



**ELITE 10™
MULTI-POSITION
BLOWER COIL UNITS**

CB29M

Bulletin #490071
February 1996

20 100 to 49 300 Btuh (5.9 to 14.4 kW) Cooling Capacity
19 700 to 49 100 Btuh (5.8 to 14.4 kW) Heat Pump Heating Capacity
2.5 to 30.0 kW Optional Electric Heat

Applications

- Multi-position (up-flow, down-flow or horizontal) applications.
- Applicable to expansion valve systems in cooling applications and check and expansion valve systems in heat pump applications.
- Wide range check and expansion valve factory installed.
- See Condensing Unit bulletins in section Cooling Units — Condensing Units for cooling capacities.
- See Heat Pump Outdoor Unit Bulletins in section Heat Pumps — Matched Remote Systems for cooling and heating capacities.
- Optional field installed electric heaters available in several sizes for additive heating capacity.
- Filter furnished.
- Optional additive base available for models with electric heat installed in down-flow position on combustible floors.

Completely Tested

- Tested with matching condensing and heat pump units in the Lennox Research Laboratory environmental test room which meets American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 37 requirements.
- Rating test conditions are those included in Air Conditioning and Refrigeration Institute (ARI) Standard 210/240 test conditions while operating at rated voltages and air volumes.
- Blower performance data according to unit tests conducted in Lennox air test chamber.
- Blower-coil units components within are bonded for grounding to meet safety standards for servicing required by the International Electrotechnical Commission (I.E.C.).
- Units developed in accordance with ISO 9002 quality standards.

Cabinet

- Constructed of heavy gauge galvanized steel.
- Completely insulated with thick fiberglass insulation.
- Pre-painted steel cabinets have mildly textured enamel finish with primer coat on unpainted side of all panels.
- No external screw heads on sides of cabinet for tight installations without damage to walls or woodwork.
- Removable panels provide complete service access.
- Electrical inlets provided in sides and top of cabinet. See dimension drawings for locations.

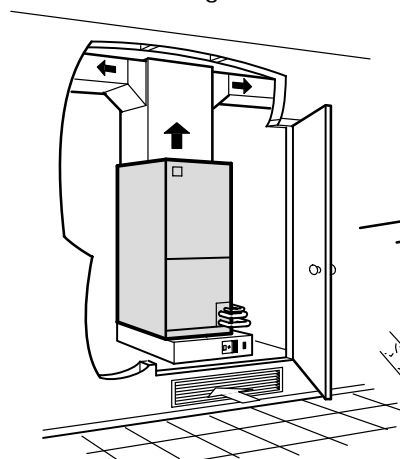


CB29M
Up-flow Position
(With Optional Electric Heat)

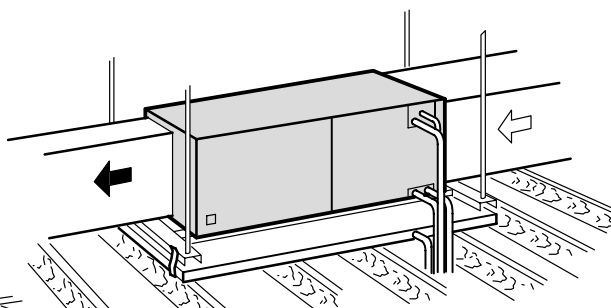


CB29M
Horizontal Left Hand Position
(With Optional Electric Heat)

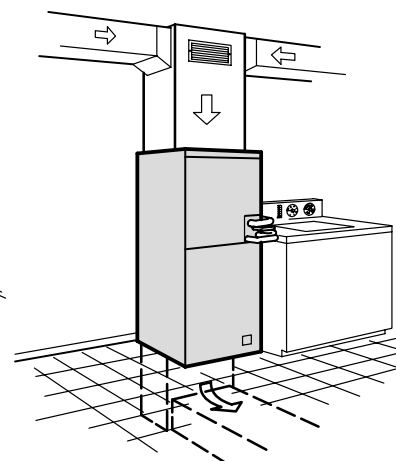
Typical Applications



Up-Flow Installation
With Optional Electronic Air Cleaner



Horizontal Installation



Down-Flow Installation

FEATURES

Multi-Position Capability

- Shipped for up-flow and horizontal right hand discharge.
- Quickly converted to down-flow or horizontal left hand air discharge.

Dual Position Drain Pans

- Drain pans designed for up-flow, down-flow or horizontal applications.
- Deep, corrosion resistant plastic drain pans have dual pipe drains.
- See dimension drawings.

Direct Drive Blower

- Lennox designed and built direct drive blower.
- Statically and dynamically balanced before installation in unit.
- Resiliently mounted multi-speed leadless motor with plug-in connections.
- Choice of blower speeds. See blower performance tables.
- Speed changes easily accomplished by a simple wiring change.
- Blower slides out of cabinet for servicing.

Refrigerant Line Connections

- Suction (vapor) and liquid lines have sweat connections.
- Extended outside of the cabinet for ease of connection.
- See dimension drawings for locations.

