Advance data

Data in this advance specification is based on 60Hz. For nominal cooling capacity at 50Hz derate by 12%.
Detailed 50Hz electrical data is available from Lennox, Basingstoke

January 15, 1982
Supersedes 11-15-80

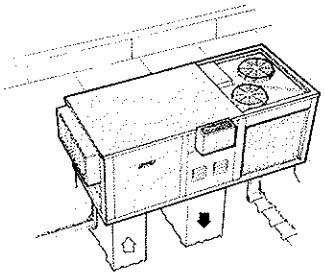
LENNOX

GCS11 SERIES SINGLE PACKAGE UNITS ALL SEASON — DX COOLING & GAS HEATING

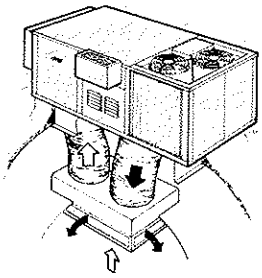
***89,000 to 240,000 Btuh Cooling Capacity**
145,000 to 450,000 Btuh Input Heating Capacity

*At ARI Standard Test Conditions

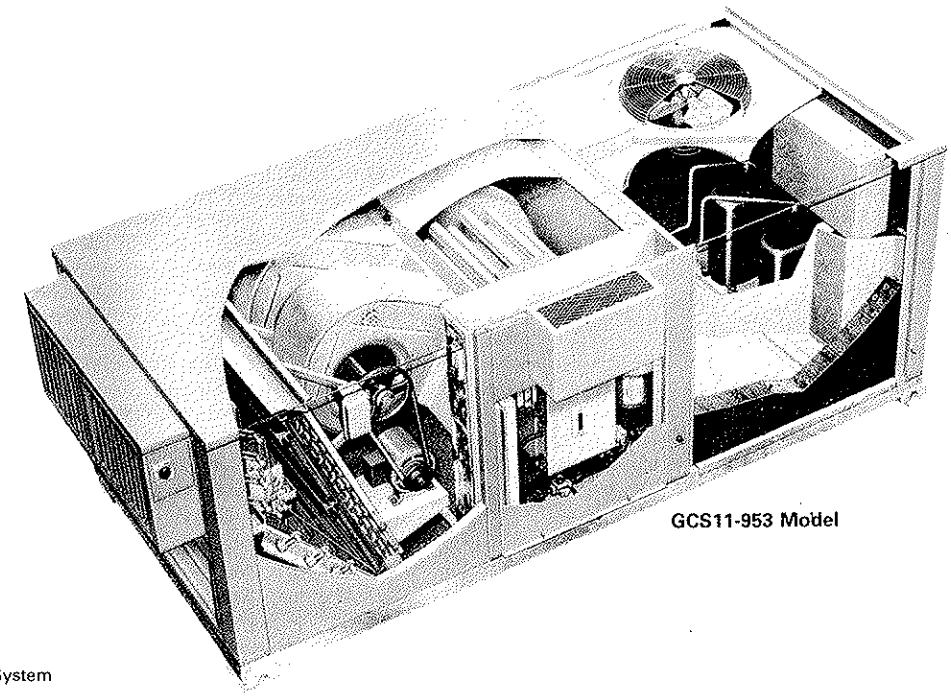
Typical Applications



Rooftop Installation with
Double Duct Air Distribution System



Rooftop Installation with
Combination Ceiling Supply and Return Air System



GCS11-953 Model

Energy Efficient All-Season Rooftop Units Provide Low Cost Comfort Year-Round

The Lennox GCS11 series combination DX cooling and gas fired heating units are designed for rooftop installation with bottom handling of supply and return air. A separate roof mounting frame (optional) mates to the bottom of the unit and when flashed into the roof permits weatherproof duct connections and entry into the conditioned area. No additional roof curbing or flashing is required. Roof mounting frame is shipped knocked down for ease of handling.

Energy and operational cost saving features include: Demand oriented solid-state electronic control system. Dual refrigerant circuits to control system capacity and reduce energy usage. POWER SAVER® option will provide "free cooling" by using outdoor air in lieu of mechanical refrigeration. Two stage heating operation.

The insulated galvanized steel cabinet has a durable outdoor enamel finish for maximum protection from the weather. Rugged cabinet houses highly efficient air cooled DX cooling, gas fired heating, twin centrifugal belt drive blowers driven by one high efficiency motor, replaceable air filters and optional POWER SAVER® dampers or minimum fresh air dampers and exhaust dampers. The POWER SAVER dampers and controls are available factory or field installed. The minimum fresh air dampers (manual or motorized) and exhaust dampers require field installation.

The complete factory sealed DX cooling consists of two independent refrigeration systems including separate compressors and their independent condenser coil and fan with a separate circuit in the evaporator coil. Durable long life copper tubing is used in the construction of condenser and evaporator coils. Aluminized steel DURATUBE® heat exchanger provides maximum heating efficiency and service life. Lennox designed gas power burner provides efficient, trouble free operation. Burner is equipped with direct spark ignition system and 100% shutoff safety controls. Available for single or two stage operation. Lennox augments its reliable operating components with a full complement of standard comfort and safety controls. Thermostat is not furnished and must be ordered extra.

Separate supply and return air double duct, combination ceiling supply and return air duct, or horizontal end duct systems are applicable to the units. A choice of RTD stepdown or FD flush model diffusers are available for combination ceiling supply and return air distribution systems.

The design of the units with the Lennox roof mounting frame is A.G.A. certified as combination heating-cooling units for outdoor installation. Cooling system has been thoroughly tested and rated in the Lennox Research Laboratory environmental test room according to ARI Standard 210 test conditions. Additionally, units have been sound tested in the Lennox sound test room according to ARI Standard 270 conditions. Units coming within the scope of this standard (135,000 Btuh or less) are certified under the ARI certification program. Units and components within are bonded for grounding to meet safety standards for servicing required by U.L. and National Electrical Codes. Blower data is from tests conducted in the Lennox Laboratory air test chamber.

Units are shipped completely factory assembled, piped, and wired. In addition, each unit is test operated at the factory insuring unit dependability and reducing start-up problems.

NOTE — Specifications, Ratings and Dimensions subject to change without notice.

FEATURES

Lennox Solid-State Control System — Energy savings electronic control system measures the deviation between room temperature and set point and then controls the supply air temperature to meet the load requirements. The control system consists of a dual set point room thermostat located in the conditioned space or a dual set point transmitter with a remote temperature sensor in the conditioned space, a discharge temperature sensor located in the supply air duct of the unit, Logic Panel installed in the unit and a modulating damper actuator for the POWER SAVER dampers. This solid-state control system will operate the unit to automatically match its output to the load with minimum space temperature variation. To accomplish this the room thermostat or transmitter, in the conditioned space, is continuously comparing space temperature deviation with supply air temperature and sending a varying load signal to the logic panel. The heat-cool relays in the logic panel respond to the signal and cycle the stages of heating or cooling and POWER SAVER position to match the output to the load condition. To maintain stable space temperatures the Logic Panel balances the space thermostat demand signal against the system output. System output is measured by the discharge temperature sensor in the supply air duct. The combined demand and output signals determine POWER SAVER position and number of heating or cooling stages energized. The discharge sensor also provides a positive modulating low limit signal to the Logic Panel ensuring that the POWER SAVER will modulate closed if the discharge air gets too cold. Additionally on power failure, system recycles all stages to off. When power is restored system sequences stages back on with a time delay between stages.

Rugged DURATUBE Heat Exchanger — Aluminized steel cylindrical tube and drum heat exchanger construction permits normal expansion and contraction without metal fatigue. Design results in high input to heat surface ratio, low resistance to air travel reducing blower horsepower requirements and ease of cleaning. All heat exchanger surfaces, inside and out, are of aluminized steel for superior resistance to corrosion and oxidation. Round surfaces create minimum air resistance. Air wipes all surfaces for excellent heat transfer. Removable rear breeching provides complete service access. Laboratory life cycle testing of heat exchanger insures long service.

Gas Power Burner — Provides efficient, trouble free operation and is unaffected by adverse wind or atmospheric conditions. Aluminized steel venturi mix air and gas in correct proportion for proper combustion. Stainless steel flame spreaders fit flame to combustion chamber resulting in uniform heat distribution. GCS11-953-1353 has dual venturi burner with one venturi on low fire (1st stage) and both firing on high fire (2nd stage). GCS11-1853-2753 is equipped with four venturi with two operating on low fire (1st stage) and all four firing on high fire (2nd stage). GCS11-953-1353 burner has electric direct spark ignition system. Spark is intermittent and occurs only when required. The GCS11-1853-2753 burner has pilot spark ignition. Pilot flame burns continuously during main burner operation, spark occurs only for pilot ignition. Redundant combination control valve combines a manual main shut-off valve, pressure regulation and automatic electric valve (dual) into one compact control. Dual valve design provides double assurance of 100% close off of gas supply during no heat cycle and in case of any abnormal shut down. A separate solenoid gas valve provides high fire (2nd stage) operation. Electronic flame sensor controls assure safe and reliable operation. Combustion air blower is equipped with air pressure switch which prepurges heat exchanger and proves blower operation before allowing main gas valve to open. Blower motor is resiliently mounted. Burner has inspection glass for flame viewing, easy combustion air adjustment and is easily removed for service.

LPG Conversion Kits (Optional) — For LPG fired models a conversion kit is required for field changeover from natural gas. Kit is not furnished and must be ordered extra. See Specification table.

Durable Cabinet — Rugged leaktight cabinet is constructed of heavy gauge galvanized steel. Cabinet is subject to a five station zinc phosphate metal wash process resulting in a perfect bonding surface for a paint finish of baked-on outdoor enamel. Long lasting enamel finish provides maximum protection from the weather. Large removable panels allow complete service access. Electrical inlets are provided in the cabinet for wiring entry. Wiring junction box and control boxes with all controls factory installed are conveniently located for service access. Lifting brackets are furnished for ease of handling and rigging. Drainage holes in base rails provide moisture removal.

Cabinet Insulation — Base section and cabinet panels exposed to conditioned air are lined with thick fiberglass insulation. This results in quiet and efficient operation due to the excellent acoustical and insulating qualities of fiberglass. The panels have 3 inch thick 1/2 lb. density fiberglass insulation and the base 1/2 inch thick 6 lb. density. Insulation is sandwiched between the panel and a galvanized steel panel liner protecting the insulation indefinitely. It will never erode or tear away from a panel to clog or impair unit operation.

Refrigeration System — Factory sealed refrigerant system consists of compressors, condenser coils and direct drive fans, evaporator (dual circuits) coil and blower, expansion valves, high capacity driers, high and low pressure switches, refrigerant lines connected and a full operating charge of refrigerant. Dual independent refrigerant circuits provide staging control to fit varying cooling loads.

Lennox Evaporator and Condenser Coils — Extra large surface area and circuiting of Lennox designed coils provide maximum cooling efficiency, excellent heat transfer and low air resistance. Lennox fabricated coils are constructed of precisely spaced ripple-edge aluminum fins fitted to durable copper tubes. Fins are equipped with flared collars that grip tubing for maximum contact area. Flared shoulder tubing connections and silver soldering provide tight, leakproof joints. Long life, durable copper tubing is easy to field service. Coil is thoroughly factory tested under high pressure to insure leakproof construction. The evaporator coil is face split with two separate circuits. Each circuit has its own separate expansion valve, condensing coil, fan, compressor and refrigerant charge.

Drain Pan — Deep, corrosion resistant evaporator coil drain pan is constructed of heavy gauge galvanized steel. Drain pipes extend outside of cabinet on both sides for convenient connections.

Dependable, Quiet Compressors — Reliable, dual compressors are hermetically sealed and provide trouble free operation and long service life. Built in protection devices assure protection from excessive current and temperature. Suction cooled, overload protected and equipped with internal pressure relief. Low ambient lock-out control prevents compressor operation below 20 degrees F. The entire running gear assembly is spring mounted within the sealed housing. In addition, the compressor is installed in the unit on resilient rubber mounts assuring quiet and vibration free operation.

Compressor Crankcase Heater — Furnished and factory installed. Prevents migration of liquid refrigerant into the compressor and ensures proper compressor lubrication at all times.

Efficient Condenser Fans — Two direct drive fans draw large air volumes uniformly through dual condenser coils and discharges it vertically, up and away from the building. Fan orifice design and low fan tip speed keeps operating sound level at a minimum. Uniform air flow through the coils result in high refrigerant cooling capacity. Permanently lubricated, overload protected, sleeve bearing fan motor is totally enclosed for maximum protection from rain, dust and corrosion. A rain shield on the motor provides additional protection from moisture. Motor is resiliently mounted. Corrosion resistant coated steel wire fan guards are furnished.

Powerful Dual Supply Air Blowers — Twin belt drive centrifugal blowers deliver large air volume efficiently and with minimum power consumption. Blower assembly is mounted to rugged angle iron frame with the entire blower and frame assembly vibration isolated on rubber mounts. Ball bearings are permanently sealed and lubricated. Blower wheel is statically and dynamically balanced. Design of motor mounting base permits quick and simple motor changeover, belt tension adjustment or belt changing. A choice of motor hosepower and drives is available. Adjustable motor pulley allows for variable speed adjustments. Motor is overload protected.

Air Filters — One inch thick frame type throwaway filters are furnished as standard. Filter rack is sized to accept two inch thick filters. Fiberglass media is oil impregnated for increased efficiency. Filters are readily accessible for replacement.

Fan and Limit Controls — Factory installed and accurately located. Fan time delay allows blower operation approximately three minutes after burner shut-off. Dual limit controls (primary and secondary) have fixed temperature setting and protect heating system from abnormal operating conditions.

FEATURES

Optional SP11 Remote Status Panel — The operation of the unit can be checked at a glance on the Remote Status Panel conveniently located within the conditioned area. Order no. 25C91 for GCS11-953-1353 and 12F83 for GCS11-1853-2753. Signal lights on the panel indicate "Cool Mode", "Heat Mode", "Compressor 1", "Compressor 2", "No Heat" and "Filter". The cool mode signal light is green when lit and indicates Power Saver operation or DX cooling operation for units without Power Saver. Heat Mode light is green and reflects heating operation. Compressor 1 and Compressor 2 lights are green when operating and will turn red if there is an operational malfunction. The No Heat and Filter lights will show red and indicate a requirement for service. Field installed Filter Switch Kit (97C85) is required for operation of Filter light and must be ordered extra. In addition, the GCS11-1853 & 2753 models require a Electrical Control Kit (10F09) for 120/24 voltage operation.

