ALLIED™ Commercial

QGA ULNOx

Q-SERIES™

Standard Efficiency - Three-Phase - 60 Hz

COMMERCIAL
PRODUCT SPECIFICATIONS

Bulletin No. 310960
November 2024

SEER2 - 13.4
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

Q G A 060 S 5 D S 1 Y - 1A

Model Family
Q = Light Commercial Packaged

Unit Type
G = Gas / Electric

Major Design Sequence
A = 1st Generation

Nominal Cooling Capacity - Tons
036 = 3 Tons
048 = 4 Tons
060 = 5 Tons

Cooling Efficiency
S = 13.4 SEER2

Refrigerant Type
5 = R-454B

Blower Type
D = Direct Drive (ECM)

Heating Type
S = 54k Gas Heat, 1 Stage, Ultra Low NOx
U = 72k Gas Heat, 1 Stage, Ultra Low NOx

Minor Design Sequence
1 = 1st Revision

Voltage
Y = 230V - 3 phase - 60Hz
G = 460V - 3 phase - 60Hz

Minor Revision Sequence
1A = 1st Revision

CONTENTS

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.
- 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-454B 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_2 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	QGA048	QGA060
COOLING SYSTEM						
Compressor Crankcase Heater 230V 1-ph or 3-ph			**11X27**	X	X	X
Compressor Crankcase Heater 460V 3-ph			**21D21**	X	X	X
Compressor Timed-Off Control			**47J27**	X	X	X
Freezestat			**21D23**	X	X	X
Low Ambient Kit (40°F)			**21D20**	X	X	X
HEATING SYSTEM						
Gas Heat Input		54 kBtuh input	Factory	X		
		72 kBtuh input	Factory		X	X
Bottom Gas Entry Kit			**22G63**	X	X	X
Vertical Vent Extension Kit			**21J79**	X	X	X
CABINET						
Base Rail Openings Closure Kit			**21J84**	X	X	X
Square to Round Duct Adaptor Kits	Downflow	14 in. dia.	**20X82**	X		
		14 in. dia.	**21D26**		X	X
	Horizontal	14 in. dia.	**21J92**	X		
		14 in. dia.	**21D24**		X	X
		16 in. dia.	**22U78**		X	X
		18 in. dia.	**22U79**		X	X
Tool-Less Filter Access Kit			**21J80**	X	X	X
CONTROLS						
Smoke Detector - Supply or Return (one sensor)			**21U21**	X	X	X
Smoke Detector - Supply and Return (two sensors)			**21U22**	X	X	X
ELECTRICAL						
Bottom Power Entry Kit			**21J78**	X	X	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
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
Economizer Controls						
Single Enthalpy Control (Standard)			**21Z09**	X	X	X
Single Enthalpy Control (High Performance)			**11G21**	X	X	X
OUTDOOR AIR						
Outdoor Air Dampers With Outdoor Air Hood						
Motorized			**21U19**	X	X	X
Manual			**21U20**	X	X	X

X = Field Installed

OPTIONS / ACCESSORIES

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

X = Field Installed

SPECIFICATIONS

General Data	Nominal Tonnage	**3 Ton**	**4 Ton**	**5 Ton**
	Model Number	**QGA036S5D**	**QGA048S5D**	**QGA060S5D**
	Efficiency Type	**Standard**	**Standard**	**Standard**
	Blower Type	Direct Drive (ECM)	Direct Drive (ECM)	Direct Drive (ECM)
Cooling Performance	Gross Cooling Capacity - Btuh	35,000	47,500	58,000
	[1] Net Cooling Capacity - Btuh	34,000	45,500	56,000
	AHRI Rated Air Flow - cfm	1200	1650	1750
	Total Unit Power - kW	3.2	3.83	3.83
	[1] SEER2	13.4	13.4	13.4
	[1] EER2	10.6	10.6	10.6
Refrigerant Charge	Refrigerant Type	R-454B	R-454B	R-454B
		5 lbs. 6 oz.	5 lbs. 5 oz.	7 lbs. 13 oz.
Gas Heating Options		See Page 10		
Compressor Type		Scroll (1)	Scroll (1)	Scroll (1)
Outdoor Coil	Net face area (total) - sq. ft.	19.53	19.53	33.57
	Tube diameter - in.	5/16	5/16	5/16
	Number of rows	1	1	2
	Fins per inch	26	26	22
Outdoor Coil Fan	Motor - (No.) horsepower	(1) 1/3	(1) 1/3	(1) 1/3
	Motor rpm	825	825	825
	Total Motor Input - watts	280	280	280
	Diameter - (No.) in.	(1) 24	(1) 24	(1) 24
	Number of blades	3	3	3
Indoor Coil	Net face area (total) - sq. ft.	6.75	6.75	6.75
	Tube diameter - in.	5/16	5/16	3/8
	Number of rows	3	3	3
	Fins per inch	15	15	15
	Drain connection (Number) and size - in.	(1) 3/4 in. NPT coupling		
	Expansion device type	Refrigerant Metering Orifice		
Indoor Blower	Nominal motor HP	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 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
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: 95°F outdoor air temperature and 80°F db/67°F wb entering evaporator air; minimum external duct static pressure.

[2] Filters are not furnished and must be field provided.