Check and Expansion Valve Furnished

- Wide range valve.
- Chatleff style fitting.
- Factory installed on all models internal to cabinet.

Copper Tube/Enhanced Fin Evaporator Coil

- Lennox designed and fabricated twin coils.
- Assembled in "A" configuration.
- Provides extra large surface and contact area, excellent heat transfer and low air resistance for maximum efficiency.
- Precise circuiting for uniform refrigerant distribution.
- Precisely spaced ripple-edged aluminum fins fitted to durable seamless copper tubes.
- Fins are strengthened to resist bending and are equipped with collars that grip tubing for maximum contact area.
- Lanced fins provide maximum exposure of fin surface to air stream.
- Long life copper tubing easy to service.
- Rifled tubing provides superior refrigerant flow with maximum heat transfer.
- Flared shoulder tubing joints and silver soldering provide tight, leakproof joints.
- Coil thoroughly factory tested under high pressure to insure leakproof construction.

Transformer and Blower Cooling Relay

- 24 volt transformer with circuit breaker and blower cooling relay furnished as standard.
- Factory installed in the unit control box.
- Terminal strip furnished.

Air Filter

- Tool-less access to filter area for quick and easy servicing.
- Disposable frame type filter furnished and factory installed in rails in cabinet.
- See Specifications tables for sizes.

OPTIONAL ACCESSORIES (Must Be Ordered Extra)

Down-Flow Additive Base (Optional)

- Additive base required for models with electric heat installed in down-flow position on combustible floors.
- See Specifications table and dimension drawing.

Side Return Unit Stand (Optional for Up-Flow Only)

- Raises unit 16 in. (406mm) above floor for side return air duct connection.
- Eliminates need for wooden platform construction.
- All aluminum construction.
- Two adjustable frames fit all sizes.
- Order (45K31) for CB29M-21/26 models and (45K32) for CB29M-31/41 thru -65 models.

Wall Hanging Bracket Kit (45K30) (Optional for Up-Flow Only)

- Allows unit to be hung on wall at any height.
- Consists of heavy gauge steel support brackets (one for blower coil unit, one for wall mount).
- Screws furnished for fastening one bracket to unit.
- Bolts for fastening one bracket to wall are field provided.

Additive Electric Heat (Optional)

- Field install internal to unit cabinet.
- Available in several kw sizes.
- See Electric Heat tables.
- Helix wound nichrome heating elements exposed directly in air stream resulting in instant heat transfer, low element temperatures and long service life.
- Each element equipped with accurately located limit control with fixed temperature off setting and automatic reset.
- Supplemental thermal cutoff limit control, provides positive protection in case of excessive temperatures.
- Thermal sequencer relay brings elements on and off line, in sequence and equal increments, with time delay between each. Initiates and terminates blower operation.
- Heating control relay(s) furnished as standard.
- Control box and access cover constructed of heavy gauge galvanized steel.
- Factory assembled with controls installed and wired.
- Electric heat low voltage controls plug-in to blower coil unit.

Circuit Breaker Models

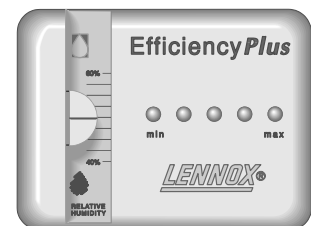
- ECB29-5CB, -8CB, -10CB, -12.5CB, -15CB, -20CB, -25CB and -30CB (220/240v-1ph) heaters are equipped with circuit breakers for overload and short circuit protection.
- Factory wired and mounted on electric heat unit.
- Current sensitive and temperature actuated.
- Manual reset.
- Circuit breakers qualify as disconnect means at unit in many areas, eliminate the need for field provided disconnect.
- Consult local electrical code in your area.

Single-Point Power Source Control Box (Optional)

- Control Box (21H39) may be used with optional electric heat when two or three circuits (if required by code) are specified.
- Field installs external to the unit cabinet on either side or top.
- Constructed of heavy gauge steel, baked enamel finish, prepunched mounting holes, electrical inlet knockouts, and terminal strip.
- Removeable cover provides easy access.
- 7 x 7 x 4 in. deep (178 x 178 x 102mm), shipping weight is 5 lbs. (2 kg.).

CCB1 EfficiencyPlus™ Humidity Control (Optional)

- Electronic control (35H00) installs next to room thermostat, allows selection of desired indoor humidity level during cooling mode.
- During heating season control is inoperable.
- CCB1 controls indoor humidity by changing indoor blower speed and compressor speed (two speed outdoor units)
- Humidity level is adjusted with vertical set point slide on scale of 40% thru 60%, 50% recommended setting.
- Five indicator LED's in a bar graph configuration (MIN – MAX) indicate difference in actual relative humidity and set point, indicates demand imposed on system equipment, more lights on, the longer equipment will operate to obtain desired humidity level. No lights on, humidity is at or below set point.
- Requires EBR1 Blower Relay Kit.



EBR1 Blower Relay Kit (75H90) (Optional)

- Allows CCB1 to be used with CB29M blower coil units.