Optional SSP11 Remote Switching Status Panel — The operation of the unit can be controlled and observed on the Switching Status Panel conveniently located within the conditioned area. Order no. 59C00 for GCS11-953-1353 and 12F84 for GCS11-1853-2753. Signal lights on the panel indicate "Cool Mode", "Heat Mode", "Compressor 1", "Compressor 2", "No Heat" and "Filter". The Cool Mode signal light is green when lit and indicates Power Saver operation or DX cooling operation for units without Power Saver. Heat Mode light is green and reflects heating operation. Compressor 1 and Compressor 2 lights are green when operating and will turn red if there is an operational malfunction. The No Heat and Filter lights will show red and indicates a requirement for service. Additionally, panel is equipped with a system selector switch (OFF — HEAT — AUTO — COOL — EMERGENCY HEAT (Heat Pump Only), fan switch (AUTO — ON) and after hours timer. Fan switch provides a choice of intermittent (AUTO) or continuous (ON) blower operation. Manually operated after hours timer (0 to 12 hours) overrides night setback controls providing normal operation for time period set. A momentary push button switch is used to initiate the time period. Additional field installed controls are required and must be specified when ordering. Voltage control relay (51C21) provides blower operation for Power Saver. Filter Switch Kit (97C85) is used in conjunction with the Filter light. GCS11-1853 & 2753 models require Electrical Control Kit (10F09) for 120/24 voltage operation.

Optional Disconnect Mounting Kit (GCS11-953 & 1353) — Disconnect mounting kit (LB-38208BA) provides a convenient mounting location for field furnished remote disconnect switch. Kit field installs to outside of unit cabinet adjacent to electrical inlets.

Optional RMFG11 Roof Mounting Frame — Sturdy mounting frame mates to the GCS11 unit and provides an automatic weather sealed rooftop installation. Shipped knocked down for ease of shipping and handling; it is easily field assembled. A nailer strip is secured to the frame sides to facilitate flashing. Approved by National Roofing Contractors Association.

Optional RMFGH11 Roof Mounting Frame — Frame mates to GCS11 unit and provides horizontal end supply and return air (over/under) duct connection. Supply air connection is in end of frame. Return air connection is made in evaporator section end of unit. Shipped knocked down for ease of shipping and handling; it is easily field assembled. A nailer strip is secured to the frame sides to facilitate flashing. See dimension drawing and installation detail sketch.

Optional RMFGA11 Roof Mounting Frame — Retrofit adapter frame is available for GCS11 model replacement of existing GCS3 unit installations. The RMFGA11 frame adapts to the existing RMF3 frame and provides a weather sealed connection with minimum installation cost. RMFGA11 frame is shipped knocked down for ease of shipping and handling; it is easily field assembled. A nailer strip is secured to the frame sides to facilitate flashing. See dimensions drawing.

Optional Low Ambient Control Kit — System will operate satisfactorily down to 35°F outdoor air temperature without additional controls. If air conditioning operation is required below 35° a field installed low ambient kit can be added enabling the unit to operate down to 0°F. Kit LB-37124BB for GCS11-953-1353 and LB-47882CA for GCS11-1853-2753.

Optional Night Setback Controls — Automatically programs the unit for night setback operation. Field installed clocks available are 24 Hour Skip-A-Day without Reserve (88C86) or with Reserve (88C85). Also 7 Day Time Clock without Reserve (88C84) or with Reserve (88C83). System room thermostat or transmitter controls both day and night operation.

Optional PSD11 Power Saver — Available factory or field installed. Lennox Power Saver system consists of: mechanically linked outdoor air and recirculated air dampers. Damper blades are gasketed for tight seal and quiet operation. Formed damper blades rotate smoothly in nylon bearings. The positioning of these dampers is accomplished by a 24 volt modulating spring return damper actuator and controlled by the room thermostat or transmitter, discharge sensor and enthalpy control. The enthalpy control allows (0 to 100%) outdoor air to be used for "free" cooling when outdoor air humidity and temperature is acceptable. A outdoor air hood with rain eliminator vanes is furnished and field installs over the outdoor air dampers external to the unit. For field installation the two damper sections slide in cavities provided in the unit cabinet. Power Saver is shipped factory wired and only requires plug-in field connection.

Optional OAD11 Minimum Fresh Air Dampers (GCS11-1853-2753 only) — Damper section complete with cleanable polyurethane air filter field installs external to the unit cabinet. Available for manual or automatic operation. Damper assembly allows a fixed amount of outdoor air into the system and can be adjusted for air quantities up to 25%. Automatic damper operation is available with the addition of a spring return 3 position damper actuator. Actuator only requires plug-in connection for operation. Order Automatic Fresh Air Damper Kit 99C94. Kit also includes adjustable potentiometer for minimum fresh air setting.

Optional GED11 Gravity Exhaust Air Dampers — Dampers field install in space provided in the unit. Pressure operated extruded aluminum dampers operate smoothly in nylon bearings. Damper blades are equipped with seal gaskets for tight seal and quiet operation.

Optional PED11 Power Exhaust Dampers (GCS11-1853-2753 only) — Field installs in space provided in the unit cabinet. Fans provide system pressure relief and are interlocked to run when return air dampers are closed and supply air blowers are operating. Motors are overload protected. Pressure operated extruded aluminum dampers ride in nylon bearings and are equipped with seal gaskets resulting in tight seal and quiet operation. Dampers prevent blow-back and outdoor air infiltration during off cycle.

Optional OADM11 Minimum Fresh Air Damper Section (GCS11-953-1353 only) — Field installs external to the unit cabinet. Manually operated damper may be adjusted and locked in place to provide outdoor air quantities of up to 25%.

Optional OADA11 Minimum Fresh Air Dampers (GCS11-953-1353 only) — Automatically controlled damper assembly field installs in space provided in the unit cabinet. Dampers allow a fixed amount of outdoor air into the system and can be adjusted for air quantities of up to 25%. Positioning of dampers is accomplished with a 24 volt multiposition spring return actuator. Actuator only requires plug-in connection for operation. Adjustable potentiometer for minimum fresh air setting is furnished. Outdoor air hood with rain eliminator vanes installs over dampers external to the unit.

Thermostat Choice — Dual set point room thermostat (25C52) or transmitter (25C51) with a choice of remote sensors is available. Both have separate heating - cooling locking set points concealed under the cover and do not have indicating thermometer. The room thermostat has integral sensor and installs in the conditioned space. For remote temperature control the transmitter installs outside the conditioned space with a remote sensor (58C92) in the conditioned area or a return air sensor (27C40) in the return air duct of the unit. Sensor must be ordered extra. If desired in multiple unit applications, that serve a common space, up to six units can be controlled from a single thermostat. Thermostat and transmitter are furnished with a wiring wallplate and may be installed horizontally or vertically. In addition, an optional switching subbase (58C93) is available and must be ordered extra. It is equipped with system selector switch (HEAT — AUTO — COOL — OFF) and fan switch (AUTO — ON). Fan switch provides a choice of intermittent (AUTO) or continuous (ON) blower operation. A voltage control relay (51C21) is required with the switching subbase and must be ordered extra. Relay provides blower operation for Power Saver. Both the thermostat and transmitter will mount on a field furnished standard 2 x 4 inch electrical outlet box.

GCS11-953-1353 SPECIFICATIONS

Model No.		GCS11-953-175	GCS11-953-250	GCS11-1353-230	GCS11-1353-330
Single Stage Heating Capacity Natural Gas Only	Btuh Input	175,000	----	230,000	----
	Btuh Output	145,250	----	190,900	----
	A.G.A. Thermal Efficiency	83.0%	----	83.0%	----
Two Stage Heating Capacity Natural & **LPG	Btuh Input (low)	----	145,000	----	195,000
	Btuh Output (low)	----	117,450	----	157,950
	Btuh Input (high)	----	250,000	----	330,000
	Btuh Output (high)	----	202,500	----	267,300
	A.G.A. Thermal Efficiency	----	81.0%	----	81.0%
*ARI Standard 210 Ratings	Total cooling capacity (Btuh)	89,000		121,000	
	Total unit watts	11,100		15,100	
	†EER (Btuh/Watts)	8.0		8.0	
	Dehumidifying capacity	29%		31%	
★ARI Standard 270 SRN		21		22	
Refrigerant (22) charge		15 lbs. 6 oz.		21 lbs. 6 oz.	
Evaporator Blower	Blower wheel nominal diam. x width (in.)	(2) 12 — 6		(2) 12 — 12	
	Motor horsepower (minimum-maximum)	1-1/2 — 3		2 — 3	
Evaporator Coil	Net face area (sq. ft.)	8.3		12.0	
	Tube diam. (in.) & No. of rows	1/2 — 3		1/2 — 3	
	Fins per inch	15		15	
Condenser Coil	Net face area (sq. ft.)	14.6		19.8	
	Tube diam. (in.) & No. of rows	3/8 — 3		3/8 — 3	
	Fins per inch	20		20	
Condenser Fans	Diameter (in.) & No. of blades	(2) 20 — 4		(2) 24 — 4	
	Air volume (cfm) (factory setting)	6000		8500	
	Motor horsepower	(2) 1/3		(2) 1/2	
	Motor watts (factory setting)	850		1150	
Gas Supply Connection fpt (in.)	Natural	3/4		3/4	
	**LPG	3/4		3/4	
Recommended Gas Supply Pressure (wc. in.)	Natural	6		6	
	**LPG	11		11	
Condensate drain size mpt (in.)		(2) 3/4 - (2) 3/8		(2) 3/4 - (2) 3/8	
No. & size of filters (in.)		(4) 16 x 20 x 1		(6) 16 x 20 x 1	
Net weight of basic unit (lbs.) (1 Package)		1600 lbs.		2000 lbs.	
Optional Roof Mounting Frame — (Net weight)		RMFG11-95 (165 lbs.)		RMFG11-135 (200 lbs.)	
		RMFGH11-95 (225 lbs.)		RMFGH11-135 (270 lbs.)	
		RMFGA11-95 (325 lbs.)		RMFGA11-135 (350 lbs.)	
Optional Power Saver & Controls — (Net weight)		PSD11-95 (97 lbs.)		PSD11-135 (163 lbs.)	
Optional Gravity Exhaust Dampers (Net weight)		GED11-95 (13 lbs.)		GED11-135 (18 lbs.)	
Optional Ceiling Supply & Return Step-Down Diffuser — (Net weight)		RTD11-95 (84 lbs.)		RTD11-135 (95 lbs.)	
Optional Ceiling Supply & Return Flush Diffuser — (Net weight)		FD11-95 (84 lbs.)		FD11-135 (95 lbs.)	
Optional Ceiling Supply & Return Transitions — (Net weight)		SRTG11-95 (33 lbs.)		SRTG11-135 (45 lbs.)	
Optional Minimum Fresh Air Dampers (Manual) — (Net weight)		OADM11-95 (35 lbs.)		OADM11-135 (47 lbs.)	
Optional Automatic Fresh Air Dampers (Automatic) — (Net weight)		OADA11-95 (87 lbs.)		OADA11-135 (144 lbs.)	
Optional Remote Status Panel		SP11 (25C91)		SP11 (25C91)	
Optional Remote Switching Status Panel		SSP11 (59C00)		SSP11 (59C00)	
Optional Disconnect Mounting Kit — (Net weight)		LB-38208BA (10 lbs.)		LB-38208BA (10 lbs.)	
**Optional LPG Conversion Kit (Two Stage Only)		LB-39477CA		LB-39477CB	
Electrical characteristics		200 to 460 volt — 60 hertz — 3 phase			

★Rated in accordance with ARI Standard 270.
*Rated in accordance with ARI Standard 210; 450 cfm (maximum) evaporator air volume per ton of cooling capacity, 95F outdoor air temperature and 80db/67wb entering evaporator air.
**For LPG models a field conversion kit is required and must be ordered extra.
†Energy Efficiency Ratio in accordance with ARI Standard 210.

HIGH ALTITUDE DERATE (All Models)

If the heating value of the gas does not exceed values listed in the table, derating of the unit is not required. Should the heating value of the gas exceed the table values, or if the elevation is greater than 6,000 feet above sea level it will be necessary to derate the unit. Lennox requires that derate conditions be 4% per thousand feet above sea level. Thus at an altitude of 4000 feet, if the heating value of the gas exceeds 1000 Btu/ft³, unit will require a 16% derate.