SPECIFICATIONS - GAS HEAT

General Data	Model No.	QGA036S5D	QGA048S5D QGA060S5D
Heating Capacity Btuh	Input	54,000	72,000
	Output	43,740	58,320
[1] 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	

[1] 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 - QGA036S5D

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85° F (29.4° C)						95° F (35° C)						105° F (40.6° C)						115° F (46.1° C)					
			Total Cool Cap.		Comp. Motor Watts	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts	Sensible/Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW	Input	75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW	Input	75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW	Input	75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW	Input	75°F 23.9°C	80°F 26.7°C	85°F 29.4°C
59°F (15°C)	1000	470	35.6	10.4	2270	.91	1.00	1.00	34.2	10.0	2580	.93	1.00	1.00	33.0	9.7	2910	.95	1.00	1.00	31.8	9.3	3290	.97	1.00	1.00
	1200	565	37.8	11.1	2280	.96	1.00	1.00	36.4	10.7	2580	.98	1.00	1.00	35.0	10.3	2930	1.00	1.00	1.00	33.6	9.8	3300	1.00	1.00	1.00
	1400	660	39.5	11.6	2290	1.00	1.00	1.00	38.0	11.1	2590	1.00	1.00	1.00	36.6	10.7	2930	1.00	1.00	1.00	34.8	10.2	3310	1.00	1.00	1.00
63°F (17.2°C)	1000	470	37.2	10.9	2280	.74	.88	.99	35.6	10.4	2580	.76	.90	1.00	34.0	10.0	2920	.78	.92	1.00	32.4	9.5	3300	.80	.94	1.00
	1200	565	38.5	11.3	2280	.80	.94	1.00	37.0	10.8	2590	.80	.96	1.00	35.4	10.4	2930	.82	.98	1.00	33.8	9.9	3300	.85	1.00	1.00
	1400	660	40.0	11.7	2290	.83	.98	1.00	38.5	11.3	2590	.85	1.00	1.00	36.6	10.7	2930	.87	1.00	1.00	35.0	10.3	3310	.90	1.00	1.00
67°F (19.4°C)	1000	470	39.5	11.6	2290	.61	.73	.84	37.8	11.1	2590	.61	.73	.87	36.0	10.6	2930	.62	.76	.89	34.2	10.0	3310	.63	.78	.91
	1200	565	41.0	12.0	2290	.64	.77	.91	39.0	11.4	2590	.64	.79	.93	37.4	11.0	2940	.65	.81	.95	35.4	10.4	3310	.67	.83	.97
	1400	660	42.0	12.3	2290	.67	.82	.96	40.5	11.9	2600	.68	.83	.98	38.5	11.3	2940	.69	.86	1.00	36.4	10.7	3320	.70	.88	1.00
71°F (21.7°C)	1000	470	41.5	12.2	2290	.48	.60	.70	39.5	11.6	2600	.48	.61	.72	38.0	11.1	2940	.49	.61	.73	36.2	10.6	3320	.48	.61	.75
	1200	565	43.0	12.6	2300	.49	.63	.76	41.0	12.0	2600	.50	.64	.77	39.5	11.6	2950	.51	.65	.79	37.4	11.0	3330	.51	.65	.81
	1400	660	44.5	13.0	2300	.51	.66	.80	42.5	12.5	2610	.51	.67	.81	40.5	11.9	2950	.51	.68	.84	38.5	11.3	3330	.52	.70	.87

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 - QGA048S5D

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85° F (29.4° C)						95° F (35° C)						105° F (40.6° C)						115° F (46.1° C)					
			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C
59°F (15°C)	1300	615	43.5	12.7	2590	.94	1.00	1.00	42.0	12.3	2960	.96	1.00	1.00	40.5	11.9	3370	.98	1.00	1.00	38.5	11.3	3840	1.00	1.00	1.00
	1600	755	46.0	13.5	2600	1.00	1.00	1.00	44.5	13.0	2970	1.00	1.00	1.00	42.5	12.5	3390	1.00	1.00	1.00	40.5	11.9	3850	1.00	1.00	1.00
	1900	895	48.0	14.1	2620	1.00	1.00	1.00	46.5	13.6	2990	1.00	1.00	1.00	44.5	13.0	3400	1.00	1.00	1.00	42.5	12.5	3860	1.00	1.00	1.00
63°F (17.2°C)	1300	615	45.0	13.2	2600	.77	.91	1.00	43.5	12.7	2970	.79	.92	1.00	41.0	12.0	3380	.80	.95	1.00	39.0	11.4	3850	.83	.98	1.00
	1600	755	47.0	13.8	2610	.83	.98	1.00	45.0	13.2	2980	.84	1.00	1.00	43.0	12.6	3390	.86	1.00	1.00	41.0	12.0	3860	.89	1.00	1.00
	1900	895	48.0	14.1	2620	.88	1.00	1.00	46.5	13.6	2990	.90	1.00	1.00	45.0	13.2	3400	.92	1.00	1.00	42.5	12.5	3860	.95	1.00	1.00
67°F (19.4°C)	1300	615	47.5	13.9	2610	.63	.75	.88	45.5	13.3	2980	.63	.77	.90	43.5	12.7	3390	.64	.79	.92	41.0	12.0	3860	.66	.81	.95
	1600	755	49.5	14.5	2620	.66	.81	.95	47.5	13.9	2990	.67	.83	.97	45.0	13.2	3400	.69	.85	1.00	43.0	12.6	3860	.70	.87	1.00
	1900	895	51.0	14.9	2630	.70	.86	1.00	49.0	14.4	3000	.71	.88	1.00	46.5	13.6	3400	.72	.91	1.00	44.0	12.9	3870	.75	.93	1.00
71°F (21.7°C)	1300	615	50.0	14.7	2620	.48	.61	.73	48.0	14.1	2990	.49	.62	.75	46.0	13.5	3400	.49	.63	.77	43.5	12.7	3860	.50	.65	.79
	1600	755	52.0	15.2	2630	.51	.65	.79	50.0	14.7	3000	.51	.66	.81	47.5	13.9	3410	.52	.68	.83	45.0	13.2	3870	.53	.70	.86
	1900	895	53.5	15.7	2630	.53	.69	.85	51.0	14.9	3000	.54	.70	.87	48.5	14.2	3410	.54	.72	.89	46.0	13.5	3870	.56	.74	.92

