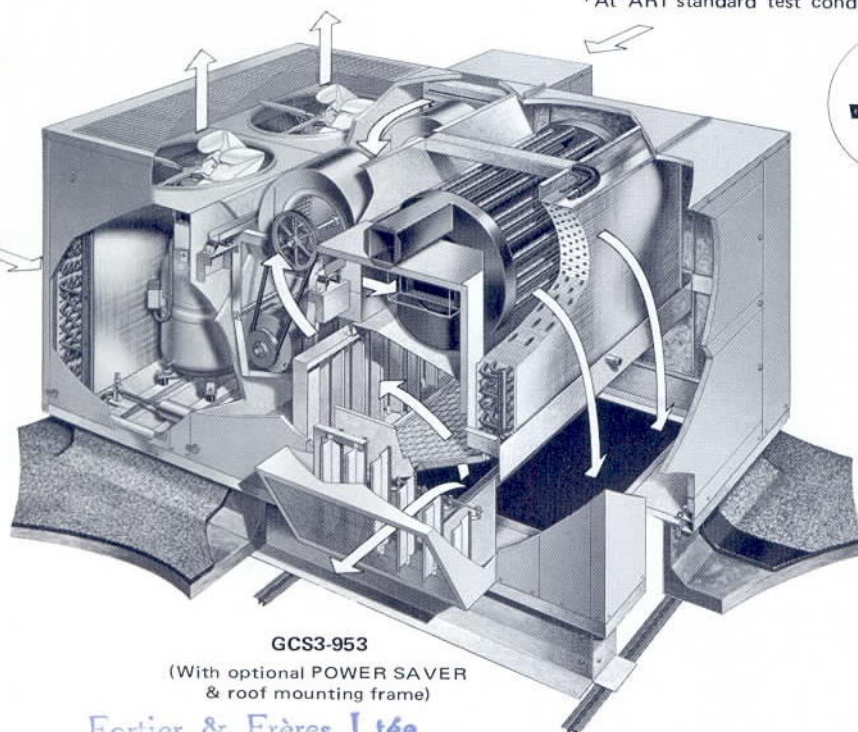


**LENNOX**

# ALL SEASON—DX COOLING & GAS HEATING GCS3 SERIES—HORIZONTAL & DOWN-FLO

†93,000 to 273,000 Btuh Total Cooling Capacity  
250,000 To 500,000 Btuh Input Heating Capacity  
2600 To 10,000 Cfm Air Volume Capacity

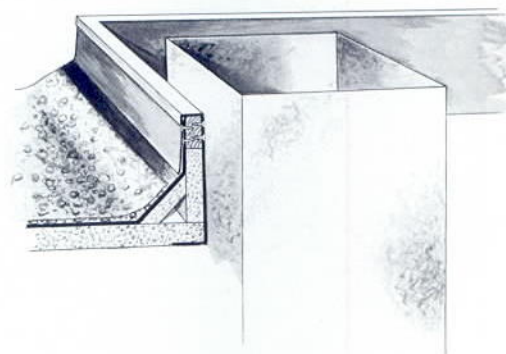
†At ARI standard test conditions.



GCS3-953

(With optional POWER SAVER  
& roof mounting frame)

Fortier &amp; Frères Ltée

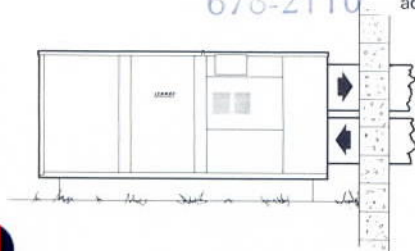
4575, Poul Laurier St-Hubert  
678-2110

Roof Mounting Frame Detail

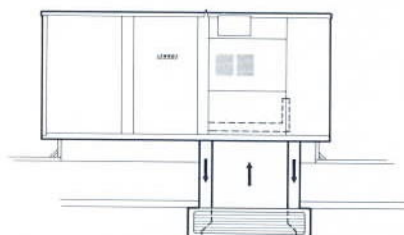
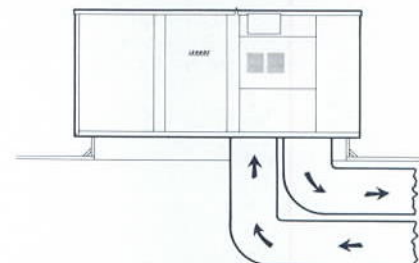
Roof mounting frame extends around entire perimeter of GCS3 base making a weather-proof installation. Duct connection and entry into the conditioned area are accomplished within the confines of the weatherproof frame.

## Three Air Patterns Possible

End panels fit bottom openings to give air pattern choice. Separate adapter required for combination ceiling supply and return applications.



Installation thru the wall—Slab or Roof

Combination Supply and Return Air Ceiling Diffuser  
Step-down or Flush grille

Separate Supply and Return (Double) Duct

## Single Package All-Season Rooftop Unit & Mounting Frame Saves Installation Costs & Floor Space

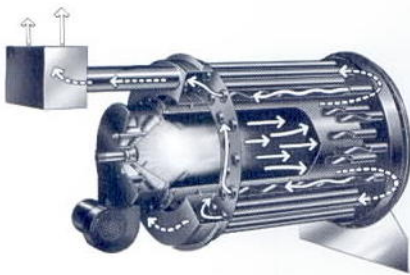
The GCS3 series combination gas fired heating and DX cooling units with bottom handling of conditioned air, are designed primarily for rooftop installation with optional POWER SAVER<sup>™</sup> and RMF3 roof mounting frame. The separate roof frame mates to the bottom of the GCS3 unit and when flashed into the roof permits weatherproof duct connection and entry into the conditioned area. No additional roof curbing or flashing is required. The single package unit can also be installed on a slab at grade level with end handling of conditioned air. The insulated single cabinet houses air cooled DX cooling, gas fired heating, powerful belt drive blowers, air filters and even enough room to receive the optional POWER SAVER dampers which are shipped complete with all controls

NOTE—Specifications, ratings and dimensions subject to change without notice.

wired. The aluminized DURATUBE<sup>™</sup> heat exchanger assures maximum service life and heating efficiency. Gas power burner provides efficient, trouble free operation. Complete factory sealed refrigeration system consists of: compressor(s), condenser coil and fans, evaporator coil, refrigerant drier, refrigerant lines connected and a full refrigerant charge. Optional POWER SAVER equipment and controls reduce cooling costs and satisfy any local code fresh air requirements. Externally mounted fresh air damper (auto or manual) is also available. A combination heating-cooling thermostat is furnished. Units are shipped completely assembled, wired and piped ready to install. Installer has only to set unit, connect duct work, gas supply, power supply and thermostat field wiring connections.

\*T.M. Reg





**DURATUBE Heat Exchanger**—Cylindrical tube and drum construction permits normal heat element expansion and contraction without metal fatigue. Design also results in high input to heat surface ratio, low resistance to air travel and cleanability. All heating element surfaces are constructed of aluminized steel. Flame observation port is located at rear of heat exchanger. Complete access is accomplished through removable rear breeching.

