

LENNOX®**ENGINEERING DATA****PACKAGED GAS / ELECTRIC****GCS20****-024-030-036-042-048-060**

2 to 5 Ton (7.0 to 17.6 kW)

AFUE - 80%

SEER - up to 11.30

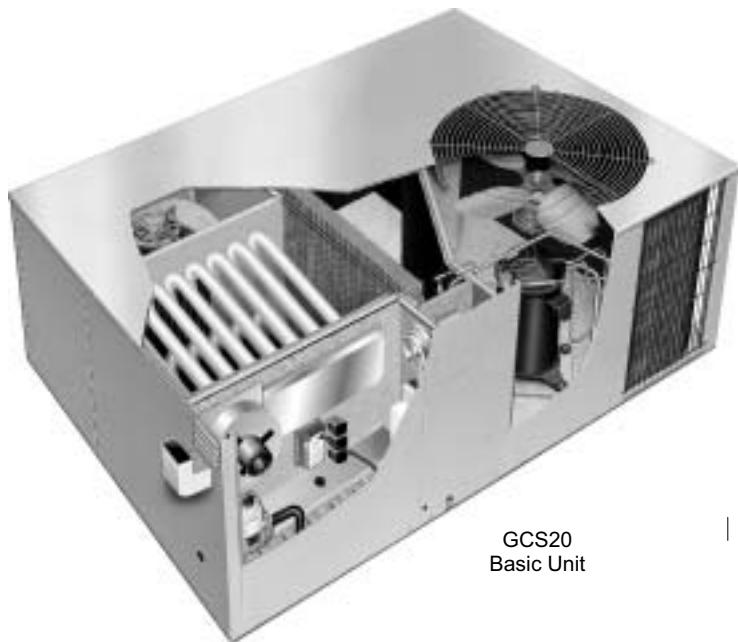
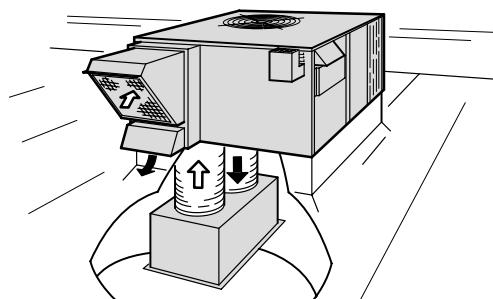
Net Cooling Capacity - 24,600 to 58,000 Btuh (7.2 to 17.0 kW)

Input Heating Capacity - 50,000 to 120,000 Btuh (14.7 to 35.2 kW)

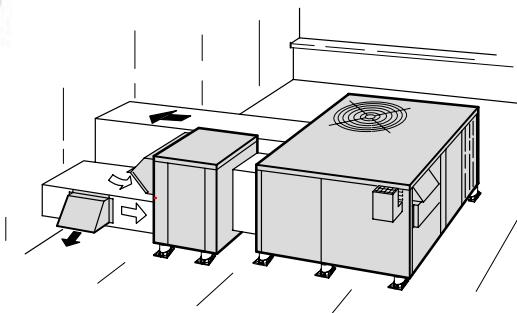
Bulletin No. 210030

September 2001

Supersedes March 2001

GCS20
Basic Unit

Rooftop Installation With Economizer and Combination Supply and Return Air System



Rooftop Installation with Horizontal Economizer

MODEL NUMBER IDENTIFICATION**GCS 20 X - 036 - 120 - 1 Y**Unit Type
GCS = Packaged Gas Heat/Cooling Unit

Series

Low NO_x Models

Cooling Capacity Tons (kW)

024 = 2 (7.0)
 030 = 2.5 (8.8)
 036 = 3 (10.6)
 042 = 3.5 (12.3)
 048 = 4 (14.1)
 060 = 5 (17.6)

Voltage

P = 208/230v-1 phase-60hz
 Y = 208/230v-3 phase-60hz
 G = 460v-3 phase-60hz

Minor Revision Number

Heating Capacity Btuh (kW)

50 = 50,000 (14.6)
 75 = 75,000 (22.0)
 90 = 90,000 (26.4)
 120 = 120,000 (35.1)

FEATURES**Application**

- AFUE of 80%.
- SEER of up to 11.3.
- 2 through 5 ton (7.0 through 17.5 kW).
- Single and three phase power supply.
- Bottom (down-flow) or horizontal supply and return air.
- Designed for outdoor rooftop or ground level installations in light commercial applications.

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.
 Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.

Installation and service must be performed by a qualified installer and servicing agency.

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FEATURES - CONTINUED

Approvals

- Certified in accordance with the USE certification program, which is based on ARI Standard 210/240-94.
- Sound rated in the Lennox reverberant sound test room in accordance with test conditions included in ARI Standard 270-95.
- Tested in the Lennox Research Laboratory environmental test room.
- Rated according to U.S. Department of Energy (DOE) test procedures.
- Blower data is from unit tests conducted in the Lennox Laboratory air test chamber.
- Units certified by CSA International (formerly AGA/CGA) and ratings are certified by GAMA.
- Gas heat is tested according to DOE test procedures and FTC labeling regulations.
- All "X" models meet California Nitrogen Oxides (NO_x) standards and California Seasonal Efficiency Requirements.
- Developed in accordance with ISO 9002 quality standards.
- Each unit test operated at the factory before shipment ensuring dependable operation at start-up.

Equipment Warranty

- Heat Exchanger - limited warranty for fifteen years in residential applications and ten years in non-residential applications.
- Compressor - limited warranty for ten years in residential applications and five years in non-residential applications.
- All other covered components - limited warranty for five years in residential applications and one year in non-residential applications.
- Refer to Lennox Equipment Limited Warranty certificate for specific details.

Heat Exchanger

- Constructed of tubular aluminized steel for superior resistance to corrosion and oxidation.
- Curving design allows complete exposure of heating surfaces to supply air stream.
- Round surfaces create minimum air resistance and allow air to surround all surfaces for excellent heat transfer. Internal baffles prolong flue gas passage resulting in maximum heat transfer.
- Compact design reduces space requirements in unit cabinet.
- Removable cabinet panels allow service access. Panel also has a peep hole for viewing flame.
- Heat exchanger has been laboratory life cycle tested.

Combustion Air Inducer

- Prepurges heat exchanger and safely vents flue products.
- Pressure switch proves blower operation before allowing gas valve to open.
- Induced draft blower operates only during heating cycle.
- Flame rollout switch (manual reset) protects against loss of combustion air due to flue vent or intake air blockage.

Inshot Burners

- Aluminized steel inshot burners provide efficient trouble free operation, unaffected by adverse wind or atmospheric conditions.
- Burner venturi mixes air and gas in correct proportion for proper combustion.
- Burners can be removed individually for service.

Gas Control Valve

- 24 volt redundant combination gas control valve combines a manual main shutoff valve, pressure regulation and automatic electric valve (dual) into one compact combination control.

Direct Spark Ignition

- Solid-state electronic direct spark ignition control provides positive and safe main burner ignition.
- Spark is intermittent and occurs only when required.
- Separate electronic flame sensor control assures safe and reliable operation.
- Should loss of flame occur, flame sensor controls will initiate 3 attempts at re-ignition.

Fan and Limit Controls

- Factory installed and accurately located limit control provides protection from abnormal operating conditions.
- Limit control has fixed temperature setting.

Copeland Scroll™ Compressor

- Compressor features high efficiency with uniform suction flow, constant discharge flow and high volumetric efficiency and quiet operation.
- Compressor consists of two involute spiral scrolls matched together to 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 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.
- Scroll 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.
- 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.



Refrigeration System

- All models include: expansion valve, liquid line strainer, suction and liquid line service gauge ports, high pressure switch (manual reset) and full refrigerant charge.
- Freezesztat prevents coil freeze-up during low ambient operation or loss of air flow.
- Low ambient operation down to 30°F (-1°C) without additional controls.

Condenser Fan

- Direct drive fan moves large air volumes uniformly through entire condenser coil for high refrigerant cooling capacity.
- Vertical air discharge minimizes operating sounds and keeps air up and away from building.
- Permanently lubricated, permanent split capacitor (PSC) motor.
- Motor totally enclosed for maximum protection from weather, dust and corrosion.
- Corrosion resistant PVC (polyvinyl chloride) coated steel wire fan guard is furnished as standard.

FEATURES - CONTINUED

Copper Tube/Enhanced Fin Coil

- Lennox designed and fabricated coil.
- Copper tube construction, rifled for improved efficiency.
- Lanced aluminum fins provide maximum exposure of fin surface to air stream resulting in excellent heat transfer.
- Fin collars grip tubing for maximum contact area.
- Flared shoulder tubing connections/silver soldering construction.
- Coil is factory tested under high pressure to insure leakproof construction.

Coil Guards

- PVC Coated steel wire guards to protect outdoor coil.
- Standard on single phase units. Optional on three phase units. See Optional Accessories for order no.

Cabinet

- Heavy gauge, galvanized steel cabinet with five station metal wash process.
- Powder enamel paint, electrostatically bonded to the metal, provides superior rust and corrosion protection.
- Control box is conveniently located with all controls factory wired.
- Large removable panels provide service access.
- Base section and cabinet panels exposed to conditioned air are lined with thick fiberglass insulation.
- Flanged supply and return air openings.
- Aluminized steel flue outlet shipped with unit for field installation.
- Gas and electrical inlets furnished for entry into the cabinet.
- Evaporator coil drain pan constructed of painted, corrosion resistant galvanized steel with galvanized steel pipe drain outlet coupling.
- Lifting brackets factory installed.

Blower

- Multi-speed direct drive blowers.
- Each blower assembly statically and dynamically balanced.
- Multiple-speed permanent split capacitor (PSC) motor resiliently mounted.
- Blower speeds are easily changed on the blower motor.
- See blower performance tables.

Air Filter

- Washable or vacuum cleanable one inch (25 mm) thick polyurethane frame type air filter.
- Filter rack is furnished for field installation in down-flow applications.
- Filter rack will accept up to two inch (51mm) thick filter.
- Filters must be field installed in return air duct for horizontal applications without economizer.
- See dimension drawings.

Economizer Wiring

- Low voltage thermostat connections in main control area.
- Furnished and factory installed on all models.
- Economizer wiring harness with jack plug connections.
- See page below for economizer options.

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Model No.	GCS20-024	GCS20-030	GCS20-036	GCS20-042	GCS20-048	GCS20-060
Ceiling Diffusers - Aluminum grilles, large center grille, insulated diffuser box with flanges, hanging rings furnished, interior transition (even air flow), internally sealed (prevents recirculation), adapts to T-bar ceiling grids or plaster ceilings - Net Weight	Step-Down - double deflection louvers	RTD9-65 - 67 lbs. (30 kg)				
	Flush - fixed blade louvers	FD9-65 - 37 lbs.(17 kg)				
Ceiling Diffuser Transitions (Supply and Return) - Installs in roof mounting frame, galvanized steel construction, flanges furnished for duct connection, fully insulated - Net Weight	SRT16 - 20 lbs. (9 kg)					
Coil Guards - PVC coated steel wire guards to protect outdoor coil (3 phase models only - furnished with 1 phase model units). Not for use with Hail Guards	Standard	LB-82199CF (47J23) 2 guards per order	Standard	LB-82199CG (47J24) 3 guards per order		
Control Systems	See pages 15-16					
Economizer with Gravity Exhaust Dampers (Down-Flow) - Installs directly in cabinet, recirculated air dampers with pressure operated gravity exhaust damper, formed, gasketed damper blades, nylon bearings, fully modulating or 3 position 24v damper motor has adjustable minimum position switch, electronic discharge air sensor, adjustable outdoor air enthalpy control. Utilizes filter furnished with unit, filter rack will accept up to 2 in. (51 mm) filter. Removable exhaust air hood and outdoor air intake hood with cleanable aluminum mesh filter. Choice of economizer controls. Model No. - Net Weight - No. & size of filter - in. (mm)	3 Position: REMD16-41 - 48 lbs. (22 kg) Modulating: REMD16M-41 - 48 lbs. (22 kg) ① Indoor: (1) 16 x 25 x 1 (406 x 635 x 25) Outdoor : (1) 14 x 25 x 1 (356 x 635 x 25)			3 Position: REMD16-65 - 66 lbs. (30 kg) Modulating: REMD16M-65 - 66 lbs. (30 kg) ① Indoor: (1) 20 x 25 x 1 (508 x 635 x 25) Outdoor : (1) 18 x 25 x 1 (457 x 635 x 25)		