5 Ton - QGA060S5D

Entering Wet Bulb Temperature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			85° F (29.4° C)						95° F (35° C)						105° F (40.6° C)						115° F (46.1° C)					
			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb			Total Cool Cap.		Comp. Motor Watts Input	Sensible/Total Ratio (S/T) Dry Bulb		
	cfm	L/s	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C	kBtuh	kW		75°F 23.9°C	80°F 26.7°C	85°F 29.4°C
59°F (15°C)	1450	685	55.5	16.3	3470	.89	1.00	1.00	54.0	15.8	3920	.91	1.00	1.00	51.5	15.1	4430	.93	1.00	1.00	49.5	14.5	5020	.95	1.00	1.00
	1800	850	60.0	17.6	3490	.96	1.00	1.00	57.5	16.9	3950	.98	1.00	1.00	55.0	16.1	4460	1.00	1.00	1.00	53.0	15.5	5060	1.00	1.00	1.00
	2100	990	62.5	18.3	3500	1.00	1.00	1.00	60.0	17.6	3960	1.00	1.00	1.00	58.0	17.0	4480	1.00	1.00	1.00	55.0	16.1	5080	1.00	1.00	1.00
63°F (17.2°C)	1450	685	58.5	17.1	3490	.74	.86	.98	56.5	16.6	3940	.76	.88	1.00	54.0	15.8	4440	.77	.90	1.00	51.0	14.9	5030	.79	.93	1.00
	1800	850	61.5	18.0	3500	.79	.93	1.00	58.5	17.1	3950	.81	.95	1.00	56.0	16.4	4470	.82	.98	1.00	53.5	15.7	5060	.85	1.00	1.00
	2100	990	63.5	18.6	3510	.83	.98	1.00	60.5	17.7	3960	.85	1.00	1.00	57.5	16.9	4480	.87	1.00	1.00	55.5	16.3	5080	.90	1.00	1.00
67°F (19.4°C)	1450	685	61.5	18.0	3500	.60	.72	.83	59.5	17.4	3960	.61	.73	.85	56.5	16.6	4470	.62	.75	.87	53.5	15.7	5060	.63	.77	.89
	1800	850	65.0	19.0	3510	.64	.77	.90	61.5	18.0	3970	.65	.79	.92	59.5	17.4	4490	.66	.81	.95	56.0	16.4	5090	.67	.83	.98
	2100	990	66.5	19.5	3520	.67	.81	.96	64.0	18.8	3980	.68	.83	.99	60.5	17.7	4500	.69	.86	1.00	57.5	16.9	5100	.71	.88	1.00
71°F (21.7°C)	1450	685	65.0	19.0	3510	.47	.59	.70	62.5	18.3	3970	.48	.60	.71	59.5	17.4	4490	.48	.61	.73	56.5	16.6	5090	.49	.62	.75
	1800	850	67.5	19.8	3520	.49	.63	.75	65.5	19.2	3990	.50	.64	.77	62.0	18.2	4510	.50	.65	.79	59.0	17.3	5120	.52	.67	.81
	2100	990	69.5	20.4	3530	.51	.66	.80	67.0	19.6	4000	.52	.67	.82	63.5	18.6	4520	.53	.69	.84	60.5	17.7	5130	.54	.71	.86

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**
QGA036S5D	Tap 1 Fan Only	CFM	978	862	786	721	656	589	518	456	401	---
		RPM	579	590	624	661	701	737	775	810	842	---
		Watts	137	125	127	133	139	143	149	154	159	---
	Tap 2 Cooling (Low Static)	CFM	1387	1344	1301	1261	1220	1175	1130	1089	1044	1000
		RPM	743	769	795	821	846	873	900	928	955	983
		Watts	284	291	299	307	315	322	332	339	347	356
	Tap 3 Cooling (High Static)	CFM	1540	1506	1463	1424	1382	1341	1302	1270	1227	1190
		RPM	811	832	855	879	902	926	951	975	1001	1025
		Watts	377	385	393	401	410	419	427	437	446	455
	Tap 4 Heating (Low Static)	CFM	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)	CFM	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

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**
QGA048S5D	Tap 1 Fan Only	SCFM	1203	1064	1012	953	894	820	735	675	622	566
		RPM	587	597	635	674	715	761	801	838	876	912
		Watts	160	147	154	162	169	179	188	194	202	209
	Tap 2 Cooling (Low Static)	SCFM	1784	1742	1701	1661	1625	1583	1544	1508	1472	1430
		RPM	794	824	850	876	902	927	954	979	1003	1029
		Watts	418	431	442	455	468	479	492	504	514	526
	Tap 3 Cooling (High Static)	SCFM	1932	1891	1854	1818	1778	1741	1707	1670	1633	1601
		RPM	849	874	900	924	949	974	998	1021	1046	1068
		Watts	518	529	543	557	570	583	597	610	622	633
	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
	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
QGA060S5D	Tap 1 Fan Only	SCFM	1305	1252	1195	1143	1087	1030	968	902	797	736
		RPM	600	634	671	705	745	782	826	869	917	971
		Watts	166	174	182	190	199	208	217	227	239	251
	Tap 2 Cooling (Low Static)	SCFM	1983	1937	1905	1864	1829	1792	1754	1715	1672	1634
		RPM	835	861	882	909	931	956	977	1002	1031	1053
		Watts	474	487	497	510	523	534	543	557	570	581
	Tap 3 Cooling (High Static)	SCFM	2120	2082	2041	2010	1974	1937	1899	1871	1828	1793
		RPM	883	905	934	952	974	994	1016	1041	1062	1087
		Watts	570	583	598	609	620	634	646	658	672	686
	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	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
	36	48, 60	36	48, 60	48, 60	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.	QGA036S5D	
[1] **Voltage - 60Hz**		**208/230V-3ph**	**460V-3ph**
Compressor	Rated Load Amps	12.2	5.8
	Locked Rotor Amps	102.8	50
Outdoor Fan Motor	Full Load Amps	1.8	1
Indoor Blower Motor	Horsepower	0.75	0.75
	Type	ECM	ECM
	Full Load Amps	2.4	3.2
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	30	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only	21	11.9

	Model No.	QGA048S5D	
[1] **Voltage - 60Hz**		**208/230V-3ph**	**460V-3ph**
Compressor	Rated Load Amps	12.2	5.1
	Locked Rotor Amps	120.4	41
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
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	35	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only	26.2	11.9

	Model No.	QGA060S5D	
[1] **Voltage - 60Hz**		**208/230V-3ph**	**460V-3ph**
Compressor	Rated Load Amps	13.1	6.6
	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
[2] Maximum Overcurrent Protection (MOCP)	Unit Only	35	15
[3] Minimum Circuit Ampacity (MCA)	Unit Only	27.3	13.7

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.