Elevation Sea Level (Feet)	Maximum Heating Value (Btu/ft³)
5001 — 6000	900
4001 — 5000	950
3001 — 4000	1000
2001 — 3000	1050
Sea Level — 2000	1100

GCS11-1853-2753 SPECIFICATIONS

Model No.			GCS11-1853-300	GCS11-1853-400	GCS11-2753-350	GCS11-2753-450
Single Stage Heating Capacity Natural Gas Only	Btuh Input		300,000	----	350,000	----
	Btuh Output		249,000	----	290,500	----
	A.G.A. Thermal Efficiency		83%	----	83%	----
Two Stage Heating Capacity Natural & **LPG	Btuh Input (low)		----	240,000	----	270,000
	Btuh Output (low)		----	194,400	----	221,400
	Btuh Input (high)		----	400,000	----	450,000
	Btuh Output (high)		----	324,000	----	369,000
	A.G.A. Thermal Efficiency		----	81%	----	82%
*At ARI Standard 210 Test Conditions	Total cooling capacity (Btuh)		180,000		240,000	
	Total unit watts		21,820		28,800	
	†EER (Btuh/Watts)		8.2		8.3	
	Dehumidifying capacity		27%		26%	
★ARI Standard 270 SRN			23		23	
Refrigerant (22) charge			26 lbs. — 8 oz.		39 lbs. — 8 oz.	
Evaporator Blower	Blower wheel nominal diam. x width (in.)		15 x 9		15 x 15	
	Motor horsepower (minimum-maximum)		3 — 5		3 — 5	
Evaporator Coil	Net face area (sq. ft.)		17.2		23.5	
	Tube diam. (in.) & No. of rows		1/2 — 3		1/2 — 3	
	Fins per inch		13		15	
Condenser Coil	Net face area (sq. ft.)		31.9 (total)		38.9	
	Tube diam. (in.) & No. of rows		(1) 3/8 — 3 & (1) 3/8 — 4		3/8 — 4	
	Fins per inch		20		20	
Condenser Fans	Diameter (in.) & No. of blades		(1) 24 — 4 and (1) 26 — 5		(2) 26 — 5	
	Air volume (cfm) (factory setting)		(1) 4400 and (1) 6700		(2) 7000	
	Motor horsepower		(1) 1/2 and (1) 1		(2) 1	
	Motor watts (factory setting)		(1) 550 and (1) 1100		(2) 1100	
Gas Supply Connection fpt (in.)	Natural		3/4		3/4	1
	**LPG		3/4		----	1
Recommended Gas Supply Pressure (wc. in.)	Natural		7		7	
	**LPG		11		11	
Condensate drain size mpt (in.)			(2) 1-1/4 & (2) 3/8		(2) 1-1/4 & (2) 3/8	
No. & size of filters (in.)			(9) 16 x 20 x 1		(11) 16 x 20 x 1	
Net weight of basic unit (lbs.) (1 Package)			2500		3100	
Optional Roof Mounting Frame — (Net weight)			RMFG11-185 (265 lbs.)		RMFG11-275 (315 lbs.)	
			RMFGH11-185 (375 lbs.)		RMFGH11-275 (440 lbs.)	
			RMFGA11-185 (470 lbs.)		RMFGA11-275 (510 lbs.)	
Optional Power Saver & Controls — (Net weight)			PSD11-185 (235 lbs.)		PSD11-275 (290 lbs.)	
Optional Gravity Exhaust Dampers (Net weight)			GED11-185 (25 lbs.)		GED11-275 (30 lbs.)	
Optional Power Exhaust Dampers	Model No. — (Net weight)		PED11-185 (110 lbs.)		PED11-275 (150 lbs.)	
	Exhaust Fans	Diameter (in.) & No. of blades	(2) 18 — 5		(3) 18 — 5	
		Total air volume (cfm)	5050		7050	
		Motor horsepower	(2) 1/4		(3) 1/4	
		Watts input (total)	730		1100	
Optional Ceiling Supply & Return Step-Down Diffuser — (Net weight)			RTD11-185 (120 lbs.)		RTD11-275 (170 lbs.)	
Optional Ceiling Supply & Return Flush Diffuser — (Net weight)			FD11-185 (120 lbs.)		FD11-275 (170 lbs.)	
Optional Ceiling Supply & Return Transitions — (Net weight)			SRT11-185 (70 lbs.)		SRT11-275 (80 lbs.)	
Optional Fresh Air Damper & Filter Size (in.)—(Net weight)			OAD11-185 (90 lbs.) 1—25x27x1		OAD11-275 (115 lbs.) 1—26x31x1	
Optional Automatic OAD11 Damper Kit—(Net Weight)			99C94 (15 lbs.)		99C94 (15 lbs.)	
Optional Remote Status Panel			SP11 (12F83)		SP11 (12F83)	
Optional Remote Switching Status Panel			SSP11 (12F84)		SSP11 (12F84)	
**Optional LPG Conversion Kit (Two Stage Only)			LB-48737CA		LB-48737CB	
Electrical characteristics			200 to 460 volt — 60 hertz — 3 phase			

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★Rated in accordance with ARI Standard 270.
*Rated in accordance with ARI Standard 210; 450 cfm (maximum) evaporator air volume per ton of cooling capacity, 95F outdoor air temperature and 80db/67wb entering evaporator air.
**For LPG models a field conversion kit is required and must be ordered extra.
†Energy Efficiency Ratio in accordance with ARI Standard 210.

COOLING RATINGS

NOTE – To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, Page 9.

GCS11-953 COOLING CAPACITY (With One Compressor Only Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F) 65					75					85					95				
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84
63	3000	50,900	3630	.72	.82	.92	48,600	3820	.73	.84	.94	46,300	4040	.75	.87	.98	43,800	4290	.78	.90	1.00
	3375	52,000	3670	.75	.86	.97	49,700	3870	.75	.87	.97	47,300	4090	.79	.91	1.00	44,800	4340	.81	.94	1.00
	3750	53,100	3710	.76	.88	1.00	50,700	3910	.77	.91	1.00	48,500	4130	.81	.94	1.00	45,500	4390	.84	.99	1.00
67	3000	54,900	3780	.56	.66	.76	52,300	3980	.58	.68	.81	49,500	4200	.58	.68	.81	46,800	4460	.59	.71	.82
	3375	55,900	3810	.58	.69	.80	53,300	4010	.59	.70	.82	50,500	4240	.60	.71	.83	47,500	4490	.62	.74	.86
	3750	56,700	3840	.59	.71	.82	54,100	4040	.60	.72	.85	51,300	4270	.62	.74	.88	48,000	4530	.64	.77	.91
71	3000	59,100	3920	.42	.52	.61	56,400	4130	.43	.53	.63	53,500	4370	.44	.53	.65	50,500	4630	.45	.54	.66
	3375	60,100	3960	.43	.54	.64	57,200	4170	.44	.55	.65	54,300	4410	.45	.55	.66	51,000	4670	.46	.56	.68
	3750	61,000	3990	.44	.55	.66	58,000	4200	.45	.55	.68	55,000	4440	.46	.57	.71	51,500	4700	.47	.58	.72

GCS11-953 TOTAL COOLING CAPACITY (With Both Compressors Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F) 85					95					105					115				
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84
63	3000	92,500	8080	.76	.87	.97	87,500	8580	.79	.90	1.00	82,000	9140	.81	.93	1.00	76,000	9760	.84	.96	1.00
	3375	94,500	8180	.78	.91	1.00	89,500	8680	.82	.94	1.00	84,500	9240	.85	.97	1.00	78,500	9920	.87	1.00	1.00
	3750	97,000	8260	.81	.94	1.00	91,000	8780	.85	.99	1.00	86,000	9400	.89	1.00	1.00	80,500	10,080	.91	1.00	1.00
67	3000	99,000	8400	.58	.68	.78	93,500	8920	.61	.71	.84	87,000	9480	.61	.73	.84	81,000	10,100	.64	.76	.88
	3375	101,000	8480	.60	.71	.81	95,000	8980	.63	.74	.88	89,000	9540	.64	.76	.88	82,000	10,180	.68	.80	.92
	3750	102,500	8540	.61	.74	.84	96,000	9060	.65	.77	.92	90,000	9640	.68	.80	.92	83,500	10,260	.72	.84	.97
71	3000	107,000	8740	.44	.53	.63	101,000	9260	.45	.54	.67	94,000	9860	.45	.56	.68	87,000	10,500	.46	.58	.70
	3375	108,500	8820	.45	.55	.65	102,000	9340	.46	.56	.70	95,000	9940	.47	.58	.71	88,000	10,580	.48	.60	.72
	3750	110,000	8880	.46	.57	.67	103,000	9400	.47	.58	.73	96,000	10,000	.49	.60	.74	89,000	10,640	.51	.63	.75

GCS11-1353 COOLING CAPACITY (With One Compressor Only Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F) 65					75					85					95				
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84
63	4000	68,700	5010	.69	.79	.89	65,600	5310	.70	.81	.91	62,800	5600	.72	.84	.95	59,500	6000	.74	.86	.99
	4500	69,900	5080	.72	.83	.94	66,800	5390	.73	.85	.96	63,800	5680	.75	.87	.99	60,500	6090	.77	.90	1.00
	5000	71,000	5090	.74	.86	.98	67,900	5450	.76	.88	1.00	64,800	5750	.78	.90	1.00	61,300	6140	.80	.93	1.00
67	4000	73,100	5260	.54	.64	.74	69,900	5580	.56	.66	.77	66,800	5870	.57	.67	.78	63,000	6280	.58	.69	.80
	4500	74,100	5330	.57	.67	.78	70,800	5640	.57	.68	.79	67,500	5920	.59	.70	.81	64,000	6330	.60	.72	.85
	5000	75,100	5380	.57	.69	.80	71,700	5690	.59	.71	.83	68,300	5980	.60	.73	.86	64,800	6360	.62	.75	.88
71	4000	77,600	5520	.42	.51	.60	74,200	5840	.42	.51	.61	71,000	6120	.43	.52	.62	67,300	6560	.44	.53	.64
	4500	78,700	5580	.43	.52	.62	75,300	5900	.43	.53	.63	72,000	6180	.44	.54	.64	68,000	6620	.45	.55	.67
	5000	79,600	5630	.44	.54	.65	76,000	5950	.44	.55	.66	72,800	6220	.45	.56	.68	68,800	6660	.46	.57	.70

GCS11-1353 TOTAL COOLING CAPACITY (With Both Compressors Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F) 85					95					105					115				
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84	Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F) 76	80	84
63	4000	125,500	11,200	.72	.84	.99	119,000	12,000	.74	.86	1.00	112,500	12,920	.77	.89	1.00	105,500	14,000	.78	.92	1.00
	4500	127,500	11,360	.75	.87	1.00	121,000	12,180	.77	.90	1.00	114,500	13,100	.79	.92	1.00	107,500	14,200	.83	.96	1.00
	5000	129,500	11,500	.77	.90	1.00	122,500	12,280	.79	.93	1.00	116,500	13,280	.83	.96	1.00	110,000	14,440	.88	1.00	1.00
67	4000	133,500	11,740	.56	.67	.78	126,000	12,560	.87	.69	.80	119,000	13,520	.58	.71	.83	111,500	14,620	.61	.74	.87
	4500	135,000	11,840	.59	.70	.82	128,000	12,660	.60	.72	.85	120,500	13,620	.60	.74	.87	113,500	14,740	.63	.77	.91
	5000	136,500	11,960	.60	.73	.86	129,500	12,780	.62	.75	.88	122,000	13,740	.62	.77	.91	114,500	14,860	.65	.80	.94
71	4000	142,000	12,240	.41	.52	.62	134,500	13,120	.42	.53	.64	127,000	14,120	.43	.55	.66	119,000	15,300	.44	.56	.69
	4500	144,000	12,360	.43	.54	.65	136,000	13,240	.44	.55	.67	128,000	14,260	.44	.57	.69	120,500	15,440	.46	.59	.73
	5000	145,500	12,440	.44	.56	.68	137,500	13,320	.45	.57	.70	129,500	14,340	.45	.59	.72	121,500	15,540	.46	.61	.75

COOLING RATINGS

NOTE – To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, Page 9.

GCS11-1853 COOLING CAPACITY (With 5 Ton Compressor Only Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																					
		65					75					85					95						
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)		
				76	80	84			76	80	84			76	80	84			76	80	84
63	5000	65,500	4690	.71	.81	.90	62,600	4950	.72	.82	.92	59,700	5230	.74	.84	.94	57,000	5500	.75	.86	.96
	6250	68,300	4790	.75	.86	.96	65,100	5060	.76	.88	.98	62,100	5340	.78	.90	1.00	59,300	5630	.80	.92	1.00
	7500	70,600	4860	.79	.91	1.00	67,400	5150	.80	.93	1.00	64,300	5440	.82	.96	1.00	61,300	5740	.84	.98	1.00
67	5000	71,000	4880	.57	.66	.75	67,800	5170	.57	.67	.76	64,700	5460	.58	.68	.78	61,700	5760	.59	.69	.79
	6250	73,700	4970	.59	.69	.79	70,300	5260	.60	.70	.81	67,000	5570	.61	.72	.83	63,800	5870	.62	.74	.85
	7500	75,800	5040	.61	.73	.84	72,300	5340	.62	.74	.86	68,800	5650	.63	.76	.89	65,400	5950	.65	.78	.91
71	5000	76,600	5060	.44	.52	.61	73,200	5380	.44	.53	.62	69,900	5700	.45	.54	.63	66,600	6020	.45	.54	.64
	6250	79,300	5150	.45	.54	.64	75,700	5470	.45	.55	.65	72,100	5800	.46	.56	.66	68,700	6120	.46	.57	.68
	7500	81,400	5220	.46	.57	.67	77,700	5550	.46	.58	.69	73,900	5880	.47	.59	.70	70,300	6200	.47	.60	.72

GCS11-1853 COOLING CAPACITY (With 10 Ton Compressor Only Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																					
		65					75					85					95						
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)		
				76	80	84			76	80	84			76	80	84			76	80	84
63	5000	131,100	9,760	.71	.81	.90	125,100	10,200	.72	.82	.92	119,000	10,720	.74	.84	.94	112,900	11,320	.75	.86	.97
	6250	136,100	9,960	.75	.86	.96	129,900	10,410	.76	.88	.99	123,500	10,930	.78	.90	1.00	117,000	11,560	.80	.93	1.00
	7500	140,300	10,120	.79	.91	1.00	133,900	10,580	.81	.93	1.00	127,400	11,120	.83	.96	1.00	120,800	11,760	.85	.99	1.00
67	5000	141,100	10,140	.57	.66	.75	134,700	10,610	.58	.67	.76	128,200	11,160	.58	.68	.78	121,500	11,800	.59	.70	.80
	6250	145,900	10,320	.59	.69	.80	139,300	10,800	.60	.71	.81	132,200	11,350	.61	.72	.84	125,200	12,000	.62	.74	.86
	7500	149,900	10,460	.61	.73	.85	142,700	10,940	.62	.75	.87	135,500	11,500	.64	.77	.89	128,000	12,150	.65	.79	.92
71	5000	151,300	10,510	.44	.53	.61	144,500	11,020	.44	.53	.62	137,600	11,600	.45	.54	.63	130,300	12,280	.45	.55	.64
	6250	156,100	10,690	.45	.55	.64	149,000	11,190	.45	.55	.66	141,600	11,780	.46	.56	.67	134,000	12,460	.46	.58	.69
	7500	160,000	10,820	.46	.57	.68	152,500	11,330	.46	.58	.69	144,800	11,920	.47	.59	.71	136,900	12,610	.48	.60	.73