SPECIFICATIONS

Model Number		CB29M-21/26	CB29M-31/41	CB29M-51	CB29M-65
Evaporator Coil	Net face area — ft. ² (m ²)	3.11 (0.29)	4.44 (0.41)	5.0 (0.46)	5.0 (0.46)
	Tube outside diameter — in. (mm)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
	Number of rows	2	2	3	3
	Fins per inch (fins per m)	14 (551)	14 (551)	12 (472)	12 (472)
	Suction line connection — in. (mm) sweat	5/8 (16)	3/4 (19)	7/8 (22.2)	1-1/8 (28)
	Liquid line connection — in. (mm) sweat	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)	3/8 (9.5)
Condensate drain connection (female pipe thread) — in. (mm)		(2) 3/4 (19)	(2) 3/4 (19)	(2) 3/4 (19)	(2) 3/4 (19)
Nominal cooling capacity — tons (kW)		1.5 – 2 (5.3 – 7.0)	2.5 – 3 (8.8 – 10.6)	4 (14.1)	5 (17.6)
Refrigerant		HCFC-22			
Blower wheel nominal diameter x width — in. (mm)		10 x 7 (254 x 178)	10 x 8 (254 x 203)	11-1/2 x 9 (292 x 229)	11-1/2 x 9 (292 x 229)
Nominal blower motor output — hp (W)		1/3 (249)	1/3 (249)	1/2 (373)	1 (746)
†Number and size of filters	in.	(1) 15 x 20 x 1	(1) 20 x 20 x 1		
	mm	(1) 381 x 508 x 25	(1) 508 x 508 x 25		
Electrical characteristics		220/240 – 50 hertz – 1 phase			
Shipping weight — lbs. (kg) 1 package		121 (55)	156 (71)	181 (83)	182 (83)
◆ Optional Accessories (Must Be Ordered Extra) ◆					
Side Return Unit Stand (Up-Flow Only)	Catalog number	45K31	45K32		
	Shipping weight – lbs. (kg)	5 (2)	6 (3)		
Wall Hanging Bracket Kit – Shipping weight – lbs. (kg)		45K30 – 3 (1) (Up-Flow Only)			
Down-Flow Combustible Base – Shipping weight – lbs. (kg)		34J72 – 8 (4)	34J73 – 8 (4)		

†Disposable frame type filter.

BLOWER DATA

CB29M-21/26 BLOWER PERFORMANCE

External Static Pressure		Air Volume and Motor Watts at Specific Blower Taps								
		High			Medium			Low		
in. w.g.	Pa	cfm	L/s	Watts	cfm	L/s	Watts	cfm	L/s	Watts
.00	0	1175	555	425	970	460	335	715	340	260
.05	10	1160	545	420	960	455	335	710	335	255
.10	25	1140	540	415	945	445	330	695	330	250
.15	35	1105	520	400	910	430	320	675	315	245
.20	50	1090	515	395	895	420	315	660	310	240
.25	60	1070	505	390	865	405	310	635	300	230
.30	75	1040	490	375	850	400	305	625	295	225
.40	100	970	455	350	785	370	285	580	275	210
.50	125	910	430	330	730	345	265	535	255	190

NOTE — All air data is measured external to unit with air filter in place.
Electric heaters have no appreciable air resistance.

CB29M-31/41 BLOWER PERFORMANCE

External Static Pressure		Air Volume and Motor Watts at Specific Blower Taps								
		High			Medium			Low		
in. w.g.	Pa	cfm	L/s	Watts	cfm	L/s	Watts	cfm	L/s	Watts
.00	0	1460	690	530	1245	585	450	950	450	345
.05	10	1440	680	520	1220	575	440	930	440	335
.10	25	1410	665	510	1190	560	425	905	430	325
.15	35	1375	650	495	1155	545	415	880	415	315
.20	50	1340	630	485	1120	530	405	850	400	305
.25	60	1295	610	470	1075	510	390	815	385	295
.30	75	1245	585	455	1030	485	380	780	370	285
.40	100	1125	530	430	925	435	355	700	330	265
.50	125	985	465	400	805	380	325	605	285	245
.60	150	825	390	370	665	315	300	500	235	225

NOTE — All air data is measured external to unit with air filter in place.
Electric heaters have no appreciable air resistance.

BLOWER DATA

CB29M-51 BLOWER PERFORMANCE

External Static Pressure		Air Volume and Motor Watts at Specific Blower Taps								
		High			Medium			Low		
in. w.g.	Pa	cfm	L/s	Watts	cfm	L/s	Watts	cfm	L/s	Watts
.00	0	1920	905	770	1515	715	585	1235	580	450
.05	10	1905	900	760	1505	710	580	1215	575	445
.10	25	1855	875	730	1460	690	560	1195	565	435
.15	35	1830	865	720	1435	675	550	1170	555	425
.20	50	1775	840	695	1410	665	545	1150	540	420
.25	60	1725	815	675	1365	645	525	1105	520	400
.30	75	1675	790	655	1340	635	515	1080	510	395
.40	100	1570	740	625	1250	590	480	1015	480	370
.50	125	1465	690	595	1155	545	445	880	415	320
.60	150	1310	615	550	1015	480	390	745	350	275
.70	175	1125	530	485	825	390	320	565	265	205

NOTE — All air data is measured external to unit with air filter in place.
Electric heaters have no appreciable air resistance.