WEIGHT DATA — UNIT

Model Number	Net		Shipping	
	lbs.	kg	lbs.	kg
QGA036	511	232	517	235
QGA048	542	246	548	249
QGA060	560	254	566	257

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
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 Roof Curb (Knock-Down Style), Downflow		
14 in. height	95	43
Adjustable Pitch Roof Curb (Welded), Downflow		
14 in. height	68	31

INSTALLATION CLEARANCES

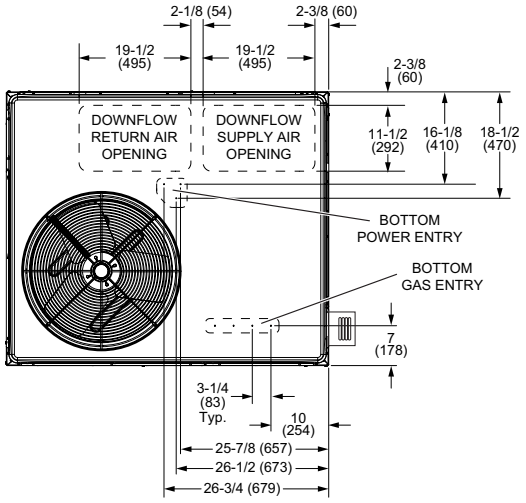
	in.	mm
Front (heat exchanger access)	24	610
Right Side (blower and evaporator coil access)	24	610
Left Side (compressor access)	24	610
Back	0	0
Top	48	1219

MINIMUM CLEARANCE TO COMBUSTIBLE MATERIAL

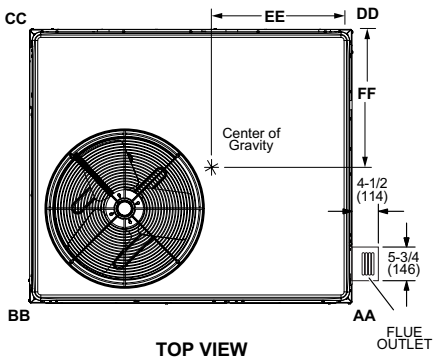
	in.	mm
Front	0	0
Back	0	0
Right Side (vent cover)	12	305
Left Side	0	0
Top	0	0
Below Unit	0	0

DIMENSIONS — UNIT

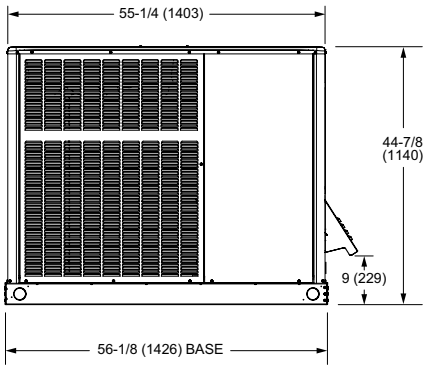
Model Number	CORNER WEIGHTS								CENTER OF GRAVITY			
	AA		BB		CC		DD		EE		FF	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg	in.	mm	in.	mm
QGA036	125	57	124	56	134	61	134	61	32-1/2	826	22-3/4	579
QGA048	133	60	130	59	143	65	143	65	32-1/2	826	22-3/4	579
QGA060	137	62	135	61	147	67	147	67	32-1/2	826	22-3/4	579



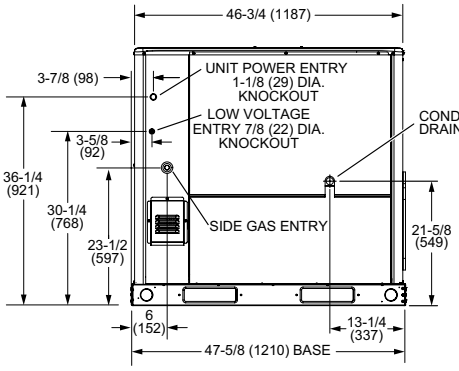
TOP VIEW (Base)



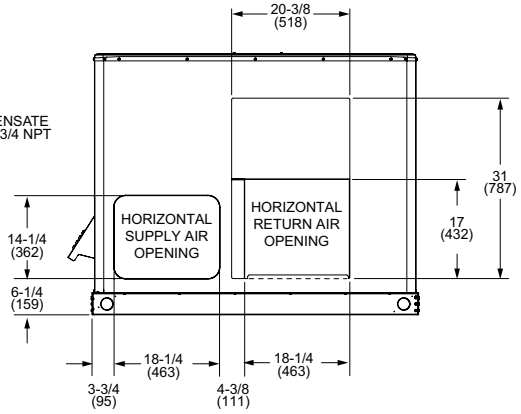
TOP VIEW
(Corner Weight and Center of Gravity)



