



**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

COMBINATION UNIT

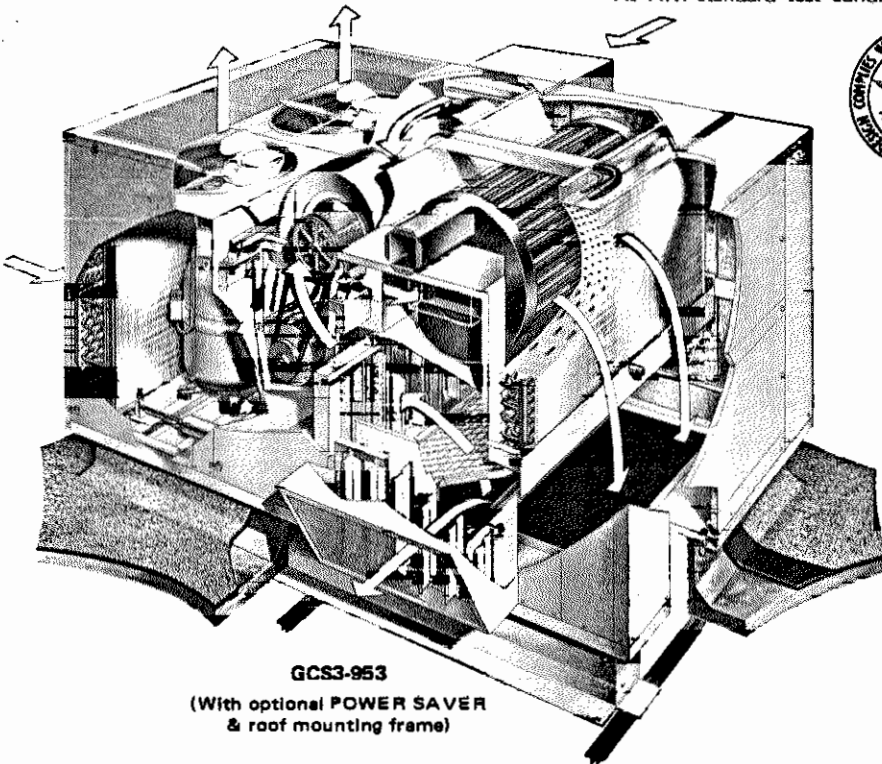
ROOFTOP

Page 37

May 15, 1972

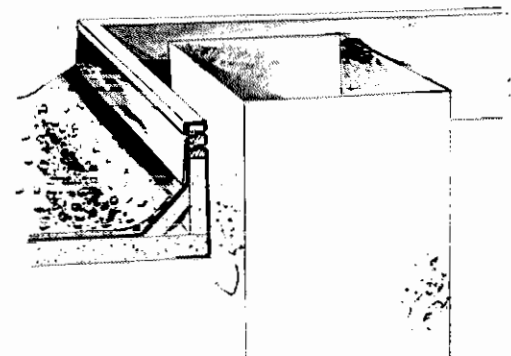
Supersedes 5-15-70

\*At ARI standard test conditions.



GCS3-953

(With optional POWER SAVER & roof mounting frame)

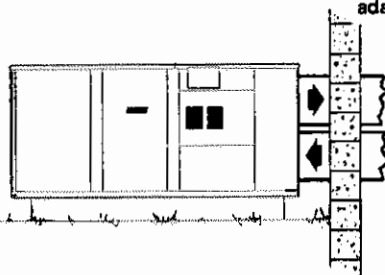


Roof Mounting Frame Detail

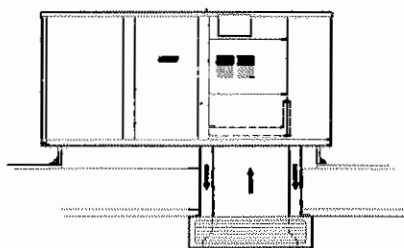
Roof mounting frame extends around entire perimeter of GCS3 base making a weatherproof installation. Duct connection and entry into the conditioned area are accomplished within the confines of the weatherproof frame.

**Three Air Patterns Possible**

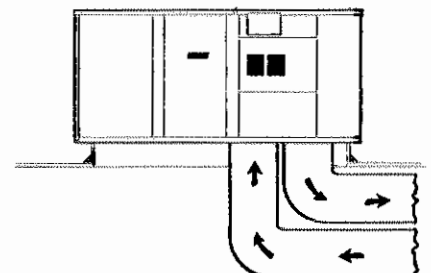
End panels fit bottom openings to give air pattern choice. Separate adapter required for combination ceiling supply and return applications.