GCS11-1853 TOTAL COOLING CAPACITY (With Both Compressors Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																					
		85					95					105					115						
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)		
				76	80	84			76	80	84			76	80	84			76	80	84
63	5000	178,700	15,950	.74	.84	.94	169,700	16,830	.75	.86	.96	160,500	17,840	.77	.89	.99	151,400	18,950	.79	.92	1.00
	6250	185,600	16,280	.78	.90	1.00	176,100	17,190	.80	.93	1.00	166,700	18,220	.82	.96	1.00	157,200	19,390	.84	.97	1.00
	7500	191,700	16,560	.83	.96	1.00	182,100	17,500	.84	.98	1.00	171,900	18,550	.87	1.00	1.00	163,200	19,820	.89	1.00	1.00
67	5000	192,800	16,620	.58	.68	.78	183,000	17,570	.59	.69	.79	173,100	18,620	.60	.71	.81	162,900	19,800	.61	.73	.84
	6250	199,300	16,920	.61	.72	.83	188,700	17,880	.62	.74	.86	178,100	18,950	.63	.75	.88	167,500	20,120	.64	.78	.91
	7500	204,200	17,150	.63	.76	.89	193,300	18,120	.65	.78	.91	182,200	19,200	.66	.81	.95	171,300	20,380	.68	.84	.98
71	5000	207,500	17,300	.45	.54	.63	196,900	18,310	.45	.55	.64	186,200	19,440	.46	.56	.65	175,300	20,680	.46	.57	.67
	6250	213,700	17,580	.46	.56	.66	202,700	18,590	.46	.57	.68	191,300	19,740	.47	.58	.70	179,900	20,990	.47	.59	.72
	7500	218,700	17,800	.47	.59	.70	207,100	18,830	.47	.60	.72	195,200	19,970	.48	.61	.75	183,500	21,220	.49	.63	.78

GCS11-2753 COOLING CAPACITY (With One Compressor Only Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																					
		65					75					85					95						
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)		
				76	80	84			76	80	84			76	80	84			76	80	84
63	7000	133,000	9,840	.72	.82	.92	127,000	10,280	.74	.84	.94	120,800	10,790	.75	.86	.96	114,500	11,390	.77	.88	.99
	8500	137,400	10,010	.76	.87	.98	131,200	10,450	.77	.89	1.00	124,700	10,980	.79	.92	1.00	118,200	11,590	.81	.94	1.00
	10,000	141,300	10,150	.80	.92	1.00	134,900	10,600	.81	.95	1.00	128,500	11,140	.84	.97	1.00	121,000	11,750	.86	1.00	1.00
67	7000	142,900	10,200	.58	.67	.76	136,400	10,670	.58	.68	.78	129,700	11,210	.59	.69	.80	122,800	11,830	.60	.71	.82
	8500	147,100	10,350	.60	.70	.81	140,200	10,820	.61	.72	.83	133,200	11,360	.62	.73	.85	126,000	12,000	.63	.75	.88
	10,000	150,400	10,470	.62	.74	.86	143,400	10,940	.63	.76	.88	135,900	11,490	.64	.78	.91	128,600	12,130	.66	.80	.94
71	7000	153,100	10,560	.44	.53	.62	146,200	11,050	.45	.54	.63	139,100	11,630	.45	.55	.64	131,700	12,290	.45	.56	.66
	8500	157,200	10,700	.45	.55	.65	149,900	11,200	.46	.56	.67	142,500	11,770	.46	.57	.68	134,800	12,450	.47	.58	.70
	10,000	160,500	10,810	.46	.57	.69	153,000	11,310	.47	.58	.70	145,200	11,890	.47	.60	.72	137,300	12,570	.48	.61	.74

COOLING RATINGS

NOTE – To determine sensible capacity, leaving wet bulb and dry bulb temperatures not shown in the tables, see Miscellaneous Engineering Data section, Page 9.

GCS11-2753 TOTAL COOLING CAPACITY (With Both Compressors Operating)

Enter. Wet Bulb (°F)	Total Air Vol. (cfm)	Outdoor Air Temperature Entering Condenser Coil (°F)																				
		85					95					105					115					
		Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)			Total Cool Cap. (Btuh)	Comp. Motor Watts Input	Sensible To Total Ratio (S/T) Dry Bulb (°F)		
				76	80	84			76	80	84			76	80	84			76	80	84
63	7000	241,600	21,580	.75	.86	.96	228,800	22,800	.77	.88	.99	215,800	24,250	.79	.91	1.00	202,700	25,950	.81	.94	1.00
	8500	249,400	21,960	.79	.92	1.00	236,300	23,200	.81	.94	1.00	223,200	24,670	.84	.97	1.00	208,700	26,400	.87	1.00	1.00
	10,000	256,800	22,270	.84	.97	1.00	242,000	23,490	.86	1.00	1.00	229,700	25,120	.89	1.00	1.00	217,300	27,000	.92	1.00	1.00
67	7000	259,500	22,410	.59	.69	.80	245,400	23,690	.60	.71	.82	231,100	25,200	.61	.73	.84	216,700	26,950	.63	.75	.87
	8500	266,200	22,730	.62	.74	.85	251,700	24,020	.63	.75	.88	236,800	25,540	.65	.78	.91	221,800	27,310	.66	.80	.94
	10,000	271,900	22,980	.64	.78	.91	256,900	24,280	.66	.80	.94	241,500	25,830	.68	.83	.97	226,200	27,600	.70	.86	1.00
71	7000	278,200	23,250	.45	.55	.64	263,300	24,610	.45	.56	.66	248,100	26,210	.46	.57	.68	232,500	28,060	.46	.58	.70
	8500	285,000	23,550	.46	.57	.68	269,400	24,920	.47	.58	.70	253,600	26,520	.47	.60	.72	237,300	28,380	.48	.61	.75
	10,000	290,400	23,790	.47	.60	.72	274,300	25,160	.48	.61	.74	257,900	26,770	.49	.63	.77	241,100	28,640	.50	.65	.80

GCS11-953-1353 ELECTRICAL DATA

Model No.		GCS11-953						GCS11-1353					
Line voltage data — 60 Hz — 3 phase		200V		230V		460V		200V		230V		460V	
Compressors (2)	Rated load amps (total)	29.8		28.2		14.2		42.0		42.0		21.0	
	Locked rotor amps (total)	152.0		152.0		74.0		264.0		264.0		132.0	
Condenser Fan Motors (2)	Full load amps (total)	4.6		4.6		2.4		6.0		6.0		2.8	
	Locked rotor amps (total)	8.6		8.6		4.6		12.4		12.4		6.4	
Evaporator Blower Motor	Horsepower	1-1/2	3	1-1/2	3	1-1/2	3	2	3	2	3	2	3
	Full load amps (total)	6.3	11.4	5.6	10.0	2.8	5.0	7.5	11.4	6.0	10.0	3.0	5.0
	Locked rotor amps (total)	39.0	65.0	34.0	56.0	17.0	28.0	55.4	65.0	46.0	56.0	23.0	28.0
Recommended maximum fuse size (amps)		60	60	50	60	25	30	80	80	80	80	40	40
*Minimum Circuit Ampacity		45.4	49.5	42.9	46.3	22.2	23.3	61.8	65.5	60.3	64.3	30.4	32.4
Unit power factor		.90	.89	.90	.89	.90	.89	.85	.85	.85	.85	.85	.85

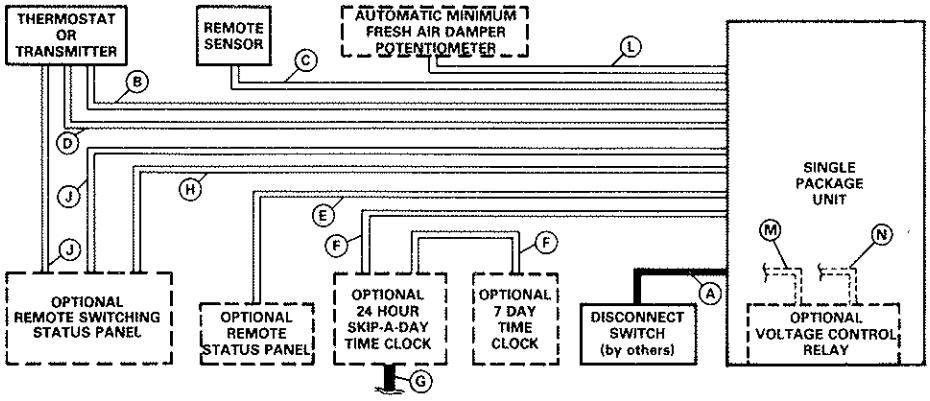
*Refer to National Electric Code manual to determine wire, fuse and disconnect size requirements.
NOTE — Extremes of operating range are plus and minus 10% of line voltage.

GCS11-1853-2753 ELECTRICAL DATA

Model No.		GCS11-1853						GCS11-2753					
Line voltage data — 60 Hz — 3 phase		200V		230V		460V		200V		230V		460V	
Compressors (2)	Rated load amps (total)	54		54		26.8		72		72		35.6	
	Locked rotor amps (total)	387.0		387.0		198.0		466.0		466.0		232.0	
Condenser Fan Motors (2)	Full load amps (total)	9.4		8.2		4.2		12.8		10.4		5.6	
	Locked rotor amps (total)	21.2		20.2		9.8		30.0		28.0		13.2	
Evaporator Blower Motor	Horsepower	3	5	3	5	3	5	3	5	3	5	3	5
	Full load amps (total)	11.4	16.2	10.0	14.6	5.0	7.3	11.4	16.2	10.0	14.6	5.0	7.3
	Locked rotor amps (total)	65	100	56	90	28	45	65.0	100	56	90	28	45
Optional Exhaust Fan Motors	(No.) Horsepower	(2) — 1/4		(2) — 1/4		(2) — 1/4		(3) — 1/4		(3) — 1/4		(3) — 1/4	
	Full load amps (total)	2.8		2.8		1.42		4.20		4.20		2.13	
	Locked rotor amps (total)	6.50		6.50		2.60		9.75		9.75		3.90	
Recommended Max. Fuse Size (Amps)	Less Exhaust Fans	110	125	110	110	50	60	125	125	125	125	60	70
	With Exhaust Fans	110	125	110	110	60	60	125	150	125	125	70	70
Unit Power Factor	Less Exhaust Fans	.87	.87	.87	.87	.87	.87	.88	.88	.88	.88	.88	.88
	With Exhaust Fans	.88	.88	.88	.88	.88	.88	.89	.89	.89	.89	.89	.89
Minimum Circuit Ampacity	Less Exhaust Fans	83.8	88.6	81.2	85.8	40.5	42.8	105.2	110	101.4	106	50.6	53
	With Exhaust Fans	86.6	91.4	84.0	88.6	41.9	43.9	109.4	114.2	105.6	110.2	52.8	55.1

*Refer to National Electric Code manual to determine wire, fuse and disconnect size requirements.
NOTE — Extremes of operating range are plus and minus 10% of line voltage.

FIELD WIRING

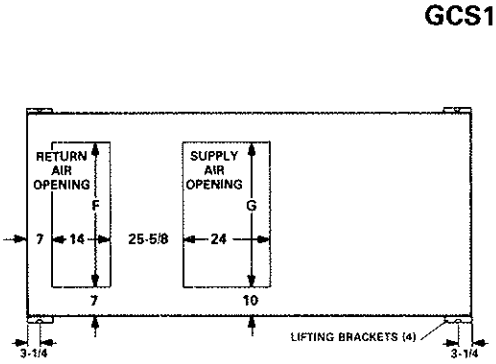


A — Three wire power (See Electrical Data Table)
B — Eight wire low voltage — DC only
Six wire low voltage — DC only (with Remote Switching Status Panel Only)
C — Two wire low voltage — DC only (with transmitter)
D — Two wire low voltage — AC only (with sub-base)
E — Nine wire low voltage — AC only
F — Three wire low voltage — AC only
G — Two wire 120 volt power
H — Twelve wire low voltage — AC only
J — Two wire low voltage — DC only
L — Three wire low voltage — DC only
M — Three wire low voltage — DC only (with Remote Switching Status Panel or sub-base and Power Saver)
N — Two wire low voltage — AC only (with sub-base and Power Saver)

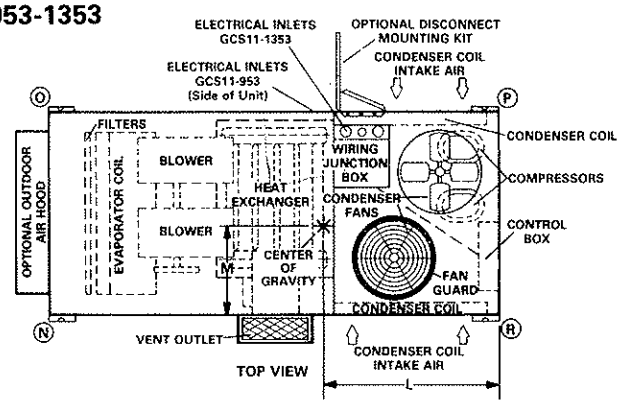
Note – Field wiring not furnished

NOTE – All wiring must be in accordance with regulations of the National Electrical Code (NEC).