FRONT VIEW

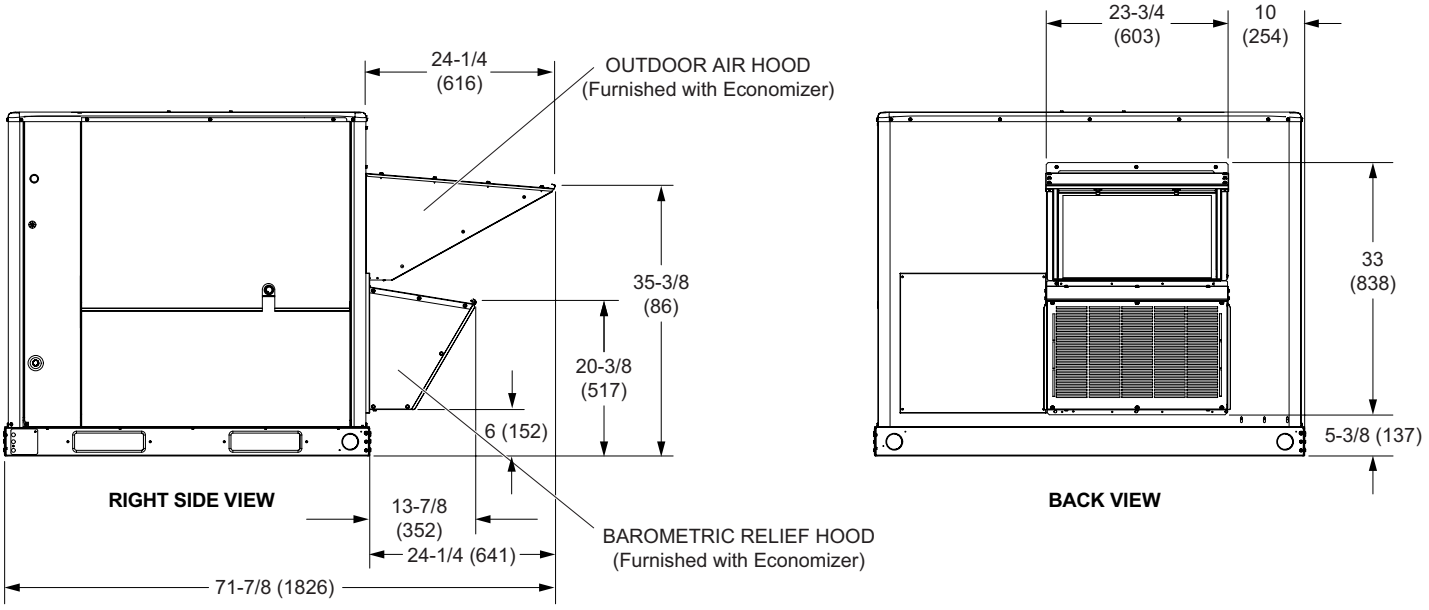


RIGHT SIDE VIEW

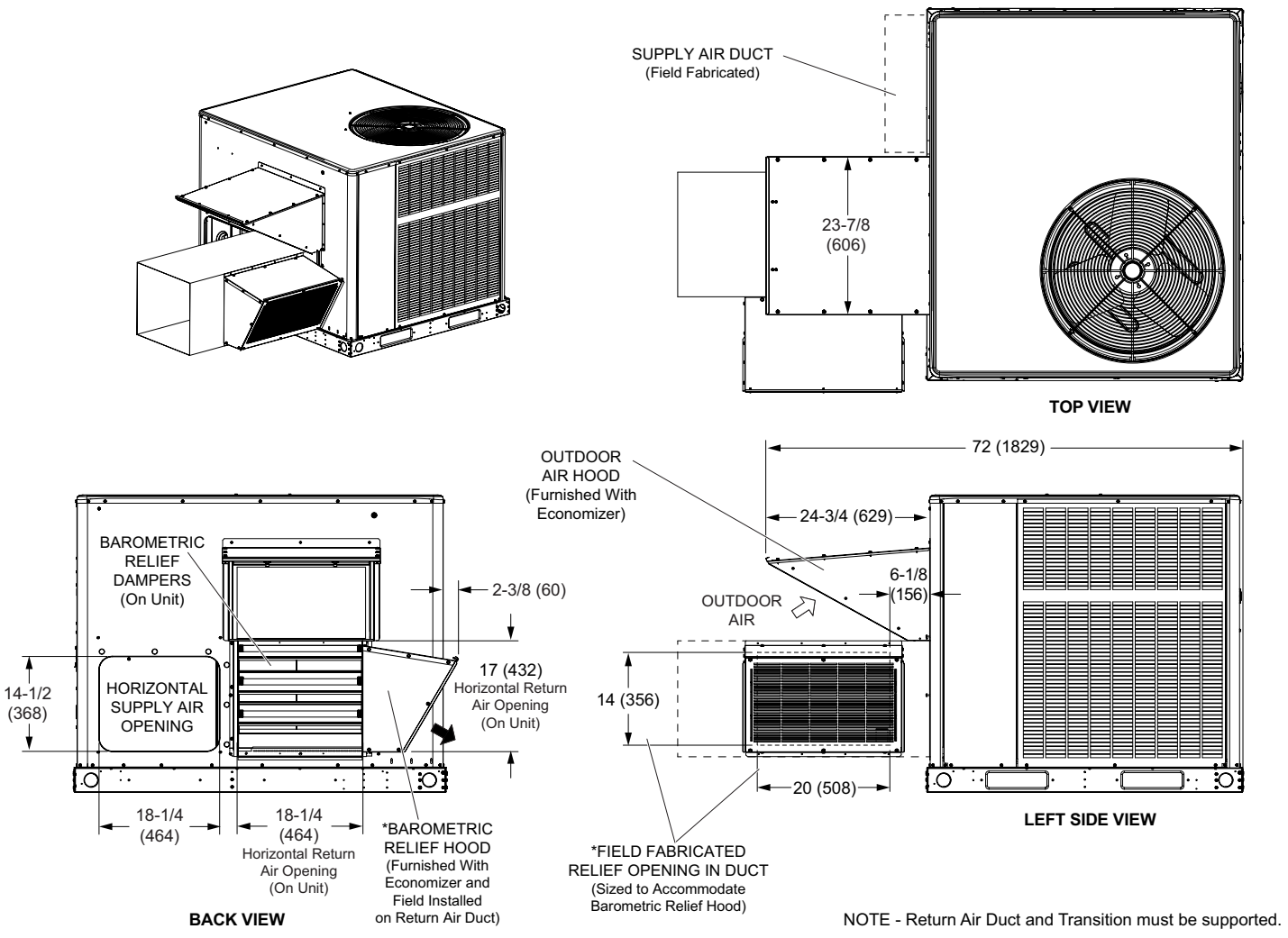


BACK VIEW

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



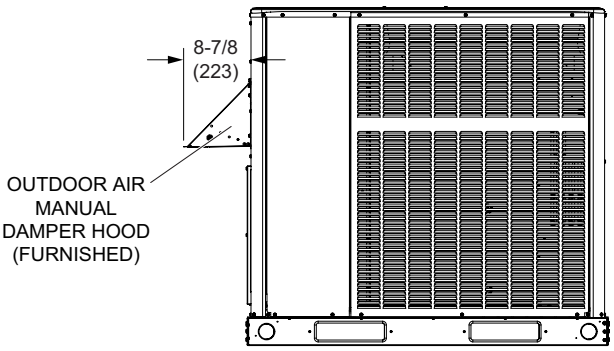
OUTDOOR AIR HOOD DETAIL FOR OPTIONAL ECONOMIZER WITH BAROMETRIC RELIEF DAMPERS
(Horizontal Applications)