Installation thru the wall—Slab or Roof



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



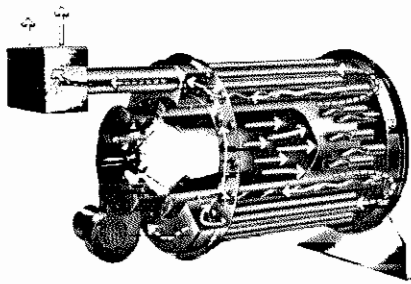
Separate Supply and Return (Double) Duct

**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 T.M. 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 T.M. 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.



**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 breaching.

**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 acrylic 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**—A.G.A. certified and 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<br>No. & size of filters (in.)              | RD3-95 (205 lbs.)<br>(2) 20 x 25 x 1    | RD3-135 (269 lbs.)<br>(4) 16 x 25 x 1 | RD3-185 (365 lbs.)<br>(3) 20 x 36 x 1 | RD3-275 (426 lbs.)<br>(4) 20 x 36 x 1 |
| Minimum fresh air damper and<br>No. & size of filters (in.) | OAD3-95 (45 lbs.)<br>(1) 16 x 20 x 1    | OAD3-135 (60 lbs.)<br>(1) 20 x 20 x 1 | OAD3-185 (90 lbs.)<br>(1) 25 x 27 x 1 | OAD3-275 (90 lbs.)<br>(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-3861-8 lbs.                          | BM-3861-8 lbs.                        | BM-3860-8 lbs.                        | BM-3860-8 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<br>P-8-9594-52 lbs.        | FD Diffuser<br>P-8-9596-46 lbs.       | P-8-9597-65 lbs.                      | P-8-9597-65 lbs.                      |
| Combination Ceiling Supply and Return Kit                   | P-8-9593-54 lbs.                        | P-8-9595-60 lbs.                      | P-8-9804-65 lbs.                      | P-8-9598-97 lbs.                      |
| Combination Ceiling Supply<br>And Return Step Down Diffuser | BM-3564-20 lbs.                         | BM-3565-29 lbs.                       | BM-3566-40 lbs.                       | BM-3567-43 lbs.                       |
| Combination Ceiling Supply<br>And Return Flush Diffuser     | RTD-95-92 lbs.                          | RTD-135-118 lbs.                      | RTD-185/275-131 lbs.                  | RTD-185/275-131 lbs.                  |
| Combination Ceiling Supply<br>And Return Flush Diffuser     | FD-95-33 lbs.<br>*FD-95-D-40 lbs.       | FD-135-49 lbs.<br>*FD-135-D-60 lbs.   | FD-185-65 lbs.<br>*FD-185-D-80 lbs.   | FD-275-105 lbs.<br>*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.                                   |                                 | GCS3-953-125               | GCS3-953-250  | GCS3-1353-175 | GCS3-1353-350 | GCS3-1853-275              | GCS3-1853-500 | GCS3-2753-275 | GCS3-2753-500 |
|---------------------------------------------|---------------------------------|----------------------------|---------------|---------------|---------------|----------------------------|---------------|---------------|---------------|
| Single Stage Heating Capacity               | Btuh Input                      | 125,000                    | ---           | 175,000       | ---           | 275,000                    | ---           | 275,000       | ---           |
|                                             | Natural Gas Btuh Output         | 93,750                     | ---           | 131,250       | ---           | 206,250                    | ---           | 206,250       | ---           |
| 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) 20x25x1<br>(2) 16x25x1 |               | (6) 16x20x1   |               | (4) 16x20x1<br>(4) 20x20x1 |               | (8) 20x20x1   |               |
|                                             | Gas supply connection MPT (in.) | Natural 3/4<br>Propane 3/4 |               | 1<br>3/4      |               | 1-1/4<br>1                 |               | 1-1/4<br>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/87 entering evaporator air.

† Cleanable polyurethane filter media.

NOTE—High altitude derate—A.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.

## INSTALLATION CLEARANCES

Furnace Side—54"    Right Side—6"    Left Side—36"    Rear—24"    Floor—Combustible

