

LENNOX

SINGLE PACKAGE AIR CONDITIONER CHA8-511-513 AND CHA8-651-653 HORIZONTAL AND DOWN-FLO

*49,000 to 59,000 Btuh Total Cooling Capacity
21,000 to 112,500 Btuh Optional Electric Heat

*ARI Certified Ratings

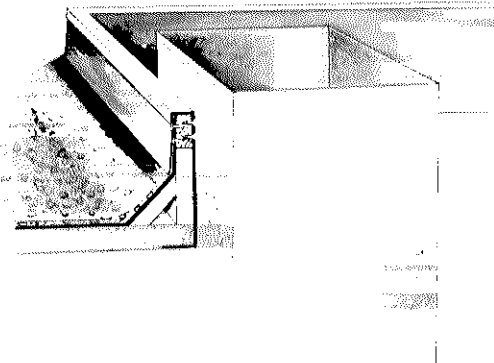
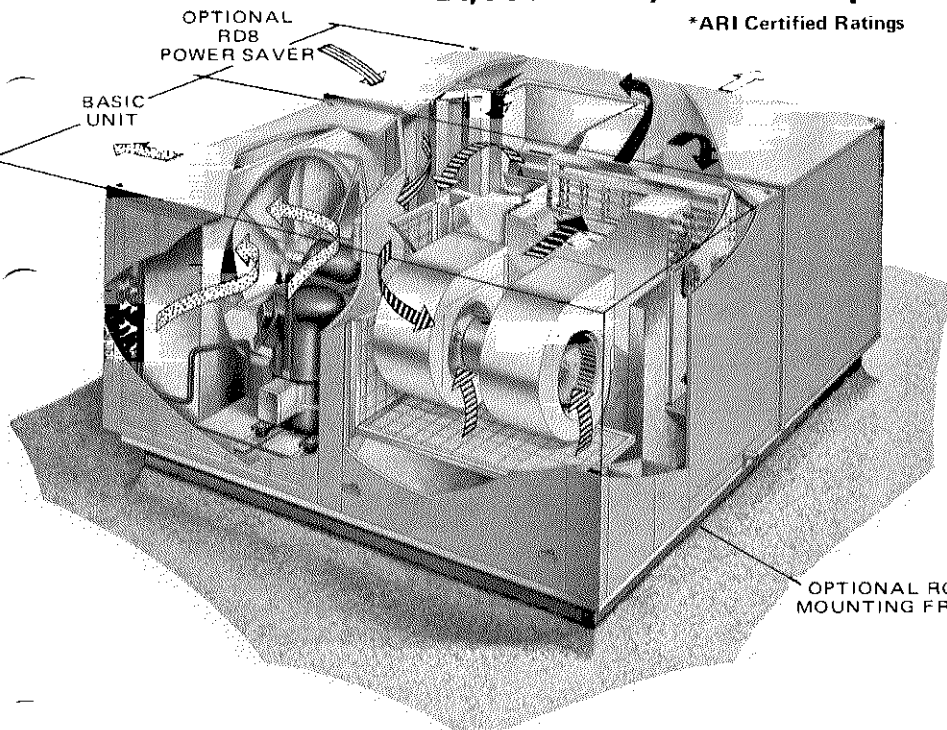
ENGINEERING DATA
COOLING UNITS
PACKAGED

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May 15, 1972

Supersedes 12 15 70

OPTIONAL
RD8
POWER SAVER

BASIC
UNIT



OPTIONAL ROOF
MOUNTING FRAME

Optional Roof Mounting Frame Detail

Weatherproof frame (RMF3-65) is used whenever RT8 duct enclosure or RD8 POWER SAVER™ is used. The frame extends around the entire perimeter of the CHA8 and RT8 or RD8. Duct connection and entry into the conditioned area are accomplished within the confines of the frame.

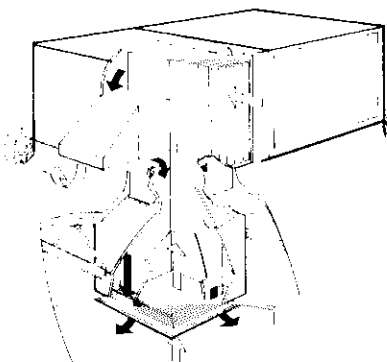
CHA8-651-653
(With optional POWER SAVER™, electric
heat and roof mounting frame)

Installation Flexibility Featured in Single Package Air Conditioning Unit

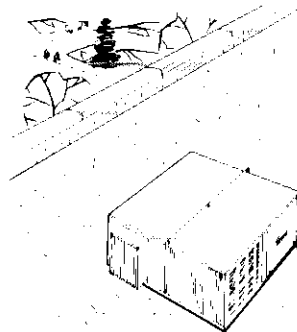
The CHA8 series DX cooling units are designed primarily for rooftop installation with the RT8 duct enclosure or RD8 POWER SAVER and RMF3 roof mounting frame. The separate roof frame mates to the bottom of the CHA8 and RT8 or RD8 and when flashed into the roof permits weatherproof duct connection and entry into the conditioned area. No additional roof curbing or flashing is required. The assembled CHA8 and RT8 or RD8 are easily hoisted to rooftop level by lifting lugs factory installed on the equipment. 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 highly efficient air cooled