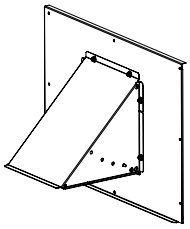
NOTE - Return Air Duct and Transition must be supported.

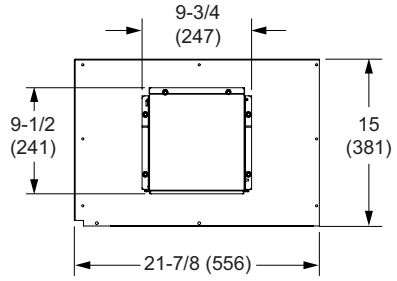
OUTDOOR AIR HOOD DETAIL FOR OPTIONAL OUTDOOR AIR DAMPERS

MANUAL OUTDOOR AIR DAMPERS

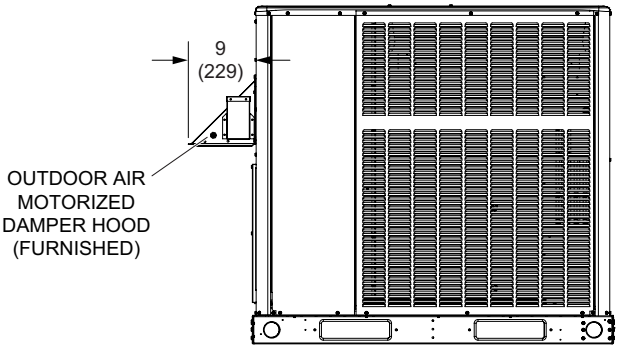


LEFT SIDE VIEW

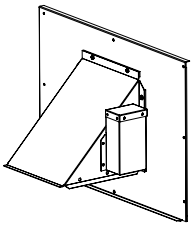


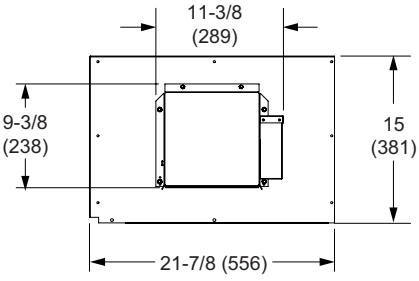


MOTORIZED OUTDOOR AIR DAMPERS



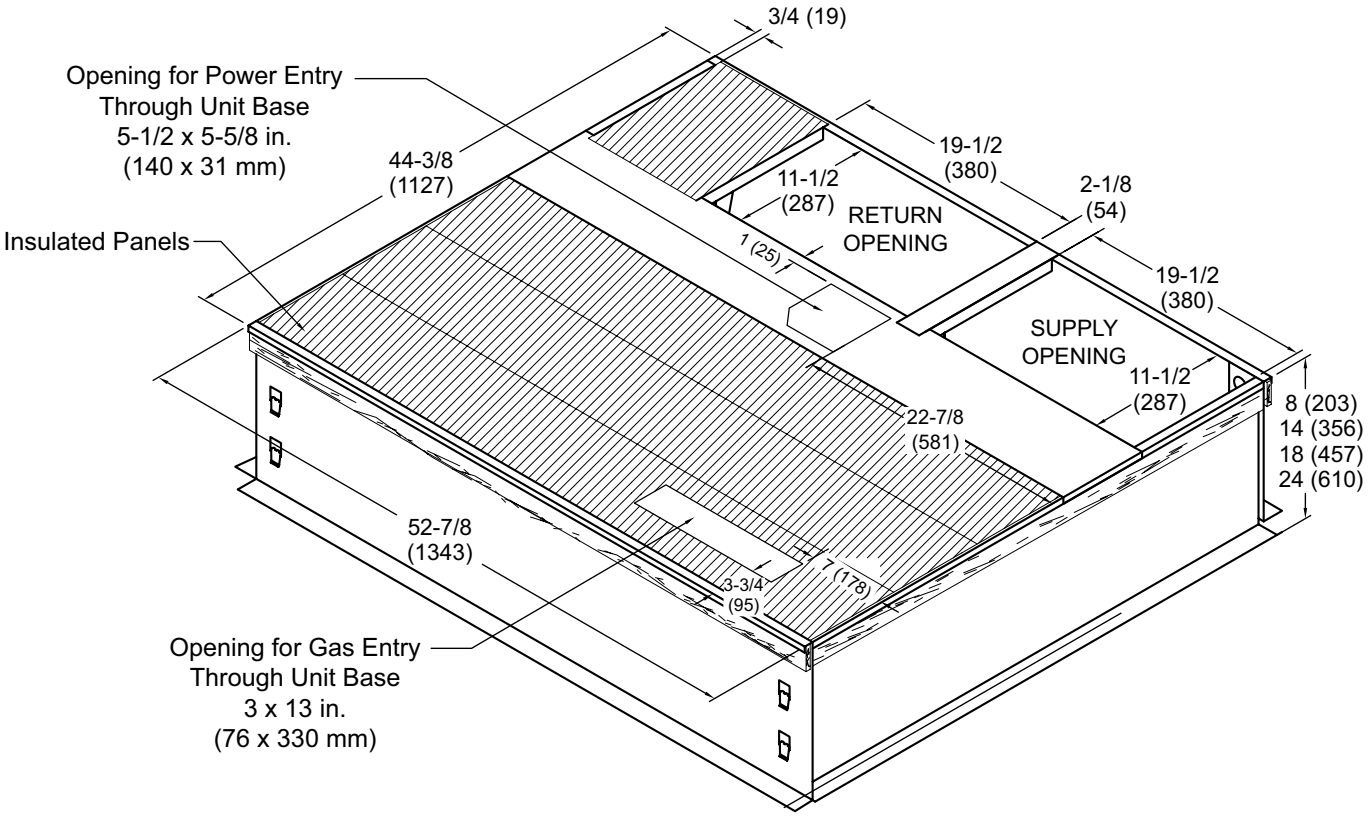
