

Packaged Unit

Cooling & Gas Heat

6, 7 1/2, 10 and 12 1/2 Tons

Cooling Capacity

104,000 to 270,000 Btuh Input

Heating Capacity

GCS16-072/090/120/150



FEATURES

- ◆ Down-flow or horizontal supply and return air configuration
- ◆ A.G.A./C.G.A. certified as combination heating/cooling unit for outdoor installation, bonded for grounding to meet safety standards for servicing required by A.G.A./C.G.A. and National and Canadian Electrical Codes
- ◆ ARI Standard 210/240-94 certified, GCS16-150 ARI Standard 340/360-93
- ◆ Sound tested in accordance with ARI 270 Standard
- ◆ Heavy gauge galvanized steel cabinet, fully insulated, powdered enamel paint finish, large removable access panels, electrical inlets in cabinet base and indoor section, control box with factory installed controls, unit lifting brackets
- ◆ Coil constructed of copper tube, ripple-edged enhanced aluminum fins, flared shoulder tubing connections, silver soldered construction, factory tested, evaporator coil face split with separate circuits, evaporator coil drain connection outside of unit cabinet
- ◆ Copeland® Compliant Scroll® compressor for high efficiency
- ◆ Condenser fans have low operating sound levels and PVC coated fan guard
- ◆ Condenser fan motors are overload protected and permanently lubricated
- ◆ Tubular constructed, aluminized steel heat exchanger
- ◆ Heating system has aluminized steel inshot burners, direct spark ignition, electronic flame sensor, redundant automatic gas valve with manual shut-off, induced draft blower, flame rollout switch, and peep hole for flame viewing
- ◆ Disposable 2" pleated filters furnished
- ◆ Refrigeration system consists of compressors, condenser coil and direct drive fan(s), evaporator coil and belt drive blower, expansion valves, high capacity filter driers, high pressure switches (072/090 only), full refrigerant charge, freezestats (prevents coil freeze-up during low ambient operation), independent refrigerant circuits (allows staging), low ambient cooling operation down to 30°F (-1°C) without additional controls
- ◆ Belt driven supply air blower statically and dynamically balanced with permanently lubricated sleeve bearings and adjustable pulley
- ◆ 1 Year warranty on parts
- ◆ 5 Year warranty on compressor
- ◆ 10 Year warranty on heat exchanger

Optional Accessories

Item		GCS16-072	GCS16-090	GCS16-120	GCS16-150
Bottom Power Entry		LB-55757CA (34G70) - 12 lbs. (5 kg)			
Coil Guard - PVC coated steel wire guards to protect outdoor coil. Not used with Hail Guards.		60L31		60L32	
Crankcase Heaters - Ensures proper compressor lubrication at all times. Temperature actuated.	208/230 volt	67K90	90P12	67K90	
	460 volt	67K89	49K11	67K89	
	575 volt	42J85	49K12	42J85	
Differential Enthalpy Control - For use with economizer dampers, solid-state return air sensor allows selection between outdoor air and return air (whichever has lowest enthalpy)		54G44			
Diffusers (Step-Down) - Aluminum grilles, double deflection louvers, 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		RTD11-95 125 lbs. (43 kg) (29G04)		RTD11-135 205 lbs. (93 kg) (29G05)	
Diffusers (Flush) - Aluminum grilles, fixed blade louvers, 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.		FD11-95 95 lbs. (43 kg) (29G08)		FD11-135 174 lbs. (79 kg) (29G09)	
Transitions (Supply and Return) - Used with diffusers, installs in roof mounting frame, galvanized steel construction, flanges furnished for duct connection, fully insulated.		SRT16-09 38 lbs. (17 kg) (33G96)		SRT16-12 38 lbs. (17 kg) (97H10)	
Economizer Dampers (Down-Flow) - Mechanically linked recirculated air and outdoor air dampers, plug-in connections to unit, nylon bearings, stainless steel seals (outdoor dampers), 24 volt fully modulating spring return damper motor, adjustable minimum damper position switch, mixed air controller, solid-state adjustable outdoor air enthalpy control, 0 to 100% outdoor air adjustable, gravity exhaust air dampers furnished, powdered enamel paint finish NOTE: Outdoor air hood with cleanable aluminum mesh frame filter is required and must be ordered separately for field installation (see below).	Model No. - Net Wt.	REMD16M-09 60 lbs. (27 kg) (90J15)		REMD16M-12 80 lbs. (36 kg) (90J16)	REMD16M-15 100 lbs. (45 kg) (64L82)
	Net face area	2.1 ft. ² (0.20 m ²)		2.8 ft. ² (0.26 m ²)	3.6 ft. ² (0.33 m ²)
Economizer Damper Hood (Down-flow) - For use with REMD16M economizer dampers (see above). Must be ordered separately.	Order No.	27L58		27L60	48L00
	No. & Size of Filters	(1) 32 1/4 x 16 1/2 x 1 (819 x 419 x 25)		(1) 32 1/4 x 21 1/4 x 1 (819 x 546 x 25)	(1) 40 1/4 x 21 1/2 x 1 (1022 x 546 x 25)

Optional Accessories

Item		GCS16-072	GCS16-090	GCS16-120	GCS16-150
Economizer Dampers (Horizontal) - Mechanically linked recirculated air and outdoor air dampers, plug-in connections to unit, nylon bearings, stainless steel seals (outdoor dampers), 24 volt fully modulating spring return damer motor, adjustable minimum damper position switch, mixed air controller, solid-state adjustable outdoor air enthalpy control, 0 to 100% outdoor air adjustable, galvanized steel cabinet, flanged air openings on return air section, powdered enamel paint finish, fully insulated. NOTE - Outdoor air hood with cleanable aluminum mesh frame filter, is required and must be ordered separately for field installation (see below). Also requires optional Horizontal Supply and Return Air Kit for duct connection.		EMDH16M-09 120 lbs. (54 kg) (24H06)		EMDH16M-12 135 lbs. (62 kg) (24H07)	EMDH16M-15 187 lbs. (85 kg) (24H08)
Economizer Damper Hood (Horizontal) - For use with EMD16M economizer dampers (see above). Must be ordered separately.	Order No.	68G80		68G80	68G77
	No. & Size of Filters	(2) 16 x 25 x 1 (406 x 635 x 25)		(2) 16 x 25 x 1 (406 x 635 x 25)	(2) 20 x 25 x 1 (508 x 635 x 25)
Economizer Gravity Exhaust Dampers (Horizontal) - For use with EMDH16 horizontal economizer damper sections, two neoprene coated fiberglass dampers furnished, rainhoods furnished, bird screen furnished		GED16-09/12 (5 lbs.) (2 kg) Net face area - 0.43 sq. ft. (0.04 m²) used with EMDH16M (96H84)			
Hail Guards - Heavy duty field installed coil guard protects coils from damage. Not used with Coil Guards.		60L33		60L34	
Horizontal Supply and Return Air Kit - Provides duct connection to unit, flanges furnished, hardware furnished, two filler panels furnished for unused air openings, filter access panel furnished		LB-55756BA (34G71) 30 lbs. (14 kg)		LB-55756BB (35G42) 35 lbs. (16 kg)	LB-55756BC (51G27) 39 lbs. (18 kg)
Low Ambient Controls - Allows unit operation down to 0° F (-17.7°C)		LB-57113BC (24H77)	LB-57113BG (15J80)	LB-57113BW (53L84)	
LPG/Propane Kits		58L34			
Outdoor Air Damper Section - Linked mechanical dampers, interchangeable unit panel furnished (down-flow applications), two-piece cabinet (control access), cleanable polyurethane frame type filter furnished, 0 to 25% (fixed) outdoor air adjustable, manual or automatic operation (kit required for automatic operation), installs on unit for down-flow applications, installs in return air duct for horizontal applications	Model No. - Net Wt.	0AD16-09 41 lbs. (19 kg) (35G22)		0AD16-12 43 lbs. (20 kg) (35G23)	0AD16-15 50 lbs. (23 kg) (64G94)
	Hood	35G24			
	No. & Size of Filters	(1) 16 x 20 x 1 (406 x 508 x 25)		(1) 16 x 20 x 1 (406 x 508 x 25)	(1) 16 x 20 x 1 (406 x 508 x 25)
Outdoor Air Damper Motorized Damper Kit - 3 position damper actuator, plug in connection		35G21 7 lbs. (3 kg)			
Roof Mounting Frame - Nailer strip furnished, mates to unit, U.S. National Roofing Contractors Approved, shipped knocked down		RMF16-09 107 lbs. (49 kg) (32G90)		RMF16-12 119 lbs. (54 kg) (32G91)	
Cycle Control - Required with electro-mechanical thermostat system, provides timed-on and off function, prevents compressor short cycling.		45L54			

Specifications

Model No.		GCS16-072	GCS16-090	GCS16-120	GCS16-150
Nominal Tonnage		6	7.5	10	12.5
Cooling Ratings	Gross capacity - Btuh (kW)	74,800 (21.9)	92,800 (27.2)	123,000 (36.0)	150,000 (44.0)
	★Net cooling capacity - Btuh (kW)	72,000 (21.1)	88,000 (25.8)	117,000 (34.3)	144,000 (42.2)
	★Total unit kW	8	9.8	13	16
	★EER (Btuh/Watts)	9	9	9	
	★Integrated Part Load Value	---	9.5	9.2	8.5
	*Sound Rating Number (db)	86	86	82	88
Refrigerant Charge (HFC-22)	Circuit 1	9 lbs. 8 oz. (4.31 kg)	6 lbs. 0 oz. (2.72 kg)	7 lbs. 8 oz. (3.4 kg)	8 lbs. 8 oz. (3.9 kg)
	Circuit 2	---	6 lbs. 0 oz. (2.72 kg)	7 lbs. 8 oz. (3.4 kg)	8 lbs. 8 oz. (3.9 kg)
Evaporator Blower and Drive Selection	Blower wheel nominal diameter x width - in. (mm)		12 x 12 (305 x 305)		15 x 15 (381 x 381)
	Factory Installed ¹ Drive	Nominal motor hp (kW)	2 (1.5)		3 (2.2)
		Maximum usable hp (kW)	2.30 (1.7)		3.45 (2.6)
		Voltage & phase	208/230/460v or 575v - 3ph		
		RPM Range	845 - 1130		735 - 1015
Evaporator Coil	Net face area - sq. ft. (m ²)		7.75 (0.72)		9.46 (0.88)
	Tube diameter - in. (mm) & No. of rows		3/8 (9.5) - 3		3/8 (9.5) - 4
	Fins per inch (m)		14 (551)		
	Expansion device type		Thermostatic Expansion Valve		
	Drain connection size mpt - in. (mm) PVC		1 (25.4)		
Condenser Coil	Net face area - sq. ft. (m ²)		13.0 (1.21)	15.67 (1.46)	24.0 (2.23)
	Tube diameter - in. (mm) & No. of rows		3/8 (9.5) - 2		
	Fins per inch (m)		20 (787)		
Condenser Fan	Diameter - in (mm) & No. of blades		(1) 24 (610) - 3	(1) 24 (610) - 4	(2) 20 (508) - 4
	Air volume - cfm (L/s)		4100 (1935)	5150 (2430)	6400 (3020)
	Motor horsepower (W)		(1) 1/3 (249)	(1) 3/4 (560)	(2) 1/3 (249)
	Motor rpm		1075		
	Motor watts		450	650	1250
Sea Level Two Stage Heating Capacity	Input (low) - Btuh (kW) Natural Gas/LPG-Propane		104,000/91,000 (30.5/26.7)	126,000/126,000 (36.9/36.9)	170,000 (49.8)
	Output (low) - Btuh (kW) Natural Gas/LPG-Propane		82,000/71,000 (24.0/20.8)	98,000/98,000 (28.7/28.7)	132,500 (38.8)
	Input (high) - Btuh (kW) Natural Gas/LPG-Propane		160,000/140,000 (46.9/41.0)	200,000/175,000 (58.6/51.3)	270,000 (79.1)
	Output (high) - Btuh (kW) Natural Gas/LPG-Propane		128,000/114,000 (37.5/33.4)	160,000/142,600 (46.9/41.8)	216,000 (63.3)
	A.G.A./C.G.A. Thermal Efficiency Natural Gas/LPG-Propane		80.0%/81.5%	80%/81.5%	80.0%
Gas Supply Connections fpt - in. (mm) Natural Gas and LPG-Propane		3/4 (19)			
Recommended Gas Supply Pressure - wc. in. (kPa)	Natural		7 (1.7)		
	LPG/Propane		11 (2.7)		
Filters (furnished)	Type of filter		Disposable, pleated		
	No. & size - in. (mm)		(4) 16 x 20 x 2 (406 x 508 x 51)	(2) 16 x 25 x 2 (406 x 635 x 51) & (2) 16 x 20 x 2 (406 x 508 x 51)	(2) 20 x 25 x 2 (508 x 635 x 51) & (2) 20 x 20 x 2 (508 x 508 x 51)
Net weight of basic unit - lbs. (kg)		760 (345)	875 (397)	1100 (499)	1200 (544)
Shipping weight of basic unit - lbs. (kg) (1 package)		900 (408)	1060 (481)	1285 (582)	1385 (628)
Electrical characteristics		208/230v, 460v or 575v - 60 hertz - 3 phase			