DX cooling, powerful direct drive blowers, air filters and optional electric heat. Complete factory sealed refrigeration system consists of compressor, evaporator coil and twin blowers, condenser coil and fan, refrigerant drier, refrigerant lines connected and a full charge of refrigerant. Controls consists of high and low pressure switches, compressor relay and overload protection. Optional POWER SAVER (RD8) and controls reduce cooling costs. Externally mounted fresh air damper (manual) is also available. Units are shipped completely assembled, wired and piped ready to install. Installer has only to set unit, connect ductwork, power supply and thermostat field wiring connections.

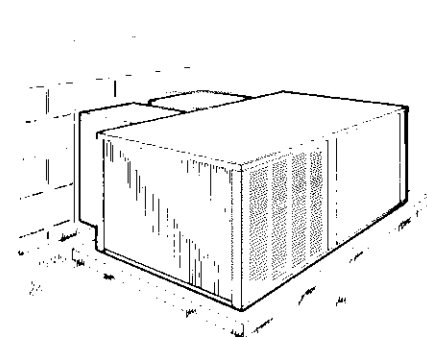
Typical Applications



Combination ceiling supply and return air application. Step-down or flush diffuser available.



Rooftop installation with optional RD8 POWER SAVER. Use of optional RD8 POWER SAVER or RT8 duct enclosure allows bottom handling of conditioned air.



Basic unit on a slab at grade level with end delivery of conditioned air.

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

Thoroughly Tested and Approved—Air conditioning system has been tested and rated in the Lennox environmental test room according to ARI Standard 210 and listed by C.S.A. as certified. In addition units have been sound tested in the Lennox reverberant sound test room and rated according to ARI Standard 270 conditions. Units coming within the scope of this standard (135,000 Btuh or less) carry the ARI certification seal. Air conditioning equipment and optional electric heating are U.L. Listed. Units and components within are bonded for grounding to meet safety standards for servicing required by U.L. and NEC. Units are test operated at the factory before shipment.

Dependable Compressor—Resiliently mounted in the unit and in addition the entire running gear assembly is spring mounted within the sealed can. It is suction cooled and equipped with suction and discharge pressure test ports. Overload protected and equipped with effective slugging protection.

Lennox Coils—Extra large coils (evaporator and condenser) are constructed of ripple-edged aluminum fins machine fitted to seamless copper tubes. This provides more contact area and excellent heat transfer. Coils are pressure leak tested at 450 to 500 psi.

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-on enamel. Large removable panels provide complete service access to interior of cabinet.

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 also insulated with thick fiberglass insulation.

Efficient Condenser Fan—Direct drive fan moves large air volumes through the entire condenser coil resulting in high refrigerant cooling capacity. Air enters unit through louvered panel and is discharged through coil at side of unit. An optional top exhaust hood is available for top discharge of condenser coil air. Order No. BM-4186.

Powerful Blowers—Twin direct drive blowers deliver large air volumes with low power consumption. Equipped with a transformer speed controller giving a choice of three blower speeds, high-medium-low.

Cleanable Air Filter—One inch 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 reoiling.

Optional Thermostat—Due to the many types of applications possible a thermostat is not furnished as standard, it must be ordered extra. For cooling only applications a single stage cooling thermostat is required. When optional electric heat is ordered a heating-cooling thermostat is required. For two stage electric heat an additional relay (P-8-3250) is required and must be ordered extra.

Optional Electric Heat—Available for field installation in 9.4 thru 33.0 kw sizes. See electric heat table. The heating elements are helix wound. Nichrome wire exposed to the air stream resulting in rapid heat transfer, lower coil temperatures and a long life. The elements are accurately located and insulated from the plated supporting frame by high quality insulators.

Optional Mounting Frame—The RMF3-65 mounting frame is available for mounting the RT8 or RD8 duct enclosure and CHA8 unit. Frame provides an automatic weather sealed rooftop installation. Approved by National Roofing Contractors Association. A securing bolt kit (BM-6908), containing bolts to secure unit to frame, is available as optional equipment and must be ordered extra.

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

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 installing instructions for field assembly. See Specification table for order no. and mounting detail drawings for dimensions.

Optional Minimum Fresh Air Damper—Externally mounted in RT8-65 duct enclosure. Equipped with manually operated damper and necessary fittings for installing.

Optional Nite Setback Controls—A nite thermostat (P-8-8899), sub-base (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. Plate mounts to two standard electrical outlet boxes, furnished by installer, located within the wall. Kit BM-4761 includes a manual set 12 hour nite setback timer and a stainless steel mounting plate. 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 with kit (BM-4762).