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Model No.	GCS20-024	GCS20-030	GCS20-036	GCS20-042	GCS20-048	GCS20-060
Economizer Dampers (Horizontal) - Installs on cabinet, combination outdoor air and recirculated air damper, formed, gasketed damper blades, nylon bearings, fully modulating or 3 position 24v damper motor has adjustable minimum position switch, electronic discharge air sensor, adjustable outdoor air enthalpy control. 1 in (25 mm) fiberglass filter furnished, filter rack will accept up to 2 in. (51 mm) filter, outdoor air intake hood with cleanable aluminum mesh filter. Choice of economizer controls. Model No. - Net Weight - No. & size of filter - in. (mm)	3 Position: EMDH16-41 - 110 lbs. (50 kg) Modulating: EMDH16M-41 - 110 lbs. (50 kg) Indoor : (1) 20 x 24 x 1 (508 x 610 x 25) Outdoor : (1) 8 x 24 x 1 (203 x 610 x 25)	3 Position: EMDH16-65 - 130 lbs. (59 kg) Modulating: EMDH16M-65 - 130 lbs. (59 kg) Indoor : (1) 16 x 25 x 1 (406 x 635 x 25) & (1) 14 x 25 x 1 (356 x 635 x 1) Outdoor : (1) 8 x 28 x 1 (203 x 711 x 25)				
Economizer Gravity Exhaust Dampers - For use with EMDH16. Pressure operated assembly field installs in the return air duct adjacent to the economizer assembly. Includes bird screen. - Net Weight		GEDH16-65 - 4 lbs. (2 kg)				
Economizer Differential Enthalpy Control - Used in conjunction with outdoor air enthalpy control. Determines and selects which air has the lowest enthalpy. Return air enthalpy sensor field installs in economizer damper section		54G44				
Hail Guards - Heavy duty field installed coil guard protects coils from damage. Not for use with Coil Guards.	90N90 2 guards per order	90N91 3 guards per order				
Low Ambient Control Kit - Units operate down to 30°F (-1°C) outdoor air temperature in cooling mode without any additional controls. A Low Ambient Kit can be field installed, enabling unit to operate properly down to 0°F (-17.7°C).		LB-57133BC (24H77)				
LPG/Propane Kits - conversion from Natural Gas to LPG	50L89 - 50-75-90K input	50L88 - 120K input				
Outdoor Air Damper Section (Down-flow) - Damper assembly replaces blower access panel, manually adjustable, 0 to 25% (fixed) outdoor air, outdoor air hood with cleanable filter included, number and size of filter - Net Weight	OAD16-41 - 12 lbs. (5 kg) (1) 5 x 17 x 1 in. (127 x 432 x 25 mm)	OAD16-65 - 12 lbs. (5 kg) (1) 8 x 17 x 1 in. (203 x 432 x 25 mm)				
Outdoor Air Damper Section (Horizontal) - Installs in return air duct adjacent to unit, manually adjustable (fixed) outdoor air - Net Weight		OAD3-46/65 - 8 lbs. (4 kg)				
Roof Curb Power Entry Kit - Allows power entry through roof mounting frame, knockouts provided in roof frame, kit contains 1/2 in. (13 mm) x 40 in. (1016 mm) armored conduit and installation hardware, two kits are required, one for low voltage and one for high voltage. See Dimension Drawing		18H70				
Roof Mounting Frame - Nailer strip furnished, mates to unit, U.S. National Roofing Contractors Approved, shipped knocked down. RMF16-41 may be used on all sizes, with a slight unit overhang on GCS16-048 and GCS16-060 units - Net Weight NOTE - Sound Reduction Plate must be ordered separately for field installation.	RMF16-41 - 75 lbs. (35 kg) Sound Reduction Plate (ordered separately) 73H80	RMF16-41 - 75 lbs. (35 kg) Sound Reduction Plate (ordered separately) 73H80				
Thermostat - Not furnished with unit. See Thermostat bulletin in Thermostats and Controls section and Lennox Price book. For commercial control systems, see below.		See Thermostat bulletin in Thermostats and Controls section, Lennox Price book and table below.				
Timed-Off Control — Prevents compressor short-cycling and allows time for suction and discharge pressure to equalize, permitting the compressor to start in an unloaded condition. Automatic reset control provides a time delay between compressor shutoff and start-up.		LB-50709BK (47J27)				
Unit Stand-Off Mounting Kit — Elevates horizontal application units above mounting surface. Includes six high impact polystyrene stand-off mounts. See dimension drawings.		38H18				

① Indoor filter is not furnished with economizer. REMD16 utilizes existing filter furnished with GCS20 unit.

SPECIFICATIONS

Heating Performance	Model No.	GCS20-024-50	GCS20-030-75	GCS20-036-90	GCS20-042-75	GCS20-042-120
	Input - Btuh (kW)	50,000 (14.7)	75,000 (22.0)	90,000 (26.4)	75,000 (22.0)	120,000 (35.2)
	Output - Btuh (kW)	40,000 (11.7)	60,000 (17.6)	72,000 (20.5)	60,000 (17.6)	96,000 (28.1)
	★A.F.U.E.	80.0%	80.0%	80.0%	80.0%	80.0%
	Gas Supply Connections npt - in.	1/2	1/2	1/2	1/2	1/2
	Rec. Gas Supply Pressure - w.c. in. (kPa) Natural	7 (1.7)	7 (1.7)	7 (1.7)	7 (1.7)	7 (1.7)
	LPG/Propane	11 (2.7)	11 (2.7)	11 (2.7)	11 (2.7)	11 (2.7)
Cooling Performance	Nominal Tonnage (kW)	2 (7.0)	2.5 (8.8)	3 (10.6)	3.5 (12.3)	3.5 (12.3)
	★Cooling capacity - Btuh (kW)	24,600 (7.2)	30,400 (8.9)	33,600 (9.8)	41,000 (12.0)	41,000 (12.0)
	Total Unit Watts	2420	3140	3500	4165	4165
	★SEER (Btuh/Watts)	11.00	11.00	11.00	11.30	11.30
	EER (Btuh/Watts)	10.2	9.70	9.60	9.8	9.8
	*Sound Rating Number (db)	80	80	80	78	82
	Refrigerant Charge (HCFC-22)	4 lbs. 5 oz. (1.96 kg)	4 lbs. 10 oz. (2.10 kg)	4 lbs. 6 oz. (1.98 kg)	5 lbs. 2 oz. (2.32 kg)	5 lbs. 2 oz. (2.32 kg)
Condenser Coil	Net face area - sq. ft. (m ²) Outer Coil	8.7 (0.81)	8.7 (0.81)	8.7 (0.81)	14.3 (1.33)	14.3 (1.33)
	Inner Coil	8.4 (0.78)	8.4 (0.78)	8.4 (0.78)	5.9 (0.55)	5.9 (0.55)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	2	2	2	1.4	1.4
	Fins per inch (m)	20 (787)	20 (787)	20 (787)	20 (787)	20 (787)
Condenser Fan	Motor output - hp (W)	1/6 (124)	1/6 (124)	1/6 (124)	1/4 (187)	1/4 (187)
	Motor watts	240	240	240	340	340
	Diameter - in. (mm)	20 (508)	20 (508)	20 (508)	24 (610)	24 (610)
	No. of blades	4	4	4	4	4
	Air volume - cfm (L/s)	2200 (1040)	2200 (1040)	2200 (1040)	3880 (1830)	3880 (1830)
Evaporator Coil	Net face area - sq. ft. (m ²)	3.2 (0.30)	4.1 (0.38)	4.1 (0.38)	5.3 (0.49)	5.3 (0.49)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	2	2	2	2	2
	Fins per inch (m)	15 (590)	15 (590)	15 (590)	15 (590)	15 (590)
	Condensate drain coupling size npt - in.	3/4	3/4	3/4	3/4	3/4
Evaporator Blower	Motor output - hp (W)	1/3 (249)	1/3 (249)	1/2 (373)	3/4 (560)	3/4 (560)
	Blower wheel nominal diameter x width - in. (mm)	9 x 8 (229 X 203)	10 x 8 (254 X 203)	10 x 8 (254 X 203)	11-1/2 x 9 (292 x 228)	11-1/2 x 9 (292 x 228)
No. & size of cleanable polyurethane filters - in. (mm)	(1) 16 x 25 x 1 (406 x 635 x 25)	(1) 16 x 25 x 1 (406 x 635 x 25)	(1) 16 x 25 x 1 (406 x 635 x 25)	(1) 20 x 25 x 1 (508 x 635 x 25)	(1) 20 x 25 x 1 (508 x 635 x 25)	
Shipping Data	Net weight of basic unit - lbs. (kg)	406 (184)	406 (184)	406 (184)	494 (224)	494 (224)
	Shipping weight of basic unit - lbs. (kg) 1 pkg.	472 (214)	472 (214)	472 (214)	603 (274)	603 (274)
Electrical characteristics (60 hz)		208/230v - 1 ph	208/230v - 1ph 208/203v - 3 ph 460v - 3 ph		208/230v - 1 ph	

★Annual Fuel Utilization Efficiency based on DOE test procedures and FTC labeling regulations.

*Sound Rating Number in accordance with test conditions included in ARI Standard 270.

★Certified in accordance with the USE certification program, which is based on ARI Standard 210/240: 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19.5°C) wb entering evaporator air.

SPECIFICATIONS

Heating Performance	Model No.	GCS20-048-75	GCS20-048-120	GCS20-060-75	GCS20-060-120
Input - Btuh (kW)	75,000 (22.0)	120,000 (35.2)	75,000 (22.0)	120,000 (35.2)	
Output - Btuh (kW)	60,000 (17.6)	96,000 (28.1)	60,000 (17.6)	96,000 (28.1)	
★A.F.U.E.	80.0%	80.0%	80.0%	80.0%	
Gas Supply Connections npt - in.	1/2	1/2	1/2	1/2	
Rec. Gas Supply Pressure - w.c. in. (kPa) Natural	7 (1.7)	7 (1.7)	7 (1.7)	7 (1.7)	
LPG/Propane	11 (2.7)	11 (2.7)	11 (2.7)	11 (2.7)	
Cooling Performance	Nominal Tonnage (kW)	4 (14.1)	4 (14.1)	5 (17.6)	5 (17.6)
★Cooling Capacity Btuh (kW)	48,000 (14.1)	48,000 (14.1)	58,000 (17.0)	58,000 (17.0)	
Total Unit Watts	4775	4775	5985	5985	
★SEER (Btuh/Watts)	11.30	11.30	11.00	11.00	
EER (Btuh/Watts)	10.1	10.1	9.7	9.7	
*Sound Rating Number (db)	82	82	82	82	
Refrigerant Charge (HCFC-22)	7 lbs. 3 oz. (3.26 kg)	7 lbs. 3 oz. (3.26 kg)	7 lbs. 5 oz. (3.32 kg)	7 lbs. 5 oz. (3.32 kg)	
Condenser Coil	Net face area - sq. ft. (m ²) Outer Coil	14.3 (1.33)	14.3 (1.33)	14.3 (1.33)	14.3 (1.33)
	Inner Coil	13.7 (1.27)	13.7 (1.27)	13.7 (1.27)	13.7 (1.27)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	2	2	2	2
	Fins per inch (m)	20 (787)	20 (787)	20 (787)	20 (787)
Condenser Fan	Motor output - hp (W)	1/4 (187)	1/4 (187)	1/4 (187)	1/4 (187)
	Motor watts	360	360	360	360
	Diameter - in. (mm)	24 (610)	24 (610)	24 (610)	24 (610)
	No. of blades	4	4	4	4
	Air volume - cfm (L/s)	3770 (1780)	3770 (1780)	3770 (1780)	3770 (1780)
Evaporator Coil	Net face area - sq. ft. (m ²)	5.3 (0.49)	5.3 (0.49)	6.2 (0.58)	6.2 (0.58)
	Tube diameter - in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	No. of rows	2	2	2	2
	Fins per inch (m)	15 (590)	15 (590)	15 (590)	15 (590)
	Condensate drain coupling size npt - in.	3/4	3/4	3/4	3/4
Evaporator Blower	Motor output - hp (W)	3/4 (560)	3/4 (560)	3/4 (560)	3/4 (560)
	Blower wheel nominal diameter x width - in. (mm)	11-1/2 x 9 (292 x 228)	11-1/2 x 9 (292 x 228)	11-1/2 x 9 (292 x 228)	11-1/2 x 9 (292 x 228)
No. & size of cleanable polyurethane filters - in. (mm)	(1) 20 x 25 x 1 (508 x 635 x 25)	(1) 20 x 25 x 1 (508 x 635 x 25)	(1) 20 x 25 x 1 (508 x 635 x 25)	(1) 20 x 25 x 1 (508 x 635 x 25)	
Shipping Data	Net weight of basic unit - lbs. (kg)	527 (239)	527 (239)	541 (245)	541 (245)
	Shipping weight of basic unit - lbs. (kg) 1 pkg.	636 (288)	636 (288)	650 (295)	650 (295)
Electrical characteristics (60 hz)		208/230v - 1 ph 208/203v - 3 ph 460v - 3 ph			

★Annual Fuel Utilization Efficiency based on DOE test procedures and FTC labeling regulations.

*Sound Rating Number in accordance with test conditions included in ARI Standard 270.

★Certified in accordance with the USE certification program, which is based on ARI Standard 210/240: 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19.5°C) wb entering evaporator air.

HIGH ALTITUDE INFORMATION

No gas pressure adjustment is needed when operating from 0 to 7500 ft. (0 to 2285 m). See below for correct manifold pressures for natural gas and LPG/propane.