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

★Rated in accordance with ARI Standard 210/2400 (-072-090-120 models) or ARI Standard 340/360 (-150 model); 95°F (35°C) outdoor air temperature and 80°F (27°C) db/67°F (19°C) wb entering evaporator air. Integrated Part Load Value rated at 80°F (27°C) outdoor air temperature.

NOTE ARI capacity is net and includes evaporator blower motor heat deduction. Gross capacity does not include evaporator blower motor heat deduction.

¹Using total air volume and system static pressure requirements determine from blower performance tables rpm and motor output required. Maximum usable output of motors furnished by Armstrong are shown. In Canada, nominal motor output is also maximum usable motor output. If motors of comparable output are used, be sure to keep within the service factor limitations outlined on the motor nameplate.

Electrical Data - 072-090 Models

Model No.		GCS16-072			GCS16-090		
Line voltage - 60 Hz - 3 phase		208/230v	460v	575v	208/230v	460v	575v
*Recommended max. fuse or circuit breaker size (amps)		50	25	20	50	25	20
†Minimum Circuit Ampacity		34	17	14	42	21	17
Compressor (1)	Rated load amps - each (total)	18.8	9.1	7.5	13.3 (26.6)	6.7 (13.4)	5.4 (10.8)
	Locked rotor amps - each (total)	156	70	54	91 (182)	46 (92)	37 (74)
Condenser Fan Motor	Full load amps	2.4	1.3	1	3.7	1.9	1.6
	Locked rotor amps	4.7	2.4	1.9	7.3	3.7	2.9
Evaporator Blower Motor	Motor Output - hp (kW)	2 (1.5)			2 (1.5)		
	Full load amps	7.5	3.4	2.7	7.5	3.7	2.7
	Locked rotor amps	41	20.4	16.2	41	20.4	16.2

*Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse. (U.S. only)

†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 - 120-150 Models

Model No.		GCS16-120			GCS16-150		
Line voltage data - 60 Hz. - 3 Phase		208/230v	460v	575v	208/230v	460v	575v
*Recommended max. Fuse or circuit breaker size (amps)		70	35	25	70	35	30
**Minimum Circuit Ampacity		58	28	21	59	29	24
Compressors (2)	Rated load amps - each (total)	18.6 (37.2)	8.8 (17.7)	6.6 (13.2)	18.8 (37.6)	9.1 (18.2)	7.5 (15.0)
	Locked rotor amps - each (total)	128 (256)	63 (126)	49 (98)	156 (312)	70 (140)	54 (108)
Condenser Fan Motors	Full load amps	(2) 4.8	(2) 2.6	(2) 2.0	(2) 6.0	(2) 3.0	(2) 2.4
	Locked rotor amps	(2) 9.4	(2) 4.8	(2) 3.8	(2) 12.0	(2) 6.0	(2) 5.8
Evaporator Blower Motor	Motor Output - hp (kW)	3 (2.2)			3 (2.2)		
	Full load amps	10.6	4.8	3.9	10.6	4.8	3.9
	Locked rotor amps	66	26.8	23.4	66	26.8	23.4

*Where current does not exceed 100 amps, HACR type circuit breaker may be used in place of fuse (U.S. only).

**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.

High Altitude Heating Derate

A.G.A. certified units must be derated when installed at an elevation of more than 2000 feet (610 m) above sea level. If unit is installed at an altitude higher than 2000 feet (610 m), the unit must be derated 4% for every 1000 feet (305 m) above sea level. Thus, at an altitude of 4000 feet (1210 m), the unit would require a derate of 16%.

C.G.A. certified units must be derated when installed at an elevation of more than 2000 feet (610 m) above sea level. If unit is installed at an altitude higher than 2000 feet (610 m), the unit must be derated 10% for elevations between 2000 feet and 4500 feet (610 m and 1370 m) above sea level.

NOTE - This is the only permissible derate for these units.

Cooling Ratings

GCS16-072

Entering Wet Bulb Temp.	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	Sensible to Total Ratio (S/T)			Total Cooling Capacity	Comp. Motor kW	Sensible to Total Ratio (S/T)			Total Cooling Capacity	Comp. Motor kW	Sensible to Total Ratio (S/T)			Total Cooling Capacity	Comp. Motor kW	Sensible to Total Ratio (S/T)						
					Dry Bulb					Dry Bulb					Dry Bulb					Dry Bulb						
	75°F (24°C)	80°F (27°C)			85°F (29°C)	75°F (24°C)	80°F (27°C)			85°F (29°C)	75°F (24°C)	80°F (27°C)			85°F (29°C)	75°F (24°C)	80°F (27°C)			85°F (29°C)						
cfm	L/s	kBtuh	kW	Input	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtuh	kW	Input	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtuh	kW	Input	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtuh	kW	Input	75°F (24°C)	80°F (27°C)	85°F (29°C)	
63°F (17°C)	1900	895	70.7	20.7	5.23	.71	.84	.96	68.3	20.0	5.86	.72	.86	.97	65.6	19.2	6.58	.73	.87	.99	62.8	18.4	7.39	.75	.89	1.00
	2400	1135	73.5	21.5	5.31	.76	.91	1.00	71.0	20.8	5.93	.78	.93	1.00	68.2	20.0	6.65	.79	.94	1.00	65.3	19.1	7.46	.81	.96	1.00
	2900	1370	75.7	22.2	5.35	.81	.97	1.00	73.1	21.4	5.99	.83	.98	1.00	70.5	20.7	6.71	.85	.99	1.00	67.6	19.8	7.54	.86	1.00	1.00
67°F (19°C)	1900	895	75.1	22.0	5.34	.56	.69	.81	72.5	21.2	5.97	.57	.70	.82	69.7	20.4	6.69	.57	.71	.84	66.7	19.5	7.51	.58	.72	.86
	2400	1135	77.6	22.7	5.41	.59	.74	.88	74.8	21.9	6.05	.60	.75	.90	71.9	21.1	6.76	.61	.77	.91	68.7	20.1	7.57	.62	.78	.93
	2900	1370	79.3	23.2	5.46	.62	.79	.94	76.5	22.4	6.09	.63	.81	.96	73.5	21.5	6.81	.64	.82	.97	70.2	20.6	7.64	.65	.84	.99
71°F (22°C)	1900	895	79.9	23.4	5.47	.42	.54	.66	77.2	22.6	6.11	.42	.55	.67	74.2	21.7	6.83	.43	.56	.68	71.0	20.8	7.66	.43	.56	.70
	2400	1135	82.3	24.1	5.54	.43	.58	.72	79.4	23.3	6.18	.44	.58	.73	76.3	22.4	6.91	.44	.59	.75	73.0	21.4	7.73	.44	.60	.76
	2900	1370	83.9	24.6	5.59	.45	.61	.77	80.9	23.7	6.23	.45	.62	.79	77.8	22.8	6.95	.45	.63	.80	74.3	21.8	7.79	.46	.64	.82

GCS16-090 - One Compressor Operating

Entering Wet Bulb Temper- ature	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	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)	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)	2500	1180	46.4	13.6	2.73	.69	.82	.93	45.1	13.2	3.04	.70	.83	.94	43.7	12.8	3.39	.71	.84	.96	42.2	12.4	3.80	.72	.85	.97
	3000	1415	47.8	14.0	2.76	.72	.87	.98	46.4	13.6	3.07	.73	.88	.99	44.9	13.2	3.42	.75	.89	1.00	43.4	12.7	3.84	.76	.91	1.00
	3500	1650	48.9	14.3	2.79	.76	.91	1.00	47.5	13.9	3.10	.77	.92	1.00	46.0	13.5	3.45	.79	.94	1.00	44.4	13.0	3.87	.80	.95	1.00
67°F (19°C)	2500	1180	49.3	14.4	2.79	.55	.67	.79	47.8	14.0	3.10	.55	.67	.80	46.3	13.6	3.46	.56	.68	.81	44.7	13.1	3.87	.56	.69	.82
	3000	1415	50.5	14.8	2.82	.57	.70	.84	49.0	14.4	3.14	.57	.71	.85	47.4	13.9	3.49	.58	.72	.86	45.7	13.4	3.90	.58	.73	.88
	3500	1650	51.4	15.1	2.85	.59	.74	.88	49.8	14.6	3.16	.59	.75	.90	48.2	14.1	3.52	.60	.76	.91	46.5	13.6	3.93	.61	.78	.93
71°F (22°C)	2500	1180	52.3	15.3	2.87	.42	.53	.64	50.7	14.9	3.18	.42	.54	.65	49.1	14.4	3.55	.42	.54	.66	47.4	13.9	3.96	.42	.55	.67
	3000	1415	53.5	15.7	2.90	.42	.55	.68	51.9	15.2	3.22	.43	.56	.69	50.2	14.7	3.58	.43	.56	.70	48.4	14.2	4.00	.43	.57	.71
	3500	1650	54.4	15.9	2.93	.43	.58	.72	52.8	15.5	3.25	.43	.58	.73	51.0	14.9	3.61	.44	.59	.74	49.2	14.4	4.02	.44	.60	.76