Optional Remote Readout Panel—Readout panel (BM2-5358) and Rough-In Box (BM1-5358) must be ordered extra. See bulletin in 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 RD8 POWER SAVER And RT8 Duct Enclosure—Application flexibility is possible with the options available as follows:

- 1—Completely assembled RD8-65 Power Saver and Duct Enclosure:
 - A—With wired and linked Power Saver Installed.
 - a—With hole cut for combination ceiling supply and return distribution.
 - b—With holes cut for distribution ducts.
- 2—Completely assembled RT8-65 duct enclosure:
 - A—Without Power Saver (Power Saver cannot be added to RT8, if Power Saver is required order RD8-65)
 - a—With hole cut for combination ceiling supply and return distribution.
 - b—With holes cut for distribution ducts.

POWER SAVER Operation—The entire Power Saver control system is factory installed and wired, simply make plug-in connections to complete the job. The only field wiring required is when the optional night setback thermostat is used. The basic control system consists of:

1—**LENNOX DO-3-S**—24 volt, spring return multi-position damper motor with motor and gear train sealed in non-temperature sensitive oil. It controls the position of the outdoor air, recirculated air and pressure relief dampers as dictated by the room thermostat and controlled by the following:

2—**Mixed Air Temperature Controller**—This adjustable highly sensitive device controls the damper motor to position the dampers to give the selected mixed air temperature. The inherent quick sensing of this control coupled with the fast acting Lennox damper motor gives in effect modulated control of the entering mixed air temperature.

3—**Compressor Monitor**—An outdoor thermostat switch (adjustable) which locks out compressor operation below approximately 58F outdoor air temperature. This allows the outdoor air to handle the entire cooling load below 58F.

4—**Outdoor Air Monitor**—A temperature sensing control (adjustable) which returns the outdoor air dampers to minimum when the outdoor air has more heat than recirculated room air, usually set at 70F.

5—**Climate Selection Switch**—A manually operated toggle switch with one position labeled "Dry Climate—Maximum Power Saving" and the other labeled "Humid Climate—Maximum De-humidification." In the "Dry Climate" position, above the Compressor Monitor temperature setting (usually 58F) and below the Outdoor Air Monitor setting (usually 70F) the outdoor air damper can open 100%, as dictated by the mixed air temperature controller. This provides the maximum "Free Cooling" benefits from the outdoor air. In the "Humid Climate" position above 58F and below 70F, the outdoor air damper can open 100% (controlled by mixed air temperature controller) only when the compressor is operating. This gives maximum dehumidification because in moist climates the humid outdoor air enters the structure in maximum quantity only when the compressor is operating, thus "drying out" the air.

6—**Room Thermostat**—The Lennox Power Saver will co-operate perfectly with any heating-cooling thermostat. The thermostat commands the aforementioned heating, cooling, cooling with outdoor air and ventilation cycles.

SPECIFICATIONS

Model No.		CHA8-511-513	CHA8-651-653
† Cooling Capacity ARI Certified	Total capacity (Btuh)	49,000	59,000
	Total unit watts	7400	8800
	Dehumidifying capacity	23%	26%
Blower wheel nom. diam. x wid. (in.)		(2) 10 x 6	(2) 10 x 6
Blower Motor hp.		1/2	1/2
Refrigerant (R-22) charge		8 lbs. 12 oz.	8 lbs. 11 oz.
Condenser Coil	Net face area (sq. ft.)	6.95	8.33
	Tube diam. (in.) & No. of rows	1/2-3	1/2-3
	Fins per inch	13	13
Condenser Fan	Diam. (in.) & No. of blades	26-5	26-5
	Air volume (factory setting)	4100	4320
	Motor hp	1/2	1/2
		Motor watts (factory setting)	670
Evaporator Coil	Net face area (sq. ft.)	3.75	4.58
	Tube diam. (in.) & No. of rows	1/2-4	1/2-4
	Fins per inch	10	10
††No. & size of filters (in.)		(1) 16-1/2 x 31-1/2 x 1 (1) 16-1/2 x 27-7/8 x 1	(1) 16-1/2 x 31-1/2 x 1 (1) 16-1/2 x 27-7/8 x 1
Condensate drain size MPT (in.)		3/4	3/4
Net weight of basic units (lbs) (1-Pkg.)		770	800
Optional Duct Enclosure (Without Power Saver)		RT8-65 - *229 lbs.	
Optional Duct Enclosure with Power Saver & Controls installed		RD8-65 - *350 lbs.	
Optional Roof Mounting Frame		RMF3-65 - *100 lbs.	
Optional Minimum Fresh Air Damper		OAD3-65 - *7 lbs.	
Optional Combination Ceiling Supply And Return Step Down Diffuser		RTD-65 - *52 lbs.	
Optional Combination Ceiling Supply And Return Flush Diffuser		FD-65 - *26 lbs.	
		**FD-65-D - *33 lbs.	
Combination Supply & Return Air Duct	RTD Diffuser	P-8-9592 - *36 lbs.	
	FD Diffuser		

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

††Cleanable polyurethane filter media.