FUEL	Manifold Absolute Pressure (outlet) 0 to 7500 ft. (0 to 2285 m) above sea level
Natural Gas	3.5 in. w.g. (0.87 kPa)
LPG/Propane	10.5 in. w.g. (2.61 kPa)

COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

GCS20-024 — COOLING CAPACITY

Entering Wet Bulb Tempera- ture	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																		
		85°F (29°C)				95°F (35°C)				105°F (41°C)				115°F (46°C)						
		Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb			
		cfm	L/s		kBtuh kW	75°F 24°C	80°F 27°C		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtuh kW	75°F 24°C	80°F 27°C	85°F 29°C	
63°F (17°C)	640	300	24.1	7.1	1.68	.71	.84	.95	23.3	6.8	1.90	.72	.85	.97	22.4	6.6	2.14	.73	.86	.98
	800	380	25.0	7.3	1.69	.75	.90	1.00	24.1	7.1	1.91	.77	.92	1.00	23.3	6.8	2.15	.78	.93	1.00
	960	455	25.7	7.5	1.70	.80	.95	1.00	24.8	7.3	1.92	.82	.97	1.00	24.0	7.0	2.16	.83	.98	1.00
67°F (19°C)	640	300	25.7	7.5	1.69	.56	.68	.80	24.8	7.3	1.91	.57	.69	.82	23.8	7.0	2.16	.57	.70	.83
	800	380	26.5	7.8	1.70	.59	.73	.87	25.5	7.5	1.92	.59	.74	.88	24.6	7.2	2.16	.60	.75	.90
	960	455	27.1	7.9	1.70	.61	.78	.92	26.1	7.6	1.92	.62	.79	.94	25.1	7.4	2.17	.63	.81	.96
71°F (22°C)	640	300	27.4	8.0	1.70	.43	.54	.66	26.4	7.7	1.93	.43	.55	.67	25.4	7.4	2.17	.43	.55	.68
	800	380	28.3	8.3	1.70	.43	.57	.70	27.2	8.0	1.93	.44	.58	.72	26.2	7.7	2.18	.44	.59	.73
	960	455	28.9	8.5	1.70	.44	.60	.75	27.8	8.1	1.94	.45	.61	.77	26.7	7.8	2.18	.45	.62	.79

GCS20-030 — COOLING CAPACITY

Entering Wet Bulb Tempera- ture	Total Air Volume	Outdoor Air Temperature Entering Outdoor Coil																		
		85°F (29°C)				95°F (35°C)				105°F (41°C)				115°F (46°C)						
		Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb	Total Cooling Capacity		Comp Motor kW Input	Dry Bulb			
		cfm	L/s		kBtuh kW	75°F 24°C	80°F 27°C		75°F 24°C	80°F 27°C	85°F 29°C	kBtuh kW	75°F 24°C	80°F 27°C	85°F 29°C	kBtuh kW	75°F 24°C	80°F 27°C	85°F 29°C	
63°F (17°C)	800	380	30.2	8.9	2.17	.71	.84	.95	29.2	8.6	2.45	.72	.85	.96	28.1	8.2	2.77	.73	.86	.98
	1000	470	31.4	9.2	2.18	.75	.90	1.00	30.3	8.9	2.46	.77	.91	1.00	29.1	8.5	2.78	.78	.93	1.00
	1200	565	32.3	9.5	2.19	.80	.95	1.00	31.2	9.1	2.47	.82	.97	1.00	30.0	8.8	2.79	.83	.98	1.00
67°F (19°C)	800	380	32.1	9.4	2.19	.56	.68	.80	31.0	9.1	2.47	.57	.69	.82	29.8	8.7	2.79	.57	.70	.83
	1000	470	33.2	9.7	2.20	.59	.73	.87	32.0	9.4	2.48	.59	.74	.89	30.7	9.0	2.80	.60	.76	.90
	1200	565	33.9	9.9	2.21	.61	.78	.93	32.7	9.6	2.49	.62	.79	.94	31.4	9.2	2.81	.63	.81	.96
71°F (22°C)	800	380	34.2	10.0	2.21	.43	.54	.66	33.0	9.7	2.49	.43	.55	.67	31.8	9.3	2.81	.43	.55	.68
	1000	470	35.2	10.3	2.23	.43	.57	.71	34.0	10.0	2.50	.44	.58	.72	32.7	9.6	2.82	.44	.59	.73
	1200	565	35.9	10.5	2.23	.44	.60	.76	34.6	10.1	2.51	.45	.61	.77	33.3	9.8	2.84	.45	.62	.79

COOLING RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin — Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

GCS20-036 COOLING CAPACITY

Enter- ing Wet Bulb Temper- ature	Total Air Volume		85°F (29°C)				95°F (35°C)				105°F (41°C)				115°F (46°C)											
			Total Cooling Capacity	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb
	L/s	cfm	kW	Btuh																						
63°F (17.2°C)	495	1050	9.8	33,300	2480	.76	.90	1.00	9.4	32,100	2760	.77	.91	1.00	9.1	31,000	3110	.78	.94	1.00	8.8	29,900	3540	.79	.94	1.00
	565	1200	10.0	34,200	2490	.78	.93	1.00	9.7	33,000	2780	.80	.95	1.00	9.3	31,900	3130	.81	.99	1.00	8.9	30,400	3560	.82	.99	1.00
	635	1350	10.3	35,100	2510	.81	.97	1.00	10.8	37,000	2790	.82	.99	1.00	9.5	32,500	3150	.84	1.00	1.00	9.2	31,400	3590	.85	1.00	1.00
67°F (19.4°C)	495	1050	10.2	34,800	2510	.60	.73	.86	9.9	33,700	2790	.61	.75	.88	9.6	32,600	3150	.62	.76	.89	9.2	31,400	3600	.62	.77	.91
	565	1200	10.5	35,900	2530	.62	.76	.90	10.2	34,700	2820	.62	.77	.92	9.8	33,500	3180	.63	.78	.93	9.4	32,200	3630	.64	.80	.95
	635	1350	10.8	36,700	2540	.63	.79	.93	10.4	35,400	2840	.64	.80	.95	10.0	34,200	3200	.65	.81	.97	9.6	32,900	3660	.66	.83	.99
71°F (21.7°C)	495	1050	10.6	36,300	2530	.45	.59	.71	10.3	35,100	2830	.46	.59	.72	9.9	33,900	3190	.46	.60	.73	9.6	32,800	3650	.46	.61	.74
	565	1200	11.0	37,400	2560	.46	.60	.74	10.6	36,200	2850	.46	.61	.75	10.3	35,000	3230	.46	.62	.76	9.9	33,800	3690	.47	.63	.77
	635	1350	11.2	38,300	2580	.46	.62	.76	10.9	37,100	2880	.47	.63	.78	10.5	35,800	3260	.47	.63	.79	10.1	34,500	3730	.47	.64	.80

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

GCS20-042 COOLING CAPACITY

Enter- ing Wet Bulb Temper- ature	Total Air Volume		85°F (29°C)				95°F (35°C)				105°F (41°C)				115°F (46°C)											
			Total Cooling Capacity	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb
	L/s	cfm	kW	Btuh																						
63°F (17.2°C)	580	1225	11.9	40,600	2880	.75	.90	1.00	11.4	39,000	3210	.76	.92	1.00	10.9	37,200	3610	.78	.94	1.00	10.4	35,500	4120	.79	.97	1.00
	660	1400	12.3	41,900	2900	.78	.94	1.00	11.8	40,100	3220	.79	.97	1.00	11.2	38,100	3620	.81	.99	1.00	10.7	36,500	4140	.83	1.00	1.00
	745	1575	12.5	42,700	2910	.81	.98	1.00	12.0	41,000	3240	.83	1.00	1.00	11.5	39,300	3640	.84	1.00	1.00	10.9	37,300	4160	.86	1.00	1.00
67°F (19.4°C)	580	1225	12.5	42,700	2910	.59	.74	.88	12.0	41,000	3240	.60	.75	.90	11.5	39,300	3650	.60	.77	.91	11.0	37,600	4170	.61	.78	.93
	660	1400	12.9	44,100	2930	.61	.77	.92	12.4	42,300	3260	.62	.78	.94	11.9	40,500	3670	.62	.80	.95	11.3	38,700	4190	.63	.82	.97
	745	1575	13.3	45,300	2950	.63	.79	.96	12.7	43,400	3280	.63	.81	.98	12.2	41,500	3690	.64	.83	1.00	11.6	39,600	4210	.65	.85	1.00
71°F (21.7°C)	580	1225	13.1	44,700	2940	.44	.59	.74	12.6	43,000	3270	.44	.59	.75	12.1	41,300	3690	.45	.60	.76	11.6	39,500	4210	.45	.61	.77
	660	1400	13.5	46,200	2960	.45	.60	.77	13.0	44,400	3300	.45	.61	.78	12.5	42,600	3710	.45	.62	.79	11.9	40,700	4240	.46	.63	.80
	745	1575	13.9	47,400	2980	.45	.62	.79	13.4	45,600	3320	.46	.63	.81	12.8	43,700	3740	.46	.64	.82	12.3	41,800	4270	.46	.66	.84

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

GCS20-048 COOLING CAPACITY

Enter- ing Wet Bulb Temper- ature	Total Air Volume		85°F (29°C)				95°F (35°C)				105°F (41°C)				115°F (46°C)											
			Total Cooling Capacity	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb	75°F 24°C	80°F 27°C	85°F 29°C	kW	Btuh	Com- pressor Motor Watts Input	Sensi- ble To Total Ratio (S/T) Dry Bulb
	L/s	cfm	kW	Btuh																						
63°F (17.2°C)	660	1400	14.0	47,900	3370	.75	.90	1.00	13.5	46,200	3710	.76	.92	1.00	13.0	44,500	4150	.77	.93	1.00	12.5	42,700	4680	.78	.95	1.00
	755	1600	14.5	49,400	3390	.78	.94	1.00	14.0	47,600	3730	.79	.95	1.00	13.4	45,700	4160	.80	.98	1.00	12.9	43,900	4700	.82	1.00	1.00
	850	1800	14.8	50,600	3400	.81	.97	1.00	14.3	48,800	3740	.82	.99	1.00	13.7	46,600	4170	.84	1.00	1.00	13.1	44,800	4710	.85	1.00	1.00
67°F (19.4°C)	660	1400	14.7	50,200	3400	.59	.74	.88	14.2	48,500	3740	.60	.75	.89	13.7	46,700	4170	.60	.76	.90	13.2	44,900	4710	.61	.77	.92
	755	1600	15.2	51,800	3410	.61	.76	.92	14.7	50,000	3760	.61	.78	.93	14.1	48,100	4190	.62	.79	.95	13.5	46,100	4730	.63	.81	.96
	850	1800	15.5	53,000	3430	.62	.79	.95	15.0	51,200	3780	.63	.80	.97	14.4	49,200	4210	.64	.82	.99	13.8	47,100	4740	.65	.84	1.00
71°F (21.7°C)	660	1400	15.4	52,400	3420	.44	.58	.74	14.9	50,700	3770	.44	.59	.74	14.3	48,900	4200	.44	.60	.75	13.7	46,900	4740	.44	.61	.77
	755	1600	15.8	54,000	3440	.44	.60	.76	15.3	52,200																

BLOWER DATA

GCS20-024-50 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1335	630	1000	470	905	425	665	315
.05	12	1330	630	1010	475	915	430	680	320
.10	25	1315	620	1015	480	920	435	685	325
.15	37	1300	615	1015	480	925	435	690	325
.20	50	1280	605	1010	475	920	435	695	330
.25	62	1255	590	1005	475	915	430	695	330
.30	75	1225	580	990	465	900	425	690	325
.40	100	1160	550	945	445	865	410	665	315
.50	125	1075	505	885	420	815	385	630	295
.60	150	975	460	805	380	745	350	585	275
.70	175	860	405	705	335	655	310	520	245
.80	200	730	345	590	280	545	255	---	---
.90	225	570	270	---	---	---	---	---	---
1.00	250	---	---	---	---	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-030-75 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1525	720	1350	635	1090	515	870	410
.05	12	1515	715	1345	635	1090	515	880	415
.10	25	1495	705	1335	630	1085	510	885	420
.15	37	1480	700	1325	625	1075	505	890	420
.20	50	1465	690	1310	620	1065	505	885	420
.25	62	1450	685	1285	605	1055	500	875	415
.30	75	1420	670	1270	600	1045	495	870	410
.40	100	1375	650	1230	580	1020	480	855	405
.50	125	1325	625	1190	560	990	465	835	395
.60	150	1280	605	1150	545	965	455	810	380
.70	175	1220	575	1110	525	930	440	790	375
.80	200	1130	535	1030	485	885	420	765	360
.90	225	1070	505	955	450	820	385	---	---
1.00	250	965	455	860	405	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-036-90 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1700	800	1580	745	1430	675	1315	620
.05	12	1665	785	1550	730	1420	670	1300	615
.10	25	1635	770	1520	715	1405	665	1285	605
.15	37	1600	755	1490	705	1390	655	1270	600
.20	50	1570	740	1460	690	1370	645	1250	590
.25	62	1540	725	1430	675	1345	635	1230	580
.30	75	1505	710	1400	660	1315	620	1215	575
.40	100	1430	675	1340	630	1260	595	1165	550
.50	125	1370	645	1280	605	1200	565	1110	525
.60	150	1300	615	1215	575	1130	535	1030	485
.70	175	1235	585	1150	545	1045	495	970	460
.80	200	1165	550	1075	505	955	450	870	410
.90	225	1090	515	990	465	825	390	---	---
1.00	250	980	465	885	420	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-024-50 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1315	620	915	430	840	395	615	290
.05	12	1300	615	930	440	855	405	640	300
.10	25	1285	605	945	445	870	410	655	310
.15	37	1265	595	950	450	875	415	670	315
.20	50	1240	585	950	450	880	415	680	320
.25	62	1220	575	950	450	880	415	685	325
.30	75	1195	565	945	445	875	415	685	325
.40	100	1140	540	915	430	850	400	675	320
.50	125	1080	510	870	410	815	385	650	305
.60	150	1010	475	805	380	760	360	610	290
.70	175	935	440	725	340	690	325	550	260
.80	200	845	400	625	295	600	285	---	---
.90	225	735	345	515	245	---	---	---	---
1.00	250	---	---	---	---	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-030-75 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1435	675	1280	605	1010	475	860	405
.05	12	1425	675	1265	595	1005	475	860	405
.10	25	1410	665	1250	590	1005	475	865	410
.15	37	1380	650	1235	585	1000	470	860	405
.20	50	1365	645	1220	575	990	465	855	405
.25	62	1345	635	1205	570	975	460	845	400
.30	75	1315	620	1190	560	970	460	835	395
.40	100	1270	600	1160	550	945	445	810	380
.50	125	1220	575	1115	525	920	435	790	375
.60	150	1155	545	1070	505	900	425	765	360
.70	175	1095	515	1010	475	865	410	740	350
.80	200	1030	485	955	450	820	385	700	330
.90	225	950	450	865	410	745	350	---	---
1.00	250	850	400	760	360	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-036-90 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds							
in. w.g.	Pa	High		Medium-High		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	1740	820	1585	750	1500	710	1370	645
.05	12	1710	805	1565	740	1475	695	1350	635
.10	25	1675	790	1545	730	1450	685	1330	630
.15	37	1645	775	1525	720	1425	675	1310	620
.20	50	1615	760	1490	705	1400	660	1290	610
.25	62	1580	745	1465	690	1375	650	1265	595
.30	75	1550	730	1440	680	1345	635	1240	585
.40	100								