## RATINGS

| Unit Model No. | Evaporator Air 80F Dry Bulb   |                        | Outdoor Air Temperature Entering Condenser (F) |                               |                         |                               |                               |                         |                               |                               |                         |                               |                               |                         |
|----------------|-------------------------------|------------------------|------------------------------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------------|-------------------------|-------------------------------|-------------------------------|-------------------------|
|                |                               |                        | 85                                             |                               |                         | 95                            |                               |                         | 105                           |                               |                         | 115                           |                               |                         |
|                | Entering Wet Bulb Degrees (F) | Total Air Volume (Cfm) | 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                                        | .88                           | 8,900                   | 96,600                        | .89                           | 9,500                   | 91,200                        | .92                           | 10,300                  | 86,000                        | .97                           | 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                  |
| GCS3-1353      | 64                            | 3000                   | 109,700                                        | .83                           | 9,300                   | 103,800                       | .84                           | 9,900                   | 98,300                        | .89                           | 10,700                  | 92,800                        | .92                           | 11,600                  |
|                |                               | 3375                   | 112,000                                        | .83                           | 9,400                   | 106,000                       | .84                           | 10,000                  | 100,200                       | .86                           | 10,800                  | 94,700                        | .87                           | 11,700                  |
|                |                               | 3750                   | 113,900                                        | .84                           | 9,500                   | 107,700                       | .85                           | 10,100                  | 101,800                       | .87                           | 10,900                  | 96,200                        | .88                           | 11,800                  |
|                | 67                            | 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                  |
| GCS3-1853      | 63                            | 6000                   | 191,800                                        | .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                                        | .87                           | 17,800                  | 195,800                       | .89                           | 19,300                  | 184,600                       | .91                           | 20,800                  | 173,100                       | .94                           | 22,200                  |
|                |                               | 6750                   | 210,900                                        | .89                           | 18,000                  | 199,800                       | .91                           | 19,500                  | 188,200                       | .93                           | 21,000                  | 176,300                       | .96                           | 22,400                  |
|                |                               | 7500                   | 214,900                                        | .91                           | 18,200                  | 203,400                       | .93                           | 19,700                  | 191,300                       | .95                           | 21,200                  | 179,200                       | .98                           | 22,600                  |
| GCS3-2753      | 63                            | 6000                   | 222,200                                        | .82                           | 18,600                  | 210,600                       | .83                           | 20,200                  | 198,300                       | .84                           | 21,600                  | 186,100                       | .85                           | 23,000                  |
|                |                               | 6750                   | 226,400                                        | .83                           | 18,900                  | 214,500                       | .84                           | 20,400                  | 201,800                       | .85                           | 22,000                  | 189,100                       | .86                           | 23,200                  |
|                |                               | 7500                   | 230,400                                        | .84                           | 19,100                  | 218,100                       | .85                           | 20,600                  | 205,000                       | .86                           | 22,000                  | 192,000                       | .87                           | 23,500                  |
|                | 67                            | 8800                   | 281,000                                        | .89                           | 25,100                  | 248,000                       | .92                           | 26,600                  | 235,000                       | .94                           | 28,100                  | 222,000                       | .98                           | 30,000                  |
|                |                               | 9900                   | 285,500                                        | .92                           | 25,300                  | 252,600                       | .95                           | 26,800                  | 239,200                       | .97                           | 28,400                  | 225,500                       | 1.00                          | 30,300                  |
|                |                               | 8800                   | 282,600                                        | .70                           | 26,000                  | 268,000                       | .72                           | 27,700                  | 254,000                       | .74                           | 29,400                  | 239,400                       | .76                           | 31,500                  |
| 71             | 9900                          | 288,500                | .73                                            | 26,400                        | 273,000                 | .75                           | 28,000                        | 258,000                 | .76                           | 29,700                        | 242,700                 | .78                           | 31,800                        |                         |
|                | 8800                          | 304,500                | .84                                            | 27,300                        | 288,000                 | .85                           | 29,000                        | 272,000                 | .86                           | 30,800                        | 255,800                 | .88                           | 32,900                        |                         |
|                | 9900                          | 309,800                | .85                                            | 27,600                        | 292,600                 | .86                           | 29,300                        | 276,000                 | .88                           | 31,200                        | 259,500                 | .89                           | 33,200                        |                         |

## ELECTRICAL DATA

| Model No.                         | GCS3-953     |           |           | GCS3-1353 |           |           | GCS3-1853 |           |           | GCS3-2753 |            |           |           |
|-----------------------------------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|
|                                   | 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 Fan motors (2)          | FLA (total)  | 8.0       | *3.0      | *2.4      | 7.6       | *3.8      | *3.0      | 8.6       | 4.3       | 3.5       | 8.8        | 4.4       | 3.5       |
|                                   | 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 Blower Motor           | Horsepower   | 2 3       | 2 3       | 2 3       | 3 5       | 3 5       | 3 5       | 3 5       | 3 5       | 3 5       | 5 7 1/2    | 5 7 1/2   | 5 7 1/2   |
| Maximum unit amps                 | 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   |
|                                   | 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 |
| 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 0        | 4 4       | 6 6       |
| Time delay fuse, fuse-tron (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 NEC 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 NEC 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)

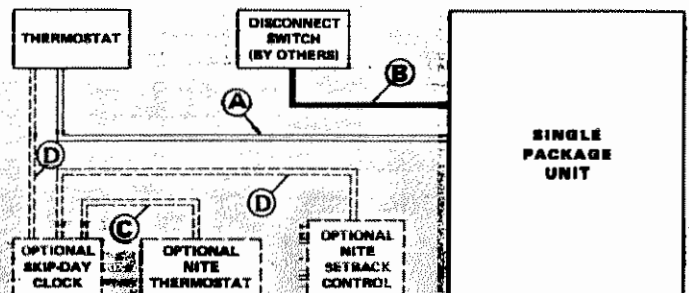
\*If POWER SAVER and Nite Setback controls are used one additional wire is required.