CB29M-65 BLOWER PERFORMANCE

External Static Pressure		Air Volume and Motor Watts at Specific Blower Taps								
		High			Medium			Low		
in. w.g.	Pa	cfm	L/s	Watts	cfm	L/s	Watts	cfm	L/s	Watts
.00	0	2295	1085	1405	2070	975	1200	1835	865	975
.05	10	2280	1075	1400	2050	970	1190	1820	860	975
.10	25	2260	1065	1390	2030	960	1180	1800	850	970
.15	35	2240	1055	1385	2010	950	1170	1780	840	965
.20	50	2215	1045	1375	1990	940	1160	1760	830	960
.25	60	2190	1035	1365	1965	925	1150	1745	825	955
.30	75	2170	1025	1360	1935	915	1140	1725	815	950
.40	100	2125	1005	1345	1895	895	1125	1680	790	940
.50	125	2075	980	1330	1845	870	1105	1640	775	930
.60	150	2025	955	1315	1795	845	1090	1595	750	920
.70	175	1980	935	1300	1745	825	1080	1545	730	905

NOTE — All air data is measured external to unit with air filter in place.
Electric heaters have no appreciable air resistance.

ELECTRIC HEAT DATA — CB29M-21/26

Blower Coil Model Number	Electric Heat kW, Model Number & Shipping Weight	Number of Elements (Steps)	Volts Input (1 phase)	Heating Capacity	
				kW	Btuh
CB29M-21/26	2.5 kW ECB29-2.5 (28K30) 4 lbs. (2 kg)	1	220	2.1	7 200
			230	2.3	7 800
			240	2.5	8 500
	5 kW ECB29-5 (28K31) ECB29-5CB (28K32) 4 lbs. (2 kg)	1	220	4.2	14 300
			230	4.6	15 700
			240	5.0	17 100
	8 kW ECB29-8 (28K33) ECB29-8CB (28K34) 5 lbs. (2 kg)	2	220	6.7	22 900
			230	7.3	25 100
			240	8.0	27 300
	10 kW ECB29-10 (28K35) ECB29-10CB (28K36) 5 lbs. (2 kg)	2	220	8.4	28 700
			230	9.2	31 400
			240	10.0	34 100

*Refer to local codes to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

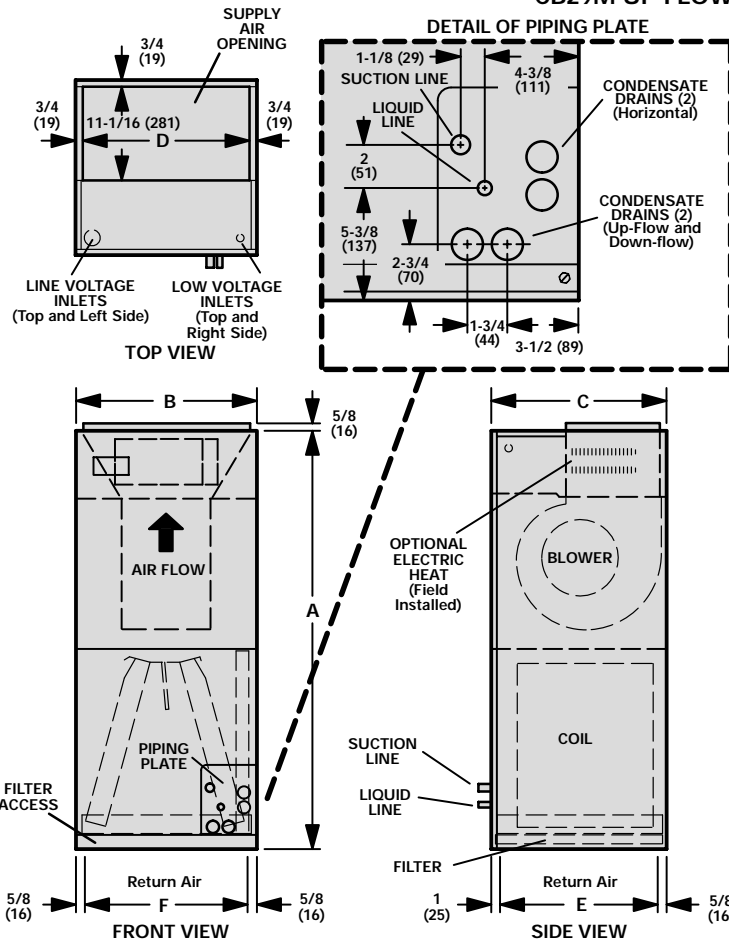
ELECTRIC HEAT DATA — CB29M-31/41, CB29M-51 AND CB29M-65