**GCS3-953**—Has a dual stainless steel burner with two separate combustion heads, one head fires when low fire is required while both heads operate for high fire requirements. Separate solenoid valves control gas supply. Single stage operation controlled by one solenoid valve. Intermittent spark ignition for low fire operation. Spark is continuous during main burner operation. High fire ignition is from proven low fire burners. Flame rod sensor with electronic controls assure safe and reliable operation.

**All Other Models**—Have a stainless steel burner with a single combustion head. First stage and second stage operators feed the gas supply to the single combustion head. Pilot flame is lit by an intermittent spark, pilot burns continuously during main burner operation. Electronic flame sensing controls are standard. All controls are tested and listed for operation down to -30F outdoor air temperature. Limit controls and electronic flame proving controls protect heating system from abnormal operating conditions.

**Two-Stage Heating (Natural Gas Only)**—Deluxe wall mounted combination two stage heating and cooling thermostat controls two stage heating operation. The first stage mercury bulb controls the first stage and the unit operates at low fire. If the room temperature drops another 1-1/2 F the second stage heat bulb makes and provides high fire operation.

**Lennox Coils**—Extra large coils (condenser and evaporator) are constructed of ripple edged aluminum fins machine fitted to seamless copper tubes for maximum strength and heat transfer. Coils are pressure leak tested at 450 to 500 psi.

**Dependable Lennox Compressor(s)**—The large casing, spring loaded discharge valve, high suction intake ports and crankcase heater result in effective "slugging" protection. Crankshaft is statically and dynamically balanced and has patented 3 mode oil pumping for positive pressure lubrication. Contoured piston for increased volumetric efficiency. 17 strategically located discharge mufflers result in extremely quiet operation. Motor is located within refrigerant flow pattern resulting in low motor winding temperatures. Twin internally mounted motor in-winding temperature sensing thermostats and a discharge gas temperature sensing thermostat provide safe operation. In addition a low ambient cut-out thermostat prevents compressor operation below 22°F. The entire running gear assembly is spring mounted.

**GCS3-953 & GCS3-1353** have a single Lennox L2 compressor in a single refrigeration system giving single stage cooling operation.

**GCS3-1853 & GCS3-2753** models have twin Lennox L2 compressors in separate refrigeration systems and two stage operation is controlled by the two stage cooling thermostat furnished.

**Efficient Condensing Section**—Direct drive fans pull large air volumes through the extra large condenser coil(s) and discharges the air out the top. Condenser discharge grille is furnished.

**Powerful Blowers**—Twin resiliently mounted blowers deliver large air volumes with low power consumption. Rugged blower motor support allows quick belt adjustment and motor change over. Temperature protection device (manual reset), installed in scroll, prevents burner operation in case of excessive temperature in the heat section.

**Rugged Cabinet**—Heavy gauge galvanized hot dipped steel cabinet panels. A five station wash metal preparation assures a perfect bonding surface for the finish coat of baked outdoor enamel. Large removable panels provide complete service access to interior.

**Thick Interior Insulation**—All of the interior panels where conditioned air is handled are lined with thick fiberglass insulation. In addition the entire bottom of unit is insulated with thick fiberglass insulation on the 953 and 1353 models and polystyrene on the 1853 and 2753 models.

**Cleanable Air Filter**—1" frame filters are furnished as standard. Media is washable or vacuum cleanable polyurethane. It is easily accessible for cleaning and is coated with oil for increased efficiency. Use RP products filter coating No. 418 when reoilng. Filter rack will receive 2" filters.

**Heating-Cooling Thermostat Furnished**—Combination single or two stage heat and single or two stage cool thermostat has temperature setting dial, system selector switch and blower selection switch for intermittent or continuous blower operation.

**Optional Nite Setback Controls**—A nite thermostat (P-8-8899), subbase (P-8-8890) and adaptor plate (P-8-8954) (to adapt to vertical outlet box) is available. Two nite setback kits are available: BM-4762 includes a manual nite setback switch and stainless steel mounting plate. Kit BM-4761 includes a manual set 12 hour nite setback timer and a stainless steel mounting plate. Mounting plate mounts to two standard electrical outlet boxes, furnished by installer, located within the wall. In order to receive the plate, sufficient clearance should be provided between outlet box and any door or window. A skip-day clock (P-8-3744) to program this unit automatically is also available. Clock is required with kit (BM-4761) and is optional kit (BM-4762).

**Optional Remote Readout Panel**—Readout Panel (BM2-5358) and Rough-In Box (BM1-5358) must be ordered extra. See bulletin (page 71) is Accessories Section for complete data. When panel is used for nite setback operation the following controls must be used and ordered extra; nite thermostat (P-8-8899), subbase (P-8-8890), adaptor plate (P-8-8954) and skip-day clock (P-8-3744).

**Optional Supply and Return Duct**—Provides connection of combination supply and return diffuser. Furnished in nominal 4 ft. lengths and constructed of 1" thick fiberglass duct board with an aluminum exterior. Shipped knocked down with the tape, staples and instructions for field assembly. See Accessory table for order no. and mounting detail drawings for sizes.

**Optional Combination Supply and Return Diffusers**—Lennox offers two different styles of air diffusers. The RTD step down model extends below ceiling level and the FD model is almost flush with the ceiling when installed. Supply air is discharged through the outside grilles and return air enters through the center grille on both models. Adjustable vanes are available on both models for air distribution.

**Optional Power Saver (Fresh Air)**—Mounts internally and GCS3 control system has "plug-in" electrical connections to handle operation. The Lennox POWER SAVER system consists of: Mechanically linked outdoor air, recirculated air and exhaust air dampers. The positioning of these dampers is accomplished by a Lennox 24 volt, spring return multi-position damper motor and controlled by the room thermostat, adjustable mixed air temperature controller, adjustable compressor monitor, adjustable outdoor air monitor and a climate selection switch. It is completely factory wired, simply make plug-in connections. The two damper sections simply slide into cavities provided in GCS3 cabinet. The fresh air intake section is furnished with cleanable polyurethane air filters. See accessories table for ordering.

**Optional Minimum Fresh Air Damper**—Externally mounted fresh air damper section complete with cleanable polyurethane air filters is available. See the accessories table. It can be either manually or automatically controlled with the addition of a damper motor.

**Optional Roof Mounting Frame**—Durable and serviceable frame is 13 inches high. It sets on the roof support members and is actually built into the roof structure. The top mates to the GCS3 base. A securing bolt kit (BM-6909), containing bolts to secure unit to frame, is available as optional equipment and must be ordered extra.

**Optional AF4 Adaptor Frame**—Required for heating-cooling down-flow applications where supply duct enters through combustible deck. See accessories table for ordering data.

**Optional Low Ambient Controls**—System will operate satisfactory down to 35F outdoor air temperature without additional controls. If air conditioning operation is required at outdoor air temperatures colder than 35F a field installed low ambient control kit is required. See accessories table for ordering data.

**Optional Hot Gas Bypass Kit**—GCS3-953 and 1353 models only. Contains necessary valves and fittings for adding hot gas bypass to refrigeration system. See accessories table for ordering data.