*Net weight.

**Flush diffuser with adjustable baffle blades.

RATINGS

Unit Model No.	Evaporator Air 80F Dry Bulb		Outdoor Air Temperature Entering Condenser (F)											
	Entering Wet Bulb Degrees (F)	Total Air Volume (Cfm)	85			95			105			115		
			Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Input Watts	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Input Watts	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Input Watts	Total Cooling Capacity (Btuh)	Sensible To Total Ratio (S/T)	Comp. Motor Input Watts
CHA8-511-513	63	1600	51,200	.87	5430	46,800	.91	5690	43,000	.94	6100	38,900	.97	6430
		1800	52,700	.88	5510	48,700	.92	5820	44,800	.96	6230	40,400	.99	6560
		2000	54,000	.89	5590	49,800	.94	5890	46,000	.98	6320	41,500	1.00	6650
	67	1600	54,300	.69	5600	50,200	.73	5920	46,100	.76	6330	41,500	.84	6650
		1800	55,500	.72	5670	51,300	.76	5990	47,200	.79	6420	42,500	.85	6750
		2000	56,600	.76	5730	52,300	.79	6060	48,000	.82	6480	43,500	.86	6820
	71	1600	57,800	.54	5800	54,000	.56	6170	50,500	.57	6660	46,500	.59	7080
		1800	58,900	.55	5860	55,100	.57	6250	51,500	.59	6740	47,500	.61	7160
		2000	59,800	.56	5910	56,400	.59	6330	52,800	.61	6830	48,400	.63	7240
CHA8-651-653	63	2000	58,500	.85	6570	55,000	.88	6950	49,800	.92	7240	44,200	.96	7670
		2250	60,300	.87	6670	57,200	.90	7080	52,000	.94	7380	46,500	.98	7830
		2500	61,700	.90	6740	58,700	.92	7170	54,100	.96	7520	48,800	1.00	8000
	67	2000	61,800	.71	6750	59,100	.73	7190	54,200	.75	7520	48,900	.78	8000
		2250	63,500	.72	6830	60,800	.74	7290	56,100	.77	7660	51,100	.79	8170
		2500	64,700	.73	6900	62,200	.75	7370	57,700	.78	7760	52,800	.81	8300
	71	2000	64,800	.53	6900	62,200	.54	7370	57,600	.56	7760	52,800	.57	8300
		2250	66,100	.55	6970	63,500	.56	7450	59,200	.57	7860	54,300	.58	8410
		2500	67,300	.56	7040	64,900	.57	7530	61,000	.58	7980	56,200	.60	8520

ELECTRIC HEAT

CHA8-511-513 ELECTRIC HEAT DATA

CHAB Model No.	*Optional Electric Unit Model No.	No. of Steps	Volts Input	Electric Heat Kw Input	Electric Heat Btuh Output	Electric Heat Amps	Maximum Unit Amps	AWG Wire Size	Time Delay Fuse Fusetron (Amps)	Disconnect Rating Hp
CHA8-511	ECH8-65-321 (55 lbs.)	2	208	7.1	24,000	34.0	38.0	6	50	7-1/2
			220	7.9	27,000	35.9	39.9	6	50	10
			230	8.6	29,500	37.6	41.6	6	60	10
			240	9.4	32,000	39.2	43.2	6	60	10
	ECH8-65-641 (59 lbs.)	4	208	14.1	48,000	68.0	72.0	2	90	20
			220	15.8	54,000	71.8	75.8	1	100	20
			230	17.3	59,000	75.2	79.2	1	100	20
			240	18.8	64,000	78.4	82.4	1	110	20
	ECH8-65-961 (63 lbs.)	6	208	21.2	72,000	102.0	106.0	00	150	25
			220	23.8	81,000	107.8	111.8	000	150	30
			230	26.0	88,500	112.8	116.8	000	150	30
			240	28.2	96,000	117.6	121.6	000	175	30
CHA8-513	ECH8-65-293 (65 lbs.)	1	208	6.2	21,000	17.2	25.6	8	35	15
			220	6.9	23,600	18.2	25.6	8	35	15
			230	7.6	25,900	19.1	25.6	8	35	15
			240	8.3	28,200	19.9	25.6	8	35	15
	ECH8-65-593 (69 lbs.)	2	208	12.4	42,200	34.5	38.5	6	50	15
			220	13.9	47,200	36.6	40.6	6	50	15
			230	15.2	51,800	38.3	42.3	6	60	20
			240	16.6	56,400	39.9	43.9	6	60	20
	ECH8-65-883 (73 lbs.)	3	208	18.6	63,300	51.6	55.6	3	80	25
			220	20.8	70,800	54.7	58.7	3	80	25
			230	22.7	77,700	57.1	61.1	3	80	25
			240	24.8	84,800	59.7	63.7	3	80	25
	ECH8-65-373-480 (63 lbs.)	1	440	9.2	31,500	12.1	14.1	12	20	15
			480	11.0	37,500	13.2	15.2	12	20	15
	ECH8-65-753-480 (65 lbs.)	2	440	18.5	63,000	24.3	26.3	8	35	20
			480	22.0	75,000	26.5	28.5	8	35	20
	ECH8-65-1123-480 (67 lbs.)	3	440	27.7	94,500	36.4	38.4	6	50	30
			480	33.0	112,500	39.7	41.7	6	60	40

*Includes net weight of electric units.