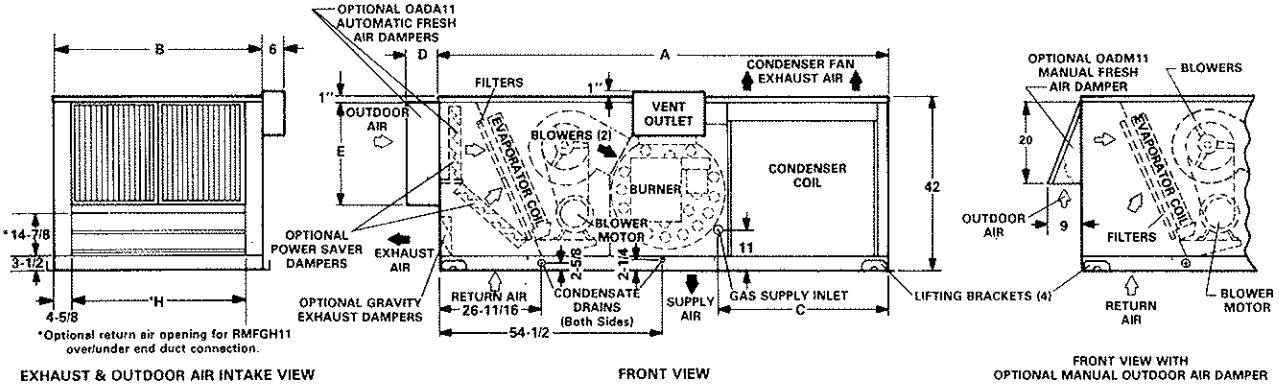
DIMENSIONS (inches)
GCS11-953-1353



TOP VIEW BASE SECTION



TOP VIEW



EXHAUST & OUTDOOR AIR INTAKE VIEW

FRONT VIEW

FRONT VIEW WITH OPTIONAL MANUAL OUTDOOR AIR DAMPER

Model No.	A	B	C	D	E	F	G	H
GCS11-953	111	50	42	6-1/8	20-3/4	35-9/16	32-9/16	40-3/4
GCS11-1353	116-1/2	68	47-1/2	14-1/8	32	53-9/16	47-9/16	58-3/4

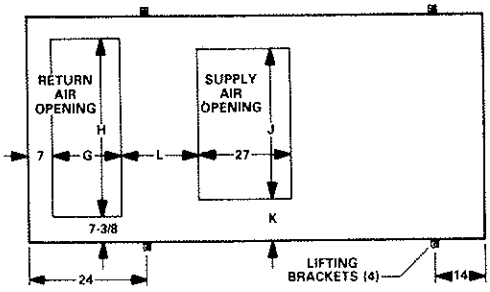
CENTER OF GRAVITY (in.)

Model No.		L	M
GCS11-953	Basic Unit	53	25
	With Power Saver	54	24
GCS11-1353	Basic Unit	57	32
	With Power Saver	59	30

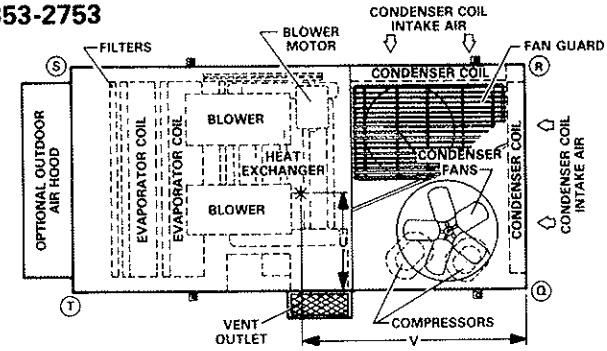
CORNER WEIGHTS (lbs.)

Model No.		N	O	P	R
GCS11-953	Basic Unit	382	382	418	418
	With Power Saver	430	397	419	450
GCS11-1353	Basic Unit	518	460	481	541
	With Power Saver	613	483	471	596

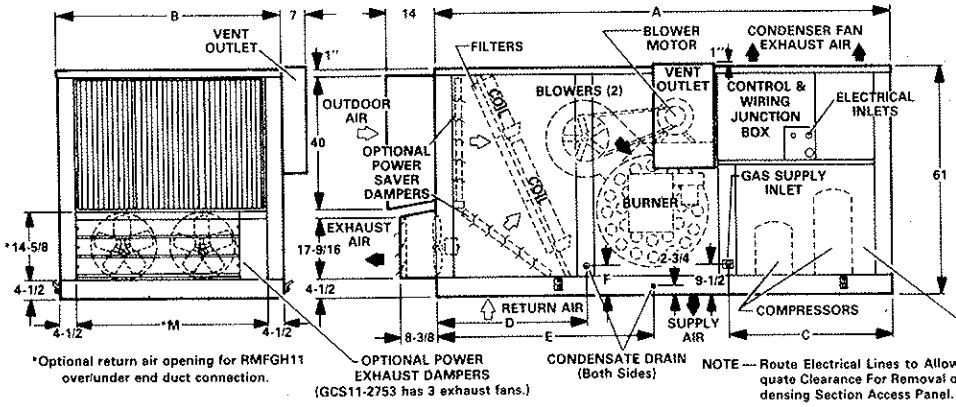
DIMENSIONS (inches)
GCS11-1853-2753



TOP VIEW BASE SECTION



TOP VIEW



*Optional return air opening for RMFGH11 over/under end duct connection.

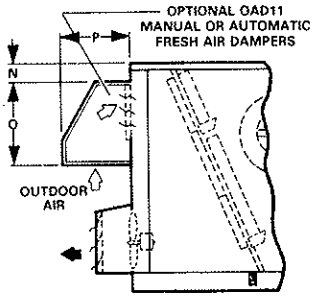
OPTIONAL POWER EXHAUST DAMPERS (GCS11-2753 has 3 exhaust fans.)

CONDENSATE DRAIN (Both Sides)

NOTE — Route Electrical Lines to Allow Adequate Clearance For Removal of Condensing Section Access Panel.

EXHAUST & OUTDOOR AIR INTAKE VIEW

FRONT VIEW



FRONT VIEW WITH OPTIONAL FRESH AIR DAMPERS

Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
GCS11-1853	116-1/2	68	42-1/4	32-7/8	54-1/8	8-5/16	18	53-5/8	47	10-1/2	19-1/4	58-3/4	1-5/8	27-1/2	22-1/4
GCS11-2753	142	78	61-7/8	41	60-1/16	2-3/4	22-1/2	63-5/8	53	12-1/2	20-3/4	68-3/4	7-3/8	33-1/4	24-1/4

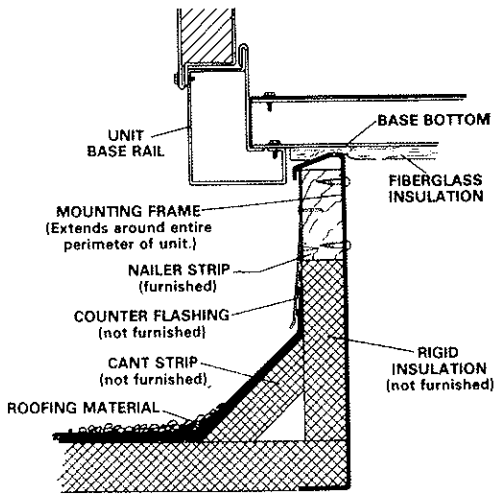
CORNER WEIGHTS (lbs.)

Model No.		Q	R	S	T
GCS11-1853	Basic Unit	777	591	489	643
	With Power Saver	858	615	527	735
	With Power Saver/Exhaust Fans	879	629	558	779
GCS11-2753	Basic Unit	836	785	716	763
	With Power Saver	925	824	773	868
	With Power Saver/Exhaust Fans	952	848	820	920

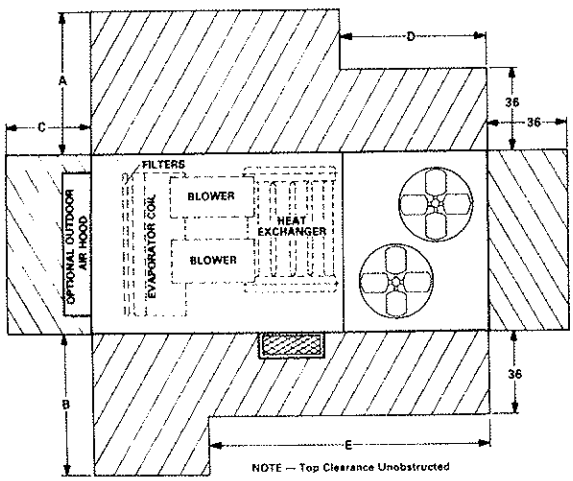
CENTER OF GRAVITY (in.)

Model No.		U	V
GCS11-1853	Basic Unit	29-3/8	52-3/4
	With Power Saver	28-3/8	53-3/4
	With Power Saver/Exhaust Fans	28-3/8	54-3/4
GCS11-2753	Basic Unit	37-3/4	67-3/4
	With Power Saver	36-3/4	68-3/4
	With Power Saver/Exhaust Fans	36-3/4	69-3/4

TYPICAL FLASHING DETAIL FOR RMFG11 ROOF MOUNTING FRAME



INSTALLATION CLEARANCES (inches)



Model No.	A	B	C	D	E
GCS11-953	50	50	24	40	81
GCS11-1353	68	68	36	45-1/2	86-1/2
GCS11-1853	68	68	36	44	84
GCS11-2753	78	78	36	62	102

ROOF MOUNTING FRAME SPECIFICATIONS

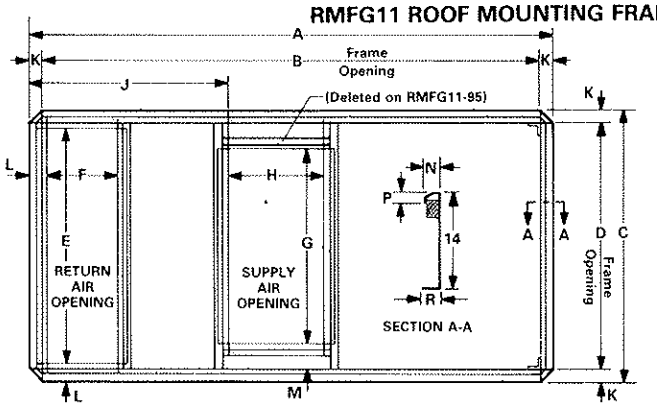
Roof Mounting frame is rigid enough to be spanned over its entire length or cantilevered if supported on either side of the center of gravity.

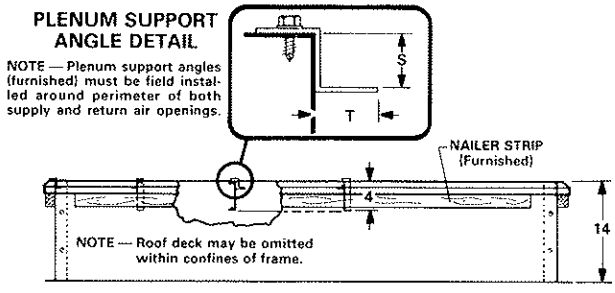
Mounting Frame Height	GCS11-953		GCS11-1353		GCS11-1853		GCS11-2753	
	RMFG11	RMFGH11	RMFG11	RMFGH11	RMFG11	RMFGH11	RMFG11	RMFGH11
*Frame moment of inertia (I) (in.⁴)	86	88	86	88	92	660	92	660
*Frame section modulus $\frac{I}{C}$ (in.³)	12.3	12.3	12.3	12.3	11.8	42.7	11.8	42.7
Mounting frame weight (lb./foot of length)	6.3	8.8	6.3	10.0	9.8	13.5	9.8	13.5
Mounting frame design strength (psi)	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000

*Includes both sides of frame.

DIMENSIONS (inches)

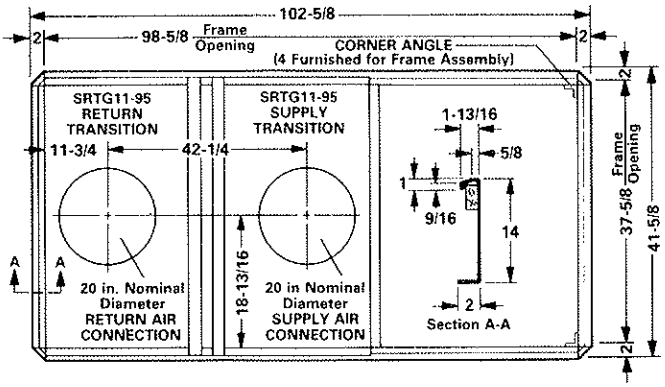
RMFG11 ROOF MOUNTING FRAME WITH DOUBLE DUCT OPENING

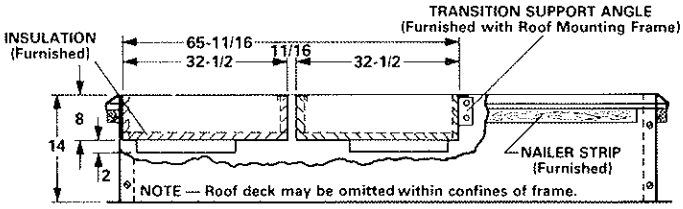




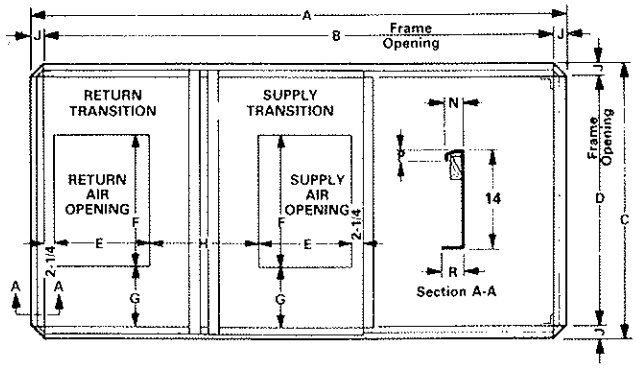
Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R	S	T
RMFG11-95	102-5/8	98-5/8	41-5/8	37-5/8	35-7/8	14-1/4	32-7/8	24-1/4	42-1/2	2	2-7/8	3-7/8	1-13/16	1	2	3/4	7/8
RMFG11-135	108-1/8	104-1/8	59-5/8	55-5/8	53-7/8	14-1/4	47-7/8	24-1/4	42-1/2	2	2-7/8	3-7/8	1-13/16	1	2	3/4	7/8
RMFG11-185	111-1/4	104-1/8	62-3/4	55-5/8	54-1/4	18-5/8	47-5/8	27-5/8	42-1/8	3-9/16	4-1/4	4	3-9/16	3-15/16	3-1/8	5/8	11/16
RMFG11-275	136-13/16	129-11/16	72-3/4	65-5/8	64-1/4	23-1/8	53-5/8	27-5/8	47-1/2	3-9/16	4-1/4	6	3-9/16	3-15/16	3-1/8	5/8	11/16

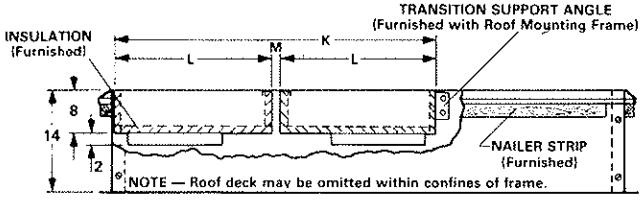
RMFG11 ROOF MOUNTING FRAME WITH FD11-95 & RTD11-95 CEILING SUPPLY AND RETURN TRANSITIONS





RMFG11 ROOF MOUNTING FRAME WITH FD11 & RTD11-135, 185 & 275 CEILING SUPPLY AND RETURN TRANSITIONS



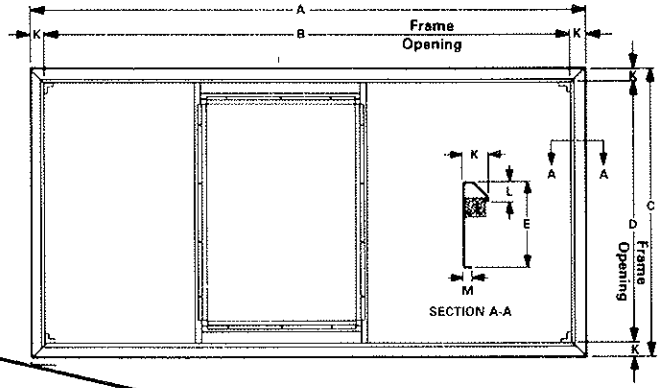


Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N	P	R
RMFG11-135	108-1/8	104-1/8	59-5/8	55-5/8	18	28	13-3/4	25-3/16	2	65-11/16	32-1/2	11/16	1-13/16	1	2
RMFG11-185	111-1/4	104-1/8	62-3/4	55-5/8	18	36	9-13/16	25-3/4	3-9/16	66-1/4	32-7/8	1/2	3-9/16	3-15/16	3-1/8
RMFG11-275	136-13/16	129-11/16	72-3/4	65-5/8	24	48	8-13/16	19-3/4	3-9/16	72-1/4	35-7/8	1/2	3-9/16	3-15/16	3-1/8

LB-38758C .