BLOWER DATA

GCS20-036-90 BLOWER PERFORMANCE @ 460v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds					
in. w.g.	Pa	High		Medium		Low	
		cfm	L/s	cfm	L/s	cfm	L/s
0	0	1570	740	1480	700	1135	535
.05	12	1545	730	1455	685	1135	535
.10	25	1520	715	1430	675	1130	535
.15	37	1490	705	1405	665	1125	530
.20	50	1465	690	1375	650	1115	525
.25	62	1435	675	1350	635	1105	520
.30	75	1405	665	1320	625	1090	515
.40	100	1345	635	1265	595	1050	495
.50	125	1285	605	1200	565	1020	480
.60	150	1220	575	1140	540	975	460
.70	175	1155	545	1070	505	920	435
.80	200	1085	510	1000	470	850	400
.90	225	1000	470	910	430	---	---
1.00	250	905	425	810	380	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter.

GCS20-036-90 BLOWER PERFORMANCE @ 460v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds					
in. w.g.	Pa	High		Medium		Low	
		cfm	L/s	cfm	L/s	cfm	L/s
0	0	1610	760	1515	715	1165	550
.05	12	1585	750	1490	705	1165	550
.10	25	1560	735	1465	690	1160	550
.15	37	1525	720	1440	680	1155	545
.20	50	1500	710	1410	665	1145	540
.25	62	1470	695	1385	655	1135	535
.30	75	1440	680	1355	640	1115	525
.40	100	1380	650	1295	610	1085	510
.50	125	1315	620	1230	580	1045	495
.60	150	1250	590	1170	550	1000	470
.70	175	1185	560	1095	515	945	445
.80	200	1110	525	1025	485	845	400
.90	225	1030	485	940	445	---	---
1.00	250	940	445	845	400	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter.

GCS20-042/048-75 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2765	1305	2475	1170	2225	1050	1945	920	1670	790
.05	12	2735	1290	2450	1155	2205	1040	1930	910	1655	780
.10	25	2705	1275	2430	1145	2190	1035	1915	905	1640	775
.15	37	2670	1260	2405	1135	2170	1025	1900	895	1620	765
.20	50	2635	1245	2380	1125	2145	1010	1880	885	1605	760
.25	62	2600	1225	2355	1110	2125	1005	1860	880	1585	750
.30	75	2530	1195	2300	1085	2075	980	1820	860	1540	725
.40	100	2455	1160	2240	1055	2025	955	1775	840	1495	705
.50	125	2380	1125	2180	1030	1970	930	1725	815	1445	680
.60	150	2300	1085	2110	995	1910	900	1670	790	1385	655
.70	175	2260	1065	2075	980	1875	885	1640	775	1355	640
.80	200	2175	1025	2000	945	1805	850	1570	740	1290	610
.90	225	2100	990	1910	900	1730	815	1500	710	---	---
1.00	250	2010	950	1820	860	1645	775	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-042/048-75 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2800	1320	2495	1180	2240	1055	1955	925	1680	795
.05	12	2765	1305	2475	1170	2225	1050	1945	920	1670	790
.10	25	2735	1290	2450	1155	2205	1040	1930	910	1655	780
.15	37	2705	1275	2430	1145	2190	1035	1915	905	1640	775
.20	50	2670	1260	2405	1135	2170	1025	1900	895	1620	765
.25	62	2635	1245	2380	1125	2145	1010	1880	885	1605	760
.30	75	2600	1225	2355	1110	2125	1005	1860	880	1585	750
.40	100	2530	1195	2300	1085	2075	980	1820	860	1540	725
.50	125	2455	1160	2240	1055	2025	955	1775	840	1495	705
.60	150	2380	1125	2180	1030	1930	970	1670	785	1445	680
.70	175	2300	1085	2110	995	1910	900	1670	790	1385	655
.80	200	2220	1050	2035	960	1835	865	1600	755	1310	620
.90	225	2130	1005	1950	920	1745	825	1510	715	---	---
1.00	250	2050	955	1845	870	1640	775	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-042/048-120 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2775	1310	2505	1180	2270	1070	1970	930	1710	805
.05	12	2725	1285	2465	1165	2240	1055	1950	920	1685	795
.10	25	2675	1265	2430	1145	2210	1045	1925	910	1665	785
.15	37	2630	1240	2395	1130	2180	1030	1905	900	1645	775
.20	50	2580	1220	2360	1115	2150	1015	1885	890	1620	765
.25	62	2540	1200	2320	1095	2120	1000	1860	880	1595	755
.30	75	2490	1175	2285	1080	2100	990	1840	870	1570	740
.40	100	2400	1135	2220	1050	2040	965	1795	845	1515	715
.50	125	2300	1085	2145	1010	1980	935	1740	820	1450	685
.60	150	2200	1040	2070	975	1910	900	1680	795	1365	645
.70	175	2130	1005	2000	945	1865	880	1620	765	1305	615
.80	200	2050	970	1925	910	1800	850	1550	730	1210	570
.90	225	1950	920	1840	870	1715	810	1465	690	---	---
1.00	250	1840	870	1740	820	1610	760	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-042/048-120 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2700	1275	2470	1165	2235	1055	1900	895	1650	780
.05	12	2675	1265	2450	1155	2225	1050	1890			

BLOWER DATA

GCS20-060-75 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2785	1315	2530	1195	2270	1070	1980	935	1715	810
.05	12	2755	1300	2510	1185	2255	1065	1965	925	1700	800
.10	25	2725	1285	2488	1175	2240	1055	1950	920	1690	800
.15	37	2695	1270	2455	1160	2220	1050	1935	915	1680	795
.20	50	2670	1260	2430	1145	2200	1040	1920	905	1670	790
.25	62	2640	1245	2400	1135	2180	1030	1905	900	1655	780
.30	75	2610	1230	2375	1120	2160	1020	1895	895	1645	775
.40	100	2550	1205	2320	1095	2120	1000	1865	880	1615	760
.50	125	2485	1175	2265	1070	2075	980	1825	860	1580	745
.60	150	2415	1140	2200	1040	2025	955	1780	840	1540	725
.70	175	2345	1105	2165	1020	1965	925	1765	835	1450	685
.80	200	2270	1070	2105	995	1900	895	1720	810	1415	670
.90	225	2185	1030	2035	960	1830	865	1660	785	---	---
1.00	250	2085	985	1950	920	1750	825	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-060-120 BLOWER PERFORMANCE @ 230v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2740	1295	2520	1190	2270	1070	2025	955	1710	805
.05	12	2715	1280	2495	1180	2250	1060	2005	945	1690	800
.10	25	2685	1265	2470	1165	2230	1055	1980	935	1670	790
.15	37	2655	1255	2445	1155	2210	1045	1960	925	1650	780
.20	50	2630	1240	2420	1140	2190	1035	1935	915	1635	770
.25	62	2600	1225	2395	1130	2170	1025	1910	900	1615	760
.30	75	2570	1215	2370	1120	2150	1015	1885	890	1595	755
.40	100	2510	1185	2320	1095	2100	990	1835	865	1550	730
.50	125	2450	1155	2255	1065	2080	980	1780	840	1500	710
.60	150	2375	1120	2185	1030	1995	940	1755	830	1440	680
.70	175	2305	1090	2120	1000	1935	915	1695	800	1390	655
.80	200	2230	1055	2040	965	1860	880	1645	775	1315	620
.90	225	2140	1010	1945	920	1775	840	1585	750	---	---
1.00	250	2030	960	1835	865	1670	790	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-048/60-75-120 BLOWER PERFORMANCE @ 460v (Down-Flow Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium		Low		cfm	L/s	cfm	L/s
		cfm	L/s	cfm	L/s	cfm	L/s				
0	0	2630	1240	2330	1100	1905	900				
.05	12	2605	1230	2310	1090	1890	890				
.10	25	2580	1220	2285	1080	1870	885				
.15	37	2555	1205	2260	1065	1850	875				
.20	50	2525	1190	2235	1055	1830	865				
.25	62	2495	1180	2210	1045	1810	855				
.30	75	2445	1155	2180	1030	1790	845				
.40	100	2400	1135	2125	1005	1745	825				
.50	125	2325	1095	2065	975	1695	800				
.60	150	2250	1060	2000	945	1640	775				
.70	175	2165	1020	1930	910	1580	745				
.80	200	2080	980	1850	875	1510	715				
.90	225	1985	935	1760	830	---	---				
1.00	250	1860	880	1655	780	---	---				

NOTE — All air data is measured external to the unit with dry coil and without air filter.

GCS20-060-75 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2760	1305	2515	1185	2220	1050	1945	920	1680	795
.05	12	2740	1295	2500	1180	2210	1045	1935	915	1670	790
.10	25	2720	1285	2485	1175	2200	1040	1930	910	1660	785
.15	37	2700	1275	2465	1165	2190	1035	1920	905	1650	780
.20	50	2680	1265	2450	1155	2175	1025	1910	900	1635	770
.25	62	2660	1255	2430	1145	2160	1020	1900	895	1620	765
.30	75	2630	1240	2410	1140	2150	1015	1885	890	1600	755
.40	100	2570	1215	2360	1115	2115	1000	1860	880	1570	740
.50	125	2490	1175	2300	1085	2075	975	1820	860	1525	720
.60	150	2375	1120	2225	1050	2020	955	1770	835	1470	695
.70	175	2310	1090	2170	1025	1970	930	1730	815	1435	675
.80	200	2200	1040	2070	975	1900	895	1670	790	1380	650
.90	225	2065	975	1960	925	1820	860	1590	750	---	---
1.00	250	1910	900	1820	860	1710	805	---	---	---	---

NOTE — All air data is measured external to the unit with dry coil and without air filter. For 208v unit operation, derate air volume by 7%.