**Thoroughly Tested And Approved**—C.G.A. approved as a combination heating-cooling unit for outdoor installation. Complies with ANSI safety codes. The cooling system has been thoroughly tested and rated in the Lennox environmental test room according to ARI Standard 210 and listed by C.S.A. as certified. In addition the GCS3-953 and 1353 models have been sound tested in the Lennox reverberant sound test room and rated according to ARI Standard 270. Laboratory life cycle testing of the heat exchanger proves long life of heating element. Each unit is test operated at the factory.



## ACCESSORIES

Accessory Description	Accessory Order No. & Net Weight (lbs.)			
	GCS3-953	GCS3-1353	GCS3-1853	GCS3-2753
POWER SAVER and No. & size of filters (in.)	RD3-95 (205 lbs.) (2) 20 x 25 x 1	RD3-135 (269 lbs.) (4) 16 x 25 x 1	RD3-185 (365 lbs.) (3) 20 x 36 x 1	RD3-275 (426 lbs.) (4) 20 x 36 x 1
Minimum fresh air damper and No. & size of filters (in.)	OAD3-95 (45 lbs.) (1) 16 x 20 x 1	OAD3-135 (60 lbs.) (1) 20 x 20 x 1	OAD3-185 (90 lbs.) (1) 25 x 27 x 1	OAD3-275 (90 lbs.) (1) 26 x 31 x 1
Automatic Kit for OAD3 Damper	BM-5563-9 lbs.	BM-5563-9 lbs.	BM-5563-9 lbs.	BM-5563-9 lbs.
RP2-1 Remote Readout Panel	BM2-5358-5 lbs.	BM2-5358-5 lbs.	BM2-5358-5 lbs.	BM2-5358-5 lbs.
RP00-1 Rough-in Box	BM1-5358-1 lb.	BM1-5358-1 lb.	BM1-5358-1 lb.	BM1-5358-1 lb.
Remote Readout Panel Kit	BM-5817-2 lbs.	BM-5817-2 lbs.	BM-5817-2 lbs.	BM-5817-2 lbs.
Low Ambient Control Kit	BM-7803-8 lbs.	BM-7803-8 lbs.	BM-7802-8 lbs.	BM-7802-8 lbs.
Hot Gas Bypass Kit	BM-4310-10 lbs.	BM-4311-10 lbs.	----	----
Roof Mounting Frame	RMF3-95-115 lbs.	RMF3-135-160 lbs.	RMF3-185/275-210 lbs.	RMF3-185/275-210 lbs.
Combustible Deck Adaptor	AF4-95-14 lbs.	AF4-135-16 lbs.	AF4-185/275-20 lbs.	AF4-185/275-20 lbs.
Combination Supply & Return Air Duct	RTD Diffuser	BM-7829-52 lbs.	BM-7831-46 lbs.	BM-7832-65 lbs.
	FD Diffuser	BM-7828-54 lbs.	BM-7830-60 lbs.	BM-7833-97 lbs.
Combination Ceiling Supply and Return Kit	BM-3564-20 lbs.	BM-3565-29 lbs.	BM-3566-40 lbs.	BM-3567-43 lbs.
Combination Ceiling Supply And Return Step Down Diffuser	RTD-95-92 lbs.	RTD-135-118 lbs.	RTD-185/275-131 lbs.	RTD-185/275-131 lbs.
Combination Ceiling Supply And Return Flush Diffuser	FD-95-33 lbs.	FD-135-49 lbs.	FD-185-65 lbs.	FD-275-105 lbs.
	*FD-95-D-40 lbs.	*FD-135-D-60 lbs.	*FD-185-D-80 lbs.	*FD-275-D-135 lbs.
**Service Enclosure	SE1-66-300 lbs.	SE1-66-300 lbs.	SE1-87-344 lbs.	SE1-87-344 lbs.

\* Flush diffuser with adjustable baffle blades.

\*\* See bulletin (Page 25a) in Accessories section for complete data.

## SPECIFICATIONS

Model No.		GCS3-953-250	GCS3-1353-350	GCS3-1853-500	GCS3-2753-500
Single Stage Heating Capacity Propane Gas	Btuh Input	250,000	350,000	500,000	500,000
	Btuh Output	187,500	262,500	375,000	375,000
Two Stage Heating Capacity Nat. Gas Only	Btuh Input (low)	125,000	200,000	275,000	275,000
	Btuh Input (high)	250,000	350,000	500,000	500,000
	Btuh Output (high)	187,500	262,500	375,000	375,000
Cooling Capacity @ARI Standard Conditions	Total capacity (Btuh)	93,000	130,000	200,000	273,000
	Total unit watts	12,500	17,100	25,000	35,500
	Dehumidifying capacity	29%	25%	29%	26%
Refrigerant charge (R-22)		19 lbs.	24 lbs. 8 oz.	40 lbs.	48 lbs.
Blower wheel nominal diameter x width (in.)		(2)-12 x 6	(2)-15 x 9	(2)-15 x 11	(2)-15 x 15
Blower Motor Hp. See Drive Table	Minimum	2	3	3	5
	Maximum	3	5	5	7-1/2
Condenser Coil	Net face area (sq. ft.)	10.38	14.32	(2)-10.75	(2)-12.15
	Tube diam. (in.) & No. of rows	1/2-4	1/2-4	1/2-4	1/2-6
	Fins per inch	13	13	13	13
Condenser Fan	Diam. (in.) & No. of blades	(2) 22-4	(2) 22-4	(2) 25-1/2-6	(2) 25-1/2-6
	Air volume (cfm)	6400	8000	13,500	13,250
	Motor hp	(2) 1/2	(2) 3/4	(2) 1	(2) 1
	Watts input (total)	1000	1560	2820	2500
Evaporator Coil	Net face area (sq. ft.)	7.70	9.35	(2) 7.67	(2) 8.75
	Tube diam. (in.) & No. of rows	1/2-4	1/2-4	1/2-4	1/2-4
	Fins per inch	10	13	10	13
†No. & size of filters (in.)		(1) 20 x 25 x 1 (2) 16 x 25 x 1	(6) 16 x 20 x 1	(4) 16 x 20 x 1 (4) 20 x 20 x 1	(8) 20 x 20 x 1
Gas supply connection MPT (in.)	Natural	3/4	1	1-1/4	1-1/4
	Propane	3/4	3/4	1	1
Recommended gas supply pressure wc (in.)	Natural	6	6	6	6
	Propane	11	11	11	11
Condensate drain size MPT (in.)		3/4	3/4	1-1/4	1-1/4
Net weight of basic unit (lbs.)		1693	2251	3225	3665

\* Rated in accordance with ARI Standard 210; 450 cfm evaporator air volume per ton of cooling capacity, 95F outdoor air temperature and 80db/67 wb entering evaporator air.

† Cleanable polyurethane filter media.

NOTE—High altitude de-rate—C.G.A. requires gas furnaces be derated 4% per thousand feet above sea level when the installation is at an altitude of 2,000 feet or more. Thus an installation at 3,000 feet altitude requires a derate of 12%, while up to 2,000 feet altitude the unit has a full rating.