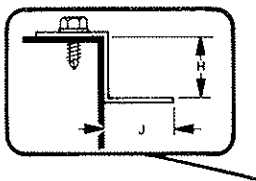
DIMENSIONS (inches)

RMFGH11 HORIZONTAL MOUNTING FRAME

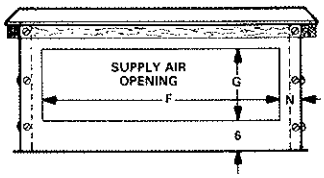


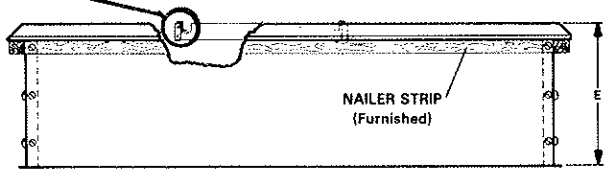
PLENUM SUPPORT ANGLE DETAIL

Optional duct connection support angles (furnished) for field installation around perimeter of unit supply air opening.



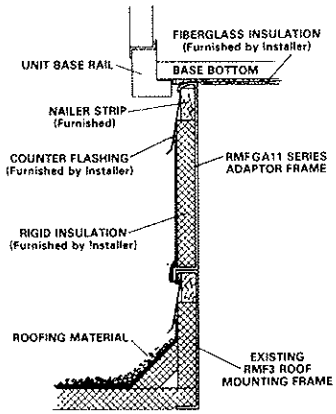
NOTE - Return air duct connection is to unit. Refer to unit dimension drawing for location and size





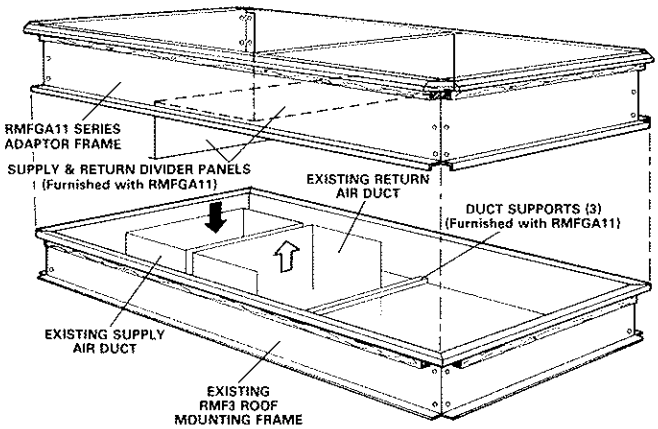
Model No.	A	B	C	D	E	F	G	H	J	K	L	M	N
RMFGH11-95	102-1/4	98-5/8	41-1/4	37-5/8	23	31	12	3/4	7/8	1-13/16	1	2	3-5/16
RMFGH11-135	107-3/4	104-1/8	59-1/4	55-5/8	23	48	12	3/4	7/8	1-13/16	1	2	3-13/16
RMFGH11-185	111-1/4	104-1/8	62-3/4	55-5/8	30	48	17	5/8	11/16	3-9/16	3-15/16	3-1/8	3-13/16
RMFGH11-275	136-13/16	129-11/16	72-3/4	65-5/8	30	58	17	5/8	11/16	3-9/16	3-15/16	3-1/8	3-13/16

TYPICAL FLASHING DETAIL FOR RMFGA11 AND RMF3 ROOF MOUNTING FRAME

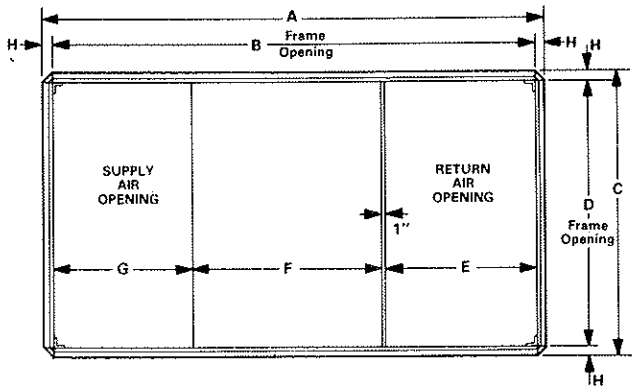


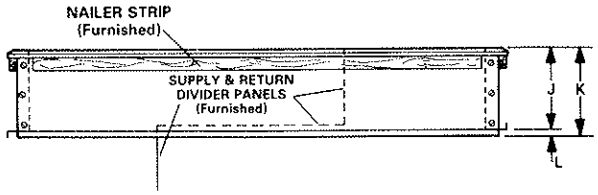
NOTE — RMFG11-953 frame shown. Other sizes similar.

RMFGA11 ROOF MOUNTING FRAME WITH RMF3 ROOF MOUNTING FRAME



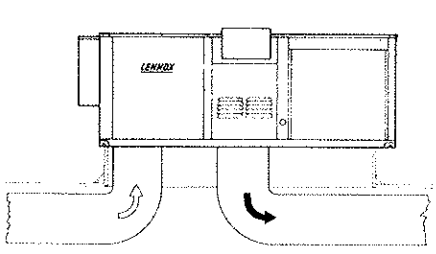
RMFGA11 ADAPTOR MOUNTING FRAME



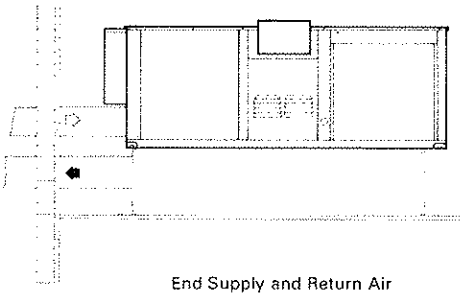


Model No.	A	B	C	D	E	F	G	H	J	K	L
RMFGA11-95	86-5/16	82-11/16	41-1/4	37-5/8	30	28-1/4	23-7/16	1-13/16	17-1/2	19	1-1/2
RMFGA11-135	106-3/16	102-9/16	59-1/4	55-5/8	38-1/2	33-1/16	30	1-13/16	17-1/2	19	1-1/2
RMFGA11-185	111-1/4	104-1/8	62-3/4	55-5/8	36	34-5/8	32-1/2	3-9/16	18	19-1/2	1-1/2
RMFGA11-275	127-9/16	120-7/16	72-3/4	65-5/8	42-3/8	44-9/16	32-1/2	3-9/16	22	23-1/2	1-1/2

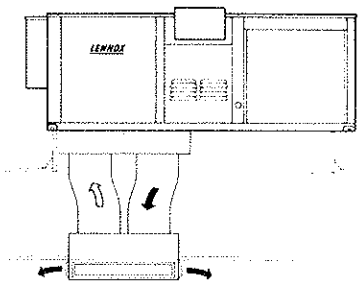
AIR PATTERN



Separate Supply and Return (Double) Duct



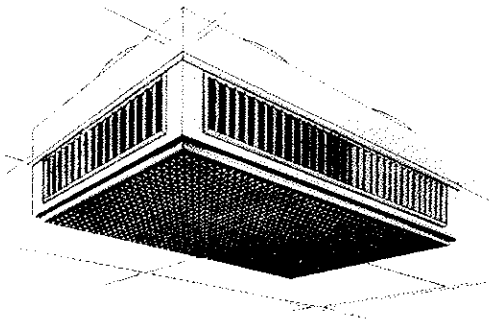
End Supply and Return Air
(over and under) Duct Application.



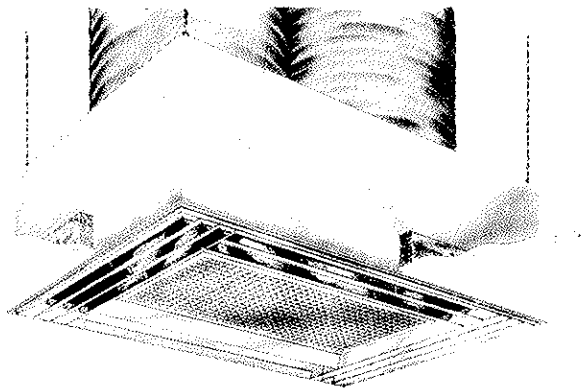
Combination Supply and Return Air Ceiling Diffuser
Stepdown or Flush Grille

COMBINATION CEILING SUPPLY AND RETURN AIR DIFFUSERS

STEP-DOWN CEILING DIFFUSER
(RTD11-95 Model Shown)



FLUSH CEILING DIFFUSER
(FD11-95 Model Shown)



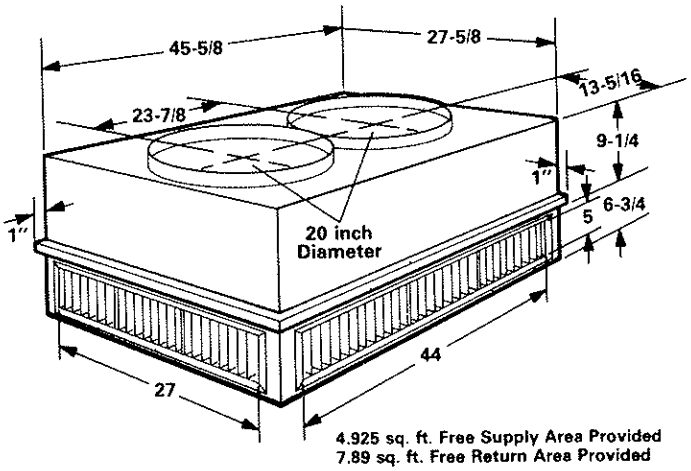
Optional RTD11 Combination Ceiling Supply and Return Diffuser Assembly — Step-down mount diffuser extends slightly below ceiling level and discharges conditioned air out through grilles on all four sides. Aluminum grilles are fitted with double deflection louvers for precise directional control of air flow. Return air enters through the large center grille. Assembly also includes insulated diffuser box with flanges for ease of duct connection, hanging rings for suspending, interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings. RTD11-95 model diffuser is used with the GCS11-953 unit, RTD11-135 with the GCS11-1353, RTD11-185 with the GCS11-1853 and RTD11-275 with the GCS11-2753.

Optional FD11 Combination Ceiling Supply and Return Diffuser Assembly — Flush mount diffuser installs almost flush with the ceiling level and discharges conditioned air out through fixed blade louvers on all four sides. Fixed blade louvers insure that air flow will be evenly distributed. Return air enters through large center grille. Assembly also includes insulated diffuser box with flanges for ease of duct connections, support hanger eyelets at the top corners for secure installation, interior transition to insure low static and even air flow on all four sides. Transition is sealed internally to prevent recirculation. Diffuser assembly is completely factory assembled. Diffuser readily adapts to T-bar ceiling grids and plaster ceilings. FD11-95 model diffuser is used with the GCS11-953 unit, FD11-135 with the GCS11-1353, FD11-185 with the GCS11-1853 and FD11-275 with the GCS11-2753.

Optional Supply and Return Transitions — Transitions field install in the roof mounting frame and provide segregated and simple duct connections to supply and return diffuser. Completely insulated galvanized steel transitions have flanges for ease of duct connection. Duct from the transitions to the diffuser is not furnished and must be provided by installer. Transitions are completely factory assembled and easily field installed in the roof mounting frame with the minimum costs and labor requirements. SRTG11-95 transitions are used with the RMFG11-95 roof mounting frame, SRTG11-135 with the RMFG11-135 frame, SRT11-185 with the RMFG11-185 frame and SRT11-275 with the RMFG11-275 frame.

