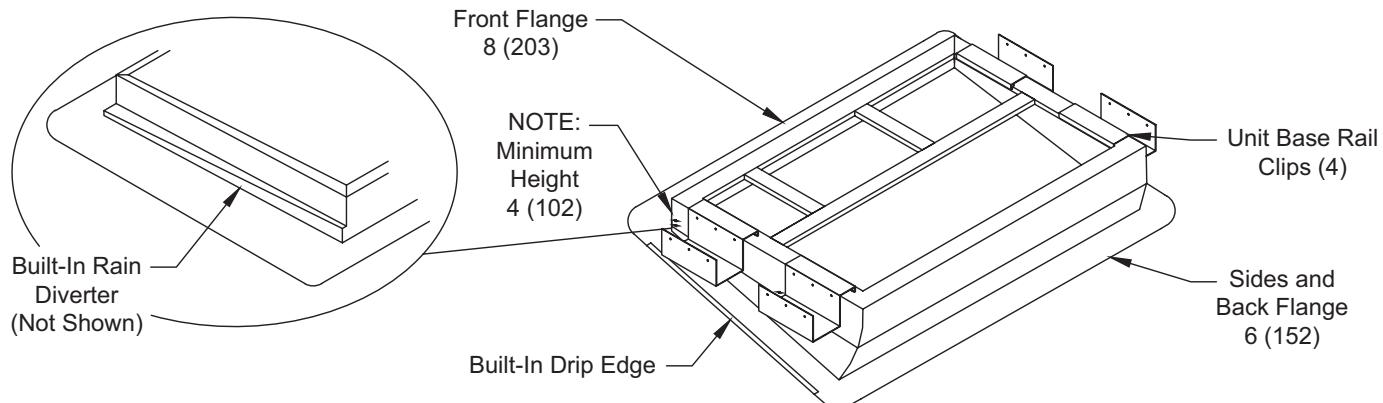
NOTE - Roof deck may be omitted within confines of curb.

### TYPICAL FLASHING DETAIL FOR ROOF CURB



### DETAIL ROOF CURB



**DIMENSIONS****ACCESSORIES****ADJUSTABLE PITCH ROOF CURB (WELDED STYLE)**

USAGE	A		B		C	
	in.	mm	in.	mm	in.	mm
24,30,36	42-7/8	1089	13-7/8	352	16-7/8	429
42,48,60	51-3/8	1305	19-1/2	495	19-1/2	495



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