GCS16-090 - All Compressors Operating

Entering Wet Bulb Temperature	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	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)				
	63°F (17°C)	2500	1180	88.9	26.1	6.80	.72	.85	.97	85.8	25.1	7.62	.73	.87	.98	82.6	24.2	8.57	.74	.88	.99	79.0	23.2	9.65	.75	.90
3000		1415	91.4	26.8	6.87	.76	.91	1.00	88.3	25.9	7.70	.77	.92	1.00	84.8	24.9	8.64	.79	.94	1.00	81.2	23.8	9.75	.80	.96	1.00
3500		1650	93.6	27.4	6.93	.80	.95	1.00	90.3	26.5	7.76	.81	.96	1.00	86.9	25.5	8.71	.83	.98	1.00	83.4	24.4	9.81	.85	.99	1.00
67°F (19°C)	2500	1180	94.1	27.6	6.94	.56	.69	.82	90.8	26.6	7.76	.57	.70	.84	87.2	25.6	8.71	.58	.72	.85	83.4	24.4	9.81	.58	.73	.87
	3000	1415	96.3	28.2	7.00	.59	.74	.88	92.8	27.2	7.83	.59	.75	.89	89.2	26.1	8.78	.60	.76	.91	85.1	24.9	9.89	.61	.78	.93
	3500	1650	97.9	28.7	7.06	.61	.78	.92	94.4	27.7	7.88	.62	.79	.94	90.6	26.6	8.84	.63	.81	.96	86.5	25.4	9.95	.64	.83	.98
71°F (22°C)	2500	1180	99.8	29.2	7.12	.42	.55	.67	96.3	28.2	7.95	.43	.55	.68	92.5	27.1	8.91	.43	.56	.69	88.5	25.9	10.01	.43	.57	.71
	3000	1415	102.0	29.9	7.19	.43	.57	.71	98.3	28.8	8.02	.43	.58	.73	94.4	27.7	8.99	.44	.59	.74	90.2	26.4	10.09	.44	.60	.76
	3500	1650	103.5	30.3	7.24	.44	.60	.76	99.8	29.2	8.07	.44	.61	.77	95.7	28.0	9.03	.45	.62	.79	91.4	26.8	10.15	.45	.63	.81

GCS16-120 - One Compressor Operating

Entering Wet Bulb Temp.	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																									
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)							
			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)				
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb				
	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)
	cfm	L/s	kBtu/h	kW																								
63°F (17°C)	3200	1510	62.9	18.4	3.73	.64	.78	.92	61.3	18.0	4.13	.65	.79	.93	59.4	17.4	4.60	.65	.81	.95	57.2	16.8	5.13	.66	.83	.97		
	4000	1890	65.1	19.1	3.78	.68	.86	.99	63.5	18.6	4.19	.69	.87	1.00	61.5	18.0	4.66	.71	.89	1.00	59.2	17.3	5.19	.72	.91	1.00		
	4800	2265	66.9	19.6	3.83	.74	.93	1.00	65.2	19.1	4.24	.75	.94	1.00	63.2	18.5	4.71	.77	.96	1.00	61.0	17.9	5.24	.78	.97	1.00		
67°F (19°C)	3200	1510	66.6	19.5	3.81	.51	.62	.74	64.9	19.0	4.23	.51	.62	.76	62.9	18.4	4.69	.51	.63	.77	60.6	17.8	5.22	.52	.64	.79		
	4000	1890	68.5	20.1	3.86	.53	.66	.82	66.8	19.6	4.27	.54	.67	.84	64.7	19.0	4.74	.54	.68	.85	62.3	18.3	5.27	.55	.70	.87		
	4800	2265	69.9	20.5	3.90	.56	.72	.89	68.1	20.0	4.31	.56	.73	.91	66.0	19.3	4.78	.57	.74	.93	63.5	18.6	5.31	.58	.76	.94		
71°F (22°C)	3200	1510	70.5	20.7	3.91	.39	.49	.60	68.8	20.2	4.33	.39	.49	.60	66.7	19.5	4.80	.39	.50	.61	64.3	18.8	5.33	.39	.50	.62		
	4000	1890	72.4	21.2	3.96	.39	.52	.64	70.7	20.7	4.38	.39	.52	.65	68.5	20.1	4.85	.40	.53	.66	66.0	19.3	5.38	.40	.53	.67		
	4800	2265	73.7	21.6	4.00	.40	.55	.69	71.9	21.1	4.41	.41	.55	.70	69.7	20.4	4.88	.41	.56	.72	67.1	19.7	5.41	.41	.57	.74		

GCS16-120 - All Compressors Operating

Entering Wet Bulb Temp.	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	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW		75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW		75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW		75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW		75°F (24°C)	80°F (27°C)	85°F (29°C)
63°F (17°C)	3200	1510	117.3	34.4	9.08	.70	.84	.98	112.9	33.1	10.12	.71	.86	.99	108.4	31.8	11.28	.72	.88	1.00	104.0	30.5	12.58	.74	.90	1.00
	4000	1890	121.4	35.6	9.19	.75	.92	1.00	116.9	34.3	10.24	.77	.94	1.00	112.3	32.9	11.41	.78	.96	1.00	107.8	31.6	12.71	.80	.98	1.00
	4800	2265	124.8	36.6	9.29	.81	.98	1.00	120.4	35.3	10.33	.82	1.00	1.00	115.9	34.0	11.50	.84	1.00	1.00	111.3	32.6	12.82	.86	1.00	1.00
67°F (19°C)	3200	1510	124.2	36.4	9.25	.55	.68	.81	119.6	35.1	10.30	.56	.69	.82	114.7	33.6	11.46	.56	.70	.84	109.9	32.2	12.78	.57	.71	.86
	4000	1890	127.7	37.4	9.35	.58	.73	.89	123.0	36.0	10.40	.59	.74	.91	117.9	34.6	11.58	.60	.76	.93	112.8	33.1	12.90	.61	.78	.95
	4800	2265	130.3	38.2	9.43	.61	.78	.95	125.4	36.8	10.47	.62	.80	.97	120.2	35.2	11.66	.63	.82	.99	115.1	33.7	12.97	.64	.84	1.00
71°F (22°C)	3200	1510	131.7	38.6	9.47	.41	.53	.65	127.0	37.2	10.51	.42	.54	.66	121.8	35.7	11.70	.42	.55	.68	116.7	34.2	13.03	.42	.56	.69
	4000	1890	135.2	39.6	9.57	.42	.57	.71	130.3	38.2	10.62	.43	.57	.72	124.9	36.6	11.80	.43	.58	.74	119.4	35.0	13.14	.43	.60	.75
	4800	2265	137.6	40.3	9.63	.44	.60	.76	132.4	38.8	10.67	.44	.61	.78	126.9	37.2	11.87	.44	.62	.80	121.4	35.6	13.22	.45	.63	.82

Cooling Ratings

GCS16-150 -One Compressor Operating

Entering Wet Bulb Temp.	Total Air Volume		Outdoor Air Temperature Entering Outdoor Coil																							
			65°F (18°C)						75°F (24°C)						85°F (29°C)						95°F (35°C)					
			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)
63°F	3840	1810	73.4	21.5	4.53	.69	.82	.93	71.3	20.9	5.05	.70	.83	.94	69.1	20.3	5.63	.71	.84	.96	66.7	19.5	6.30	.72	.85	.97
(17°C)	4800	2265	76.3	22.4	4.61	.74	.88	.99	74.1	21.7	5.12	.75	.89	1.00	71.8	21.0	5.70	.76	.91	1.00	69.3	20.3	6.37	.77	.92	1.00
	5760	2720	78.7	23.1	4.66	.79	.94	1.00	76.4	22.4	5.17	.80	.95	1.00	74.0	21.7	5.76	.81	.97	1.00	71.5	21.0	6.43	.83	.98	1.00
67°F	3840	1810	77.9	22.8	4.64	.55	.67	.78	75.7	22.2	5.16	.55	.68	.80	73.3	21.5	5.74	.56	.68	.81	70.7	20.7	6.41	.56	.69	.82
(19°C)	4800	2265	80.6	23.6	4.72	.58	.72	.85	78.2	22.9	5.23	.58	.73	.86	75.6	22.2	5.81	.59	.74	.88	73.0	21.4	6.48	.60	.75	.90
	5760	2720	82.5	24.2	4.77	.60	.77	.91	80.0	23.4	5.28	.61	.78	.93	77.4	22.7	5.86	.62	.79	.94	74.6	21.9	6.53	.63	.81	.96
71°F	3840	1810	83.0	24.3	4.78	.42	.53	.64	80.5	23.6	5.29	.42	.54	.65	78.0	22.9	5.87	.42	.54	.66	75.3	22.1	6.55	.42	.55	.67
(22°C)	4800	2265	85.6	25.1	4.85	.43	.56	.69	83.0	24.3	5.36	.43	.57	.70	80.3	23.5	5.95	.43	.57	.71	77.4	22.7	6.62	.43	.58	.73
	5760	2720	87.3	25.6	4.90	.44	.59	.74	84.6	24.8	5.41	.44	.60	.76	81.8	24.0	5.99	.45	.61	.77	78.9	23.1	6.66	.45	.62	.78

GCS16-150 -All Compressors Operating

Entering Wet Bulb Temp.	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	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)			Total Cooling Capacity		Comp. Motor kW Input	Sensible to Total Ratio (S/T)		
						Dry Bulb						Dry Bulb						Dry Bulb						Dry Bulb		
	cfm	L/s	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)	85°F (29°C)	kBtu/h	kW	75°F (24°C)	80°F (27°C)
63°F (17°C)	3840	1810	142.3	41.7	11.29	.71	.84	.97	137.4	40.3	12.63	.72	.86	.98	132.2	38.7	14.15	.73	.87	.99	126.7	37.1	15.86	.74	.89	1.00
	4800	2265	147.7	43.3	11.43	.76	.92	1.00	142.6	41.8	12.78	.77	.93	1.00	137.3	40.2	14.30	.79	.95	1.00	131.7	38.6	16.03	.81	.97	1.00
	5760	2720	152.3	44.6	11.56	.82	.98	1.00	147.3	43.2	12.91	.83	.99	1.00	142.0	41.6	14.44	.85	1.00	1.00	136.5	40.0	16.20	.87	1.00	1.00
67°F (19°C)	3840	1810	150.7	44.2	11.52	.56	.68	.81	145.4	42.6	12.87	.56	.69	.83	139.9	41.0	14.40	.57	.71	.84	134.0	39.3	16.11	.58	.72	.86
	4800	2265	155.4	45.5	11.66	.59	.74	.89	150.0	44.0	13.00	.60	.75	.90	144.2	42.3	14.53	.60	.77	.92	137.9	40.4	16.27	.61	.78	.94
	5760	2720	158.9	46.6	11.75	.62	.80	.95	153.2	44.9	13.11	.63	.81	.97	147.2	43.1	14.64	.64	.83	.98	140.9	41.3	16.38	.65	.85	1.00
71°F (22°C)	3840	1810	160.3	47	11.79	.42	.54	.66	154.8	45.4	13.14	.42	.55	.67	148.8	43.6	14.69	.42	.55	.68	142.5	41.8	16.42	.43	.56	.70
	4800	2265	164.8	48.3	11.94	.43	.57	.72	158.9	46.6	13.28	.43	.58	.73	152.8	44.8	14.81	.44	.59	.75	146.2	42.8	16.57	.44	.60	.76
	5760	2720	167.9	49.2	12.02	.44	.61	.77	161.9	47.4	13.38	.45	.62	.79	155.5	45.6	14.92	.45	.63	.81	148.7	43.6	16.65	.48	.65	.83