LEFT SIDE VIEW





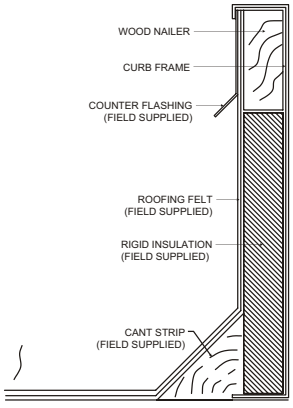
NOTE - Outdoor Air Hood and Panel replaces existing panel on unit.

CLIP CURB

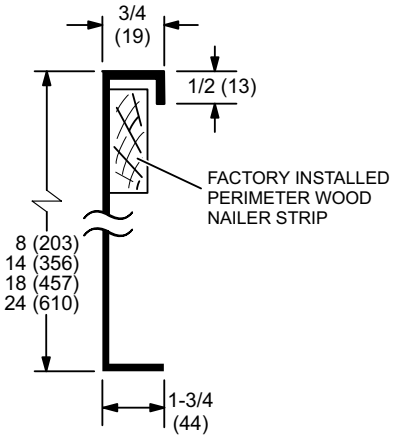


NOTE - Roof deck may be omitted within confines of curb.

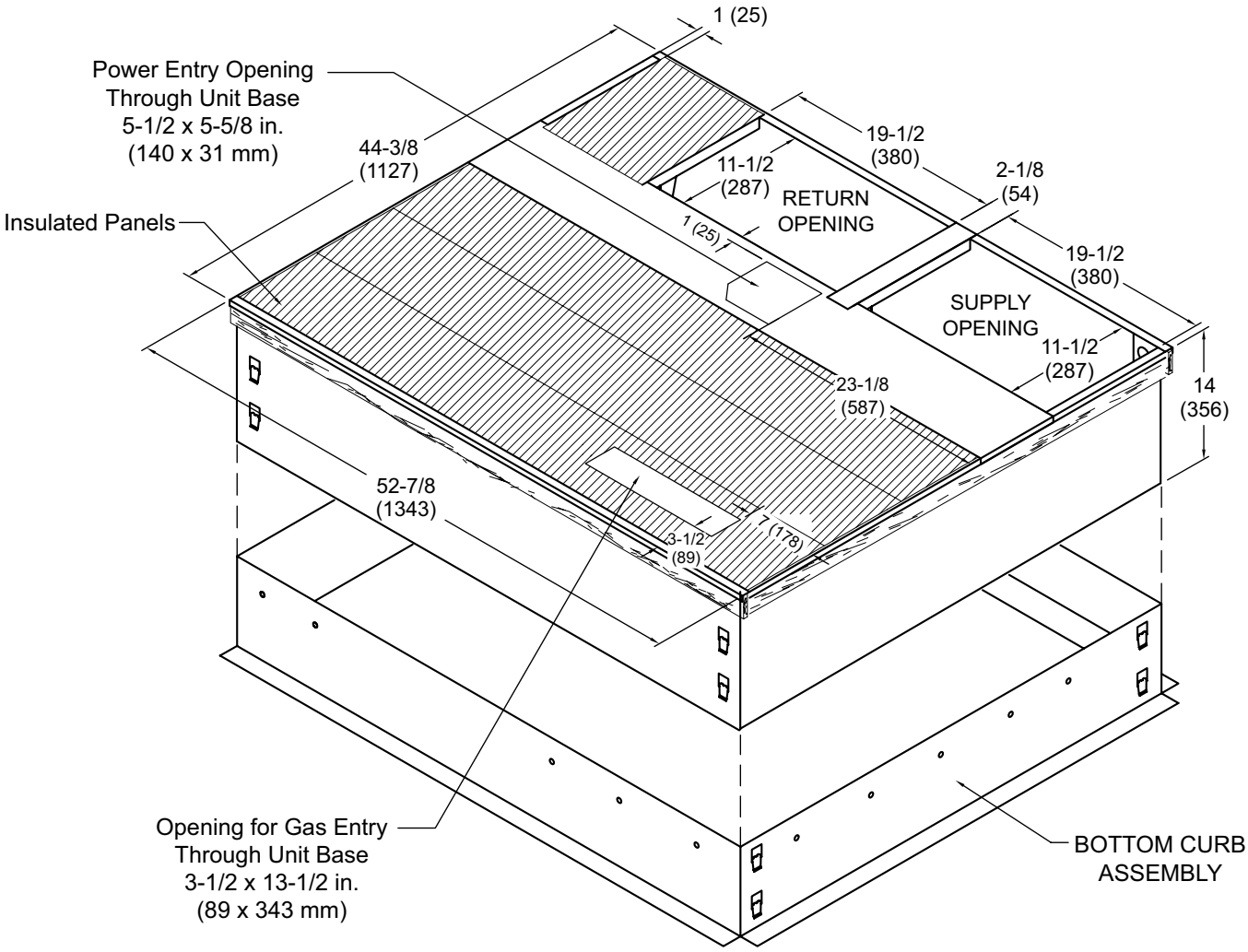
TYPICAL FLASHING DETAIL FOR ROOF CURB



DETAIL ROOF CURB

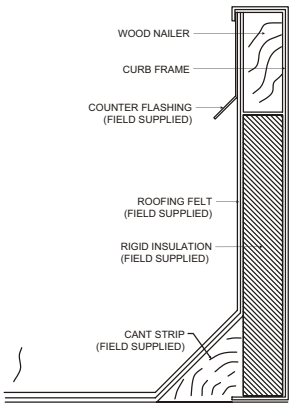


ADJUSTABLE PITCH ROOF CURB (KNOCK-DOWN STYLE)