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-on connections to complete job.

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



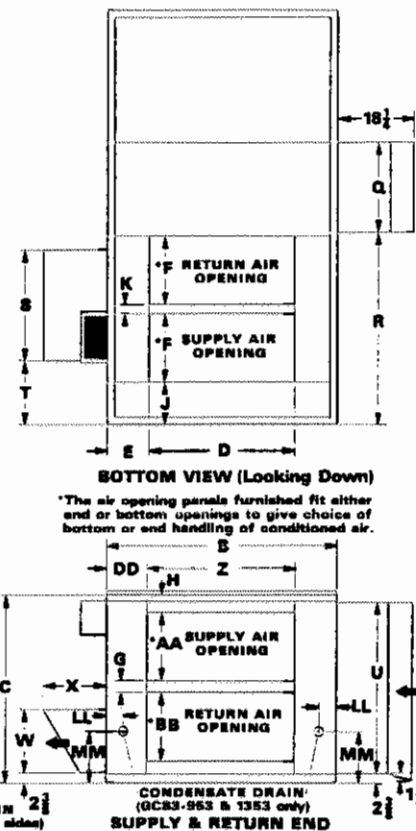
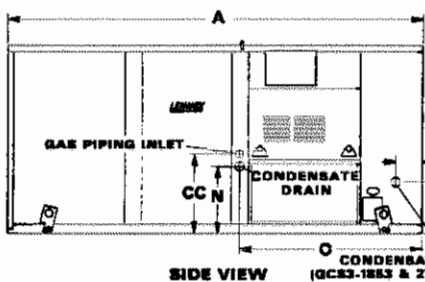
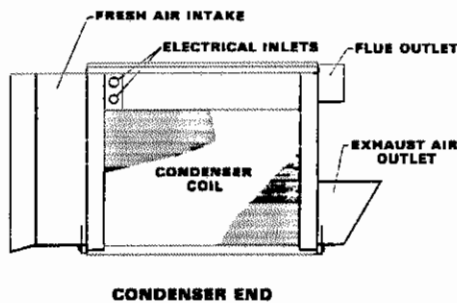
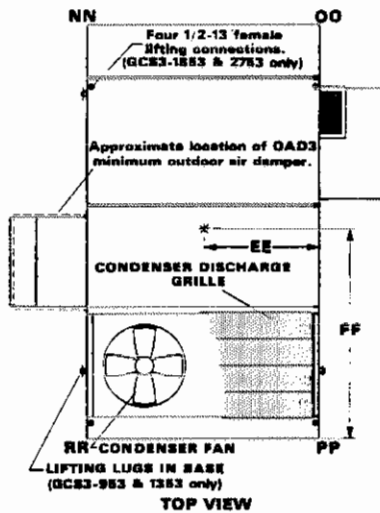
## DIMENSIONS (in.)

### CORNER WEIGHTS (lbs.)

| Model No. | NN                  | OO  | PP  | RR   |      |
|-----------|---------------------|-----|-----|------|------|
| GCS3-953  | With Power Saver    | 389 | 451 | 591  | 509  |
|           | Without Power Saver | 316 | 426 | 570  | 423  |
| GCS3-1353 | With Power Saver    | 445 | 489 | 668  | 607  |
|           | Without Power Saver | 352 | 469 | 640  | 479  |
| GCS3-1853 | With Power Saver    | 684 | 667 | 995  | 1019 |
|           | Without Power Saver | 561 | 632 | 958  | 849  |
| GCS3-2753 | With Power Saver    | 809 | 734 | 1111 | 1224 |
|           | Without Power Saver | 655 | 705 | 1083 | 1007 |

### CENTER OF GRAVITY (in.)

| Model No. | EE                  | FF      |
|-----------|---------------------|---------|
| GCS3-953  | With Power Saver    | 25 42   |
|           | Without Power Saver | 23 41½  |
| GCS3-1353 | With Power Saver    | 30 49   |
|           | Without Power Saver | 27 49½  |
| GCS3-1853 | With Power Saver    | 42 55   |
|           | Without Power Saver | 39 54½  |
| GCS3-2753 | With Power Saver    | 43% 54% |
|           | Without Power Saver | 40 54   |



| 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 | 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 | 48-3/4 | 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 | 62-5/8 | 51      | 16      | 24      | 2     | 1-1/2  | 12-5/8 | 3       | 15-1/2 | —       | 18-1/8 | 18-1/2 | 66-1/8 | 37-1/2 | 68     | 35-1/2 | 28-1/2 | 48-3/4 | 15-3/4 | 15-5/8 | 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      | 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  |         |