**Climatisation Fortier & Frères Ltée**



## RATINGS

Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
	Entering Wet Bulb Degrees (F)	Total Air Volume (Cfm)	85			95			105			115		
			Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Watts Input
GCS3-953	63	3000	95,000	.85	8,500	89,700	.88	9,100	84,300	.91	9,800	79,500	.93	10,700
		3375	96,800	.87	8,600	91,200	.91	9,200	85,800	.94	9,900	80,880	.97	10,800
		3750	98,400	.90	8,700	92,700	.93	9,300	87,200	.96	10,000	82,100	.99	10,900
	67	3000	102,200	.68	8,900	96,600	.69	9,500	91,200	.72	10,300	86,000	.73	11,100
		3375	104,200	.70	9,000	98,500	.71	9,600	92,800	.73	10,400	87,600	.75	11,300
		3750	106,000	.71	9,100	101,000	.72	9,700	94,400	.75	10,500	89,000	.77	11,400
	71	3000	109,700	.53	9,300	103,800	.54	9,900	98,300	.55	10,700	92,800	.56	11,600
		3375	112,000	.53	9,400	106,000	.54	10,000	100,200	.56	10,800	94,700	.57	11,700
		3750	113,900	.54	9,500	107,700	.55	10,100	101,800	.57	10,900	96,200	.58	11,800
GCS3-1353	64	4400	133,000	.84	12,150	127,000	.86	12,900	120,500	.89	13,750	112,000	.92	14,850
		4950	136,000	.87	12,300	129,000	.90	13,000	123,000	.92	13,850	114,000	.96	14,950
		5500	137,500	.90	12,400	131,000	.93	13,150	124,000	.96	13,950	115,500	1.00	15,050
	67	4400	141,000	.71	12,600	134,000	.72	13,350	127,000	.74	14,150	118,500	.77	15,300
		4950	143,500	.73	12,750	136,000	.75	13,500	129,000	.77	14,300	120,500	.80	15,400
		5500	144,500	.76	12,850	138,500	.77	13,650	131,000	.80	14,400	123,000	.82	15,500
	70	4400	148,500	.58	13,000	141,500	.59	13,850	134,000	.61	14,550	125,000	.63	15,700
		4950	151,000	.60	13,150	144,000	.61	14,000	136,000	.63	14,700	127,000	.65	15,800
		5500	154,000	.62	13,300	146,500	.63	14,150	139,000	.64	14,850	129,000	.67	15,900
GCS3-1853	63	6000	191,600	.84	17,000	181,400	.86	18,400	170,800	.90	19,900	160,100	.93	21,300
		6750	195,500	.87	17,100	185,000	.90	18,600	174,000	.93	20,100	162,900	.96	21,500
		7500	199,100	.89	17,300	188,300	.92	18,800	177,100	.95	20,300	165,700	.98	21,600
	67	6000	206,600	.67	17,800	195,800	.69	19,300	184,600	.71	20,800	173,100	.73	22,200
		6750	210,900	.69	18,000	199,800	.71	19,500	188,200	.73	21,000	176,300	.75	22,400
		7500	214,900	.71	18,200	203,400	.72	19,700	191,300	.74	21,200	179,200	.76	22,600
	71	6000	222,200	.52	18,600	210,600	.53	20,200	198,300	.54	21,600	186,100	.55	23,000
		6750	226,400	.53	18,900	214,500	.54	20,400	201,800	.55	22,000	189,100	.56	23,200
		7500	230,400	.54	19,100	218,100	.55	20,600	205,000	.56	22,000	192,000	.56	23,500
GCS3-2753	63	8800	261,000	.89	25,100	248,000	.92	26,600	235,000	.94	28,100	222,000	.98	30,000
		9900	266,500	.92	25,300	252,500	.95	26,800	239,200	.97	28,400	225,500	1.00	30,300
	67	8800	282,600	.70	26,000	268,000	.72	27,700	254,000	.74	29,400	239,400	.76	31,500
		9900	288,500	.73	26,400	273,000	.75	28,000	258,000	.76	29,700	242,700	.78	31,800
	71	8800	304,500	.54	27,300	288,000	.55	29,000	272,000	.56	30,800	255,800	.58	32,900
		9900	309,800	.55	27,600	292,600	.56	29,300	276,000	.58	31,200	259,500	.59	33,200

## ELECTRICAL DATA

Model No.		GCS3-953						GCS3-1353						GCS3-1853						GCS3-2753									
Line voltage (60 Hertz—3 phase)		208/240	440/480	550/600	208/240	440/480	550/600	208/240	440/480	550/600	208/240	440/480	550/600	208/240	440/480	550/600	208/240	440/480	550/600	208/240	440/480	550/600							
Compressor (s)	FLA (total)	31.8	14.6	11.7	42.8	22.8	16.5	63.6	29.2	23.4	85.6	41.2	33.0																
	LRA (total)	185.0	93.0	76.0	240.0	128.0	92.0	370.0	186.0	152.0	480.0	256.0	184.0																
	Power factor	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85	.85																
Condenser	FLA (total)	6.0	*3.0	*2.4	7.6	*3.8	*2.0	8.6	4.3	3.5	8.6	4.4	3.5																
Fan motors (2)	LRA (total)	24.0	24.0	24.0	28.0	28.0	28.0	40.0	20.0	16.0	40.0	20.0	16.0																
Control transformer (FLA)		1.7	**----			**----			1.7	**----			**----			1.7	.80			.70			1.7	.80			.70		
Evaporator	Horsepower	2	3	2	3	2	3	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5	3	5
Blower	FLA	5.6	9.4	2.8	4.7	2.5	3.7	9.4	14.6	4.7	7.3	3.7	6.1	9.4	14.6	4.7	7.3	3.7	6.1	14.6	21.0	7.3	10.5	6.1	8.4				
Motor	LRA	44.0	64.0	22.0	32.0	17.6	25.6	64.0	92.0	32.0	46.0	25.6	36.8	64.0	92.0	32.0	46.0	25.6	36.8	92.0	150.0	46.0	75.0	36.8	60.0				
Maximum unit amps		45.1	48.9	20.4	22.3	16.6	17.8	61.5	66.7	29.1	31.7	23.2	25.6	83.3	88.5	39.0	41.6	31.3	33.7	110.5	116.9	53.7	56.9	43.3	45.6				
Wire size up to 100 ft. of run		6	4	10	10	10	10	3	2	8	8	10	8	1	1	6	6	8	8	0	00	4	4	6	6				
Time delay fuse, fusetrone (amps)		60	60	30	30	25	25	80	90	40	40	30	40	100	100	45	50	40	40	125	150	60	70	50	50				
Maximum allowable fuse (amps)		80	80	35	40	30	30	110	125	50	60	40	45	110	125	50	50	45	45	150	150	70	80	60	60				
Disconnect rating (hp)		20	20	20	20	20	20	30	30	30	30	25	30	40	40	30	40	30	40	50	50	50	50	50	50				

\* Motors are rated at 230v, FLA shown is for step down transformer.