GCS20-060-120 BLOWER PERFORMANCE @ 230v (Horizontal Air Openings)

External Static Pressure		Air Volume at Various Blower Speeds									
in. w.g.	Pa	High		Medium-High		Medium		Medium-Low		Low	
		cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s	cfm	L/s
0	0	2760	1305	2545	1200	2295	1085	2015	950	1680	795
.05	12	2745	1295	2530	1195	2280	1075	2005	945	1675	790
.10	25	2730	1285	2510	1185	2265	1070	1995	940	1670	790
.15	37	2710	1280	2495	1180	2250	1060	1985	935	1665	785
.20	50	2695	1270	2480	1170	2235	1055	1970	930	1665	785
.25	62	2675	1265	2460	1160	2220	1050	1955	925	1645	775
.30	75	2650	1250	2440	1150	2200	1040	1930	910	1635	770
.40	100	2600	1225	2395	1130	2160	1020	1875	885	1605	760
.50	125	2540	1200	2340	1105	2110	995	1805	850	1555	735
.60	150	2480	1170	2265	1070	2025	955	1725	815	1475	695
.70	175	2395	1130	2200	1040	1985	935	1630	770	1450	685
.80	200	2285	1080	2100	990	1900	895	1540			

BLOWER DATA

FILTER AND ACCESSORY AIR RESISTANCE

Unit Model No.	Air Volume	Total Air Resistance												
		REMD16 Down-Flow Economizer						EMDH16 Horizontal Economizer						
		1 in. (25mm) Filter Furnished		Less Filter		With Optional Pleated Polyester 2 in. (51mm) Filter		With Optional Fiberglass 2 in. (51mm) Filter		With Furnished 1 in. (25mm) Filter		Less Filter		
cfm	L/s	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	
GCS20-024 GCS20-030 GCS20-036	800	380	.15	37	.05	12	.27	67	.13	32	.18	45	.10	25
	1000	470	.18	45	.06	15	.34	85	.18	45	.26	65	.15	37
	1200	565	.21	52	.09	22	.42	104	.24	60	.35	87	.21	52
	1400	660	.25	62	.15	37	.51	127	.31	77	.46	114	.29	72
GCS20-042 GCS20-048 GCS20-060	1600	755	.15	37	.05	12	.40	99	.27	67	.30	75	.17	42
	1800	850	.17	42	.06	15	.48	119	.33	82	.35	87	.19	47
	2000	945	.20	50	.08	20	.56	139	.39	97	.40	99	.22	55
	2200	1040	.23	57	.13	32	.66	164	.46	114	.47	117	.26	85

DIFFUSER AIR RESISTANCE

Unit Model No.	Air Volume	Total Air Resistance									
		RTD9-65 Diffuser				FD9-65 Diffuser					
		2 Ends Open		1 Side 2 Ends Open		All Ends & Sides Open		FD9-65 Diffuser			
cfm	L/s	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa	in. w.g.	Pa
GCS20-024 GCS20-030 GCS20-036	800	380	.15	37	.13	32	.11	27	.11	27	
	1000	470	.19	47	.16	40	.14	35	.14	35	
	1200	565	.25	62	.20	50	.17	42	.17	42	
	1400	660	.33	82	.26	65	.20	50	.20	50	
GCS20-042 GCS20-048 GCS20-060	1600	755	.43	107	.32	80	.20	50	.24	60	
	1800	850	.56	139	.40	90	.30	75	.30	75	
	2000	945	.73	182	.50	124	.36	90	.36	90	
	2200	1040	.95	236	.63	157	.44	109	.44	109	

NOTE - Electric heaters have no appreciable air resistance.

CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume	RTD9-65		FD9-65	
		cfm	L/s	Effective Throw ft.	m
1000	470	10-17	3-5	15-20	5-6
1200	565	11-18	3-5	16-22	5-7
1400	660	12-19	4-6	17-24	5-7
1600	755	12-20	4-6	18-25	5-8
1800	850	13-21	4-6	20-28	6-9
2000	945	14-23	4-7	21-29	6-9
2200	1040	16-25	5-8	22-30	7-9

① Effective throw based on terminal velocities of 75 ft. (22.9 m) per minute.

WET INDOOR COIL AIR RESISTANCE

Model Number	Air Volume		Air Resistance	
	cfm	L/s	in. w.g.	Pa
GCS20-024	800	380	0.06	15
	1000	470	0.07	17
	1200	565	0.08	20
GCS20-030	800	380	0.09	22
	1000	470	0.10	25
	1200	565	0.11	27
GCS20-036	800	380	0.09	22
	1000	470	0.10	25
	1200	565	0.11	27
	1400	660	0.12	30
GCS20-042 GCS20-048	1600	755	0.11	27
	1800	850	0.12	30
	2000	945	0.13	32
	2200	1040	0.14	35
GCS20-060	1600	755	0.08	20
	1800	850	0.09	22
	2000	945	0.10	25
	2200	1040	0.11	27

ELECTRICAL DATA - 1 PHASE

General Data	Model No.	GCS20-024	GCS20-030	GCS20-036	GCS20-042	GCS20-048	GCS20-060
	Line voltage data - 60 hz - 1 phase	208/230v	208/230v	208/230v	208/230v	208/230v	208/230v
	Rec. maximum fuse size (amps)	30	30	40	45	60	70
	†Minimum Circuit Ampacity	19	21	26	30	37	43
Compressor	Rated load amps	12.2	13.5	16.1	17.9	23.7	28.8
	Locked rotor amps	61	73	88	104	129	169
Condenser Coil Fan Motor	Full load amps	1.1	1.1	1.1	2.0	2.0	2.0
	Locked rotor amps	2.3	2.3	2.3	4.2	4.2	4.2
Evaporator Blower Motor	Motor output - hp (W)	1/3 (249)	1/3 (249)	1/3 (249)	1/2 (373)	3/4 (560)	3/4 (560)
	Full load amps	2.2	3.0	3.9	4.6	4.6	4.6
	Locked rotor amps	4.6	6.2	8.3	10.1	10.1	10.1
Induced Draft Blower Motor (1 phase) full load amps		0.7	0.7	0.7	0.7	0.7	0.7

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

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

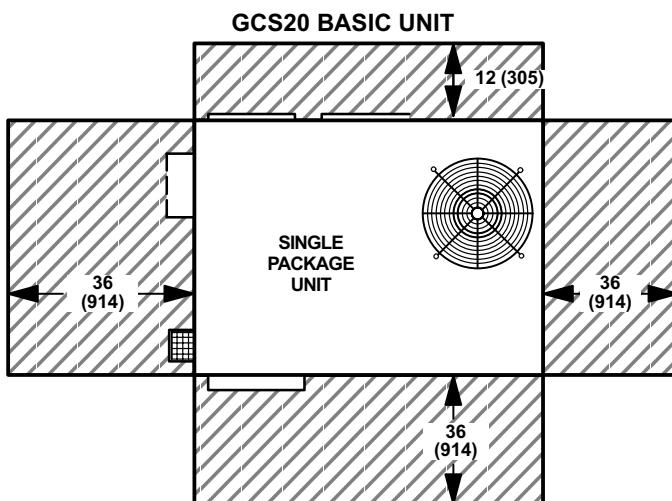
ELECTRICAL DATA - 3 PHASE

General Data	Model No.	GCS20-036		GCS20-048		GCS20-060	
	Line voltage data - 60 hz - 3 phase	208/230v	460v	208/230v	460v	208/230v	460v
	Rec. maximum fuse size (amps)	25	15	35	20	45	20
	†Minimum Circuit Ampacity	18	10	24	13	29	15
Compressor	Rated load amps	10.3	5.1	13.5	7.4	17.3	9
	Locked rotor amps	77	39	120	49.5	123	62
Condenser Fan Motor	Full load amps	1.1	.8	2	1.1	2	1.1
	Locked rotor amps	2.3	1.9	4.2	2.2	4.2	2.2
Evaporator Blower Motor (1 phase)	Motor output - hp (W)	1/3 (249)	1/3 (249)	1/2 (373)	1/2 (373)	3/4 (560)	3/4 (560)
	Full load amps	3.9	1.9	4.6	2.4	4.6	2.4
	Locked rotor amps	8.3	4.2	10.1	5.0	10.1	5
Induced Draft Blower Motor (1 phase) full load amps		0.7	0.7	0.7	0.7	0.7	0.7

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

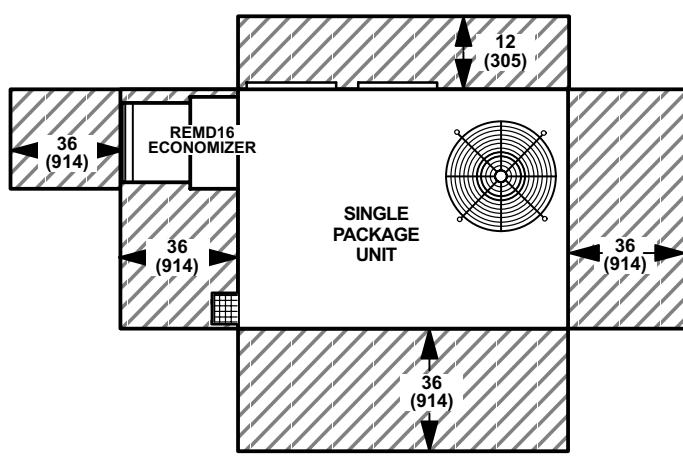
NOTE - Extremes of operating range are plus and minus 10% of line voltage.

INSTALLATION CLEARANCES - INCHES (MM)



NOTE — Top Clearance 60 in. (1524 mm)
NOTE — Entire perimeter of unit requires support when elevated above mounting surface.

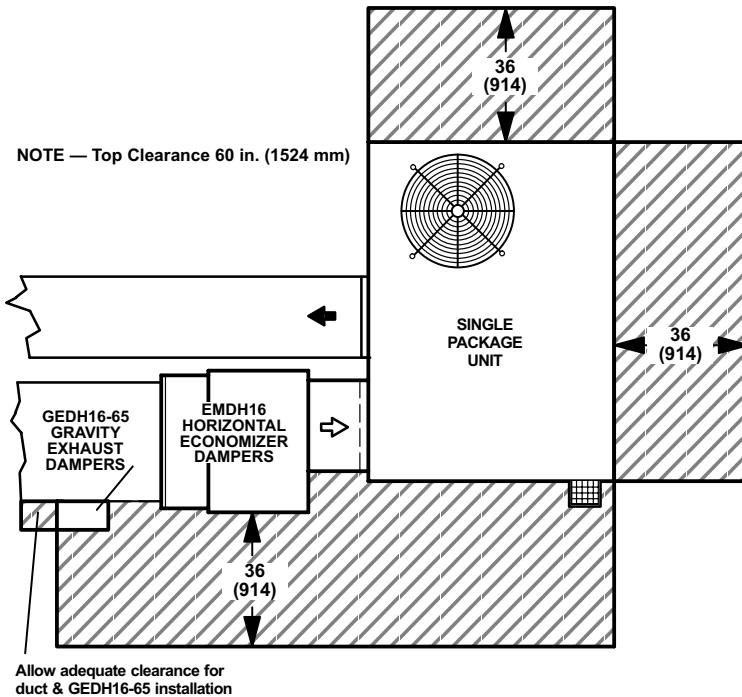
GCS20 UNIT WITH REMD16 ECONOMIZER



NOTE — Top Clearance 60 in. (1525 mm).

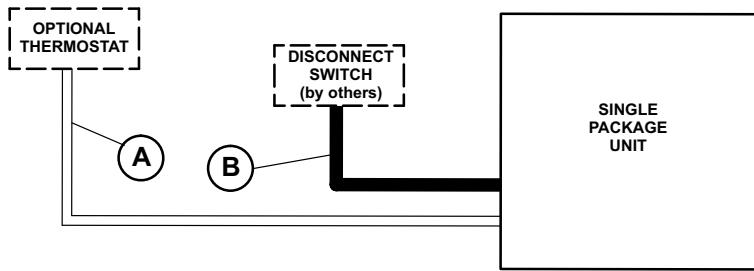
INSTALLATION CLEARANCES - INCHES (MM)

GCS20 UNIT WITH EMD16M HORIZONTAL ECONOMIZER AND GEDH16-65 GRAVITY EXHAUST DAMPER



FIELD WIRING

BASIC UNIT

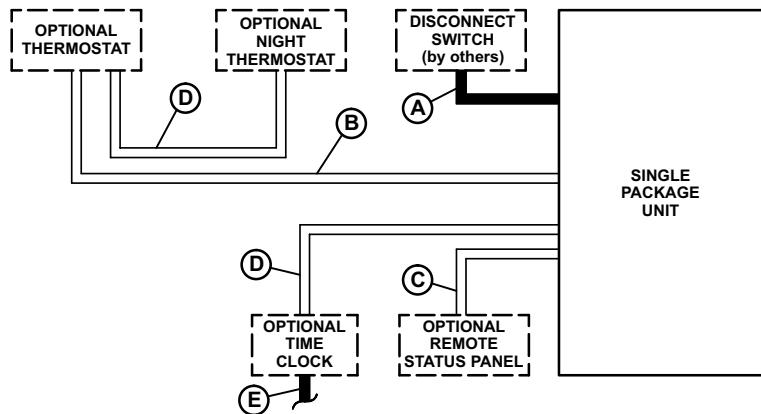


- A — *Four Wire Low Voltage (Electro-mechanical)
- *Five Wire Low Voltage (Electronic)
- B — Two or Three Wire Power (See Electrical Data Table)
- Field Wiring Not Furnished —

*When economizer with two stage thermostat is used, one additional wire is required

NOTE - All wiring must conform to NEC or CEC and local electrical codes.

ELECTRO-MECHANICAL THERMOSTAT CONTROL SYSTEM



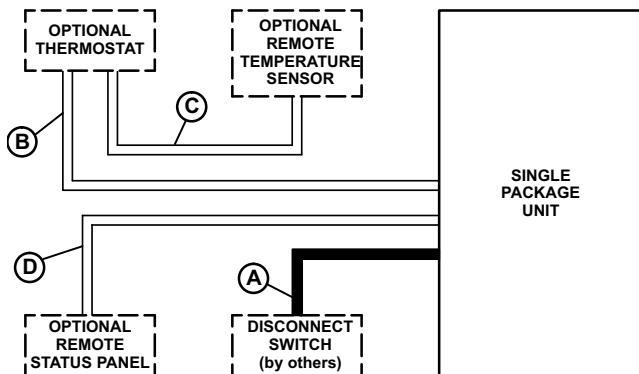
- A - Two or Three wire power (See Electrical Data Table)
- B - Six wire low voltage
- C - Nine wire low voltage
- D - Two wire low voltage
- E - Two wire low voltage

- Field wiring not furnished -

NOTE - All wiring must conform to NEC or CEC and local electrical codes.