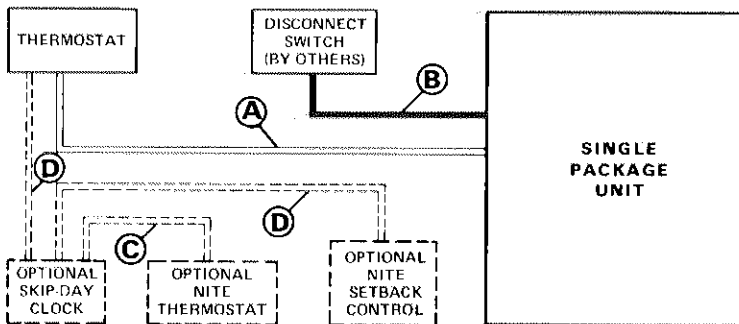
ELECTRIC HEAT

CHA8-651-653 ELECTRIC HEAT DATA

CHAB Model No.	*Optional Electric Unit Model No.	No. of Steps	Volts Input	Electric Heat Kw Input	Electric Heat Btuh Output	Electric Heat Amps	Maximum Unit Amps	AWG Wire Size	Time Delay Fuse Fusetron (Amps)	Disconnect Rating Hp
CHA8-651	ECH8-65-321 (55 lbs.)	2	208	7.1	24,000	34.0	40.4	6	50	7-1/2
			220	7.9	27,000	35.9	40.4	6	50	10
			230	8.6	29,500	37.6	40.4	6	60	10
			240	9.4	32,000	39.2	40.4	6	60	10
	ECH8-65-641 (59 lbs.)	4	208	14.1	48,000	68.0	72.0	2	90	20
			220	15.8	54,000	71.8	75.8	1	100	20
			230	17.3	59,000	75.2	79.2	1	100	20
			240	18.8	64,000	78.4	82.4	1	110	20
	ECH8-65-961 (63 lbs.)	6	208	21.2	72,000	102.0	106.0	00	125	25
			220	23.8	81,000	107.8	111.8	000	150	30
			230	26.0	88,500	112.8	116.8	000	150	30
			240	28.2	96,000	117.6	121.6	000	150	30
	ECH8-65-1121 (65 lbs.)	7	208	24.7	84,000	119.0	123.0	000	175	25
			220	27.7	94,500	125.7	129.7	0000	175	30
			230	30.3	103,250	131.6	135.6	0000	175	30
			240	32.9	112,000	137.2	141.2	0000	200	30
CHA8-653	ECH8-65-293 (65 lbs.)	1	208	6.2	21,100	17.2	28.7	8	35	15
			220	6.9	23,600	18.2	28.7	8	35	15
			230	7.6	25,900	19.1	28.7	8	35	15
			240	8.3	28,200	19.9	28.7	8	35	15
	ECH8-65-593 (69 lbs.)	2	208	12.4	42,200	34.5	38.5	6	50	15
			220	13.9	47,200	36.6	40.6	6	50	15
			230	15.2	51,800	38.3	42.3	6	60	20
			240	16.6	56,400	39.9	43.9	6	60	20
	ECH8-65-883 (73 lbs.)	3	208	18.6	63,300	51.6	55.6	3	80	25
			220	20.8	70,800	54.7	58.7	3	80	25
			230	22.7	77,700	57.1	61.1	3	80	25
			240	24.8	84,800	59.7	63.7	3	80	25
	ECH8-65-373-480 (63 lbs.)	1	440	9.2	31,500	12.1	14.4	12	20	15
			480	11.0	37,500	13.2	15.2	12	20	15
	ECH8-65-753-480 (65 lbs.)	2	440	18.5	63,000	24.3	26.3	8	35	20
			480	22.0	75,000	26.5	28.5	8	35	20
	ECH8-65-1123-480 (67 lbs.)	3	440	27.7	94,500	36.4	38.4	6	50	30
			480	33.0	112,500	39.7	41.7	6	60	40

*Includes net weight of electric units.

FIELD WIRING



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

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

All wiring must conform to NEC and local electrical codes.

If local electrical code permits may be class 2 wiring.

Additional field wiring is not required when POWER SAVER is used. All wiring is provided in CHA8 and in POWER SAVER, simply make plug-in connections to complete the job.