Blower Data

Bold Data Indicates Field Furnished Drive

GCS16-072-090 Blower Performance

Air Volume cfm (L/s)	Static Pressure External to Unit - Inches Water Gauge (Pa)																							
	.20 (50)		.30 (75)		.40 (100)		.50 (125)		.60 (150)		.70 (175)		.80 (200)		.90 (225)		1.00 (250)		1.10 (275)		1.20 (300)		1.30 (325)	
	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)
2000 (945)	600	.35 (.26)	655	.40 (.30)	705	.50 (.37)	755	.55 (.41)	800	.60 (.45)	845	.70 (.52)	890	.75 (.56)	930	.85 (.63)	970	.90 (.67)	1015	1.00 (.75)	1050	1.05 (.78)	1090	1.15 (.86)
2200 (1040)	640	.45 (.34)	690	.50 (.37)	735	.55 (.41)	780	.65 (.48)	825	.70 (.52)	870	.80 (.60)	910	.85 (.63)	950	.95 (.71)	990	1.05 (.78)	1030	1.10 (.82)	1065	1.20 (.90)	1100	1.30 (.97)
2400 (1135)	680	.55 (.41)	725	.60 (.45)	770	.70 (.52)	815	.75 (.56)	855	.85 (.63)	895	.90 (.67)	935	1.00 (.75)	975	1.10 (.82)	1010	1.15 (.86)	1045	1.25 (.93)	1085	1.35 (1.01)	1120	1.45 (1.08)
2600 (1225)	720	.70 (.52)	765	.75 (.56)	805	.80 (.60)	845	.90 (.67)	885	1.00 (.75)	925	1.05 (.78)	960	1.15 (.86)	1000	1.25 (.93)	1035	1.30 (.97)	1070	1.40 (1.04)	1105	1.50 (1.12)	1140	1.60 (1.19)
2800 (1320)	765	.85 (.63)	805	.90 (.67)	845	1.00 (.75)	880	1.05 (.78)	920	1.15 (.86)	955	1.25 (.93)	990	1.30 (.97)	1025	1.40 (1.04)	1060	1.50 (1.12)	1095	1.60 (1.19)	1125	1.70 (1.27)	1160	1.80 (1.34)
3000 (1415)	805	1.00 (.75)	845	1.05 (.78)	880	1.15 (.86)	920	1.25 (.93)	955	1.35 (1.01)	990	1.40 (1.04)	1020	1.50 (1.12)	1055	1.60 (1.19)	1090	1.70 (1.27)	1120	1.80 (1.34)	1150	1.90 (1.42)	1185	2.00 (1.49)
3200 (1510)	850	1.20 (.90)	885	1.25 (.93)	920	1.35 (1.01)	955	1.45 (1.08)	990	1.55 (1.16)	1020	1.60 (1.19)	1055	1.70 (1.27)	1085	1.80 (1.34)	1120	1.90 (1.42)	1150	2.00 (1.49)	1180	2.10 (1.57)	1210	2.25 (1.68)
3400 (1605)	895	1.40 (1.04)	930	1.50 (1.12)	960	1.55 (1.16)	995	1.65 (1.23)	1025	1.75 (1.31)	1060	1.85 (1.38)	1090	1.95 (1.45)	1120	2.05 (1.53)	1150	2.15 (1.60)	1180	2.25 (1.68)	1210	2.40 (1.79)	1240	2.50 (1.87)
3600 (1700)	940	1.65 (1.23)	970	1.70 (1.27)	1005	1.85 (1.38)	1035	1.90 (1.42)	1065	2.00 (1.49)	1095	2.10 (1.57)	1125	2.20 (1.64)	1155	2.35 (1.75)	1185	2.45 (1.83)	1210	2.55 (1.90)	1240	2.65 (1.98)	1270	2.80 (2.09)
3800 (1795)	985	1.90 (1.42)	1015	2.00 (1.49)	1045	2.10 (1.57)	1075	2.20 (1.64)	1105	2.30 (1.72)	1135	2.40 (1.79)	1160	2.50 (1.87)	1190	2.65 (1.98)	1220	2.75 (2.05)	1245	2.85 (2.13)	1270	2.95 (2.20)	1300	3.10 (2.31)

NOTE - All data is measured external to the unit with dry coil and with the air filters in place. See page 11 for Accessory Air Resistance.

NOTE - In Canada, maximum usable motor output is 2 hp (1.5 kW)

GCS16-120 Blower Performance

Air Volume cfm (L/s)	Static Pressure External to Unit - Inches Water Gauge (Pa)																											
	.20 (50)		.30 (75)		.40 (100)		.50 (125)		.60 (150)		.70 (175)		.80 (200)		.90 (225)		1.00 (250)		1.10 (275)		1.20 (300)		1.30 (325)		1.40 (350)		1.50 (375)	
	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)
3000 (1415)	515	.50 (.37)	555	.60 (.45)	595	.65 (.48)	635	.75 (.56)	670	.80 (.60)	705	.90 (.67)	740	1.00 (.75)	775	1.10 (.82)	810	1.15 (.86)	845	1.30 (.97)	875	1.35 (1.01)	905	1.45 (1.08)	940	1.60 (1.19)	970	1.70 (1.27)
3200 (1510)	535	.65 (.48)	575	.65 (.48)	615	.75 (.56)	650	.85 (.63)	685	.90 (.67)	720	1.00 (.75)	755	1.10 (.82)	790	1.20 (.90)	820	1.30 (.97)	850	1.40 (1.04)	885	1.50 (1.12)	915	1.60 (1.19)	945	1.70 (1.27)	975	1.80 (1.34)
3400 (1605)	560	.80 (.60)	600	.80 (.60)	635	.85 (.63)	670	.95 (.71)	705	1.05 (.78)	735	1.10 (.82)	770	1.20 (.90)	800	1.30 (.97)	830	1.40 (1.04)	865	1.50 (1.12)	895	1.65 (1.23)	925	1.75 (1.31)	950	1.85 (1.38)	980	1.95 (1.45)
3600 (1700)	585	.90 (.67)	620	.90 (.67)	655	1.00 (.75)	690	1.05 (.78)	720	1.15 (.86)	755	1.25 (.93)	785	1.35 (1.01)	815	1.45 (1.08)	845	1.55 (1.16)	875	1.65 (1.23)	905	1.75 (1.31)	935	1.90 (1.42)	960	2.00 (1.49)	990	2.10 (1.57)
3800 (1795)	610	1.00 (.75)	645	1.00 (.75)	675	1.10 (.82)	710	1.20 (.90)	740	1.30 (.97)	770	1.40 (1.04)	800	1.50 (1.12)	830	1.60 (1.19)	860	1.70 (1.27)	890	1.80 (1.34)	915	1.90 (1.42)	945	2.05 (1.53)	970	2.15 (1.60)	1000	2.25 (1.68)
4000 (1890)	635	1.15 (.86)	670	1.15 (.86)	700	1.25 (.93)	730	1.35 (1.01)	760	1.45 (1.08)	790	1.55 (1.16)	820	1.65 (1.23)	845	1.75 (1.31)	875	1.85 (1.38)	900	1.95 (1.45)	930	2.10 (1.57)	955	2.20 (1.64)	985	2.35 (1.75)	1010	2.45 (1.83)
4200 (1980)	660	1.30 (.97)	690	1.30 (.97)	720	1.40 (1.04)	750	1.50 (1.12)	780	1.60 (1.19)	810	1.70 (1.27)	835	1.80 (1.34)	865	1.95 (1.45)	890	2.05 (1.53)	920	2.15 (1.60)	945	2.25 (1.68)	970	2.40 (1.79)	995	2.50 (1.87)	1020	2.60 (1.94)
4400 (2075)	690	1.45 (1.08)	715	1.45 (1.08)	745	1.60 (1.19)	775	1.70 (1.27)	800	1.80 (1.34)	830	1.90 (1.42)	855	2.00 (1.49)	880	2.10 (1.57)	910	2.25 (1.68)	935	2.35 (1.75)	960	2.45 (1.83)	985	2.60 (1.94)	1010	2.70 (2.01)	1035	2.85 (2.13)
4600 (2170)	715	1.65 (1.23)	740	1.65 (1.23)	770	1.75 (1.31)	795	1.85 (1.38)	825	2.00 (1.49)	850	2.10 (1.57)	875	2.20 (1.64)	900	2.30 (1.72)	925	2.45 (1.83)	950	2.55 (1.90)	975	2.65 (1.98)	1000	2.80 (2.09)	1025	2.95 (2.20)	1050	3.05 (2.28)
4800 (2265)	740	1.85 (1.38)	765	1.85 (1.38)	795	1.95 (1.45)	820	2.10 (1.57)	845	2.20 (1.64)	870	2.30 (1.72)	895	2.40 (1.79)	920	2.55 (1.90)	945	2.65 (1.98)	970	2.80 (2.09)	995	2.90 (2.16)	1015	3.00 (2.24)	1040	3.15 (2.35)	1065	3.30 (2.46)
5000 (2360)	765	2.05 (1.53)	790	2.05 (1.53)	820	2.20 (1.64)	845	2.30 (1.72)	870	2.40 (1.79)	890	2.50 (1.87)	915	2.65 (1.98)	940	2.75 (2.05)	965	2.90 (2.16)	990	3.05 (2.28)	1010	3.15 (2.35)	1035	3.30 (2.46)	1055	3.40 (2.54)	--	--
5200 (2455)	795	2.30 (1.72)	820	2.30 (1.72)	840	2.40 (1.79)	865	2.50 (1.87)	890	2.65 (1.98)	915	2.80 (2.09)	940	2.90 (2.16)	960	3.00 (2.24)	985	3.15 (2.35)	1005	3.25 (2.42)	1030	3.40 (2.54)	--	--	--	--	--	--

NOTE - All data is measured external to the unit with dry coil and with the air filters in place. See page 11 for Accessory Air Resistance.

NOTE - In Canada, maximum usable motor output is 3 hp (2.24 kW)

Blower Data**Bold Data Indicates Field Furnished Drive****Shaded Data Indicates Field Furnished Motor****GCS16-150 Blower Performance**