FIELD WIRING

T7300 THERMOSTAT CONTROL SYSTEM



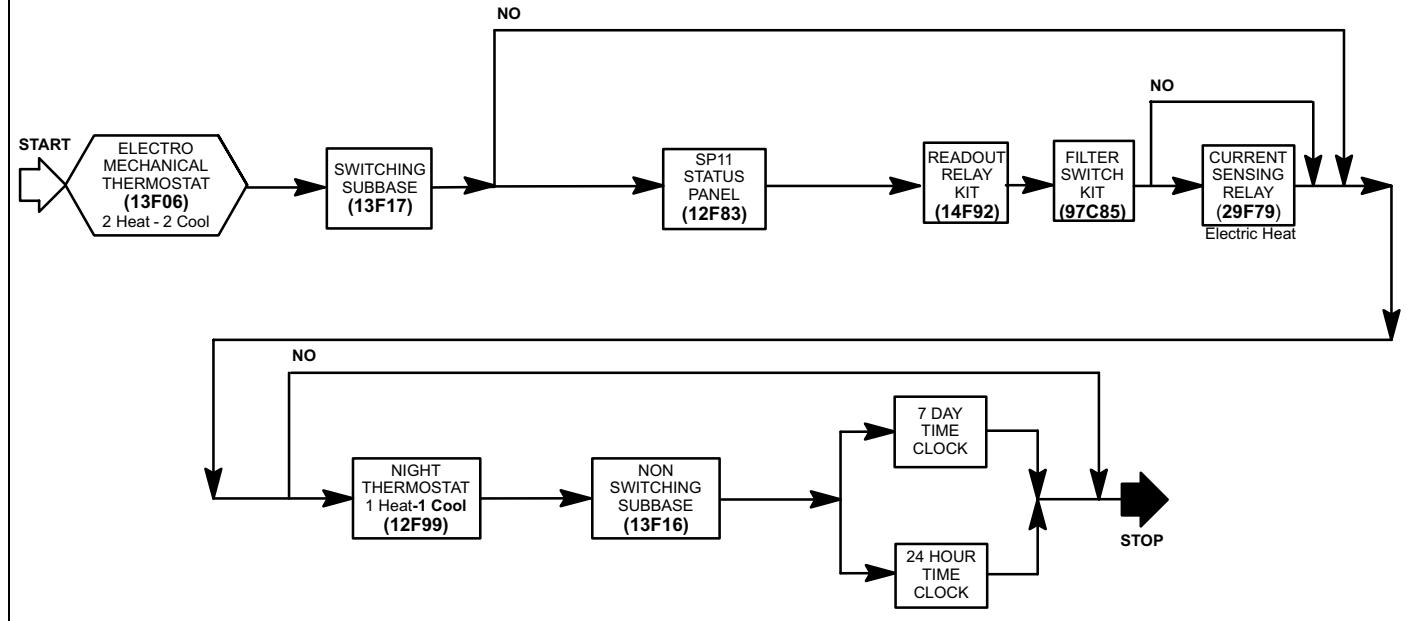
- A - Two or Three wire power (See Electrical Data Table)
- B - Nine wire low voltage
- C - Two wire low voltage
- D - Seven wire low voltage (T7300 Room Sensor with override)
- E - Nine wire low voltage (T7300 with optional override sensor)
- F - Four wire low voltage (T8600)

- Field wiring not furnished -

NOTE - All wiring must conform to NEC or CEC and local electrical codes.

OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS (FIELD INSTALLED)

System and Component Description	Catalog No.
ELECTRO-MECHANICAL THERMOSTAT	
Thermostat — Two stage heat & two stage cool with dual temperature levers, subbase choice	13F06
Subbase — Manual system switch (Off-Heat-Auto-Cool), fan switch (Auto-On)	13F17
Status Panel — May be ordered extra	12F83
Night Setback Operation — Order components below	—
Thermostat — One stage heat & one stage cool	12F99
Subbase — Non-switching	13F16
Time Clock — 7 day operation, indicates day and night periods, 2 hour increments, battery back-up	See Price Book for Selection
Time Clock — 24 hour night setback operation, 15 minute increments, battery back-up	See Price Book for Selection



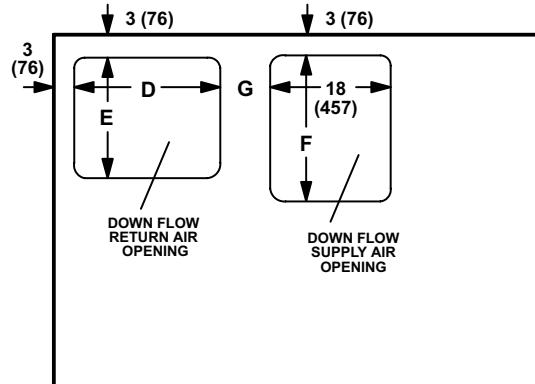
OPTIONAL CONVENTIONAL TEMPERATURE CONTROL SYSTEMS (FIELD INSTALLED)

System and Component Description	Catalog No.																									
HONEYWELL T7300 THERMOSTAT																										
Thermostat — Programmable, internal or optional remote temperature sensing (sensor required), touch sensitive keyboard, automatic switching, °F or °C readout, no anticipator, droop/no droop selection, indicator LED's, hour/day programming, override capabilities, time and operational mode readout, stage status indicators, battery back-up, subbase choice, manual system switch (Heat-Off-Auto-Cool), fan switch (Auto-On)	37L54																									
Subbase — Selectable staging, indicator LED's, auxiliary relay output for economizer operation	37L55 37L53																									
Sensor — Room temperature	58C92																									
Sensor — Room temperature with 3 hour override and setpoint adjustment	86G67																									
Sensor — Return air temperature	27C40																									
Status Panel — May be ordered extra	12F83																									
HONEYWELL T8600D/T8624D THERMOSTAT																										
Thermostat — Programmable, touch sensitive keypad, automatic heat/cool switching, °F or °C readout, indicator LED's, four temperature settings per daily schedule, override capabilities, time and operational mode readout, battery back-up (batteries included)	—																									
T8600D Thermostat — 1 heat/1 cool, 7 day programming, wiring wall plate included	37L59																									
T8624D Thermostat — 2 heat/2 cool, 7 day programming, switching subbase included	37L61																									
Status Panel — May be ordered extra	12F83																									
STATUS PANEL																										
SP11 Status Panel — Allows remote monitoring of unit through status lights, requires Status Panel Readout Kit																										
<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;"></th> <th style="width: 25%; text-align: center;">Status Light</th> <th style="width: 25%; text-align: center;">Definition</th> <th style="width: 25%;"></th> </tr> </thead> <tbody> <tr> <td>Cool Mode</td> <td style="text-align: center;">Green</td> <td>Cooling operation</td> <td rowspan="7" style="vertical-align: middle; text-align: right;">12F83</td> </tr> <tr> <td>Heat Mode</td> <td style="text-align: center;">Green</td> <td>Heating operation</td> </tr> <tr> <td>Compressor 1</td> <td style="text-align: center;">Green</td> <td>Compressor operation</td> </tr> <tr> <td></td> <td style="text-align: center;">Red</td> <td>Compressor malfunction</td> </tr> <tr> <td>Compressor 2</td> <td style="text-align: center;">Not used</td> <td></td> </tr> <tr> <td>No Heat</td> <td style="text-align: center;">Red</td> <td>Requires service</td> </tr> <tr> <td>Filter</td> <td style="text-align: center;">Red</td> <td>Requires service</td> </tr> </tbody> </table>		Status Light	Definition		Cool Mode	Green	Cooling operation	12F83	Heat Mode	Green	Heating operation	Compressor 1	Green	Compressor operation		Red	Compressor malfunction	Compressor 2	Not used		No Heat	Red	Requires service	Filter	Red	Requires service
	Status Light	Definition																								
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Compressor 1	Green	Compressor operation																								
	Red	Compressor malfunction																								
Compressor 2	Not used																									
No Heat	Red	Requires service																								
Filter	Red	Requires service																								
Status Panel Readout Kit — Required to interface SP11 to unit operation	14F92																									
Filter Switch Kit — Required with Filter light option on SP11	97C85																									

DIMENSIONS - INCHES (MM) BASIC UNIT

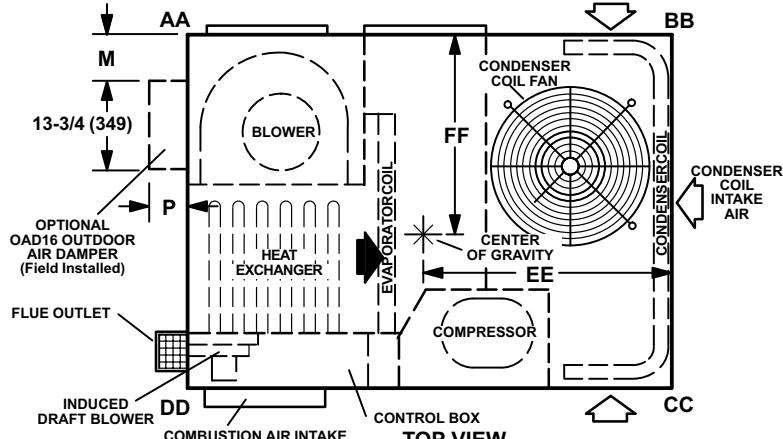
CORNER WEIGHTS

Model Number	AA lbs. kg	BB lbs. kg	CC lbs. kg	DD lbs. kg
GCS20-024-030-036	88 40	75 34	111 51	131 60
GCS20-42	110 50	97 44	134 61	153 70
GCS20-048	117 53	103 47	143 65	163 74
GCS20-060	121 55	106 48	147 67	168 76

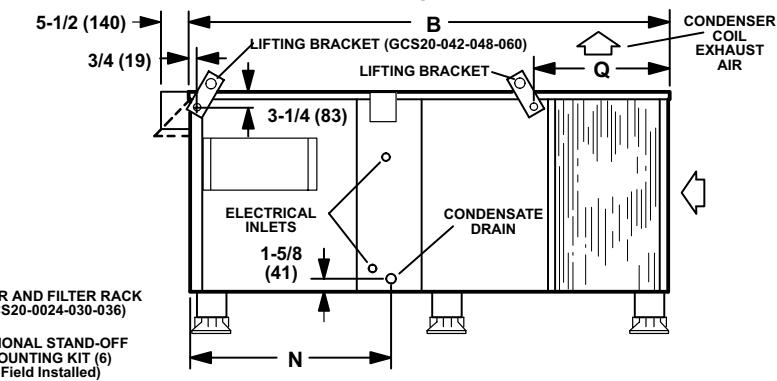
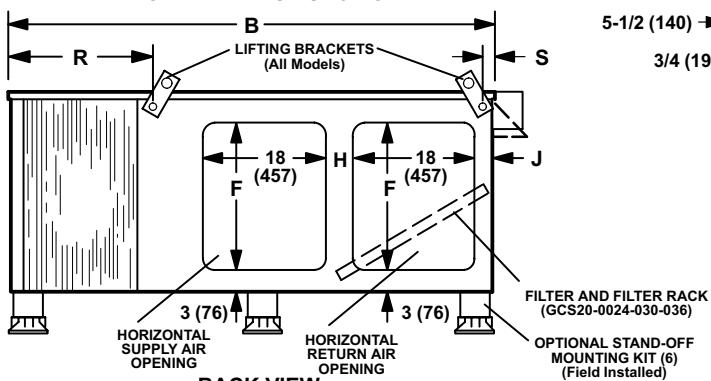


CENTER OF GRAVITY

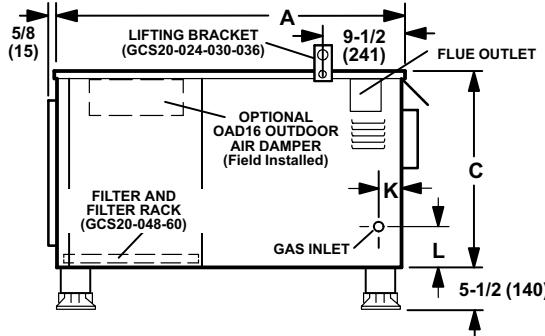
Model Number	EE inch mm	FF inch mm
GCS20-024-030-036	32-1/2 826	27-1/2 699
GCS20-042-048-060	38-5/8 981	30-1/4 768



TOP VIEW BASE SECTION

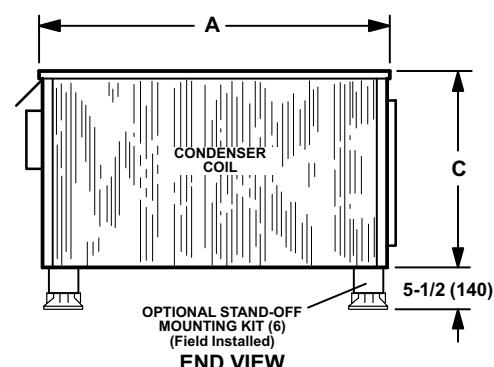


BACK VIEW
(With Horizontal Supply & Return Air)



END VIEW

FRONT VIEW



END VIEW

Model No.	A in. mm	B in. mm	C in. mm	D in. mm	E in. mm	F in. mm	G in. mm	H in. mm	J in. mm
GCS20-024-030-036	46 1168	60 1524	23 584	18 457	13 330	13 330	10 254	3 76	4 102
GCS20-042-048-060	52 1321	72-1/2 1842	29 737	22 559	18 457	22 737	7-1/2 191	5 127	3 76