Blower Coil Model Number	Electric Heat kW, Model Number & Shipping Weight		Number of Elements (Steps)	Volts Input (1 phase)	Heating Capacity	
					kW	Btuh
CB29M-31/41	5 kW	ECB29-5 (28K31) ECB29-5CB (28K32) 4 lbs. (2 kg)	1	220	4.2	14 300
				230	4.6	15 700
				240	5.0	17 100
	8 kW	ECB29-8 (28K33) ECB29-8CB (28K34) 5 lbs. (2 kg)	2	220	6.7	22 900
				230	7.3	25 100
				240	8.0	27 300
	10 kW	ECB29-10 (28K35) ECB29-10CB (28K36) 5 lbs. (2 kg)	2	220	8.4	28 700
				230	9.2	31 400
				240	10.0	34 100
	12.5 kW	ECB29-12.5CB (28K37) 10 lbs. (5 kg)	3	220	10.5	35 800
				230	11.5	39 200
				240	12.5	42 600
	15 kW	ECB29-15CB (28K38) 10 lbs. (5 kg)	3	220	12.6	43 000
				230	13.5	47 000
				240	15.0	51 200
	20 kW	ECB29-20CB (28K39) 14 lbs. (6 kg)	4	220	16.8	57 300
				230	18.4	62 700
				240	20.0	68 200
CB29M-51	5 kW	ECB29-5 (28K31) ECB29-5CB (28K32) 4 lbs. (2 kg)	1	220	4.2	14 300
				230	4.6	15 700
				240	5.0	17 100
	8 kW	ECB29-8 (28K33) ECB29-8CB (28K34) 4 lbs. (2 kg)	2	220	6.7	22 900
				230	7.3	25 100
				240	8.0	27 300
	10 kW	ECB29-10 (28K35) ECB29-10CB (28K36) 5 lbs. (2 kg)	2	220	8.4	28 700
				230	9.2	31 400
				240	10.0	34 100
	12.5 kW	ECB29-12.5CB (28K37) 10 lbs. (5 kg)	3	220	10.5	35 800
				230	11.5	39 200
				240	12.5	42 600
	15 kW	ECB29-15CB (28K38) 10 lbs. (5 kg)	3	220	12.6	43 000
				230	13.5	47 000
				240	15.0	51 200
	20 kW	ECB29-20CB (28K39) 14 lbs. (6 kg)	4	220	16.8	57 300
				230	18.4	62 700
				240	20.0	68 200
25 kW	ECB29-25CB (28K40) 18 lbs. (8 kg)	5	220	21.0	71 700	
			230	23.0	78 300	
			240	25.0	85 300	
CB29M-65	5 kW	ECB29-5 (28K31) ECB29-5CB (28K32) 4 lbs. (2 kg)	1	220	4.2	14 300
				230	4.6	15 700
				240	5.0	17 100
	8 kW	ECB29-8 (28K33) ECB29-8CB (28K34) 4 lbs. (2 kg)	2	220	6.7	22 900
				230	7.3	25 100
				240	8.0	27 300
	10 kW	ECB29-10 (28K35) ECB29-10CB (28K36) 5 lbs. (2 kg)	2	220	8.4	28 700
				230	9.2	31 400
				240	10.0	34 100
	12.5 kW	ECB29-12.5CB (28K37) 10 lbs. (5 kg)	3	220	10.5	35 800
				230	11.5	39 200
				240	12.5	42 600
	15 kW	ECB29-15CB (28K38) 10 lbs. (5 kg)	3	220	12.6	43 000
				230	13.5	47 000
				240	15.0	51 200
	20 kW	ECB29-20CB (28K39) 14 lbs. (6 kg)	4	220	16.8	57 300
				230	18.4	62 700
				240	20.0	68 200
25 kW	ECB29-25CB (28K40) 18 lbs. (8 kg)	5	220	21.0	71 700	
			230	23.0	78 300	
			240	25.0	85 300	
30 kW	ECB29-30CB (28K41) 1 lbs. (9 kg)	5	220	25.2	86 000	
			230	27.5	94 000	
			240	30.0	102 400	