\*\* Not required, control circuit is from step down transformer.

NOTE—All fuses, disconnects and wiring must conform to CEC and local codes.

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

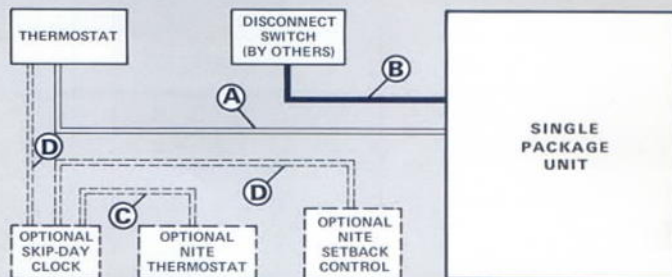
NOTE—If other than time delay fuses are used, the next larger amp rating may be required. Wire sizes are according to CEC for copper conductors.

## FIELD WIRING

- A—Three wire low voltage (Single Stage Cool Only)  
 \*Four wire low voltage (Two Stage Cool Only)  
 (Single Stage Cool and Single Stage Heat)  
 \*Five wire low voltage (Single Stage Cool and Two Stage Heat)  
 (Two Stage Cool and Single Stage Heat)  
 \*Six wire low voltage (Two Stage Cool and Two Stage Heat)

\*If POWER SAVER and Nite Setback controls are used one additional wire is required.

- B—Three wire power (See Electrical Data Table)  
 C—Two wire low voltage  
 D—Two wire low voltage (Without POWER SAVER)  
 Three wire low voltage (With POWER SAVER)

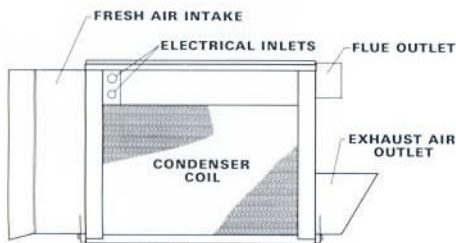


Additional field wiring is not required when POWER SAVER is used. All wiring is provided in GCS3 and in POWER SAVER, simply make plug-in connections to complete job.

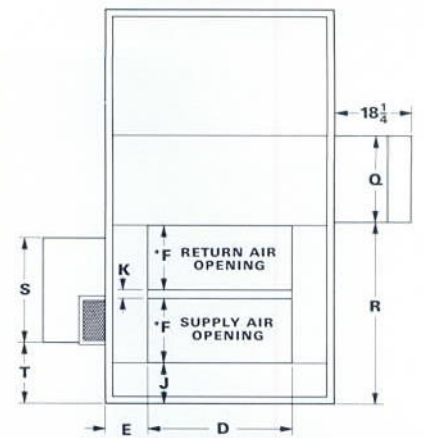
All wiring must conform to CEC and local electrical codes. If local electrical code permits may be class 2 wiring.



## CORNER WEIGHTS (lbs.)

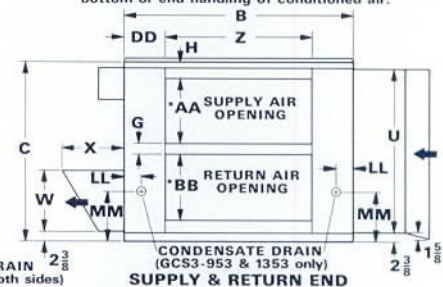
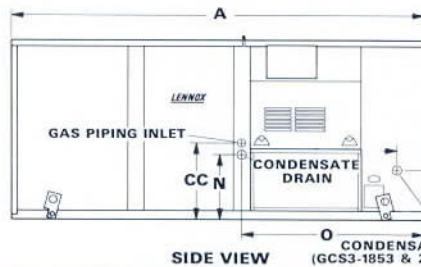


Model No.		EE	FF
GCS3-953	With Power Saver	25	42
	Without Power Saver	23	41
GCS3-1353	With Power Saver	30	49
	Without Power Saver	27	49
GCS3-1853	With Power Saver	42	55
	Without Power Saver	39	54
GCS3-2753	With Power Saver	43 $\frac{1}{2}$	54 $\frac{1}{2}$
	Without Power Saver	40	54



**BOTTOM VIEW (Looking Down)**

\*The air opening panels furnished fit either end or bottom openings to give choice of bottom or end handling of conditioned air.

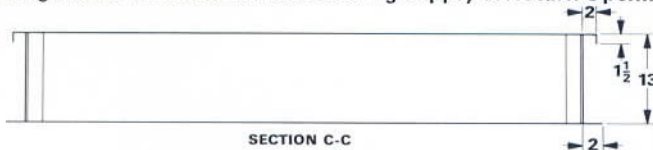


Model No.	A	B	C	D	E	F	G	H	J	K	L	LL	M	MM	N	O	Q	R	S	T	U	W	X	Z	AA	BB	CC	DD
GCS3-953	97	54	44-5/8	34-3/16	9-13/16	16-1/16	2-1/2	4-1/4	10	2	---	3-3/4	---	17-5/8	17-1/2	43-1/4	21	45-1/8	25-7/8	15-1/8	40-3/4	14-7/8	14-5/8	34-3/8	16-3/8	16-3/8	19-1/8	9-13/16
GCS3-1353	117	63	50-5/8	40-1/16	11-5/16	20-1/16	2-1/2	2-1/2	12-5/8	2	---	3-5/16	---	17-1/2	17-5/8	56-7/8	31-1/2	58-7/8	36-1/2	18-3/8	46-3/4	14-7/8	14-5/8	40-3/8	20-3/8	20-3/8	19-5/8	11-5/16
GCS3-1853	137	83	52-5/8	51	16	24	2	1-1/2	12-5/8	3	15-1/2	---	18-1/16	---	18-1/2	66-1/8	37-1/2	68	35-1/2	28-1/2	48-3/4	15-5/16	51-3/8	23-9/16	22-3/16	20-7/8	15-7/8	
GCS3-2753	137	83	62-5/8	51	16	24	6-3/8	2	12-5/8	3	16-3/16	---	22-5/16	---	26-3/4	66-1/8	37-1/2	68	35-1/2	28-1/2	58-3/4	24-1/8	20-1/8	51-3/8	24-3/8	24-3/8	29-1/4	15-7/8