Model No.	K in. mm	L in. mm	M in. mm	N in. mm	P in. mm	Q in. mm	R in. mm	S in. mm
GCS20-024-030-036	2-1/4 57	10-5/8 270	2 51	26-3/4 679	5 127	20 508	20-5/16 516	4-1/8 105
GCS20-042-048-060	3-3/8 86	13-1/8 333	5 127	28 711	8 203	19-3/8 492	19-3/16 487	3/4 19

ACCESSORY DIMENSIONS - INCHES (MM)

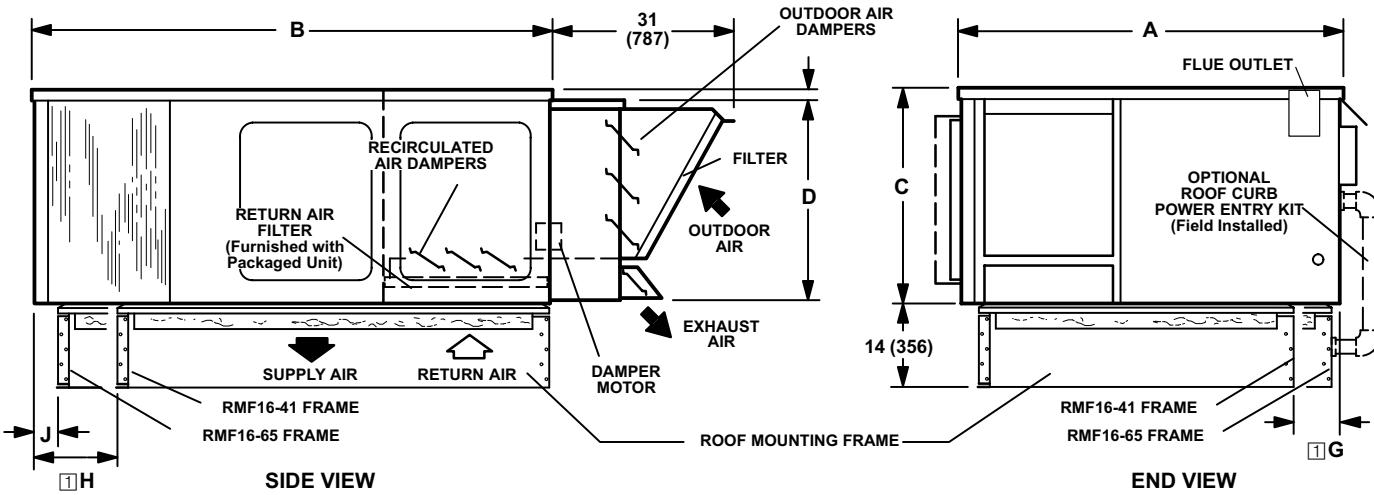
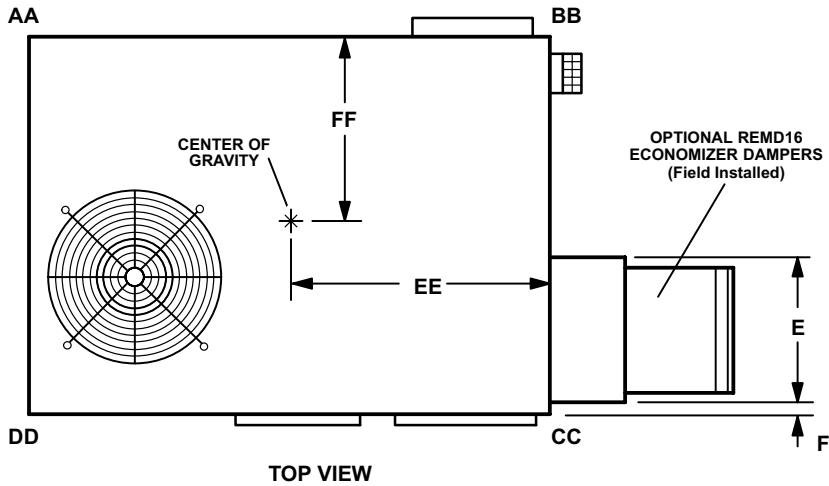
GCS20 UNIT WITH REMD16 ECONOMIZER DAMPER SECTION AND RMF16 ROOF MOUNTING FRAME

CORNER WEIGHTS

Model Number	AA lbs. kg	BB lbs. kg	CC lbs. kg	DD lbs. kg
GCS20-024-030-036	126 57	172 78	143 65	105 48
GCS20-042-048	159 72	214 97	189 86	140 64
GCS20-060	162 74	219 99	193 88	143 65

CENTER OF GRAVITY

Model Number	EE inch mm	FF inch mm
GCS20-024-030-036	25-3/8 645	20-7/8 530
GCS20-042-048-060	30-7/8 784	24-3/8 619

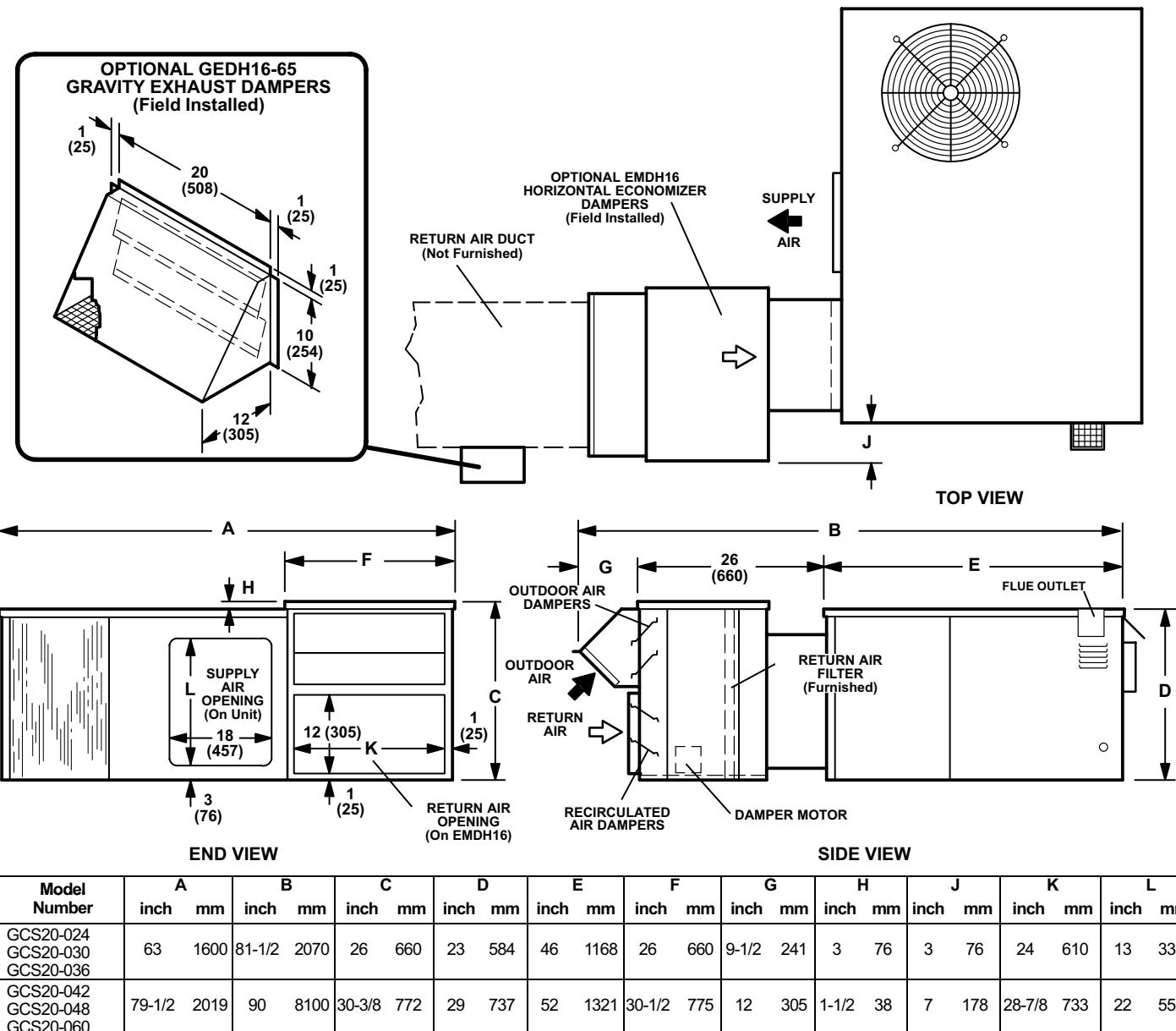


Model Number	A inch mm	B inch mm	C inch mm	D inch mm	E inch mm	F inch mm	G inch mm	H inch mm	J inch mm	
GCS20-024-030-036	46	1168	60	1524	23	584	21-3/4	552	16-1/4	413
GCS20-042-048-060	52	1321	72-1/2	1842	29	737	27-3/4	705	20-7/16	519

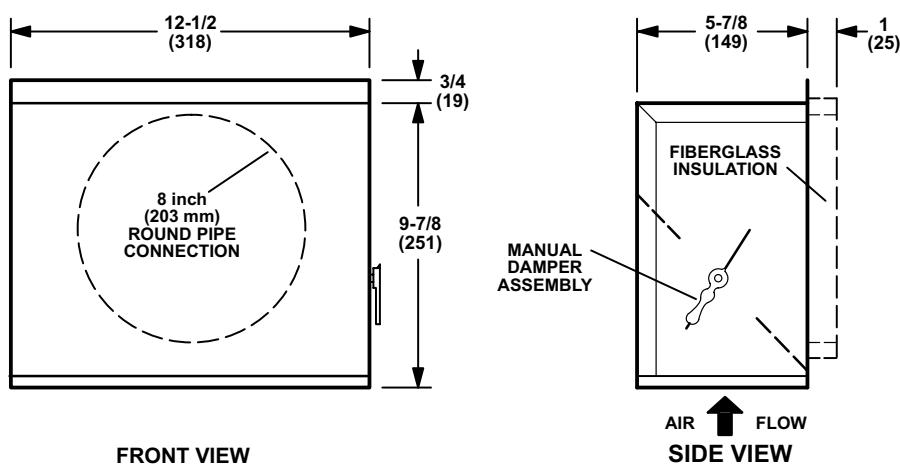
Dimensions reflect usage with RMF16-41 mounting frame.

ACCESSORY DIMENSIONS - INCHES (MM)

GCS20 UNIT WITH EMDH16 HORIZONTAL ECONOMIZER DAMPER SECTION AND GEDH16-65 GRAVITY EXHAUST DAMPERS

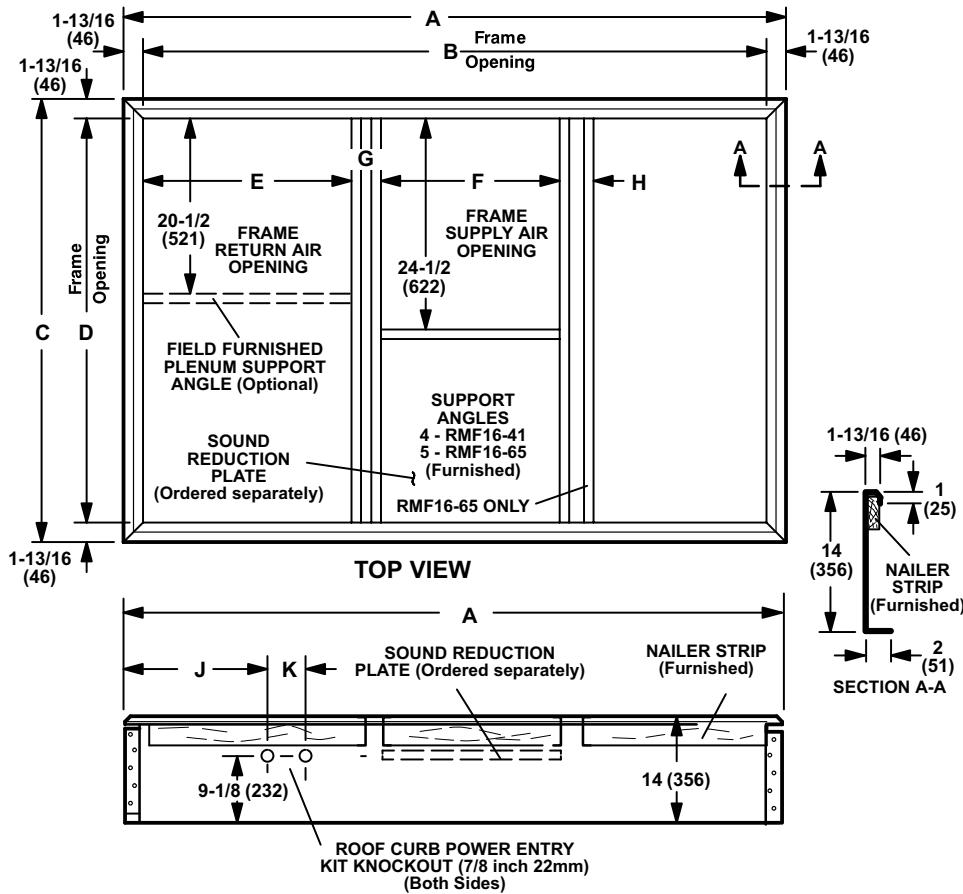


OAD3-46/65 MANUAL MINIMUM OUTDOOR AIR DAMPER



ACCESSORY DIMENSIONS - INCHES (MM)

RMF16-41 & RMF16-65 ROOF MOUNTING FRAME WITH DOUBLE DUCT OPENING



Model Number		RMF16-41	RMF16-65
A	inch mm	56-3/8 1432	69 1753
B	inch mm	52-3/4 1340	65-3/8 1661
C	inch mm	44-1/8 1119	50-1/2 1283
D	inch mm	40-1/2 1029	46-7/8 1191
E	inch mm	24-3/8 619	24-1/4 616
F	inch mm	20-9/16 522	20-1/2 521
G	inch mm	1 1/4 102	4 102
H	inch mm	---	4 102
J	inch mm	22-3/16 564	27 686
K	inch mm	4-1/2 114	5 127

□ 3-1/4 inches (83 mm) for GCS20-024-030-036.