## RMF3 ROOF MOUNTING FRAME

### Frame Specifications

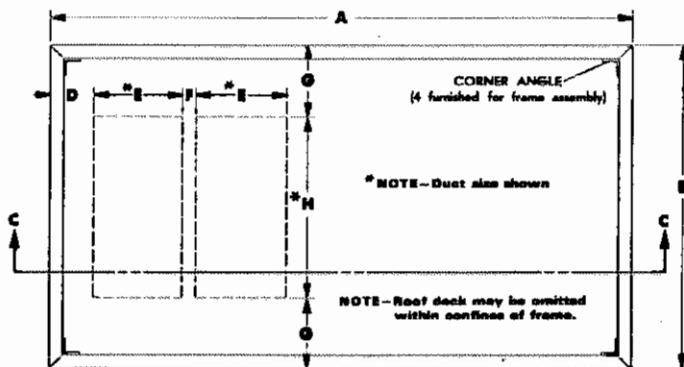
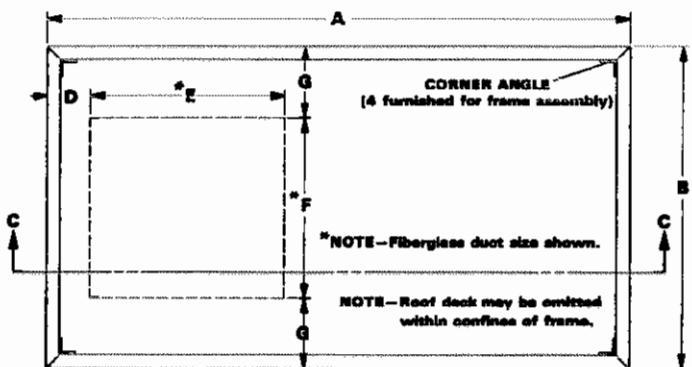
Roof Mounting frame is rigid enough to be spanned over its entire length or cantilevered if supported on either side of the center of gravity.

|                                        |                       |
|----------------------------------------|-----------------------|
| Mounting Frame Height                  | 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



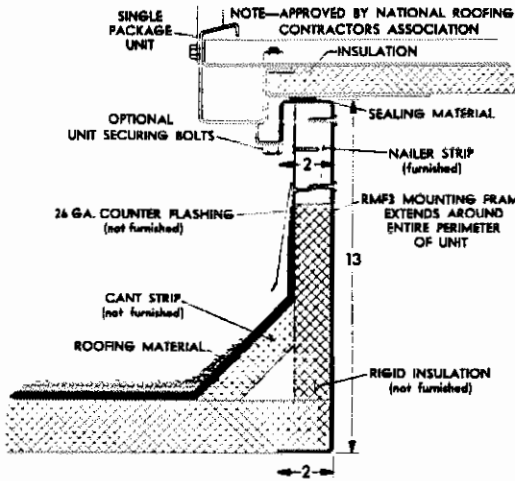
### Mounting Frame with Double Duct Openings



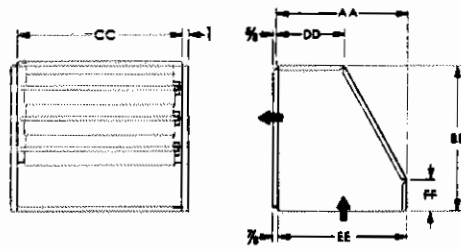
| Model No. | Mounting Frame | A       | B      | Diffuser | D     | E      | F      | G      |
|-----------|----------------|---------|--------|----------|-------|--------|--------|--------|
| GCS3-953  | RMF3-95        | 86-3/4  | 47-3/4 | RTD      | 4-7/8 | 38-1/2 | 38-1/2 | 4-5/8  |
|           |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



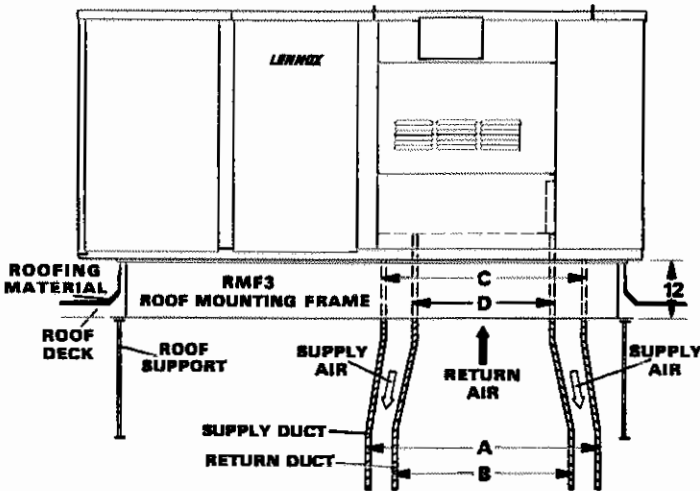
## OAD3 SERIES DAMPER ASSEMBLY (Optional) DIMENSIONS(in.)