ELECTRICAL DATA

AIR CONDITIONER ONLY

Model No.		CHA8-511	CHA8-513		CHA8-651	CHA8-653			
Line voltage data		208/230v 60cy, 1ph	208/240v 60cy, 3ph	440/480v 60cy, 3ph	550v 60cy, 3ph	230v 60cy, 1ph	208/240v 60cy, 3ph	440/480v 60cy, 3ph	550v 60cy, 3ph
Compressor	Full load amps	27.2	18.2	9.1	7.3	33.0	21.3	10.7	8.6
	Power factor	.92	.85	.85	.85	.92	.85	.85	.85
	Locked rotor amps	125.0	100.0	45.0	35.0	135.0	110.0	56.0	41.0
Condenser Coil Fan	Full load amps	3.4	3.4	*1.7	*1.5	3.4	3.4	*1.7	*1.5
	Locked rotor amps	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
Evaporator Coil Blower	Full load amps	4.0	4.0	*2.0	*1.6	4.0	4.0	*2.0	*1.6
	Locked rotor amps	9.6	9.6	9.6	9.6	9.6	9.6	9.6	9.6
Maximum unit amps		34.6	25.6	12.8	10.4	40.4	28.7	14.4	11.7
AWG wire size	1' to 100' run	6	8	12	14	6	8	12	14
	101' to 200' run	4	6	10	12	4	6	10	12
Time delay fuse, fuse-tron (amps)		45	35	20	15	50	35	20	15
Maximum allowable fuse (amps)		70	45	20	15	80	50	25	20
Disconnect rating (hp)		7-1/2	15	15	15	10	15	15	15

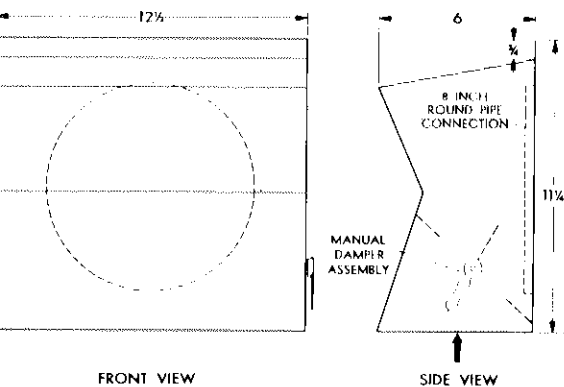
* Motors are rated at 230v, F.L.A shown is for step down transformer.

NOTE—If other than time delay fuses are used the next larger amp rating may be required.

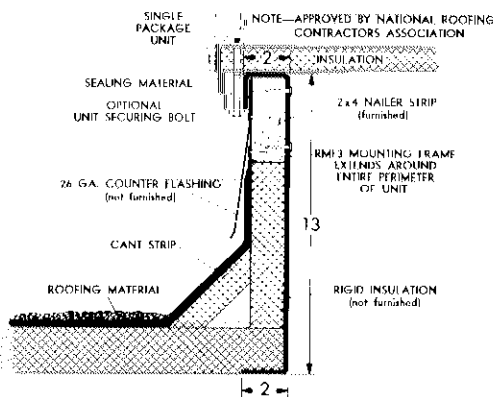
NOTE—All fuses, disconnect and wiring must conform to NEC and local codes. Wire sizes are according to NEC for copper conductors.

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

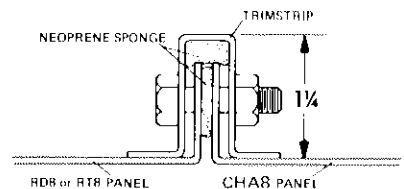
OPTIONAL OAD3-65 MINIMUM FRESH AIR DAMPER