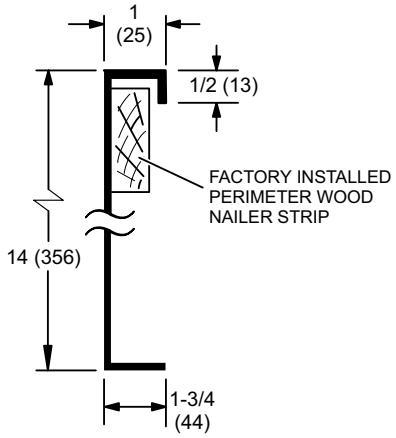


NOTE - Roof deck may be omitted within confines of curb.

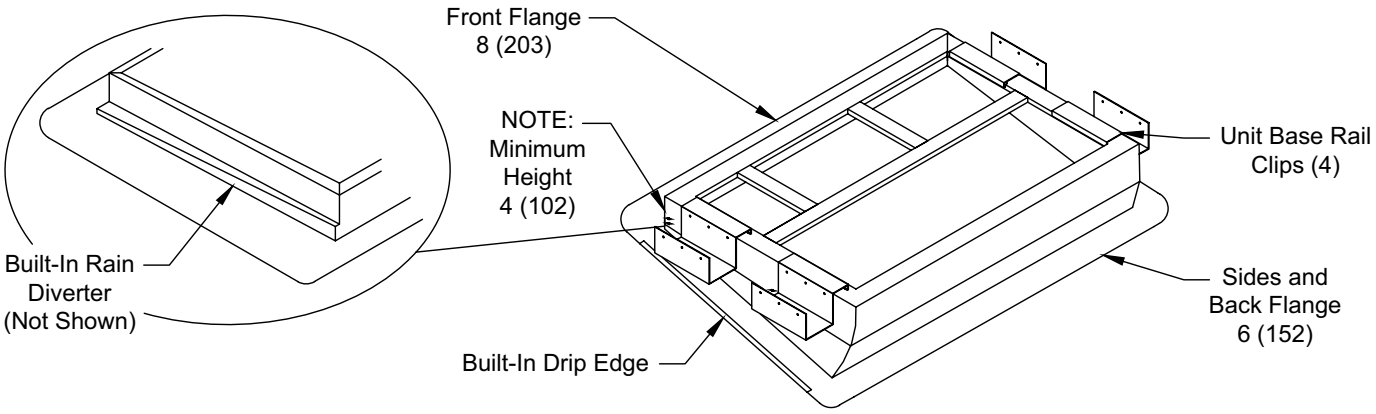
TYPICAL FLASHING DETAIL FOR ROOF CURB

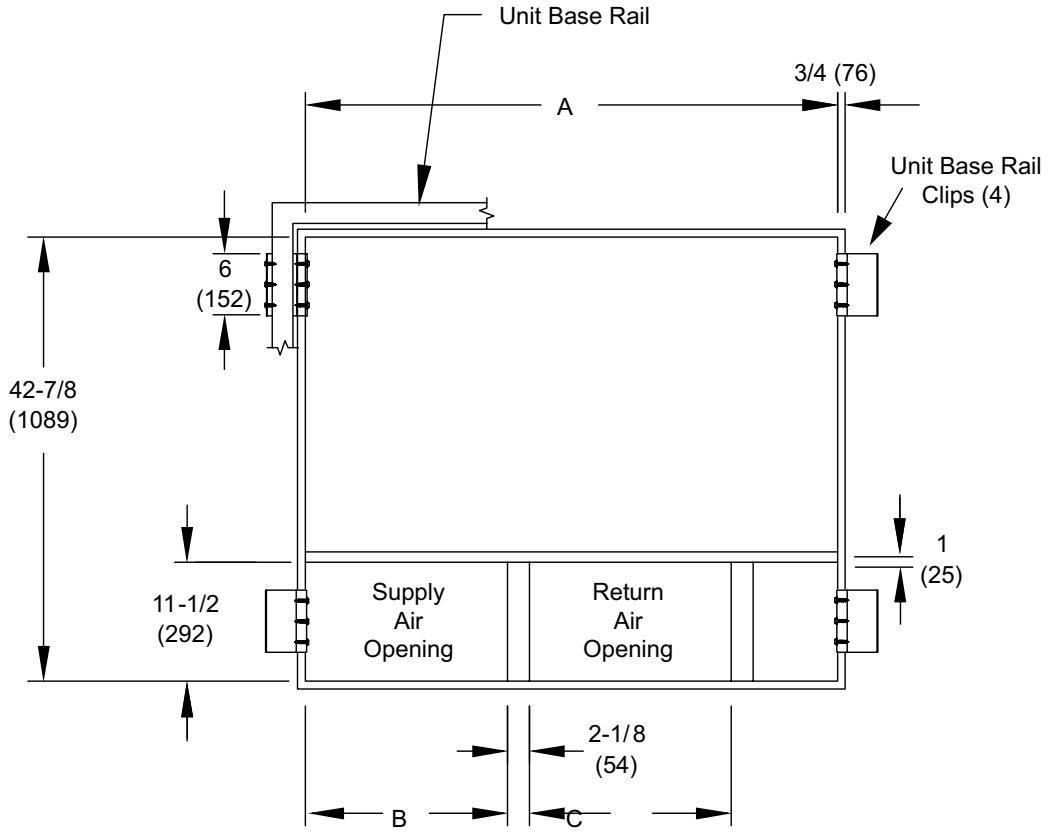


DETAIL ROOF CURB



ADJUSTABLE PITCH ROOF CURB (WELDED STYLE)





USAGE	A		B		C	
	in.	mm	in.	mm	in.	mm
36,48,60	51-3/8	1305	19-1/2	495	19-1/2	495

ALLIED™ Commercial

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Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.