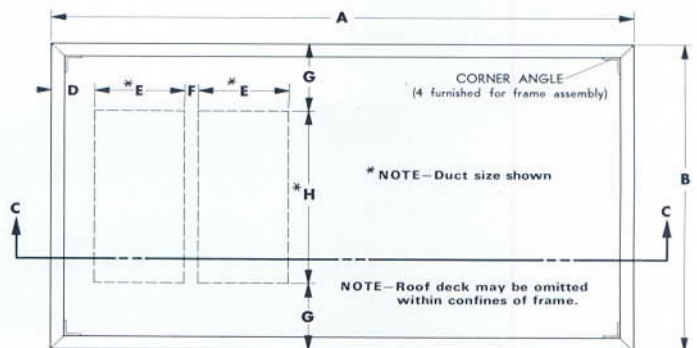
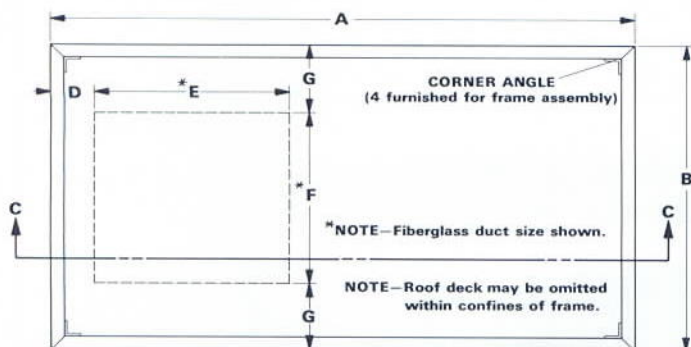
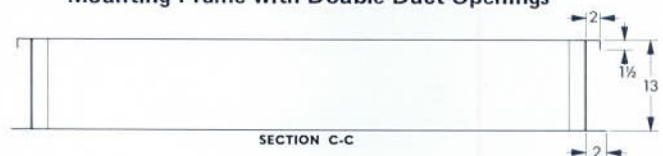
## Frame Specifications

Mounting Frame Height	13 inches
Frame moment of inertia (I)	70 in. <sup>4</sup>
Frame section modulus $\frac{I}{C}$	10.8 in. <sup>3</sup>
Mounting frame weight (foot of length)	5.3
Mounting frame design strength (psi)	20,000

### Mounting Frame with Combination Ceiling Supply & Return Opening



### Mounting Frame with Double Duct Openings

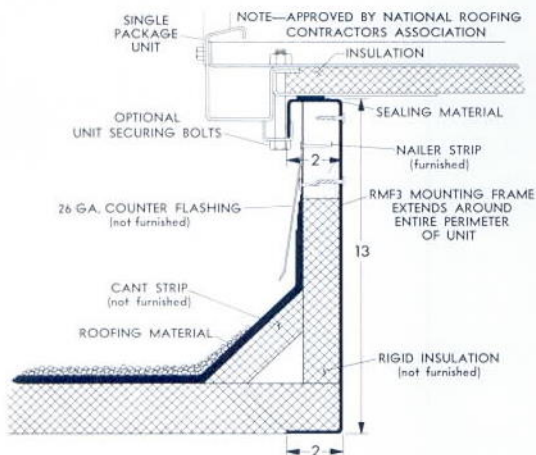


Model No.	Mounting Frame	A	B	Diffuser	D	E	F	G
GCS3-953	RMF3-95	86-3/4	47-3/4	RTD FD	4-7/8 6-1/8	38-1/2 36	38-1/2 36	4-5/8 5-7/8
GCS3-1353	RMF3-135	106-1/4	56-3/4	RTD FD	7-1/2 8-3/4	46-1/2 44	46-1/2 42	5-1/8 7-3/8
GCS3-1853 GCS3-2753	RMF3- 185/275	126-1/2	76-3/4	RTD FD	7 8-5/8	56-1/2 53-1/8	56-1/2 53-1/8	10-1/8 16-7/8

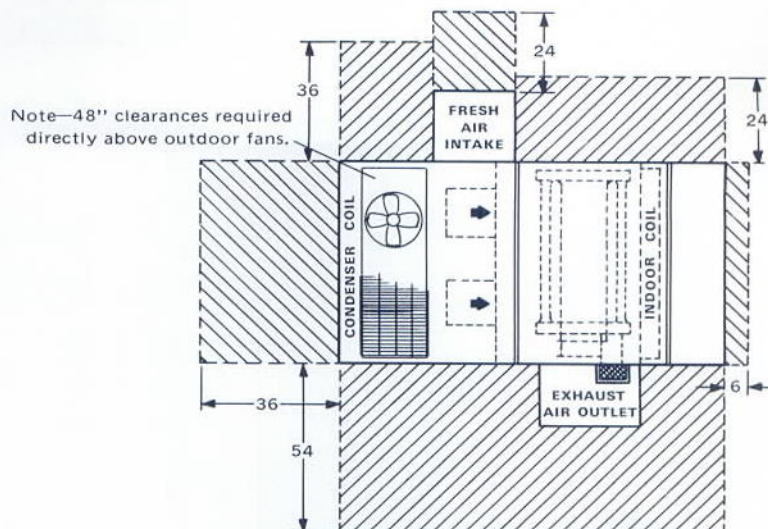
Model No.	Roof Mounting Frame	A	B	D	E	F	G	H
GCS3-953	RMF3-95	86-3/4	47-3/4	7	16	2	6-13/16	34-1/8
GCS3-1353	RMF3-135	106-1/4	56-3/4	9-5/8	20	2	8-3/8	40
GCS3-1853 GCS3-2753	RMF3-185/275	126-1/2	76-3/4	9-5/8	24	3	12-7/8	51



## RECOMMENDED FLASHING FOR RMF3 ROOF MOUNTING FRAME

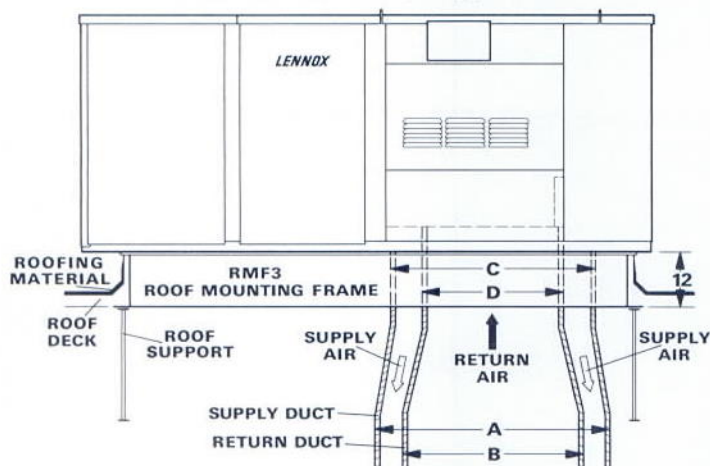


## INSTALLATION CLEARANCES



## COMBINATION CEILING SUPPLY & RETURN AIR DISTRIBUTION SYSTEM

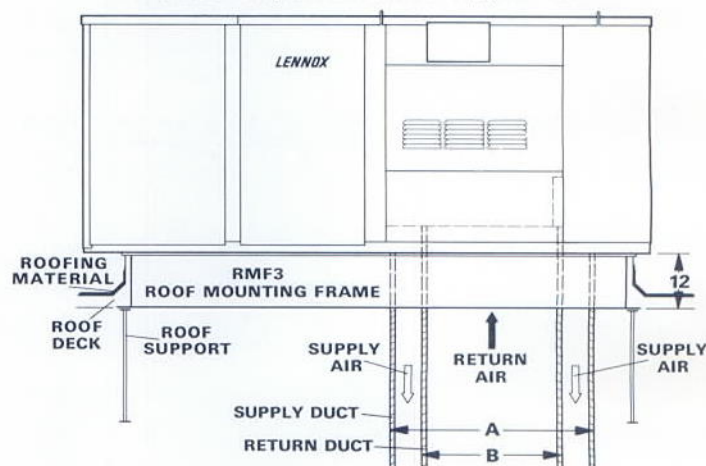
Rooftop Unit With Optional Fiberglass Duct For Flush Diffuser Applications



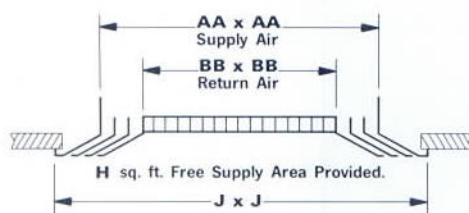
NOTE—GCS3-1853 ducts are straight and do not transition.