RECOMMENDED FLASHING FOR RMF3 ROOF MOUNTING FRAME

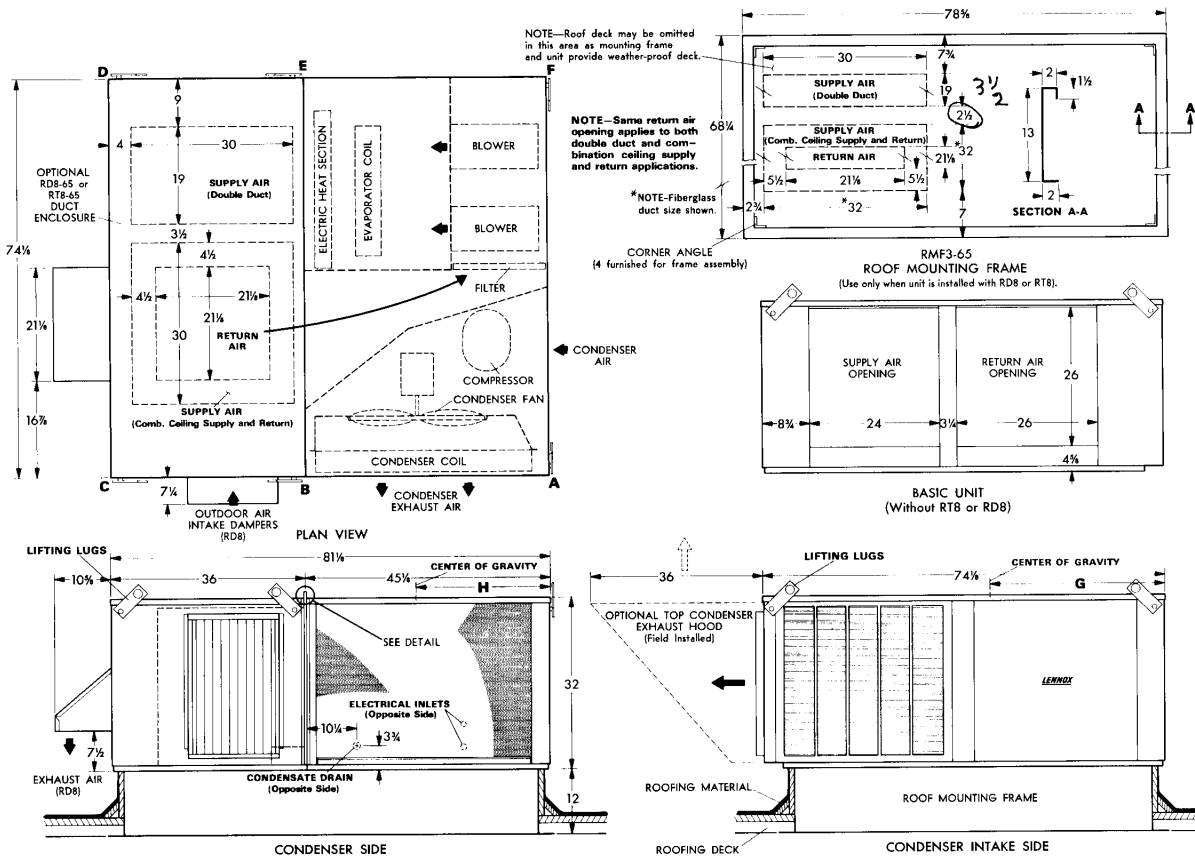


RD8 or RT8 MOUNTING DETAIL



RD8 or RT8 is attached to the CHA8 unit with a minimum amount of time and labor. Trim strips and five bolts, in pre-punched holes, provide a weatherproof seal between the cabinets.

DIMENSIONS (inches)



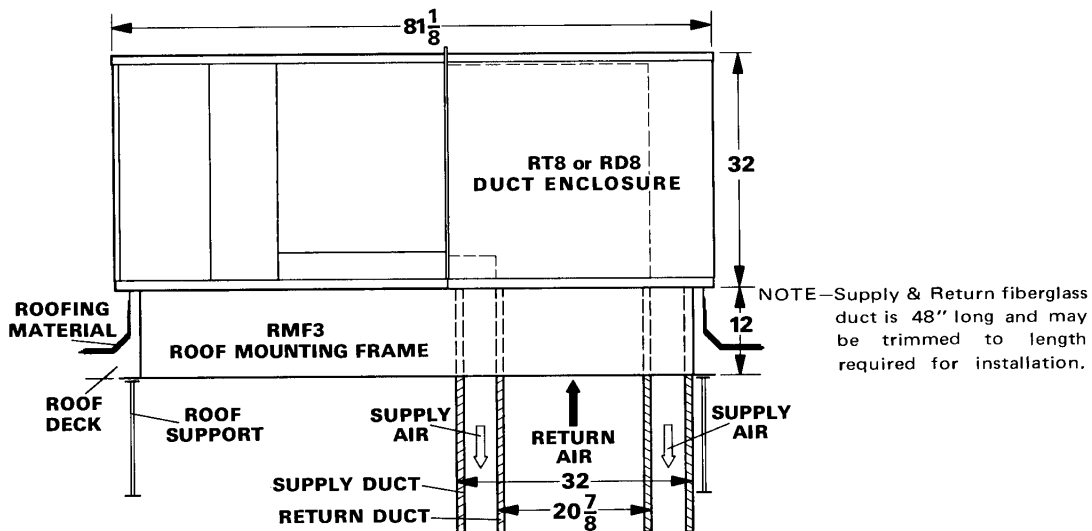
CORNER WEIGHTS (lbs.)