*Refer to local codes to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

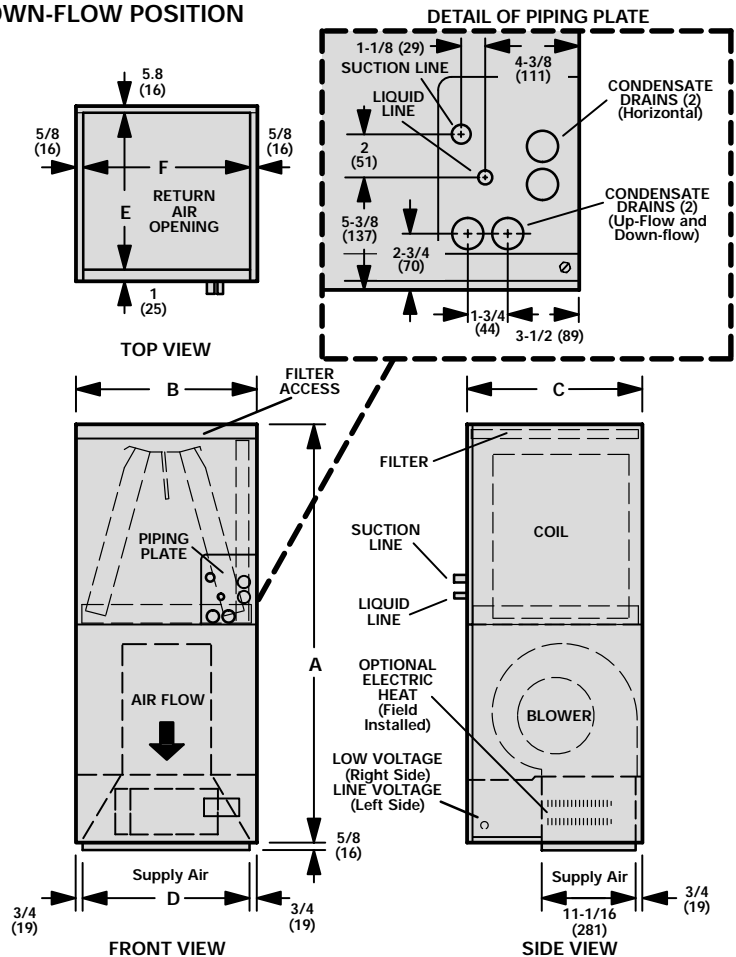
DIMENSIONS — inches (mm)

CB29M UP-FLOW POSITION



Model Number	CB29M-21/26		CB29M-31/41		CB29M-51 CB29M-65	
	inch	mm	inch	mm	inch	mm
A	45-1/4	1149	49-1/4	1251	52-1/2	1334
B	16-1/4	413	21-1/4	540	21-1/4	540
C	20-5/8	524	20-5/8	524	22-5/8	575
D	14-3/4	375	19-3/4	502	19-3/4	502
E	19	483	19	483	21	533
F	15	351	20	508	20	508