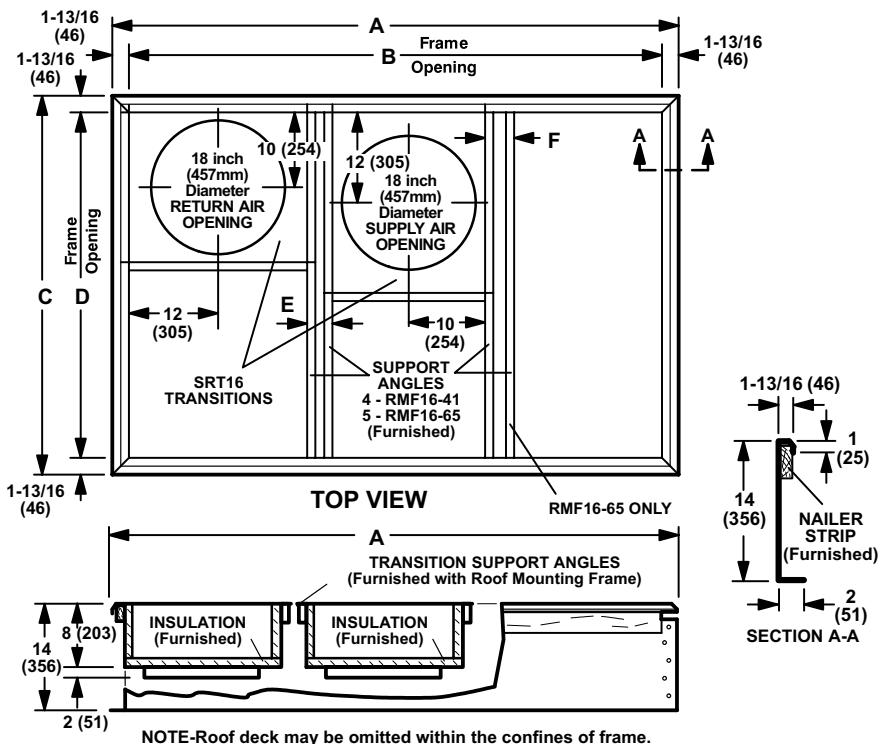
NOTE — Roof deck may be omitted within confines of frame.

SIDE VIEW

RMF16-41 & RMF16-65 ROOF MOUNTING FRAMES WITH SRT16-65 SUPPLY AND RETURN AIR TRANSITIONS FOR FD9-65 & RTD9-65 CEILING DIFFUSERS

Model Number		RMF16-41 With SRT16-65	RMF16-65 With SRT16-65
A	inch mm	56-3/8 1432	69 1753
B	inch mm	52-3/4 1340	65-3/8 1661
C	inch mm	44-1/8 1119	50-1/2 1283
D	inch mm	40-1/2 1029	46-7/8 1191
E	inch mm	1 1/4 102	4 102
F	inch mm	---	4 102

□ 3-1/4 inches (83 mm) for GCS20-024-030-036.

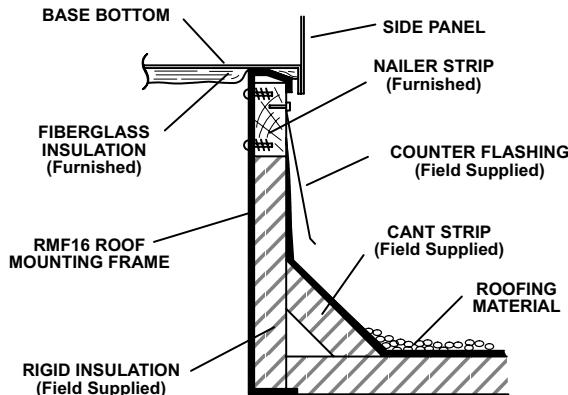


NOTE-Roof deck may be omitted within the confines of frame.

SIDE VIEW

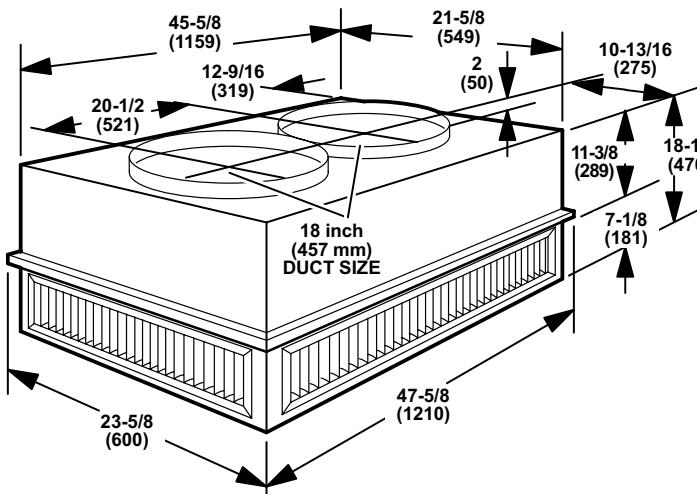
ACCESSORY DIMENSIONS - INCHES (MM)

TYPICAL FLASHING DETAIL FOR RMF16 ROOF MOUNTING FRAME

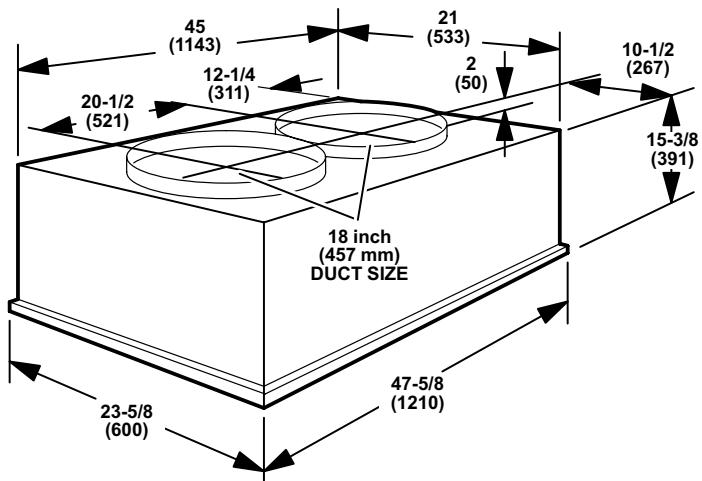


COMBINATION CEILING SUPPLY AND RETURN DIFFUSERS

RTD9-65 STEP-DOWN CEILING DIFFUSER



FD9-65 FLUSH CEILING DIFFUSER



GUIDE SPECIFICATIONS

General

- Furnish and install a single package combination air to air DX mechanical heating/cooling system, complete with automatic controls.
- The single package unit shall be a standard product of a firm regularly engaged in the manufacture of heating-cooling equipment. The manufacturer shall have parts and service available throughout the U.S..
- The equipment shall be shipped completely factory assembled, precharged, piped and wired internally ready for field connections.
- The manufacturer shall test operate system at the factory before shipment.

Air Distribution

- Equipment shall be capable of bottom (down-flow) or side (horizontal) handling of conditioned air.

Approvals

- All electrical components shall have UL and CSA Listing. All wiring shall be in compliance with NEC and CEC.
- Shall be certified by CSA International (formerly AGA/CGA) and ratings are certified by GAMA.
- Shall be rated and certified in accordance with the USE certification program, which is based on ARI Standard 210/240-94.

Equipment Warranty

- Compressor (1 phase models) has a limited warranty for ten years in residential applications and five years in non-residential applications.
- Compressor (3 phase models) has a limited warranty for 5 years.
- Heat Exchanger have a limited warranty for fifteen years in residential applications and ten years in non-residential applications.
- All other covered components have a limited warranty for one year.
- Refer to the Lennox Equipment Limited Warranty certificate for details.

Heating System

- Tubular heat exchanger and inshot type gas burners shall be constructed of aluminized steel.
- Controls shall consist of direct spark ignition, electronic flame sensor controls, flame rollout switch, limit control, automatic redundant gas valve and blower prove switch on combustion air inducer.
- Unit shall be available for use with LPG/propane as an option.

Refrigeration System

- The coils shall be non-ferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested.
- Outdoor coil shall be formed coil construction. Single phase units shall have coil guards. Optional coil guards shall be available for three phase units.
- Compressors shall be resiliently mounted and have overload protection. The refrigeration system shall have discharge, suction and liquid line service gauge ports, freezestat, high pressure switch, liquid line strainer, expansion valve and full refrigerant charge.
- Control options available shall consist of low ambient controls, timed-off control and thermostat.

GUIDE SPECIFICATIONS - CONTINUED

Cabinet

- Shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal.
- Cabinet panels where conditioned air is handled shall be fully insulated to prevent sweating and minimize sound. Openings shall be provided for power connection entry.
- Supply and return air openings shall be flanged.
- Indoor coil condensate drain shall be provided.
- Lifting brackets shall be factory installed.

Economizer Wiring

- Economizer wiring harness shall be furnished and factory installed.

Service Access

- All components, wiring and inspection areas shall be completely accessible through removable panels.

Supply Air Blowers

- Centrifugal supply air blower shall be direct driven by a multi-speed motor.
- Blower shall be statically and dynamically balanced.

Outdoor Coil Fans

- Direct drive propeller type condenser fans shall discharge vertically.
- Fan motor shall be permanently lubricated and inherently protected.
- Fans shall have a safety guard.

Air Filters

- Cleanable 1 inch (25 mm) thick filters shall be furnished.

OPTIONAL ACCESSORIES

Ceiling Diffusers

- Furnish and install a (flush or stepdown) optional combination ceiling supply and return air diffuser.

Ceiling Diffuser Supply and Return Air Transitions

- Supply and return transitions shall be available, for field installation in the roof mounting frame, to facilitate duct connection to the diffuser.

Coil Guards

- PVC (polyvinyl chloride) coated steel wire coil guards shall be available for field installation to protect outdoor coils (3 phase models only).

Control Systems

- Shall provide a selection of thermostats and related controls to automatically operate the mechanical equipment through the heating or cooling and ventilating cycles as required.

Economizer Dampers

- Furnish and install, complete with controls, an air mixing damper assembly including outdoor air and recirculated air dampers and pressure operated gravity exhaust dampers
- The assembly shall provide for the introduction of outside air for minimum ventilation and free cooling.
- Damper motor shall be 24 volt fully modulating or three position spring return.
- Controls shall include electronic discharge air sensor, minimum position switch, and solid-state adjustable enthalpy control.
- Control option available shall consist of differential enthalpy control (return air sensor).

Hail Guards

- Hail guards shall be available for field installation to protect outdoor coils from damage.

Horizontal Gravity Exhaust Dampers

- Pressure operated dampers shall install in return air duct for horizontal applications.
- Damper blades shall ride in nylon bearings and be gasketed for tight seal and quiet operation.

Outdoor Air Damper Section

- Optional manual outdoor dampers shall be available to provide outdoor air requirements of up to 25%.
- Damper section field installs external to the unit.
- Shall be equipped with outdoor air hood filter for extra air filtering and bird screen protection.

Remote Status Panel

- Shall be available for installation within the conditioned area to observe equipment operation.
- The panel shall include signal lights for Cool Mode, Heat Mode, Compressor 1, Compressor 2, No Heat and Filter.

Remote Switching Status Panel

- Shall be available for installation within the conditioned area to control and observe equipment operation.
- The panel shall include signal lights for Cool Mode, Heat Mode, Compressor 1, Compressor 2, No Heat and Filter.
- System selector switch and fan switch shall provide operational mode and blower operation.
- After hours timer switch shall override night setback controls and provide normal operation for time period set.

Roof Curb Power Entry Kit

- Optional kit shall provide power entry to the unit through the roof mounting frame.

Roof Mounting Frame

- Mechanical contractor shall install a steel roof mounting frame for bottom discharge and return air duct connection.
- It shall mate to the bottom perimeter of the equipment.
- When flashed into the roof it shall make a unit mounting curb and provide weatherproof duct connection and entry into the conditioned area.
- Flashing shall be the responsibility of a roofing contractor.
- Frame shall be approved by US National Roofing Contractors Association.

Stand-Off Mounting Kit

- Optional kit shall be available to elevate unit above mounting surface in horizontal applications.