Air Vol- ume cfm (L/s)	Static Pressure External to Unit - Inches Water Gauge (Pa)																													
	.20 (50)		.30 (75)		.40 (100)		.50 (125)		.60 (150)		.70 (175)		.80 (200)		.90 (225)		1.00 (250)		1.10 (275)		1.20 (300)		1.30 (325)		1.40 (350)		1.50 (375)		1.60 (400)	
	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)	RPM	BHP (kW)
3800 (1795)	620	1.05 (.78)	655	1.15 (.86)	695	1.25 (.93)	725	1.35 (1.01)	760	1.45 (1.08)	795	1.55 (1.16)	825	1.70 (1.27)	860	1.80 (1.34)	890	1.95 (1.45)	920	2.05 (1.53)	945	2.15 (1.60)	975	2.30 (1.72)	1005	2.45 (1.83)	1030	2.55 (1.90)	1055	2.70 (2.01)
3900 (1840)	630	1.10 (.82)	665	1.20 (.90)	705	1.30 (.97)	740	1.45 (1.08)	770	1.55 (1.16)	805	1.65 (1.23)	835	1.75 (1.31)	865	1.90 (1.42)	895	2.00 (1.49)	925	2.15 (1.60)	955	2.25 (1.68)	980	2.40 (1.79)	1010	2.55 (1.90)	1035	2.65 (1.98)	1060	2.80 (2.09)
4000 (1890)	645	1.20 (.90)	680	1.30 (.97)	715	1.40 (1.04)	750	1.50 (1.12)	780	1.60 (1.19)	815	1.75 (1.31)	845	1.85 (1.38)	875	2.00 (1.49)	905	2.10 (1.57)	935	2.25 (1.68)	960	2.35 (1.75)	990	2.50 (1.87)	1015	2.65 (1.98)	1040	2.75 (2.05)	1070	2.90 (2.16)
4100 (1935)	655	1.25 (.93)	690	1.35 (1.01)	725	1.50 (1.12)	760	1.60 (1.19)	790	1.70 (1.27)	820	1.85 (1.38)	855	1.95 (1.45)	885	2.10 (1.57)	910	2.20 (1.64)	940	2.35 (1.75)	970	2.50 (1.87)	995	2.60 (1.94)	1020	2.70 (2.01)	1050	2.90 (2.16)	1075	3.00 (2.24)
4200 (1980)	670	1.35 (1.01)	705	1.45 (1.08)	735	1.55 (1.16)	770	1.70 (1.27)	800	1.80 (1.34)	830	1.90 (1.42)	860	2.05 (1.53)	890	2.15 (1.60)	920	2.30 (1.72)	950	2.45 (1.83)	975	2.55 (1.90)	1005	2.70 (2.01)	1030	2.85 (2.13)	1055	3.00 (2.24)	1080	3.10 (2.31)
4300 (2030)	680	1.40 (1.04)	715	1.55 (1.16)	750	1.65 (1.23)	780	1.80 (1.34)	810	1.90 (1.42)	840	2.00 (1.49)	870	2.15 (1.60)	900	2.30 (1.72)	930	2.40 (1.79)	955	2.55 (1.90)	985	2.70 (2.01)	1010	2.80 (2.09)	1035	2.95 (2.20)	1060	3.10 (2.31)	1085	3.25 (2.42)
4400 (2075)	695	1.50 (1.12)	725	1.65 (1.23)	760	1.75 (1.31)	790	1.90 (1.42)	820	2.00 (1.49)	850	2.10 (1.57)	880	2.25 (1.68)	910	2.40 (1.79)	935	2.50 (1.87)	965	2.65 (1.98)	990	2.80 (2.09)	1020	2.95 (2.20)	1045	3.10 (2.31)	1070	3.20 (2.39)	1095	3.35 (2.50)
4500 (2125)	705	1.60 (1.19)	740	1.75 (1.31)	770	1.85 (1.38)	800	1.95 (1.45)	830	2.10 (1.57)	860	2.25 (1.68)	890	2.35 (1.75)	920	2.50 (1.87)	945	2.65 (1.98)	975	2.80 (2.09)	1000	2.90 (2.16)	1025	3.05 (2.28)	1050	3.20 (2.39)	1075	3.35 (2.50)	1100	3.50 (2.61)
4600 (2170)	720	1.70 (1.27)	750	1.85 (1.38)	780	1.95 (1.45)	815	2.10 (1.57)	840	2.20 (1.64)	870	2.35 (1.75)	900	2.50 (1.87)	930	2.65 (1.98)	955	2.75 (2.05)	980	2.90 (2.16)	1010	3.05 (2.28)	1035	3.20 (2.39)	1060	3.35 (2.50)	1085	3.50 (2.61)	1110	3.65 (2.72)
4700 (2220)	730	1.80 (1.34)	765	1.95 (1.45)	795	2.05 (1.53)	825	2.20 (1.64)	855	2.35 (1.75)	880	2.45 (1.83)	910	2.60 (1.94)	935	2.75 (2.05)	965	2.90 (2.16)	990	3.00 (2.24)	1015	3.15 (2.35)	1040	3.30 (2.46)	1065	3.45 (2.57)	1090	3.60 (2.69)	1115	3.75 (2.80)
4800 (2265)	745	1.90 (1.42)	775	2.05 (1.53)	805	2.20 (1.64)	835	2.30 (1.72)	865	2.45 (1.83)	890	2.55 (1.90)	920	2.70 (2.01)	945	2.85 (2.13)	975	3.00 (2.24)	1000	3.15 (2.35)	1025	3.30 (2.46)	1050	3.45 (2.57)	1075	3.60 (2.69)	1100	3.75 (2.80)	1125	3.90 (2.91)
4900 (2310)	755	2.00 (1.49)	785	2.15 (1.60)	820	2.40 (1.72)	845	2.55 (1.79)	875	2.70 (1.90)	900	2.85 (2.01)	930	3.00 (2.13)	955	3.15 (2.24)	985	3.30 (2.35)	1010	3.45 (2.46)	1035	3.60 (2.57)	1060	3.75 (2.69)	1085	3.90 (2.80)	1105	4.05 (2.87)	1130	4.20 (3.02)
5000 (2360)	770	2.15 (1.60)	800	2.30 (1.72)	830	2.40 (1.79)	860	2.55 (1.90)	885	2.70 (2.01)	915	2.85 (2.13)	940	3.00 (2.24)	965	3.10 (2.31)	990	3.25 (2.42)	1020	3.45 (2.57)	1040	3.65 (2.65)	1065	3.80 (2.76)	1090	4.00 (2.87)	1115	4.20 (3.02)	1140	4.40 (3.13)
5100 (2405)	785	2.25 (1.68)	815	2.40 (1.79)	840	2.55 (1.90)	870	2.70 (2.01)	895	2.80 (2.09)	925	2.95 (2.20)	950	3.10 (2.31)	975	3.25 (2.42)	1000	3.40 (2.54)	1025	3.60 (2.65)	1045	3.80 (2.76)	1070	4.00 (2.98)	1095	4.20 (2.98)	1120	4.40 (3.13)	1145	4.60 (3.21)
5200 (2455)	795	2.40 (1.79)	825	2.55 (1.90)	855	2.70 (2.01)	880	2.80 (2.09)	910	2.95 (2.20)	935	3.10 (2.31)	960	3.25 (2.42)	985	3.40 (2.54)	1010	3.55 (2.65)	1035	3.70 (2.76)	1060	3.85 (2.87)	1085	4.00 (2.98)	1110	4.20 (3.13)	1130	4.40 (3.21)	1155	4.60 (3.36)
5300 (2500)	810	2.50 (1.87)	840	2.65 (1.98)	865	2.80 (2.09)	895	2.95 (2.20)	920	3.10 (2.31)	945	3.25 (2.42)	970	3.40 (2.54)	995	3.55 (2.65)	1020	3.70 (2.76)	1045	3.85 (2.87)	1070	4.00 (2.98)	1095	4.20 (3.13)	1115	4.40 (3.21)	1140	4.60 (3.36)	1165	4.80 (3.47)
5400 (2550)	825	2.65 (1.98)	850	2.80 (2.09)	880	2.95 (2.20)	905	3.10 (2.31)	930	3.25 (2.42)	955	3.40 (2.54)	980	3.55 (2.65)	1005	3.70 (2.76)	1030	3.85 (2.87)	1055	4.00 (2.98)	1080	4.15 (3.10)	1105	4.35 (3.25)	1125	4.50 (3.36)	1150	4.70 (3.47)	1170	4.90 (3.58)
5500 (2595)	835	2.80 (2.09)	865	2.95 (2.20)	890	3.10 (2.31)	915	3.25 (2.42)	945	3.40 (2.54)	970	3.55 (2.65)	995	3.70 (2.76)	1020	3.85 (2.87)	1040	4.00 (2.98)	1065	4.15 (3.10)	1090	4.35 (3.25)	1110	4.55 (3.36)	1135	4.75 (3.47)	1155	4.95 (3.58)	1180	5.15 (3.73)
5600 (2645)	850	2.95 (2.20)	875	3.10 (2.31)	900	3.20 (2.39)	930	3.40 (2.54)	955	3.55 (2.65)	980	3.70 (2.76)	1005	3.85 (2.87)	1030	4.00 (3.02)	1050	4.15 (3.10)	1075	4.35 (3.25)	1100	4.50 (3.36)	1120	4.75 (3.47)	1145	4.95 (3.62)	1165	5.15 (3.73)	1190	5.35 (3.88)
5700 (2690)	860	3.10 (2.31)	890	3.25 (2.42)	915	3.40 (2.54)	940	3.55 (2.65)	965	3.70 (2.76)	990	3.85 (2.87)	1015	4.00 (2.98)	1040	4.20 (3.13)	1060	4.35 (3.25)	1085	4.50 (3.36)	1110	4.70 (3.51)	1130	4.95 (3.62)	1155	5.15 (3.73)	1175	5.35 (3.88)	1195	5.55 (3.99)
5800 (2735)	875	3.25 (2.42)	900	3.40 (2.54)	925	3.55 (2.65)	955	3.70 (2.76)	975	3.85 (2.87)	1000	4.00 (2.98)	1025	4.20 (3.13)	1050	4.35 (3.25)	1075	4.55 (3.39)	1095	4.70 (3.51)	1120	4.85 (3.62)	1140	5.00 (3.73)	1165	5.20 (3.88)	1185	5.35 (3.99)	1205	5.55 (4.14)
5900 (2785)	890	3.40 (2.54)	915	3.55 (2.65)	940	3.70 (2.76)	965	3.90 (2.91)	990	4.05 (3.02)	1015	4.20 (3.13)	1035	4.35 (3.25)	1060	4.55 (3.39)	1085	4.70 (3.51)	1105	4.85 (3.62)	1130	5.05 (3.77)	1150	5.20 (3.88)	1170	5.35 (3.99)	1195	5.55 (4.14)	1215	5.75 (4.29)
6000 (2830)	900	3.55 (2.65)	925	3.70 (2.76)	950	3.85 (2.87)	975	4.05 (3.02)	1000	4.20 (3.13)	1025	4.40 (3.28)	1050	4.55 (3.39)	1070	4.70 (3.51)	1095	4.90 (3.66)	1115	5.05 (3.77)	1140	5.25 (3.92)	1160	5.40 (4.03)	1180	5.55 (4.14)	1205	5.75 (4.29)	1225	5.95 (4.44)

NOTE - All data is measured external to the unit with dry coil and with the air filters in place. See page 11 for Accessory Air Resistance Data.

NOTE - In Canada, maximum usable motor output is 3 hp (2.24 kW).