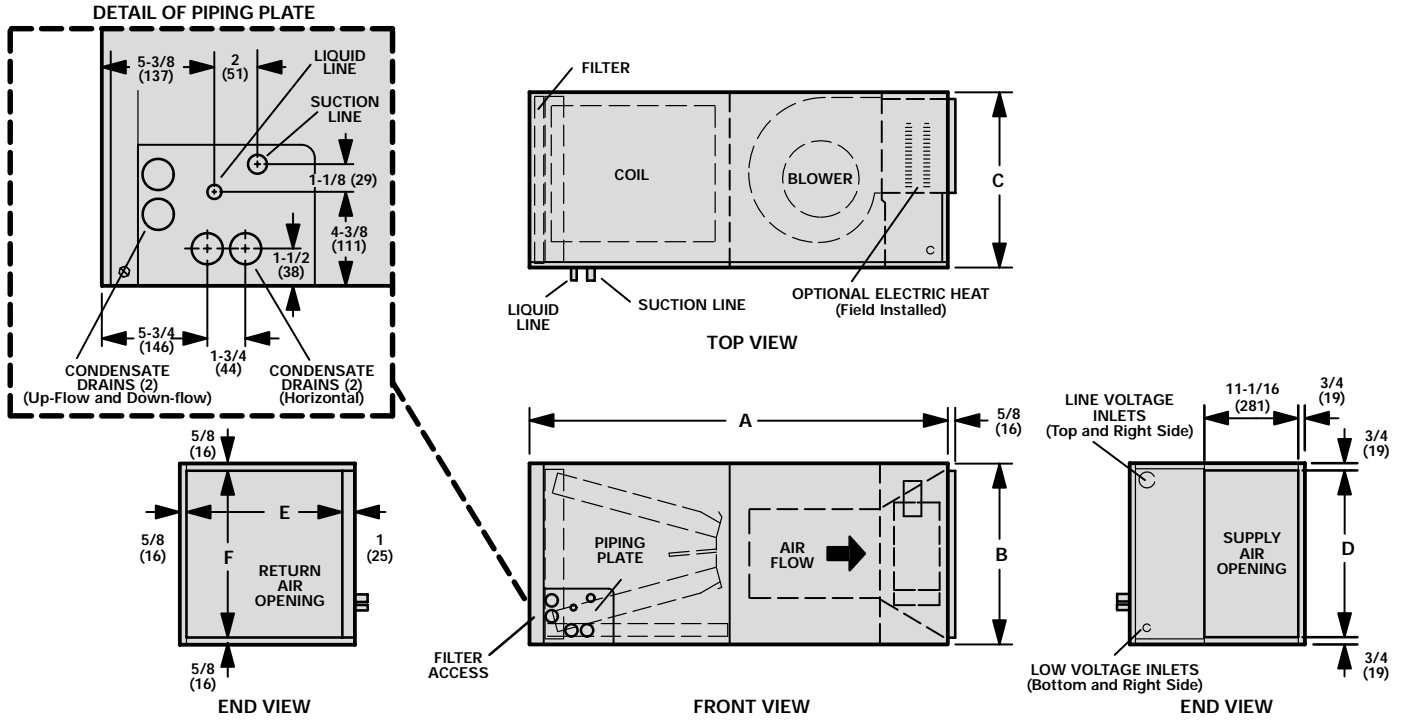
CB29M DOWN-FLOW POSITION



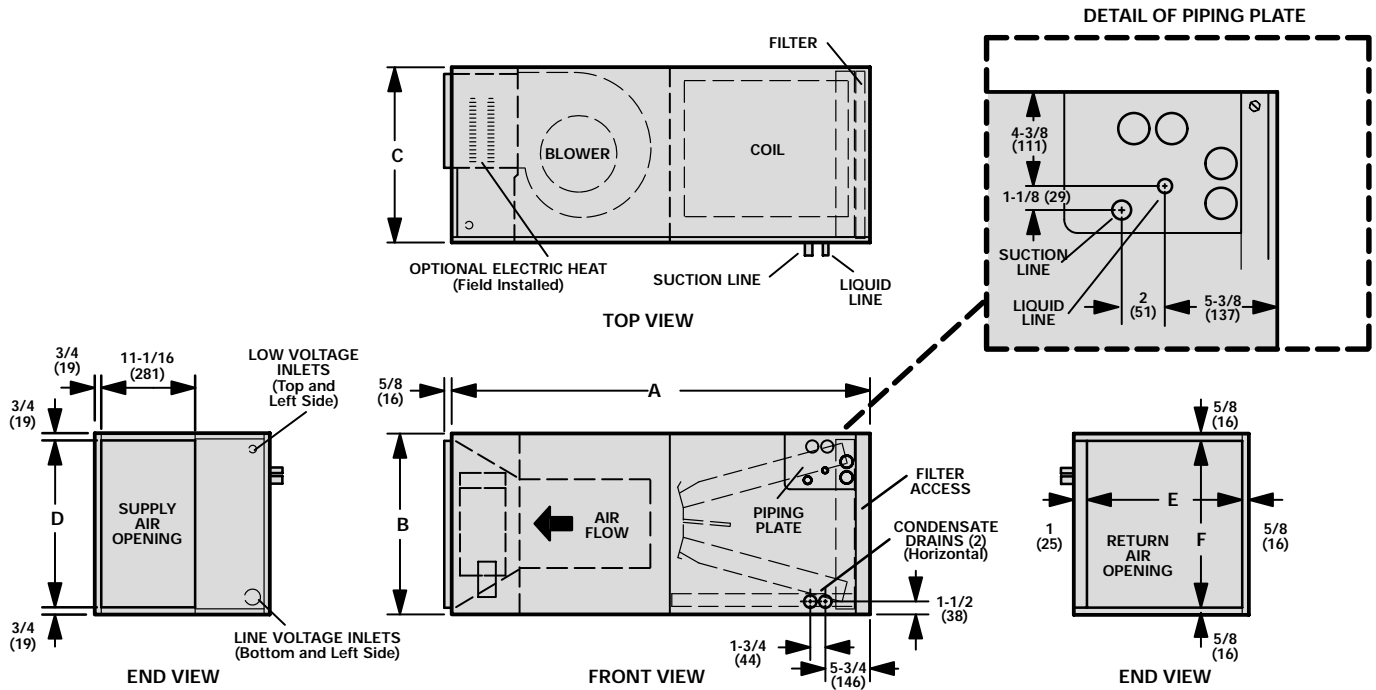
Model Number	CB29M-21/26		CB29M-31/41		CB29M-51 CB29M-65	
	inch	mm	inch	mm	inch	mm
A	45-1/4	1149	49-1/4	1251	52-1/2	1334
B	16-1/4	413	21-1/4	540	21-1/4	540
C	20-5/8	524	20-5/8	524	22-5/8	575
D	14-3/4	375	19-3/4	502	19-3/4	502
E	19	483	19	483	21	533
F	15	351	20	508	20	508

DIMENSIONS — inches (mm)

CB29M HORIZONTAL POSITION (RIGHT-HAND AIR DISCHARGE)



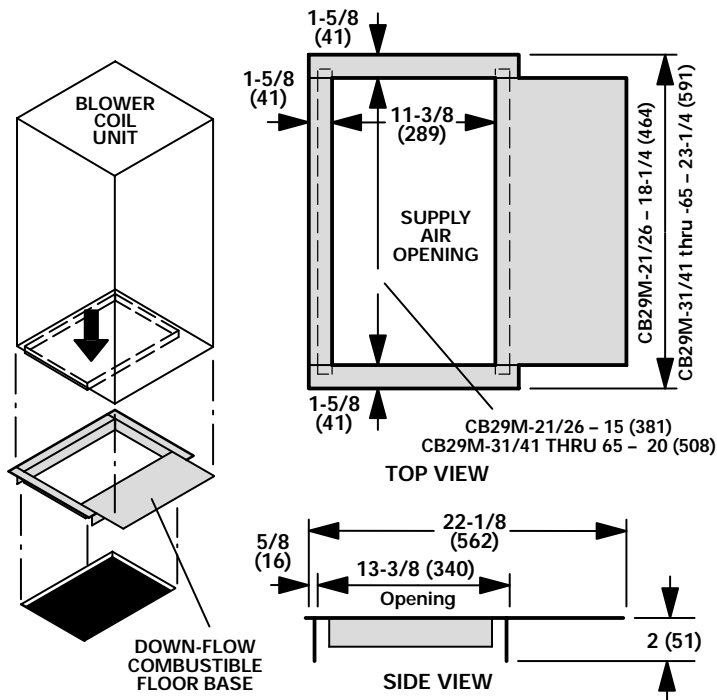
CB29M HORIZONTAL POSITION (LEFT-HAND AIR DISCHARGE)