| Unit     | AA     | BB     | CC     | DD     | EE     | PP     |
|----------|--------|--------|--------|--------|--------|--------|
| OAD3-95  | 17 1/4 | 17 1/4 | 21     | 10 1/2 | 16 1/2 | 5 1/4  |
| OAD3-135 | 20 1/4 | 22 1/4 | 25     | 10 1/2 | 20 1/4 | 4 1/4  |
| OAD3-185 | 22 1/4 | 27 1/4 | 29 1/4 | 12 1/2 | 22     | 10 1/4 |
| OAD3-275 | 24 1/4 | 33 1/4 | 29 1/4 | 12 1/2 | 24     | 12 1/4 |

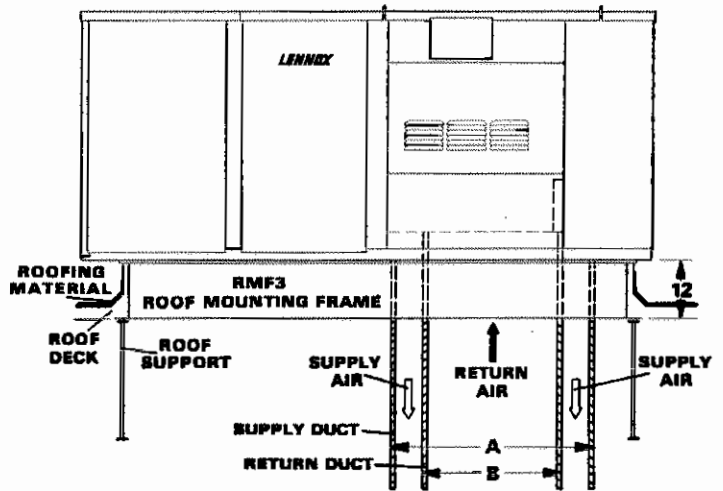
## COMBINATION CEILING SUPPLY & RETURN AIR DISTRIBUTION SYSTEM

### Rooftop Unit With Optional Fiberglass Duct For Flush Diffuser Applications



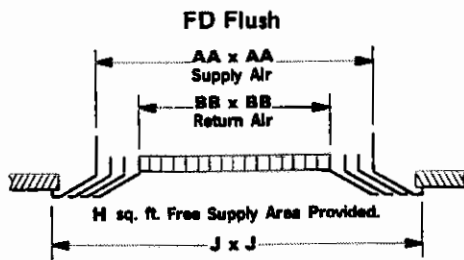
NOTE—GCS3-1853 ducts are straight and do not transition.

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

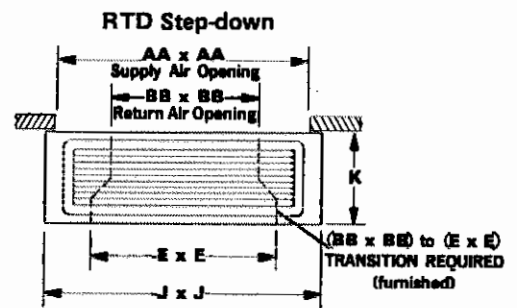


NOTE—Supply & Return fiberglass duct is 48" long and may be trimmed to length required for installation.

## CEILING DIFFUSERS



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



(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       | P-8-9594                         | RTD-95 step-down                       | 38-1/2 | 34-1/8    | 22-7/8 | 23-1/8 | ---    | ---    | 30  | 36  | 6   | ---           | 42 | 10  |
|                | P-8-9593                         | FD-95 Flush<br>†FD-95-D Flush          | 44-1/8 | 42        | 30     | 30     | 36     | 22-7/8 | --- | --- | --- | 6 sq. ft.     | 46 | --- |
| GCS3-1353      | P-8-9596                         | RTD-135 step-down                      | 46-1/2 | 42-1/8x40 | 28-7/8 | 29-1/8 | ---    | ---    | 36  | 36  | 8   | ---           | 48 | 12  |
|                | P-8-9595                         | FD-135 Flush<br>†FD-135-D Flush        | 50-1/8 | 48        | 36     | 36     | *44x42 | 28-7/8 | --- | --- | --- | 7 sq. ft.     | 52 | --- |
| GCS3-1853      | P-8-9597                         | RTD-185/275 step-down                  | 56-1/2 | 51        | 35-7/8 | 36     | ---    | ---    | 42  | 48  | 12  | ---           | 60 | 15  |
|                | P-8-9804                         | FD-185 Flush<br>†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      | P-8-9597                         | RTD-185/275 step-down                  | 56-1/2 | 51        | 35-7/8 | 36     | ---    | ---    | 42  | 48  | 12  | ---           | 60 | 15  |
|                | P-8-9598                         | FD-275 Flush<br>†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.