Accessory Air Resistance

Unit Model No.	Air Volume		Total Resistance - inches water gauge (Pa)						
			Wet Evaporator Coil	REMD16M Down-Flow Economizer	EMDH16M Horizontal Economizer	RTD11 Step-Down Diffuser			FD11 Flush Diffuser
	cfm	L/s				2 Ends Open	1 Side 2 Ends Open	All Ends & Sides Open	
GCS16-072 GCS16-090	2000	945	.10 (25)	.11 (27)	.02 (5)	.15 (37)	.12 (30)	.11 (27)	.08 (20)
	2200	1040	.11 (27)	.15 (37)	.03 (7)	.18 (45)	.15 (37)	.13 (32)	.11 (27)
	2400	1185	.12 (30)	.19 (47)	.03 (7)	.21 (52)	.18 (45)	.15 (37)	.14 (35)
	2600	1225	.13 (32)	.23 (57)	.04 (10)	.24 (60)	.21 (52)	.18 (45)	.17 (42)
	2800	1320	.14 (35)	.27 (67)	.04 (10)	.27 (67)	.24 (60)	.21 (52)	.20 (50)
	3000	1415	.16 (40)	.31 (77)	.05 (12)	.32 (80)	.29 (72)	.25 (62)	.25 (62)
	3200	1510	.18 (45)	.35 (87)	.05 (12)	.41 (102)	.37 (92)	.32 (80)	.31 (77)
	3400	1605	.19 (47)	.41 (102)	.06 (15)	.50 (124)	.45 (112)	.39 (97)	.37 (92)
	3600	1700	.21 (52)	.47 (117)	.06 (15)	.61 (152)	.54 (134)	.48 (119)	.44 (109)
	3800	1795	.23 (57)	.57 (142)	.07 (17)	.73 (182)	.63 (157)	.57 (142)	.51 (127)
GCS16-120	3600	1700	.12 (30)	.14 (35)	.03 (7)	.36 (90)	.28 (70)	.23 (57)	.15 (37)
	3800	1795	.13 (32)	.15 (37)	.04 (10)	.40 (99)	.32 (80)	.26 (65)	.18 (45)
	4000	1890	.14 (35)	.16 (40)	.04 (10)	.44 (109)	.36 (90)	.29 (72)	.21 (52)
	4200	1980	.15 (37)	.17 (42)	.05 (12)	.49 (122)	.40 (99)	.33 (82)	.24 (60)
	4400	2075	.16 (40)	.18 (45)	.05 (12)	.54 (134)	.44 (109)	.37 (92)	.27 (67)
	4600	2170	.17 (42)	.20 (50)	.06 (15)	.60 (149)	.49 (122)	.42 (104)	.31 (77)
	4800	2265	.18 (45)	.22 (55)	.07 (17)	.65 (162)	.53 (132)	.46 (114)	.35 (87)
	5000	2360	.19 (47)	.24 (60)	.09 (22)	.69 (172)	.58 (144)	.50 (124)	.39 (97)
	5200	2455	.20 (50)	.27 (67)	.10 (25)	.75 (186)	.62 (154)	.54 (134)	.43 (107)
GCS16-150	4200	1980	.17 (42)	.18 (45)	.06 (15)	.22 (55)	.19 (47)	.16 (40)	.10 (25)
	4400	2075	.18 (45)	.20 (50)	.07 (17)	.28 (70)	.24 (60)	.20 (50)	.12 (30)
	4600	2170	.20 (50)	.21 (52)	.07 (17)	.34 (85)	.29 (72)	.24 (60)	.15 (37)
	4800	2265	.21 (52)	.23 (57)	.08 (20)	.40 (99)	.34 (85)	.29 (72)	.19 (47)
	5000	2360	.22 (55)	.26 (65)	.08 (20)	.46 (114)	.39 (97)	.34 (85)	.23 (57)
	5200	2455	.24 (60)	.31 (77)	.09 (22)	.52 (129)	.44 (109)	.39 (97)	.27 (67)
	5400	2550	.25 (62)	.34 (85)	.10 (25)	.58 (144)	.49 (122)	.43 (107)	.31 (77)
	5600	2640	.26 (65)	.38 (94)	.12 (30)	.64 (159)	.54 (134)	.47 (117)	.35 (87)
	5800	2735	.28 (70)	.40 (99)	.13 (32)	.70 (174)	.59 (147)	.51 (127)	.39 (97)

Ceiling Diffuser Air Throw Data

Model No.	Air Volume		Effective Throw Range			
			RTD11 Step-Down		FD11 Flush	
	cfm	L/s	ft	m	ft	m
GCS16-072 GCS16-090	2625	1240	24 - 29	7 - 9	22 - 26	7 - 8
	3000	1415	27 - 33	8 - 10	25 - 30	8 - 9
	3375	1595	30 - 37	9 - 11	28 - 34	9 - 10
	3750	1770	34 - 41	10 - 12	31 - 38	9 - 12
GCS16-120	4400	2075	34 - 42	10 - 13	32 - 40	10 - 12
	4950	2335	38 - 47	12 - 14	36 - 45	11 - 14
	5500	2595	43 - 52	13 - 16	40 - 50	12 - 15
GCS16-150	4200	1980	39 - 46	12 - 14	40 - 48	12 - 15
	5000	2360	41 - 50	12 - 15	43 - 52	13 - 16
	5800	2735	43 - 52	13 - 16	45 - 54	14 - 16

¹Throw is the horizontal or vertical distance an airstream travels on leaving the outlet or diffuser before the maximum velocity is reduced to 50 ft. (15 m) per minute. Four sides open.

Guide Specifications

Prepared for the guidance of architects, consulting engineers, mechanical contractors, and dealers.

General - Furnish and install single package combination air to air DX mechanical cooling system and gas fired heating 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 area intended for use.

The installed weight shall not be more than.....lbs. (kg). Entire unit shall have a width of not more than.....inches (mm), a depth of not more than.....inches (mm) and an overall height of not more than.....inches (mm). The equipment shall be shipped completely factory assembled, precharged, piped and wired internally ready for field connections. In addition, manufacturer shall test operate system at the factory before shipment.

Air Distribution - Equipment shall be capable of bottom (downflow) or side (horizontal) handling of conditioned air. All air distribution ducts shall be fiberglass orga. galvanized steel insulated withinch (mm) thicklb./ft.³ (kg/m³) density fiberglass or equivalent.

Approvals - All electrical components shall have U.L. and C.S.A. Listing. All wiring shall be in compliance with NEC and CEC.

Equipment Warranty - Heat exchangers shall have a limited warranty for a full ten years. Compressors have a limited warranty for a full five years. All other components have a limited warranty for one year. Refer to the Equipment Limited Warranty certificate included with the unit for details.

Cooling System - The total certified cooling capacity shall not be less than.....Btuh (kW) with an evaporator air volume ofcfm (L/s), an entering wet bulb air temperature of°F (°C), an entering dry bulb air temperature of°F (°C) and a condenser entering temperature of°F (°C). The compressor power input shall not exceedkW at these conditions.

The coils shall be nonferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested. Coil face area shall be not less thansq. ft. (m²) (evaporator) andsq. ft. (m²) (condenser). Condenser coil shall be formed coil construction.

Compressor shall be resiliently mounted, have overload protection. The refrigeration system shall have suction and liquid line service gauge ports, high pressure switches (072/090 only), driers, freestats and full refrigerant charge. Control option available shall consist of low ambient controls. Shall be rated in accordance with ARI Standard 210/240-94 (072/090/120), ARI Standard 340/360-93 (150).

Heating System - The heating capacity output shall be Btuh (kW) with a gas input of Btuh (kW).

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 controls and automatic redundant dual gas valve with staging control (072) or centrifugal switch (090/120/150) on induced draft blower. Unit shall be available for use with LPG/Propane as an option. Complete service access shall be provided for controls and wiring. Shall be A.G.A./C.G.A. design certified for outdoor installation.

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. Shall have peep hole with cover for flame viewing of burners. Evaporator coil condensate drain extended outside cabinet shall be provided. Lifting brackets shall be provided for rigging. Bottom power entry shall be optional.

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

Supply Air Blowers - Centrifugal supply air blower shall have permanently lubricated sleeve bearings and adjustable belt drive. Motor mount base shall permit ease of motor changeover and belt tension adjustment. Blower wheel shall be statically and dynamically balanced with ball bearings. Blower shall be capable of deliveringcfm (L/s) at an external static pressure ofinches water gauge (Pa) requiringbhp (W) andrpm.

Condenser Fan(s) - Direct drive propeller type condenser fan(s) shall discharge vertically and be direct driven by ahp (W) motor. Fan motor shall have ball bearings and be permanently lubricated and inherently protected. Fan(s) shall have a safety guard.

Air Filters - Disposable filters furnished shall have not less thansq. ft. (m²) of free area.

Optional Accessories

Roof Mounting Frame - Furnish and 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 the roofing contractor. RMF16 frame shall be approved by U.S. National Roofing Contractors Association.

Economizer Damper Section - Furnish and install complete with recirculated air dampers, outside air dampers, air filters, damper actuator and controls. Low leakage dampers shall ride in nylon bearings. Downflow economizer shall have gravity exhaust. The economizer section shall provide for the introduction of 100% outdoor air for minimum ventilation and free cooling. Integrated economizer cycle shall allow compressors to cycle for dehumidification and additional cooling, as needed, with 100% outdoor air intake. Damper actuator shall be 24 volt, fully modulating spring return. Controls shall include fixed 55°F (13°C) mixed air controller, damper actuator, adjustable minimum position switch and solid-state adjustable outdoor air enthalpy control. Cabinet shall be galvanized steel with a powdered enamel paint finish electrostatically bonded to the metal. Control option shall consist of differential enthalpy control (return air sensor).

Gravity Exhaust Dampers - Optional pressure operated dampers shall be available for field installation in EMDH16 horizontal economizer damper section. Neoprene coated fiberglass dampers shall prevent blow-back and outdoor air infiltration during off cycle. Shall be equipped with rainhoods and bird screen. Shall be furnished with downflow economizer.

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

Horizontal Supply & Return Air Kit - Optional kit shall provide necessary cabinet parts to field convert unit for side (horizontal) supply and return air duct connections.

Ceiling Diffusers - Furnish and install a (flush or stepdown) optional combination ceiling supply and return air diffuser. It shall be capable of not less thanft. (m) radius of effective throw. Supply and return transitions shall be available, for field installation in the roof mounting frame, to provide duct connection to the diffuser.

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.

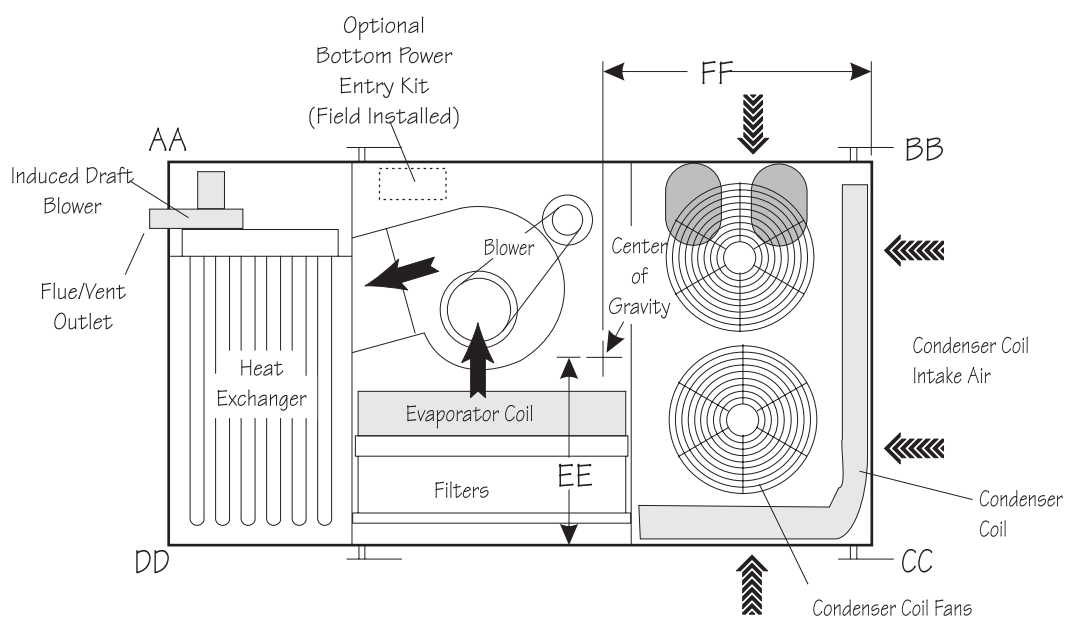
Basic Unit Dimensions - Inches (mm)

Corner Weights

Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
GCS16-072	198	90	196	89	182	83	184	83
GCS16-090	236	107	283	128	194	88	162	69
GCS16-120	276	125	311	141	268	122	245	111
GCS16-150	292	132	337	153	303	137	269	122