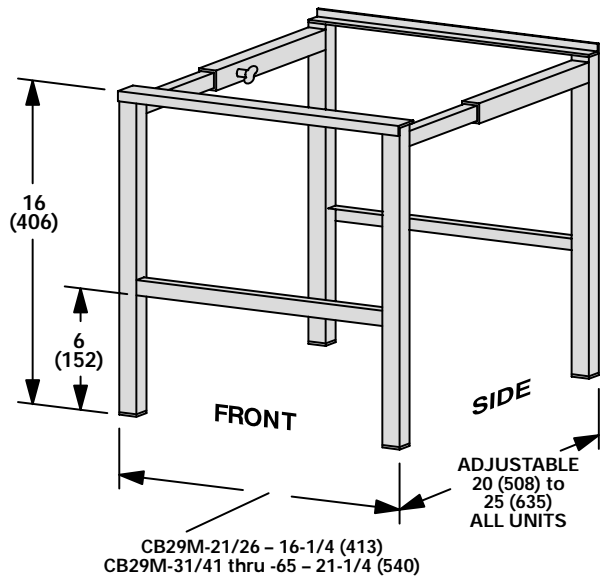
Model Number	A		B		C		D		E		F	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
CB29M-21/26	45-1/4	1149	16-1/4	413	20-5/8	524	14-3/4	375	19	483	15	351
CB29M-31/41	49-1/4	1251	21-1/4	540	20-5/8	524	19-3/4	502	19	483	20	508
CB29M-51 CB29M-65	52-1/2	1334	21-1/4	540	22-5/8	575	19-3/4	502	21	533	20	508

DIMENSIONS — inches (mm)

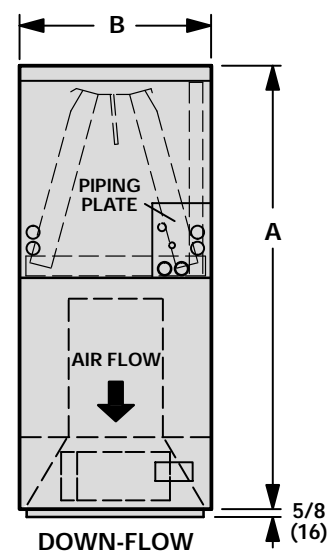
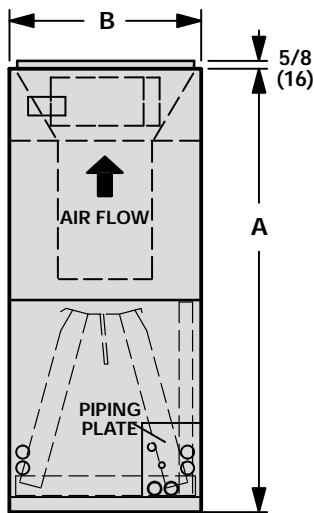
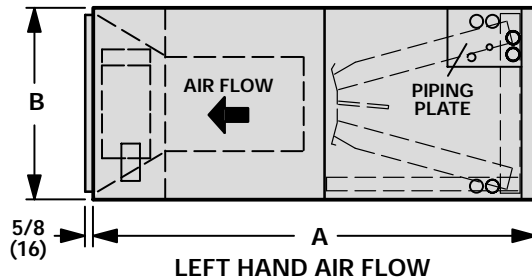
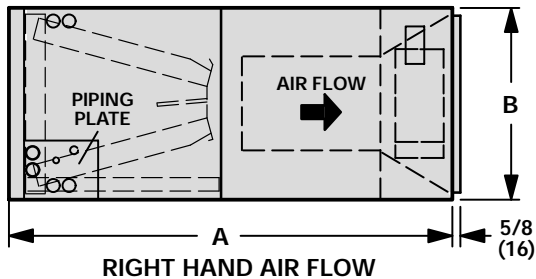
DOWN-FLOW COMBUSTIBLE FLOOR BASE



SIDE RETURN UNIT STAND (Up-Flow Only)



AIR FLOW



Blower Coil Model Number	A		B	
	in.	mm	in.	mm
CB29M-21/26	45-1/4	1149	16-1/4	413
CB29M-31/41	49-1/4	1251	21-1/4	540
CB29M-51 CB29M-65	52-1/2	1334	21-1/4	540

INSTALLATION CLEARANCES — ALL MODELS

Cabinet	0 inch (0 mm)
Plenum and Outlet duct on blower/coil units	1 inch (25 mm)
Plenum and Warm air duct within 3 feet (914mm) of cabinet	1 inch (25 mm)
Floor	*Combustible

*When unit is installed in the down-flow position with electric heat on a combustible floor an optional down flow base is required.