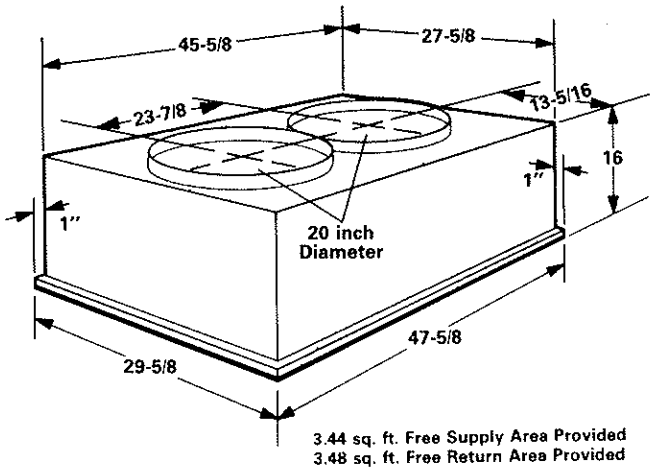
DIMENSIONS (inches)

RTD11-95 STEP-DOWN CEILING DIFFUSER



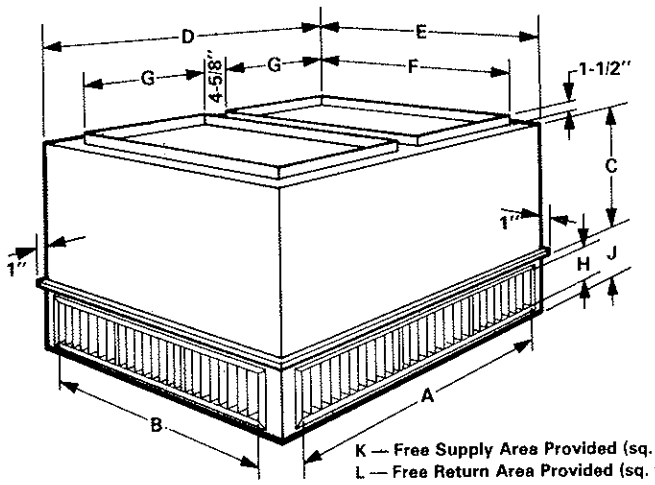
4.925 sq. ft. Free Supply Area Provided
7.89 sq. ft. Free Return Area Provided

FD11-95 FLUSH CEILING DIFFUSER



3.44 sq. ft. Free Supply Area Provided
3.48 sq. ft. Free Return Area Provided

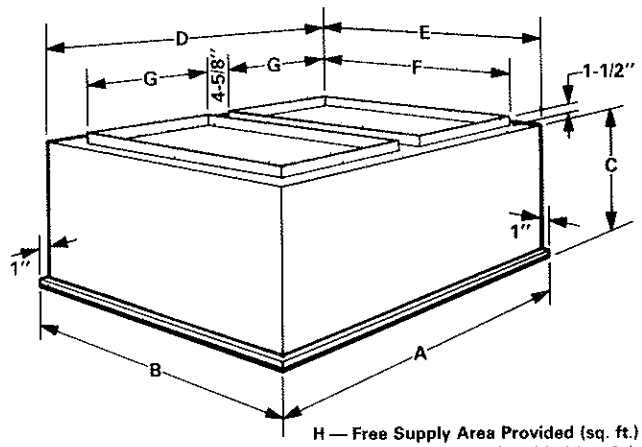
RTD11-135, RTD11-185 & RTD11-275 STEP-DOWN CEILING DIFFUSER



K — Free Supply Area Provided (sq. ft.)
L — Free Return Area Provided (sq. ft.)

Model No.	A	B	C	D	E	F	G	H	J	K	L
RTD11-135	44	32	20-5/8	45-5/8	33-5/8	28	18	5	6-3/4	5.27	9.78
RTD11-185	44	44	26-1/8	45-5/8	45-5/8	36	18	6	7-3/4	6.01	12.35
RTD11-275	55	55	31-1/2	57-5/8	57-5/8	48	24	7	8-7/8	8.77	19.04

FD11-135, FD11-185 & FD11-275 FLUSH CEILING DIFFUSER

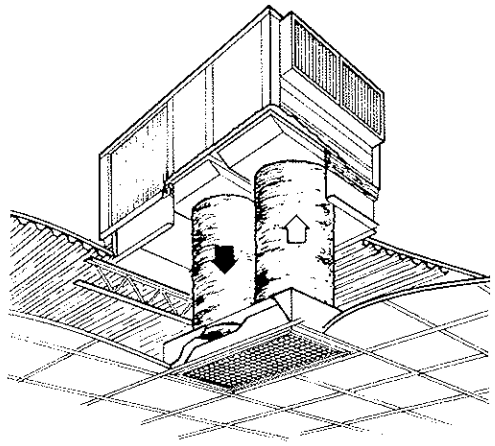


H — Free Supply Area Provided (sq. ft.)
J — Free Return Area Provided (sq. ft.)

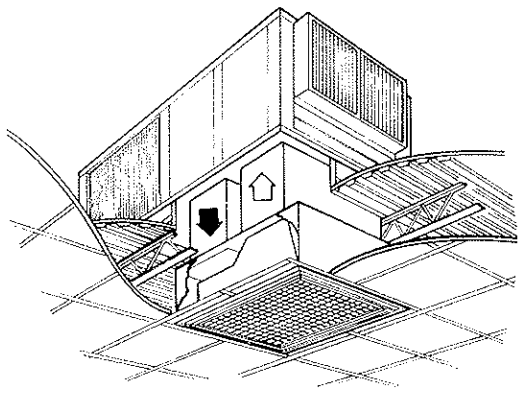
Model No.	A	B	C	D	E	F	G	H	J
FD11-135	47-5/8	35-5/8	24	45-5/8	33-5/8	28	18	3.73	4.57
FD11-185	47-5/8	47-5/8	30	45-5/8	45-5/8	36	18	4.35	6.63
FD11-275	59-5/8	59-5/8	36	57-5/8	57-5/8	48	24	5.45	12.57

DIFFUSER AIR PATTERN

FLUSH DIFFUSER
(FD11-95 Model Shown)



FLUSH DIFFUSER
(FD11-135 Model Shown)



BLOWER DATA

GCS11-953 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)																					
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00		1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2600	630	0.60	690	0.75	745	0.80	795	0.95	840	1.10	880	1.20	920	1.30	955	1.45	990	1.55	1025	1.65	1060	1.75	1080	1.80	1105	1.90	1140	1.95	1170	2.05	1200	2.10
2800	680	0.75	735	0.85	785	1.00	835	1.15	875	1.28	915	1.40	955	1.55	990	1.65	1025	1.80	1055	1.90	1080	2.00	1105	2.05	1135	2.15	1170	2.25	1195	2.35	1225	2.40
3000	725	0.85	780	1.05	830	1.20	875	1.35	910	1.45	955	1.65	990	1.80	1030	1.90	1055	2.00	1085	2.10	1105	2.25	1135	2.30	1170	2.50	1195	2.55	1225	2.65	1255	2.80
3200	770	0.95	825	1.25	870	1.40	915	1.55	955	1.70	990	1.85	1035	2.05	1060	2.15	1085	2.25	1110	2.40	1140	2.55	1170	2.75	1200	2.80	1225	2.90	1255	3.05	1280	3.20
3400	820	1.50	870	1.45	910	1.60	955	1.80	995	2.00	1030	2.15	1065	2.25	1090	2.45	1115	2.55	1145	2.70	1175	2.85	1200	3.05	1230	3.15	1260	3.30	----	----	----	----
3600	870	1.55	910	1.70	960	1.90	995	2.10	1035	2.20	1070	2.40	1095	2.60	1125	2.75	1155	2.95	1180	3.05	1190	3.10	1240	3.40	----	----	----	----	----	----	----	----
3800	915	1.75	960	1.95	1000	2.20	1040	2.35	1075	2.60	1100	2.75	1130	2.90	1165	3.10	1190	3.25	1270	3.45	----	----	----	----	----	----	----	----	----	----	----	----

NOTE — All Cfm data is measured external to the unit with the air filters in place. See Page 60b for Accessory Pressure Drop data.

GCS11-1353 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)																					
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00		1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
3800	610	0.80	670	0.95	720	1.12	765	1.25	815	1.45	850	1.61	880	1.70	915	1.80	950	1.90	985	2.05	1020	2.17	1060	2.40	1095	2.55	1125	2.70	1155	2.80	1180	2.90
4000	645	0.92	695	1.10	745	1.25	795	1.45	835	1.60	870	1.75	900	1.82	935	1.92	970	2.05	1000	2.15	1040	2.35	1075	2.55	1105	2.70	1140	2.85	1170	3.00	1200	3.15
4200	675	1.12	725	1.30	775	1.45	820	1.65	855	1.85	890	1.90	925	1.95	960	2.10	990	2.20	1025	2.35	1060	2.55	1095	2.75	1125	2.90	1155	3.05	1185	3.20	1215	3.35
4400	705	1.35	755	1.50	805	1.65	840	1.80	880	1.95	910	2.05	945	2.10	980	2.25	1010	2.40	1045	2.55	1080	2.80	1110	2.90	1145	3.05	1175	3.20	1205	3.35	----	----
4600	735	1.55	785	1.70	830	1.85	865	2.00	895	2.05	940	2.20	970	2.30	1000	2.42	1035	2.60	1070	2.80	1100	3.00	1135	3.15	1160	3.30	1190	3.45	----	----	----	----
4800	770	1.80	815	1.90	855	2.05	885	2.15	925	2.30	960	2.40	990	2.50	1020	2.65	1055	2.85	1090	3.05	1120	3.20	1150	3.35	----	----	----	----	----	----	----	----
5000	805	2.00	840	2.15	880	2.30	910	2.40	950	2.50	980	2.60	1010	2.85	1045	2.95	1080	3.00	1110	3.30	1140	3.45	----	----	----	----	----	----	----	----	----	----
5200	830	2.30	865	2.45	900	2.55	940	2.70	975	2.80	1005	2.90	1035	3.05	1070	3.25	1100	3.45	----	----	----	----	----	----	----	----	----	----	----	----	----	----
5400	860	2.65	890	2.75	930	2.90	970	3.05	995	3.15	1030	3.30	1060	3.45	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
5600	885	3.05	920	3.20	960	3.35	990	3.45	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

NOTE — All Cfm data is measured external to the unit with the air filters in place. See Page 60b for Accessory Pressure Drop data.

BLOWER DATA

GCS11-1853 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)																											
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00		1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
5800	580	1.65	620	1.80	660	2.05	690	2.25	730	2.45	760	2.65	790	2.90	820	3.10	840	3.30	860	3.50	880	3.75	910	4.05	950	4.50	970	4.90	1000	5.30	1020	5.70
6000	590	1.75	635	2.00	675	2.20	710	2.45	745	2.65	775	2.85	805	3.10	830	3.30	855	3.60	875	3.80	900	4.10	930	4.45	965	4.90	990	5.35	1020	5.75	----	
6200	610	1.85	650	2.10	690	2.40	730	2.65	760	2.85	790	3.10	820	3.30	840	3.50	870	3.90	890	4.10	920	4.45	950	4.85	980	5.30	1010	5.70	----		----	
6400	630	2.05	665	2.30	705	2.60	745	2.85	775	3.10	805	3.35	835	3.60	855	3.80	885	4.20	910	4.40	940	4.85	970	5.30	1000	5.70	----		----		----	
6600	650	2.30	680	2.50	720	2.80	760	3.10	790	3.35	820	3.60	850	3.90	870	4.10	900	4.50	930	4.75	960	5.30	990	5.75	----		----		----		----	
6800	670	2.55	700	2.75	740	3.05	775	3.35	805	3.60	835	3.85	865	4.25	885	4.40	920	4.80	950	5.25	975	5.75	----		----		----		----		----	
7000	690	2.80	720	3.00	760	3.35	795	3.60	820	3.85	850	4.15	880	4.60	900	4.90	940	5.30	970	5.75	----		----		----		----		----		----	
7200	710	3.00	740	3.25	780	3.60	810	3.90	835	4.10	865	4.50	895	4.90	925	5.20	960	5.70	----		----		----		----		----		----		----	
7400	730	3.20	760	3.50	800	3.90	830	4.25	850	4.40	880	4.85	910	5.20	950	5.70	----		----		----		----		----		----		----		----	

NOTE — All Cfm data is measured external to the unit with the air filters in place. See Page 60b for Accessory Pressure Drop data.

GCS11-2753 BLOWER PERFORMANCE

Air Volume (Cfm)	STATIC PRESSURE EXTERNAL TO UNIT — (Inches Water Gauge)																											
	0		.10		.20		.30		.40		.50		.60		.70		.80		.90		1.00		1.10		1.20		1.30		1.40		1.50	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
7600	530	1.70	575	1.95	620	2.30	670	2.65	700	2.90	730	3.10	760	3.30	790	3.50	820	3.70	850	3.95	870	4.15	900	4.50	930	4.80	960	5.00	990	5.15	1020	5.30
7800	540	1.80	590	2.10	635	2.40	680	2.85	710	3.05	740	3.25	770	3.45	800	3.65	830	3.85	860	4.15	880	4.40	910	4.70	940	5.05	970	5.15	1000	5.35	1030	5.50
8000	555	1.95	600	2.25	650	2.65	690	3.00	720	3.20	750	3.40	780	3.60	810	3.80	840	4.00	870	4.35	890	4.55	920	4.90	950	5.25	980	5.35	1010	5.55	1040	5.75
8200	570	2.10	615	2.40	665	2.85	700	3.15	730	3.35	760	3.55	790	3.75	820	3.95	850	4.20	880	4.60	900	4.75	930	5.10	960	5.35	990	5.55	1020	5.75	----	
8400	580	2.20	630	2.60	675	3.00	710	3.30	740	3.50	770	3.70	800	3.90	830	4.10	860	4.40	890	4.80	910	5.00	940	5.35	970	5.55	1000	5.75	----		----	
8600	595	2.30	645	2.80	690	3.25	720	3.45	750	3.65	780	3.85	810	4.05	840	4.25	870	4.55	900	4.95	920	5.20	950	5.55	980	5.75	----		----		----	
8800	610	2.60	660	3.10	700	3.40	730	3.60	760	3.80	790	4.00	820	4.20	850	4.40	880	4.70	910	5.20	930	5.45	960	5.75	----		----		----		----	
9000	630	2.85	675	3.25	710	3.60	740	3.75	770	4.00	800	4.20	830	4.40	860	4.60	890	5.00	920	5.40	940	5.70	----		----		----		----		----	
9200	645	3.05	690	3.50	720	3.75	750	3.95	780	4.15	810	4.40	840	4.55	870	4.80	900	5.30	930	5.60	----		----		----		----		----		----	
9400	665	3.35	700	3.70	730	3.90	760	4.10	790	4.35	820	4.60	850	4.70	880	5.00	910	5.50	----		----		----		----		----		----		----	
9600	680	3.60	710	3.85	740	4.05	770	4.25	800	4.50	830	4.75	860	4.90	890	5.25	920	5.75	----		----		----		----		----		----		----	
9800	690	3.75	720	4.00	750	4.25	780	4.45	810	4.65	840	4.90	870	5.10	900	5.50	----		----		----		----		----		----		----		----	
10,000	700	3.95	730	4.20	760	4.45	790	4.65	825	4.90	850	5.10	880	5.30	910	5.75	----		----		----		----		----		----		----		----	

NOTE — All Cfm data is measured external to the unit with the air filters in place. See Page 60b for Accessory Pressure Drop data.