Center of Gravity

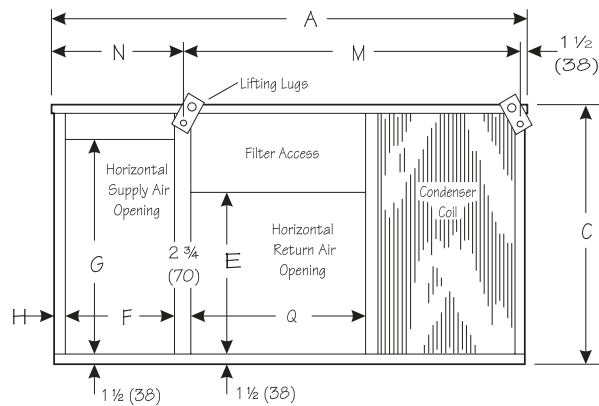
Model Number	EE		FF	
	inch	mm	inch	mm
GCS16-072	28	711	44 1/4	1124
GCS16-090	28 1/2	724	40	1016
GCS16-120	37	940	43 1/2	1105
GCS16-150	35 3/4	908	46 1/2	1181



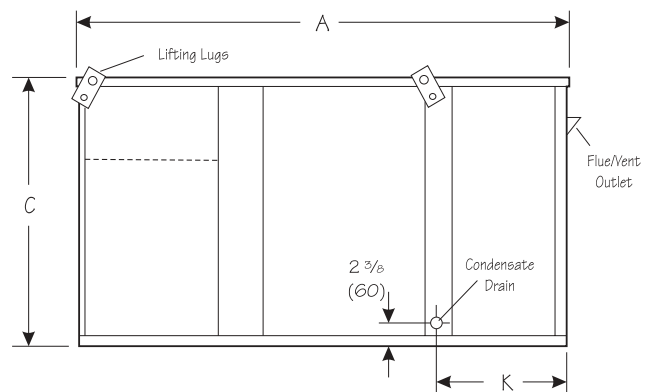
Top View

Model No.	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
GCS16-072-090	88 1/2	2248	48	1219	39	991	16 1/2	419	24 5/8	625	19 7/16	494	32 1/8	816
GCS16-120	94	2388	60	1524	46	1168	24	610	31 5/8	803	25 1/4	641	39 1/8	994
GCS16-150	102	2591	60	1524	46	1168	24	610	31 5/8	803	25 1/4	641	39 1/8	994

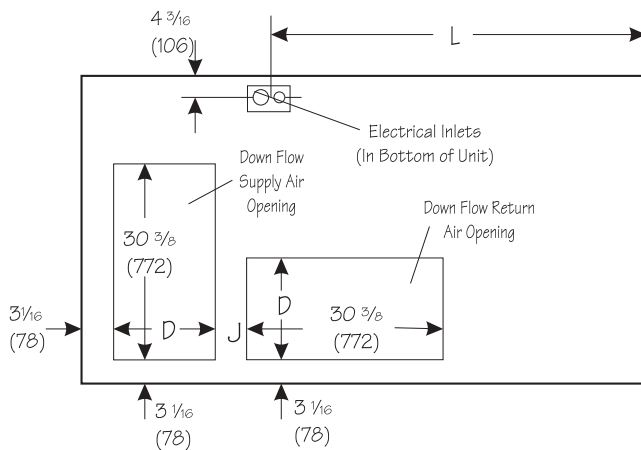
Model No.	H		J		K		L		M		N		P		Q	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
GCS16-072-090	1 5/8	41	5 5/8	143	25	635	54 1/2	1384	64 7/8	1648	22 1/8	562	9 3/4	248	33	838
GCS16-120	2	51	4 7/16	113	31 1/8	791	57 1/2	1461	68	1727	28 1/2	724	14	356	33	838
GCS16-150	2	51	4 7/16	113	31 1/8	791	65 1/2	1664	76	1930	28 1/2	724	14	356	41	1041



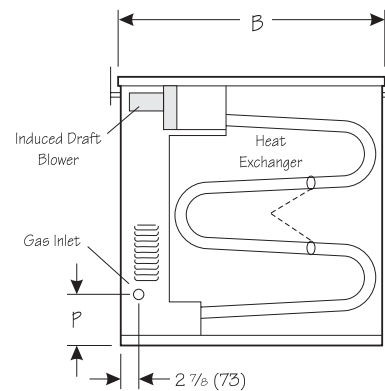
**Back View
w/Horiz. Supply & Return Opening**



Front View



Top View Base Section



Heat Section End View

Accessory Dimensions - inches (mm)

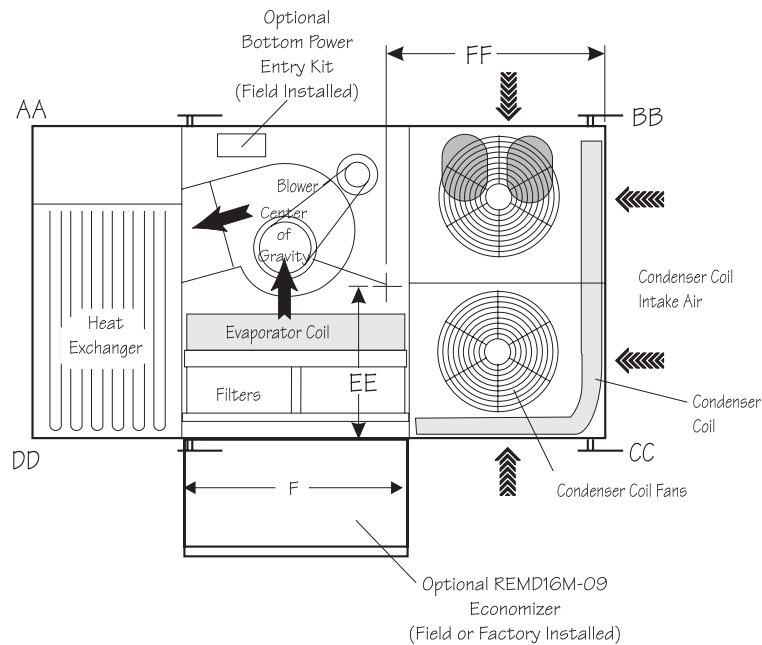
Basic Unit with REMD16M (Downflow) Economizer Damper Section & RMF16 Roof Mounting Frame

Corner Weights

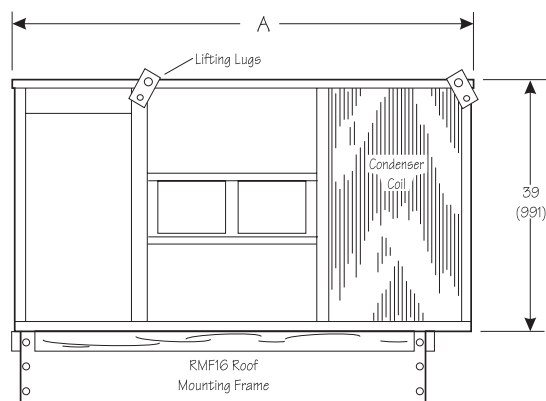
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
GCS16-072	245	111	243	110	217	98	219	99
GCS16-090	268	122	318	144	247	112	208	94
GCS16-120	296	134	333	151	299	136	272	123
GCS16-150	315	143	362	164	336	152	297	135

Center of Gravity

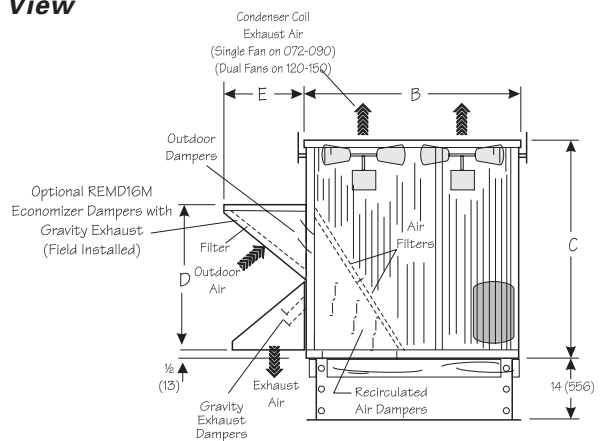
Model Number	EE		FF	
	inch	mm	inch	mm
GCS16-072	30	762	44 1/4	1124
GCS16-090	27	686	40 1/2	1029
GCS16-120	35	889	43 1/2	1105
GCS16-150	33 3/4	857	46 1/2	1181



Top View



Back View



Condenser Section End View

Model No.	A		B		C		D		E		F	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
GCS16-072-090	88 1/2	2248	48	1219	39	991	25 3/4	654	15 1/2	394	32 1/2	826
GCS16-120	94	2388	60	1524	46	1168	33 1/8	841	18 1/4	464	32 1/2	826
GCS16-150	102	2591	60	1524	46	1168	33 1/8	841	18 1/4	464	40 1/2	1029

Accessory Dimensions - inches (mm)

Basic Unit with EMDH16M (Horizontal) Economizer Damper Section

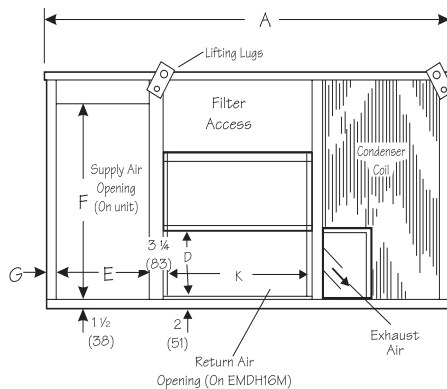
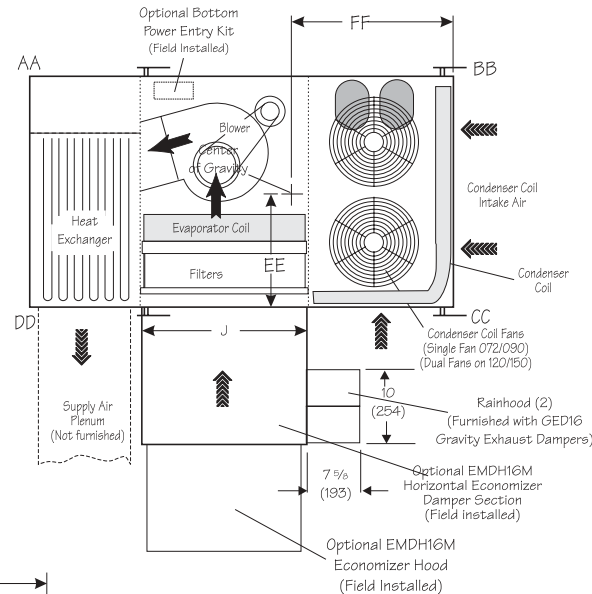
Corner Weights

Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
GCS16-072	215	98	214	97	210	95	211	96
GCS16-090	235	107	273	124	261	118	226	103
GCS16-120	294	133	329	149	302	137	274	124
GCS16-150	312	142	358	162	340	154	300	136

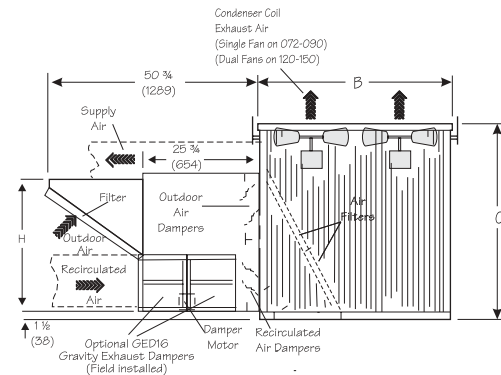
Center of Gravity

Model Number	EE		FF	
	in.	mm	in.	mm
GCS16-072	25	635	44 1/4	1124
GCS16-090	24 1/2	622	41	1041
GCS16-120	34	864	43 1/2	1105
GCS16-150	32 3/4	832	46 1/2	1181