NOTE—Supply & Return fiberglass duct is 48" long and may be trimmed to length required for installation.

Rooftop Unit With Optional Fiberglass Duct For Step-down Diffuser Applications



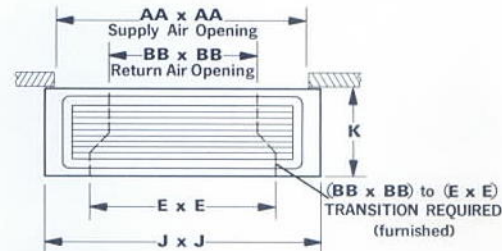
### FD Flush



NOTE—Also available with adjustable baffle blades. Same dimensions as above.

### CEILING DIFFUSERS

### RTD Step-down



(4) F x G Supply Air Grilles Furnished  
(1) E x E Return Air Grille Furnished

Unit Model No.	Optional Fiberglass Duct Package	Supply and Return Air Grille Model No.	A	AA	B	BB	C	D	E	F	G	H	J	K
GCS3-953	BM-7829	RTD-95 step-down	38-1/2	34-1/8	22-7/8	23-1/8	----	----	30	36	6	----	42	10
	BM-7828	FD-95 Flush †FD-95-D Flush	44-1/8	42	30	30	36	22-7/8	----	----	----	6 sq. ft.	46	----
GCS3-1353	BM-7831	RTD-135 step-down	46-1/2	42-1/8x40	28-7/8	29-1/8	----	----	36	36	8	----	48	12
	BM-7830	FD-135 Flush †FD-135-D Flush	50-1/8	48	36	36	*44x42	28-7/8	----	----	----	7 sq. ft.	52	----
GCS3-1853	BM-7832	RTD-185/275 step-down	56-1/2	51	35-7/8	36	----	----	42	48	12	----	60	15
	BM-7834	FD-185 Flush †FD-185-D Flush	53-1/8	51	35-7/8	36	53-1/8	35-7/8	----	----	----	9.06 sq. ft.	55	----
GCS3-2753	BM-7832	RTD-185/275 step-down	56-1/2	51	35-7/8	36	----	----	42	48	12	----	60	15
	BM-7833	FD-275 Flush †FD-275-D Flush	65-1/8	63	45	45	53-1/8	35-7/8	----	----	----	13.50 sq. ft.	67	----

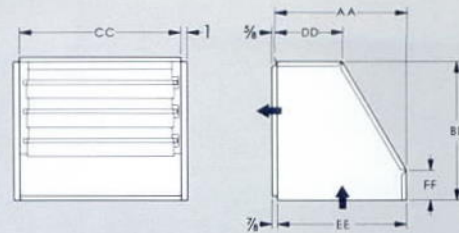
\*The 44" dimension is parallel to A dimension on side elevation drawing.

†Equipped with adjustable baffle blades.



OAD3 SERIES DAMPER ASSEMBLY (Optional) – DIMENSIONS (inches)

Unit	AA	BB	CC	DD	EE	FF
OAD3-95	17%	17%	21	10%	16%	5%
OAD3-135	20%	22%	25	10%	20%	4%
OAD3-185	22%	27%	29%	12%	22	10%
OAD3-275	24%	33%	29%	12%	24	12%



BLOWER DATA

GCS3-953 BLOWER PERFORMANCE CHART

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT—Inches Water Gauge											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	700	.70	750	.80	795	.90	840	1.00	880	1.07	920	1.15
2800	750	.90	800	1.00	845	1.10	885	1.20	925	1.30	960	1.40
3000	810	1.10	850	1.20	890	1.30	930	1.40	970	1.50	1005	1.60
3200	860	1.30	900	1.40	940	1.55	980	1.65	1015	1.75	1050	1.90
3400	915	1.55	950	1.70	990	1.80	1025	1.95	1060	2.05	1090	2.15
3600	970	1.85	1005	2.00	1045	2.15	1075	2.25	1105	2.40	1135	2.50
3800	1020	2.20	1050	2.35	1085	2.45	1120	2.60	1150	2.75	1180	2.90

NOTE—All cfm data is measured external to the unit using standard return air opening and with filters in place.

GCS3-1353 BLOWER PERFORMANCE CHART

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT—Inches Water Gauge											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3800	555	1.00	600	1.15	640	1.30	680	1.45	725	1.60	765	1.85
4000	585	1.20	625	1.35	665	1.50	705	1.65	745	1.85	780	2.00
4200	615	1.40	650	1.50	690	1.65	730	1.85	770	2.05	800	2.25
4400	645	1.60	680	1.75	720	1.90	755	2.10	790	2.30	825	2.55
4600	675	1.80	710	2.00	745	2.15	780	2.35	815	2.60	845	2.80
4800	700	2.05	740	2.25	770	2.40	805	2.65	835	2.80	865	3.00
5000	735	2.35	765	2.55	800	2.75	830	2.95	860	3.10	890	3.30
5200	765	2.65	795	2.85	825	3.05	855	3.25	885	3.45	915	3.60
5400	795	2.95	820	3.15	850	3.35	880	3.55	910	3.75	940	4.00
5600	825	3.30	850	3.45	880	3.70	905	3.90	930	4.10	960	4.30

NOTE—All cfm data is measured external to the unit using standard return air opening and with filters in place.

GCS3-1853 BLOWER PERFORMANCE CHART

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT—Inches Water Gauge											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5000	490	.95	530	1.15	570	1.30	605	1.40	635	1.55	670	1.70
5500	540	1.30	575	1.45	615	1.65	645	1.80	675	1.95	705	2.10
6000	590	1.70	620	1.85	650	2.00	685	2.20	715	2.40	740	2.60
6500	640	2.15	670	2.35	700	2.55	725	2.70	750	2.85	780	3.05
7000	685	2.65	715	2.90	740	3.10	770	3.30	800	3.50	825	3.70
7500	735	3.25	765	3.45	790	3.70	815	3.95	840	4.15	865	4.35

NOTE—All cfm data is measured external to the unit using standard return air opening and with filters in place.