BLOWER DATA

BLOWER DRIVE SELECTION

Using total air volume (cfm) and system Static Pressure External to Unit (inches water gauge) requirements determine from Blower Performance Chart Rpm and Bhp required for job. Specify Bhp, exact Rpm and power characteristics required when ordering. The correct motor and pulleys will be factory installed. The following table lists Motor hp and Rpm range of drive setups available with each motor.

Model No.	Nominal Motor Hp	Maximum Usable Hp	*Rpm Range of All Available Drive Setups
GCS11-953	1-1/2	1.80	764 — 955
	3	3.45	994 — 1185
GCS11-1353	2	2.30	688 — 860
	3	3.45	894 — 1066
GCS11-1853	3	3.45	625 — 780
	5	5.75	815 — 970
GCS11-2753	3	3.45	585 — 760
	5	5.75	790 — 965

NOTE — Maximum usable hp of motors furnished by Lennox are shown in table. If motors of comparable hp are used be sure to keep within the service factor limitations outlined on the motor nameplate.
*Specify exact Bhp, Rpm and power characteristics required when ordering.

CEILING DIFFUSER AIR THROW DATA

Model No.	Air Volume (cfm)	*Effective Throw Range (feet)	
		RTD11 Step Down	FD11 Flush
GCS11-953	3000	27 — 33	25 — 30
	3375	30 — 37	28 — 34
	3750	34 — 41	31 — 38
GCS11-1353	4400	34 — 42	32 — 40
	4950	38 — 47	36 — 45
	5500	43 — 52	40 — 50

*Throw is the horizontal or vertical distance an air stream travels on leaving the outlet of diffuser before the maximum velocity is reduced to 50 ft. per minute.

Model No.	Air Volume (cfm)	*Effective Throw Range (feet)	
		RTD11 Step Down	FD11 Flush
GCS11-1853	6000	45 — 55	48 — 55
	6750	47 — 56	50 — 58
	7500	49 — 58	55 — 66
GCS11-2753	8000	39 — 44	53 — 62
	9000	47 — 56	55 — 64
	10,000	49 — 58	57 — 67

*Throw is the horizontal or vertical distance an air stream travels on leaving the outlet of diffuser before the maximum velocity is reduced to 50 ft. per minute.

POWER EXHAUST FANS PERFORMANCE

GCS11-1853

Air Volume (Cfm Exhausted)	Return Air System Static Pressure (Inches Water Gauge)
5050	0
4750	.05
4400	.10
4100	.15
3750	.20
3450	.25

GCS11-2753

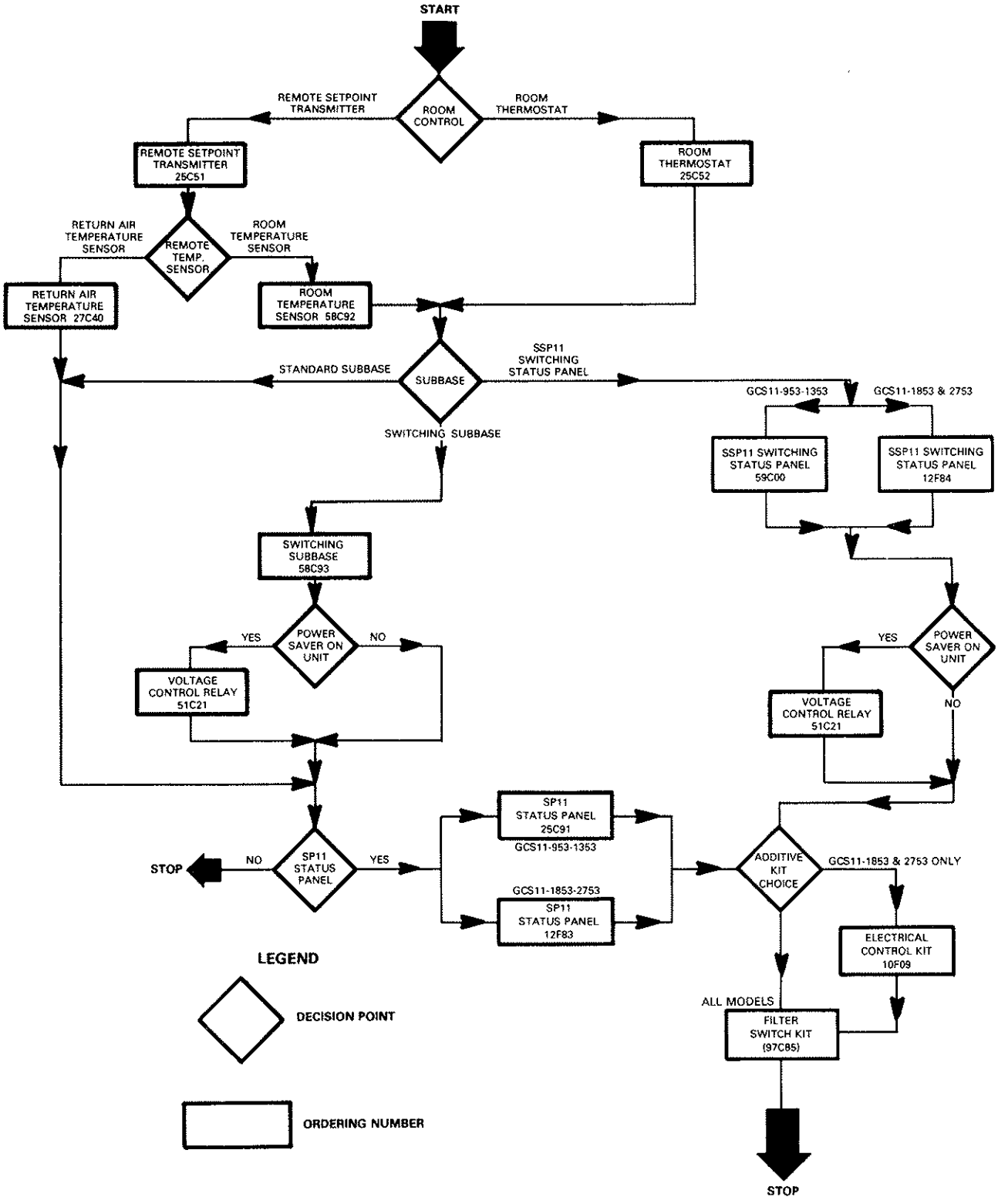
Air Volume (Cfm Exhausted)	Return Air System Static Pressure (Inches Water Gauge)
7050	0
6550	.05
6100	.10
5600	.15
5100	.20
4600	.25

BLOWER DATA

ACCESSORY PRESSURE DROP

Model No.	Air Volume (cfm)	Total Pressure Drop (inches water gauge)				
		Power Saver	RTD Combination Ceiling Supply and Return			FD Ceiling Supply & Return
			2 Sides Open	3 Sides Open	4 Sides Open	
GCS11-953	2600	.023	.24	.21	.18	.17
	2800	.025	.27	.24	.21	.20
	3000	.035	.32	.29	.25	.25
	3200	.045	.41	.37	.32	.31
	3400	.055	.50	.45	.39	.37
	3600	.065	.61	.54	.48	.44
	3800	.075	.73	.63	.57	.51
GCS11-1353	3800	.029	.40	.32	.26	.18
	4000	.037	.44	.36	.29	.21
	4200	.044	.49	.40	.33	.24
	4400	.052	.54	.44	.37	.27
	4600	.059	.60	.49	.42	.31
	4800	.067	.65	.53	.46	.35
	5000	.074	.69	.58	.50	.39
	5200	.082	.75	.62	.54	.43
	5400	.090	.80	.68	.59	.48
	5600	.097	.86	.72	.63	.52
GCS11-1853	5800	.044	.70	.59	.51	.39
	6000	.045	.76	.63	.55	.42
	6200	.047	.80	.68	.59	.46
	6400	.048	.86	.72	.63	.50
	6600	.050	.92	.77	.67	.54
	6800	.052	.99	.83	.72	.58
	7000	.054	1.04	.87	.76	.62
	7200	.056	1.09	.92	.80	.66
	7400	.058	1.15	.97	.84	.70
GCS11-2753	7600	.038	.51	.42	.37	.43
	7800	.039	.55	.46	.40	.47
	8000	.041	.59	.49	.43	.50
	8200	.043	.63	.53	.46	.53
	8400	.045	.67	.56	.49	.56
	8600	.047	.71	.60	.52	.59
	8800	.048	.76	.63	.55	.63
	9000	.050	.79	.67	.58	.66
	9200	.052	.84	.70	.61	.69
	9400	.054	.87	.73	.64	.72
	9600	.055	.92	.77	.67	.75
	9800	.057	.96	.81	.70	.78
	10,000	.059	1.00	.84	.73	.81

CONTROL SELECTION FLOW CHART



GUIDE SPECIFICATIONS

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

General — *Furnish and install a 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 United States.*

The installed weight shall not be more than . . . . . lbs. Entire unit shall have a width of not more than . . . . . inches, a depth of not more than . . . . . inches and an overall height of not more than . . . . . inches. 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.

Approvals — *All electrical components shall have U.L. Listing. All wiring shall be in compliance with NEC.*

Roof Mounting Frame — *Furnish and install a steel roof mounting frame for bottom or horizontal discharge and return air duct connection. It shall mate to the bottom perimeter of the equipment. When flashed into the roof it shall make a unit mounting curb and provide weatherproof duct connection and entry into the conditioned area. Flashing shall be the responsibility of a roofing contractor. 14 inch high frame shall be approved by National Roofing Contractors Association.*

Air Distribution — *Equipment shall be capable of bottom or end (horizontal) handling of conditioned air. All air distribution ducts shall be fiberglass or . . . . . ga. galvanized steel insulated with . . . . . inch thick . . . . . lb. density fiberglass or equivalent.*

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

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 temperature of . . . . . F. The compressor power input shall not exceed . . . . . kw at these conditions.*

The coils shall be non-ferrous construction with aluminum fins mechanically bonded to durable copper tubes. Coils shall be pressure leak tested. Coil face area shall be not less than . . . . . sq. ft. (evaporator) and . . . . . sq. ft. (condenser).

Dual compressors shall be resiliently mounted, have overload protection, internal pressure relief and crankcase heater. The refrigeration system shall have suction and discharge line service gauge ports, high pressure switch, low pressure switch, driers and full refrigerant charge. Control option available shall consist of low ambient control. Shall comply with ARI Standard 210 Test Conditions.

Heating System — *The heating capacity output shall be . . . . . Btuh with a gas input of . . . . . Btuh.*

Automatic controls furnished as standard equipment shall give single stage or two stage operation. Cylindrical drum and tube heat exchanger shall be constructed of aluminized steel. Combination stainless and aluminized steel power burner shall have prepurge, electric spark ignition, 100% safety shutoff controls, electronic flame sensing controls, series gas valves and limit controls. Staging control shall be with separate gas valves. All controls shall be listed for operation at low outdoor air temperatures. Burner shall be equipped with inspection window and air shutter for combustion air adjustment. Complete service access shall be provided for controls and wiring. Shall be A.G.A. design certified for outdoor installation.

Electronic Control System — *Shall provide room thermostat, discharge temperature sensor, logic panel, modulating damper actuator and related accessories to automatically operate the mechanical equipment through the heating or cooling and ventilating cycles as required.*

Cabinet — *Shall be galvanized steel with a baked-on outdoor enamel paint finish. 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. Base shall have drainage holes. Lifting lugs shall be provided for rigging.*

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

Supply Air Blowers — *Dual centrifugal supply air blowers shall have permanently lubricated ball bearings, adjustable belt drive and motor mount where belt tension can be easily adjusted. The entire assembly shall be floated on resilient rubber mounts. Blower wheel shall be statically and dynamically balanced. Blower shall be capable of delivering . . . . . cfm at an external static pressure of . . . . . inches water gauge requiring . . . . . bhp and . . . . . rpm.*

Condenser Fans — *Twin propeller type condenser fans shall discharge vertically and be direct driven by a . . . . . hp motor. Fan motor shall be totally enclosed with sleeve bearings, permanently lubricated, inherently protected and equipped with rain shield. Fan shall have a safety guard.*

Air Filters — *1" thick disposable frame type fiberglass media filters shall have not less than . . . . . sq. ft. of free area.*

POWER SAVER — *Furnish and install complete with controls an optional mechanically linked air mixing damper assembly including outdoor air and recirculated air dampers. The assembly shall mount within the confines of the unit cabinet and provide for the introduction of outside air for minimum ventilation and free cooling. Outdoor air hood shall mount external to the unit cabinet. Damper motor shall be 24 volt, modulating spring return. Controls shall include discharge sensor and adjustable enthalpy control.*

Fresh Air Dampers — *Outdoor air damper section shall control outdoor air requirements and be available for manual or automatic operation. Dampers shall be adjustable for air quantities up to 25%. OADM11 and OADA11 models shall include externally mounted outdoor air hood. OAD11 models shall include cleanable air filter.*

Exhaust Air Dampers — *Pressure operated dampers shall install within the unit. Damper blades shall ride in nylon bearings and be gasketed for tight seal and quiet operation.*

Power Exhaust Air Dampers — *Direct drive propeller type fans shall exhaust air through pressure relief dampers. Motors shall be overload protected. Pressure operated dampers shall install within the unit and prevent blow back and outdoor air infiltration during the fan off cycle. Damper blades shall ride in nylon bearings and be gasketed for tight seal and quiet operation.*

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

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

Night Setback Controls — *Complete controls shall be available to program the equipment for day-night operation.*

LENNOX Industries Ltd., P.O. Box 43, Lister Road, Basingstoke, Hampshire. RG22 4AR Tel: (0256) 61261 Telex: 858675

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