Unit	A	B	C	D	E	F
Basic unit	232	170	---	---	168	230
With RT8	332	---	160	153	---	315
With RD8	360	---	204	176	---	310

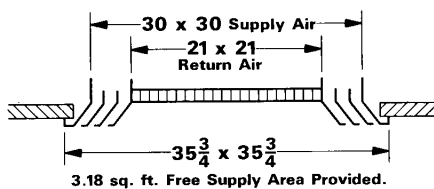
CENTER OF GRAVITY

Unit	G	H
Basic unit	37-1/4	19
With RT8	38	26-1/2
With RD8	40	29-1/2

COMBINATION CEILING SUPPLY & RETURN AIR DISTRIBUTION SYSTEM Rooftop Unit With Optional Fiberglass Duct

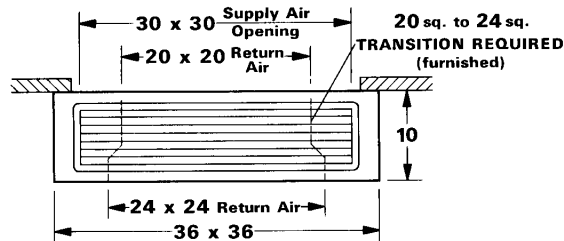


FD-65 & FD-65-D Flush Ceiling Diffuser



NOTE—FD-65-D model has adjustable baffle blades.

RTD-65 Step-down Diffuser



(4) 6 x 30 Supply Air Grilles Furnished
(1) 24 x 24 Return Air Grille Furnished

BLOWER DATA

CHA8-511-513 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Controller Speeds		
	High	Medium	Low
0	2165	1810	1490
.05	2120	1775	1465
.10	2070	1745	1440
.15	2025	1710	1420
.20	1980	1675	1390
.25	1930	1640	1365
.30	1880	1605	1335
.40	1780	1550	1270
.50	1680	1435	1180
.60	1570	1340	1050
.70	1450	1230	---

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

CHA8-511-513 BLOWER PERFORMANCE WITH RD8-65 AND DUCT DISTRIBUTION

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Controller Speeds		
	High	Medium	Low
0	2065	1755	1470
.05	2025	1720	1440
.10	1980	1685	1415
.15	1930	1655	1390
.20	1890	1620	1355
.25	1840	1585	1325
.30	1795	1545	1290
.40	1695	1470	1215
.50	1595	1380	1110
.60	1485	1285	---
.70	1370	1175	---

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

CHA8-651-653 BLOWER PERFORMANCE

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Controller Speeds		
	High	Medium	Low
0	2380	1960	1590
.05	2320	1925	1570
.10	2270	1885	1545
.15	2220	1850	1520
.20	2165	1810	1490
.25	1110	1770	1460
.30	2060	1730	1430
.40	1950	1640	1360
.50	1840	1550	1280
.60	1715	1450	---
.70	1585	---	---

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

CHA8-651-653 BLOWER PERFORMANCE WITH RD8-65 AND DUCT DISTRIBUTION

External Static Pressure (in. wg)	Air Volume (cfm) @ Various Controller Speeds		
	High	Medium	Low
0	2235	1885	1560
.05	2190	1850	1535
.10	2145	1815	1510
.15	2100	1775	1480
.20	2055	1740	1450
.25	2005	1700	1410
.30	1955	1660	1380
.40	1850	1575	1300
.50	1735	1485	1225
.60	1615	1390	---
.70	1490	---	---

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

RTD-65 CEILING DIFFUSER AIR THROW DATA

RTD-65 Step Down Model	Air Volume (cfm)	*Effective Throw (ft)		
		Horizontal Vanes 180° Straight	Horizontal Vanes 22° Down	Horizontal Vanes 45° Down
Two Sides Open	2000	51	45	31
	2250	56	50	34
	2500	61	54	37
Three Sides Open	2000	35	31	22
	2250	40	35	25
	2500	44	39	28
Four Sides Open	2000	28	25	17
	2250	30	27	18
	2500	33	29	20

*Effective throw is terminated at a point where conditioned air velocity has decreased to 50 fpm.

FD-65 AND FD-65-D CEILING DIFFUSER AIR THROW DATA

Air Volume (cfm)	*Effective Throw (ft)
800	7
900	8
1000	9
1200	11
1350	12
1500	14
2000	18
2250	20
2500	22

*Terminated at the point where conditioned air velocity has decreased to 50 fpm.

CHA8-511-513 WITH RD8-65 AND CEILING SUPPLY & RETURN

Blower Speed Controller Setting	Cfm @ Various Controller Speeds With Various Discharge Grille Arrangements			
	FD-65 or FD-65-D Flush Model	RTD-65 Step-Down Model		
		2 Sides Open	3 Sides Open	4 Sides Open
High	1790	1850	1895	1930
Medium	1590	1640	1650	1670
Low	1395	1395	1420	1435

CHA8-651-653 WITH RD8-65 AND CEILING SUPPLY & RETURN

Blower Speed Controller Setting	Cfm @ Various Controller Speeds With Various Discharge Grille Arrangements			
	FD-65 or FD-65-D Flush Model	RTD-65 Step-Down Model		
		2 Sides Open	3 Sides Open	4 Sides Open
High	1900	1970	2025	2060
Medium	1700	1725	1765	1790
Low	1480	1480	1510	1520