## BLOWER DATA

### GCS3-953 BLOWER PERFORMANCE CHART

| Air Volume (cfm) | STATIC PRESSURE EXTERNAL TO UNIT—Inches Water Gauge |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|-----------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
|                  | 0                                                   |      | .10  |      | .20  |      | .30  |      | .40  |      | .50  |      | .60  |      | .70  |      | .80  |      | .90  |      | 1.0  |      |
|                  | RPM                                                 | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | RPM  | BHP  | 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 | 960  | 1.25 | 995  | 1.35 | 1030 | 1.45 | 1065 | 1.55 | 1100 | 1.70 |
| 2800             | 750                                                 | .90  | 800  | 1.00 | 845  | 1.10 | 885  | 1.20 | 925  | 1.30 | 960  | 1.40 | 1000 | 1.50 | 1035 | 1.60 | 1070 | 1.70 | 1100 | 1.80 | 1130 | 1.90 |
| 3000             | 810                                                 | 1.10 | 850  | 1.20 | 890  | 1.30 | 930  | 1.40 | 970  | 1.50 | 1005 | 1.60 | 1040 | 1.75 | 1075 | 1.85 | 1110 | 1.95 | 1140 | 2.05 | 1170 | 2.15 |
| 3200             | 860                                                 | 1.30 | 900  | 1.40 | 940  | 1.55 | 980  | 1.65 | 1015 | 1.75 | 1050 | 1.90 | 1080 | 2.00 | 1115 | 2.15 | 1145 | 2.25 | 1175 | 2.35 | 1210 | 2.50 |
| 3400             | 915                                                 | 1.55 | 950  | 1.70 | 990  | 1.80 | 1025 | 1.95 | 1060 | 2.05 | 1090 | 2.15 | 1125 | 2.30 | 1150 | 2.40 | 1185 | 2.50 | 1215 | 2.65 | 1245 | 2.80 |
| 3600             | 970                                                 | 1.85 | 1005 | 2.00 | 1045 | 2.15 | 1075 | 2.25 | 1105 | 2.40 | 1135 | 2.50 | 1165 | 2.65 | 1195 | 2.80 | 1225 | 2.90 | 1255 | 3.00 | 1285 | 3.15 |
| 3800             | 1020                                                | 2.20 | 1050 | 2.35 | 1085 | 2.45 | 1120 | 2.60 | 1150 | 2.75 | 1180 | 2.90 | 1210 | 3.05 | 1240 | 3.15 | 1270 | 3.30 | 1300 | 3.45 | ---  | ---  |

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 |      | .60 |      | .70  |      | .80  |      | .90  |      | 1.0  |      |
|                  | RPM                                                 | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | 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 | 800 | 2.05 | 835  | 2.25 | ---  | ---  | ---  | ---  | ---  | ---  |
| 4000             | 585                                                 | 1.20 | 625 | 1.35 | 665 | 1.50 | 705 | 1.65 | 745 | 1.85 | 780 | 2.00 | 815 | 2.20 | 850  | 2.45 | 890  | 2.65 | ---  | ---  | ---  | ---  |
| 4200             | 615                                                 | 1.40 | 650 | 1.50 | 690 | 1.65 | 730 | 1.85 | 770 | 2.05 | 800 | 2.25 | 835 | 2.50 | 870  | 2.70 | 905  | 2.90 | 935  | 3.15 | ---  | ---  |
| 4400             | 645                                                 | 1.60 | 680 | 1.75 | 720 | 1.90 | 755 | 2.10 | 790 | 2.30 | 825 | 2.55 | 855 | 2.70 | 890  | 2.90 | 925  | 3.20 | 955  | 3.45 | 985  | 3.65 |
| 4600             | 675                                                 | 1.80 | 710 | 2.00 | 745 | 2.15 | 780 | 2.35 | 815 | 2.60 | 845 | 2.80 | 880 | 3.00 | 910  | 3.20 | 945  | 3.50 | 975  | 3.70 | 1005 | 3.95 |
| 4800             | 700                                                 | 2.05 | 740 | 2.25 | 770 | 2.40 | 805 | 2.65 | 835 | 2.80 | 865 | 3.00 | 900 | 3.25 | 930  | 3.50 | 965  | 3.75 | 995  | 4.00 | 1020 | 4.25 |
| 5000             | 735                                                 | 2.35 | 765 | 2.55 | 800 | 2.75 | 830 | 2.95 | 860 | 3.10 | 890 | 3.30 | 920 | 3.55 | 950  | 3.75 | 985  | 4.10 | 1015 | 4.30 | 1040 | 4.55 |
| 5200             | 765                                                 | 2.65 | 795 | 2.85 | 825 | 3.05 | 855 | 3.25 | 885 | 3.45 | 915 | 3.60 | 945 | 3.85 | 975  | 4.15 | 1005 | 4.35 | 1035 | 4.60 | 1060 | 4.90 |
| 5400             | 795                                                 | 2.95 | 820 | 3.15 | 850 | 3.35 | 880 | 3.55 | 910 | 3.75 | 940 | 4.00 | 965 | 4.25 | 995  | 4.45 | 1025 | 4.75 | 1050 | 5.00 | 1080 | 5.30 |
| 5600             | 825                                                 | 3.30 | 850 | 3.45 | 880 | 3.70 | 905 | 3.90 | 930 | 4.10 | 960 | 4.30 | 990 | 4.50 | 1015 | 4.75 | 1045 | 5.05 | 1070 | 5.35 | 1095 | 5.60 |