GCS3-2753 BLOWER PERFORMANCE CHART

Air Volume (cfm)	STATIC PRESSURE EXTERNAL TO UNIT—Inches Water Gauge											
	0		.10		.20		.30		.40		.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
6500	530	1.40	570	1.60	605	1.80	640	1.95	675	2.15	705	2.35
7000	570	1.80	605	1.95	640	2.15	675	2.35	705	2.55	735	2.75
7500	615	2.20	645	2.40	675	2.60	705	2.80	735	3.00	765	3.20
8000	650	2.65	680	2.85	715	3.10	745	3.30	770	3.50	800	3.75
8500	690	3.15	720	3.40	750	3.65	780	3.85	805	4.10	830	4.30
9000	730	3.80	760	4.05	790	4.30	815	4.50	840	4.75	865	5.05
9500	775	4.55	800	4.75	825	5.00	850	5.20	875	5.45	900	5.75
10,000	815	5.25	840	5.50	860	5.70	885	6.00	915	6.30	935	6.55

NOTE—All cfm data is measured external to the unit using standard return air opening and with filters in place.



# BLOWER DATA

## ACCESSORY PRESSURE DROP

Model No.	Air Volume (cfm)	Power Saver	Total Pressure Drop (inches water gauge)			
			RTD Combination Ceiling Supply and Return			FD Ceiling Supply & Return
			2 Sides Open	3 Sides Open	4 Sides Open	
GCS3-953	2600	.08	.31	.28	.23	.19
	2800	.08	.38	.34	.29	.23
	3000	.09	.43	.39	.34	.26
	3200	.09	.49	.44	.38	.29
	3400	.09	.55	.49	.43	.32
	3600	.10	.62	.54	.48	.36
	3800	.10	.68	.59	.53	.40
GCS3-1353	3800	.03	.39	.31	.25	.18
	4000	.03	.43	.35	.28	.21
	4200	.03	.49	.40	.33	.25
	4400	.04	.55	.45	.38	.29
	4600	.04	.62	.51	.43	.34
	4800	.04	.70	.57	.49	.39
	5000	.05	.79	.66	.57	.46
	5200	.05	.87	.73	.63	.51
	5400	.05	.93	.79	.68	.55
GCS3-1853	5000	.02	.555	.465	.425	.22
	5500	.02	.64	.53	.475	.27
	6000	.03	.73	.605	.54	.32
	6500	.03	.84	.685	.60	.37
	7000	.04	.95	.78	.67	.42
	7500	.04	1.06	.86	.74	.47
GCS3-2753	6500	.00	.45	.39	.35	.17
	7000	.00	.53	.44	.39	.20
	7500	.00	.64	.50	.44	.24
	8000	.00	.79	.58	.51	.29
	8500	.00	----	.69	.60	.24
	9000	.00	----	.85	.70	.38
	9500	.00	----	----	.81	.43
	10,000	.00	----	----	.94	.49

NOTE—POWER SAVER has no appreciable pressure drop with GCS3-2753.

NOTE—Pressure drop includes grille and 3' of ductwork.

## DRIVE SELECTION

Model No.	Nominal Motor Hp	Maximum Usable Hp	*Rpm Range Of All Available Drive Setups @ 1720 Rpm Motor Speed
GCS3-953	2	2.30	860-1200
	3	3.45	990-1200
GCS3-1353	3	3.45	765-955
	5	5.75	893-1087
GCS3-1853	3	3.45	720-875
	5	5.75	815-970
GCS3-2753	5	5.75	740-890
	7-1/2	8.63	830-980

\*Specify exact Bhp, Rpm and power characteristics required when ordering unit.

## CEILING SUPPLY AIR THROW DATA

Model No.	Air Volume (cfm)	Radius of Diffusion (Feet)	
		*RTD Step Down	**Flush
GCS3-953	3000	33	20
	3375	37	22
	3750	41	25
GCS3-1353	4400	44	22
	4950	48	25
	5500	53	28
GCS3-1853	6000	40	30
	6750	44	34
	7500	47	38
GCS3-2753	8800	51	33
	9900	55	37

\*Four sides open and terminates at a point where conditioned air reaches a velocity of 50 fpm.

\*\*Four sides open and terminates at a point where conditioned air reaches a velocity of 35 fpm.

## GUIDE SPECIFICATIONS

**General**—Furnish and install an C.G.A. certified one piece combination air to air DX mechanical cooling system and gas fired heating system, complete with automatic controls.

The installed weight shall not be more than ..... lbs. The equipment shall be shipped completely assembled, precharged, piped and wired internally ready for field connections. In addition, manufacturer shall test operate system at the factory before shipment.

**Roof Mounting Frame**—Furnish and install a steel roof mounting frame. 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.

**Air Distribution**—Equipment shall be capable of (end or bottom) handling of conditioned air.

Furnish and install a (flush or stepdown) combination ceiling supply and return grille. It shall be capable of not less than ..... ft. radius of effective throw.

Pre-formed fiberglass duct shall be available for connection of the combination ceiling supply and return air diffuser to the single package unit.

**Power Saver (Fresh Air Dampers)**—Furnish and install complete with all controls an air mixing damper assembly including fresh air, recirculated air and exhaust air dampers. The fresh air section shall be equipped with cleanable air filters. The assembly shall mount within the confines of the GCS3 casing.

**Cooling System**—The total certified cooling capacity shall not be less than ..... Btuh with an evaporator air volume of ..... cfm, an entering wet bulb air temperature of .... F, an entering dry bulb air temperature of ..... F and a condenser entering air temperature of ..... F. The total compressor power input shall not exceed ..... KW at the above conditions. The coils shall be non-ferrous construction with aluminum fins mechanically bonded to seamless copper tubes. Condenser coil(s) shall have sub-cooling rows.

The compressor(s) shall be resiliently mounted, have built-in 3 mode crankshaft lubrication, crankcase heater, discharge temperature limiter, current and temperature sensing motor overloads. The cooling system shall be protected by high and low pressure switches and a five minute compressor timed off cycle controller.

**Heating System**—The heating capacity output shall be ..... Btuh with a gas input of ..... Btuh. Automatic controls furnished shall give 50/50 two stage operation.

Cylindrical tube and drum exchanger shall be constructed of aluminized steel. Stainless steel power burner shall use 100% safety shutoff electronic flame sensing controls. All controls shall be listed for operation at low outdoor air temperatures. Visual inspection of burner flame shall be possible thru observation port at rear of heat exchanger.

**Air Movers**—Twin centrifugal conditioned air blowers shall have permanently lubricated ball bearings, adjustable belt drives and be capable of delivering ..... cfm at an external static pressure ..... inches water gauge requiring not more than ..... bhp and rpm. The condenser fans shall be direct driven. All motors shall have inherent protection devices.

**Frame and Casing**—The frame shall be welded construction. The casing shall be of galvanized panels with a baked on outdoor enamel finish. The entire bottom of cabinet shall be insulated with 1" thick fiberglass (GCS3-953 and 1353 models) or polystyrene (GCS3-1853 and 2753 models). Cabinet panels shall be insulated with not less than 1-1/2" thick fiberglass.

**Air Filters**—Cleanable filters furnished shall have not less than ..... sq. ft. of free area.

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

**Service Enclosure**—A service enclosure shall be available to protect the service area from inclement weather during service period.