Top View



Back View



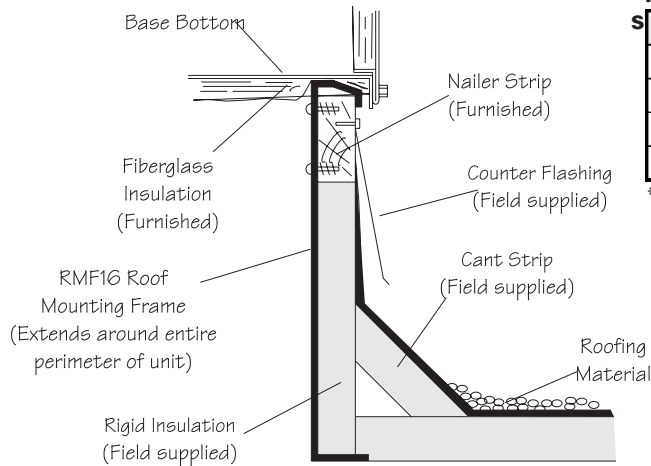
Condenser Section End View

Model No.	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
GCS16-072-090	88 1/2	2248	48	1219	39	991	13 1/4	337	19 7/16	494
GCS16-120	94	2388	60	1524	46	1168	19 1/4	489	25 1/4	641
GCS16-150	102	2591	60	1524	46	1168	19 1/4	489	25 1/4	641

Model No.	F		G		H		J		K	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
GCS16-072-090	32 1/2	816	1 5/8	41	28 3/4	730	32 9/16	827	31 1/2	800
GCS16-120	39 1/8	994	2	51	34 3/4	883	32 9/16	827	31 1/2	800
GCS16-150	39 1/8	994	2	51	34 3/4	883	40 9/16	1030	39 1/2	1003

Accessory Dimensions - inches (mm)

Typical Flashing Detail for RMF16 Roof Mounting Frame



Roof Mounting Frame Specifications

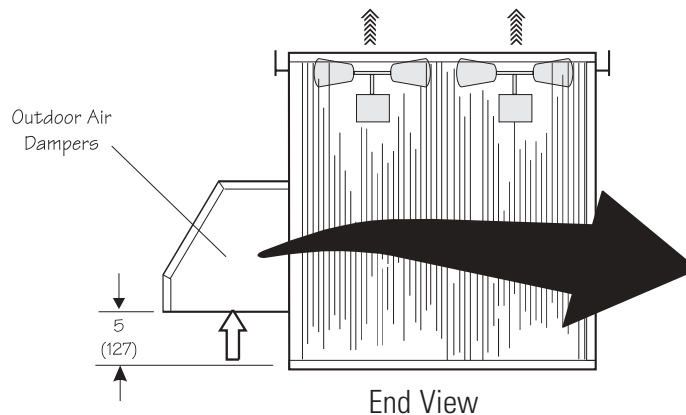
Roof Mounting frame is rigid enough to be spanned over its entire length or cantilevered if

Roof Mounting Frames	RMF16
*Moment of Inertia (I) (in. ⁴) (cm ⁴)	42 (1748)
*Section modulus I/C (in. ³) (cm ³)	5.8 (95)
Maximum weight (lb/ft.) (kg/m) of length	5.5 (8.2)
Design strength (psi) (kPa)	20,000 (137,900)

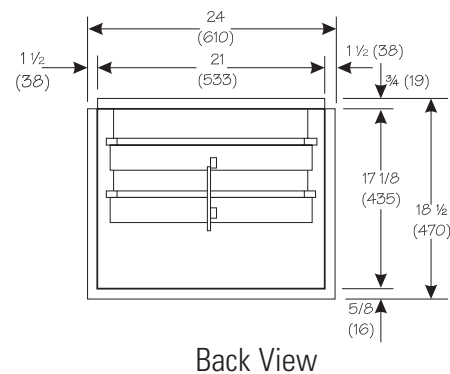
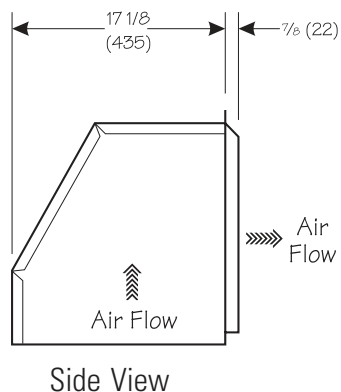
*Includes both sides of frame.

GCS16 Unit with OAD16 Outdoor Air Damper Section Downflow Supply and Return Air

Note- For Horizontal (Side) Supply and Return Air, OAD16 Field Installs on Return Air Duct



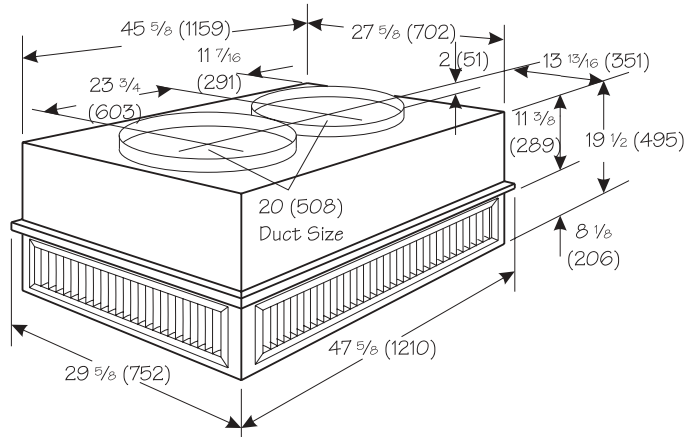
OAD16 Outdoor Air Damper Section



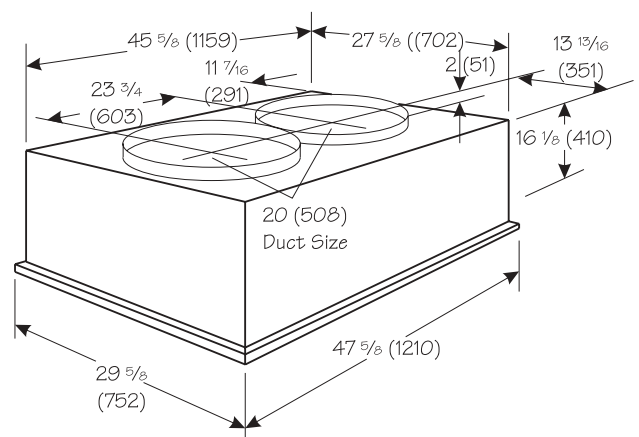
Accessory Dimensions - inches (mm)

Combination Ceiling Supply and Return Air Diffusers

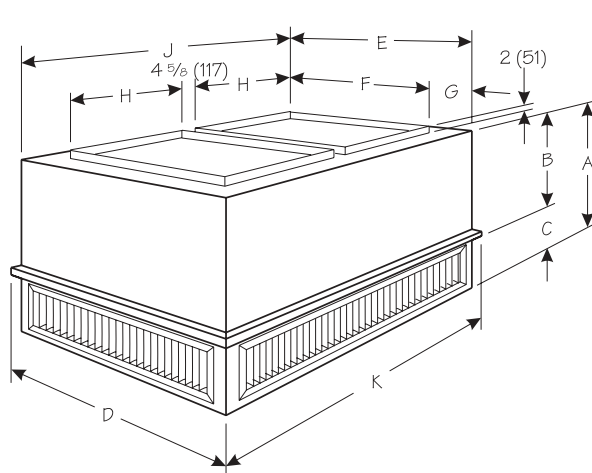
RTD11-95 Step-Down Ceiling Diffuser



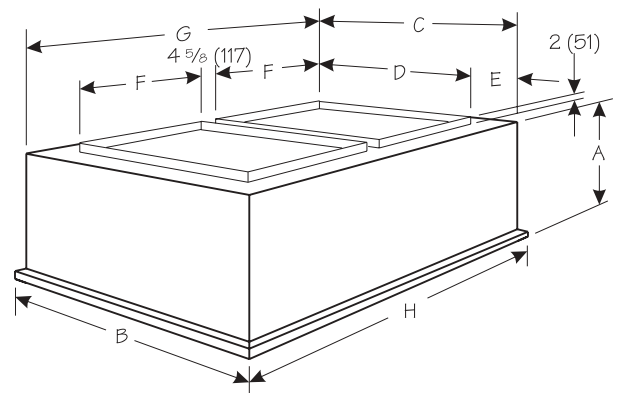
FD11-95 Flush Ceiling Diffuser



RTD11-135 Step-Down Ceiling Diffuser



FD11-135 Flush Ceiling Diffuser



Model Number	A		B		C		D		E	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
RTD11-135	28	711	18 7/8	479	9 1/8	232	35 5/8	905	33 5/8	854

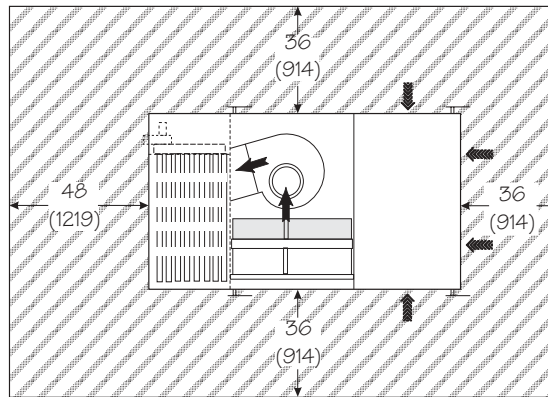
Model Number	F		G		H		J		K	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
RTD11-135	28	711	2 13/16	71	18	457	45 5/8	1159	47 5/8	1210

Model Number	A		B		C		D	
	in.	mm	in.	mm	in.	mm	in.	mm
FD11-135	24 1/8	613	35 5/8	905	33 5/8	854	28	711

Model Number	E		F		G		H	
	in.	mm	in.	mm	in.	mm	in.	mm
FD11-135	2 13/16	71	18	457	45 5/8	1159	47 5/8	1210

Installation Clearances - inches (mm)

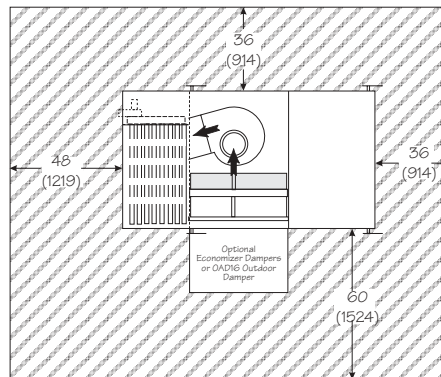
GCS16 Basic Unit



Note - Top clearance unobstructed.

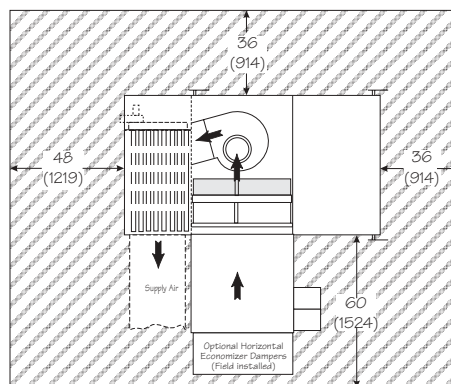
Note - Entire perimeter of unit requires support when elevated above mounting surface.

GCS16 Unit with REMD16M Economizer Damper Section or OAD16 Outdoor Air Damper Section



Note - Top clearance unobstructed.

GCS16 Unit with EMDH16M Horizontal Economizer Damper Section



Note - Top clearance unobstructed.

All specifications are subject to change
without notice.



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