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 |      | .60 |      | .70 |      | .80 |      | .90 |      | 1.0 |      |
|                  | RPM                                                 | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | 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 | 700 | 1.85 | 730 | 2.00 | 760 | 2.15 | 785 | 2.30 | 815 | 2.50 |
| 5500             | 540                                                 | 1.30 | 575 | 1.45 | 615 | 1.65 | 645 | 1.80 | 675 | 1.95 | 705 | 2.10 | 735 | 2.25 | 765 | 2.40 | 790 | 2.60 | 820 | 2.80 | 840 | 2.95 |
| 8000             | 590                                                 | 1.70 | 620 | 1.85 | 650 | 2.00 | 685 | 2.20 | 715 | 2.40 | 740 | 2.60 | 775 | 2.80 | 800 | 3.00 | 825 | 3.15 | 850 | 3.30 | 875 | 3.50 |
| 6500             | 640                                                 | 2.15 | 670 | 2.35 | 700 | 2.55 | 725 | 2.70 | 750 | 2.85 | 780 | 3.05 | 810 | 3.30 | 835 | 3.50 | 860 | 3.65 | 885 | 3.85 | 910 | 4.10 |
| 7000             | 685                                                 | 2.65 | 715 | 2.90 | 740 | 3.10 | 770 | 3.30 | 800 | 3.50 | 825 | 3.70 | 850 | 3.90 | 875 | 4.15 | 900 | 4.35 | 920 | 4.55 | 940 | 4.75 |
| 7500             | 735                                                 | 3.25 | 765 | 3.45 | 790 | 3.70 | 815 | 3.95 | 840 | 4.15 | 865 | 4.35 | 890 | 4.60 | 910 | 4.80 | 930 | 5.00 | 955 | 5.25 | 980 | 5.55 |

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 |      | .60 |      | .70 |      | .80  |      | .90  |      | 1.0  |      |
|                  | RPM                                                 | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | RPM | BHP  | 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 | 730 | 2.55 | 760 | 2.75 | 785  | 2.95 | 810  | 3.10 | 835  | 3.30 |
| 7000             | 570                                                 | 1.80 | 605 | 1.95 | 640 | 2.15 | 675 | 2.35 | 705 | 2.55 | 735 | 2.75 | 760 | 2.95 | 790 | 3.15 | 815  | 3.35 | 840  | 3.55 | 865  | 3.85 |
| 7500             | 615                                                 | 2.20 | 645 | 2.40 | 675 | 2.60 | 705 | 2.80 | 735 | 3.00 | 765 | 3.20 | 795 | 3.45 | 820 | 3.65 | 845  | 3.90 | 870  | 4.10 | 895  | 4.35 |
| 8000             | 650                                                 | 2.65 | 680 | 2.85 | 715 | 3.10 | 745 | 3.30 | 770 | 3.50 | 800 | 3.75 | 825 | 3.95 | 850 | 4.20 | 875  | 4.45 | 900  | 4.70 | 920  | 4.90 |
| 8500             | 690                                                 | 3.15 | 720 | 3.40 | 750 | 3.65 | 780 | 3.85 | 805 | 4.10 | 830 | 4.30 | 855 | 4.55 | 880 | 4.80 | 905  | 5.10 | 930  | 5.35 | 950  | 5.55 |
| 9000             | 730                                                 | 3.80 | 760 | 4.05 | 790 | 4.30 | 815 | 4.50 | 840 | 4.75 | 865 | 5.05 | 890 | 5.25 | 915 | 5.50 | 940  | 5.80 | 960  | 6.05 | 980  | 6.25 |
| 9500             | 775                                                 | 4.55 | 800 | 4.75 | 825 | 5.00 | 850 | 5.20 | 875 | 5.45 | 900 | 5.75 | 925 | 6.05 | 950 | 6.30 | 970  | 6.55 | 990  | 6.80 | 1015 | 7.15 |
| 10,000           | 815                                                 | 5.25 | 840 | 5.50 | 860 | 5.70 | 885 | 6.00 | 915 | 6.30 | 935 | 6.55 | 960 | 6.85 | 980 | 7.15 | 1000 | 7.40 | 1020 | 7.65 | 1040 | 7.95 |

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) | 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 |                            |
| 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                        |
| GCS3-1353 | 3800             | .10                                      | .68                                       | .59          | .53          | .40                        |
|           | 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 A.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 acrylic 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.