AIR HANDLERS

CB29M

Multi-Position
60 HZ

ENGINEERING DATA

Bulletin No. 210478
November 2008
Supersedes July 2007

3 to 5 Tons
Optional Electric Heat - 5 to 30 kW

MODEL NUMBER IDENTIFICATION

CB29M-41-1G

Unit Type
CB = Blower / Evaporator Coil

Series

Configuration
M = Multi-Position

Nominal Cooling Capacity
41 = 3 tons
46 = 3.5 tons
51 = 4 tons
65 = 5 tons

Minor Revision Number

Voltage
P = 208/230V-60hz-1ph
G = 460V-60hz-3ph
J = 575V-60hz-3ph

FEATURES AND BENEFITS

WARRANTY

All covered components - one year.
Refer to Lennox Limited Warranty Certificate included with each unit for additional details.

APPROVALS

Tested with matching air conditioning and heat pump units in the Lennox Research Laboratory environmental test room in accordance with ARI Standard 210/240.
Optional electric heaters rated in accordance with US Department of Energy (DOE) test procedures and Federal Trade Commission (FTC) labeling regulations.
Blower performance data according to unit tests conducted in Lennox air test chamber.
Air handlers are UL Listed to US and Canadian safety standards and components within are bonded for grounding to meet safety standards for servicing required by CEC and NEC.
ISO 9001 Registered Manufacturing Quality System.

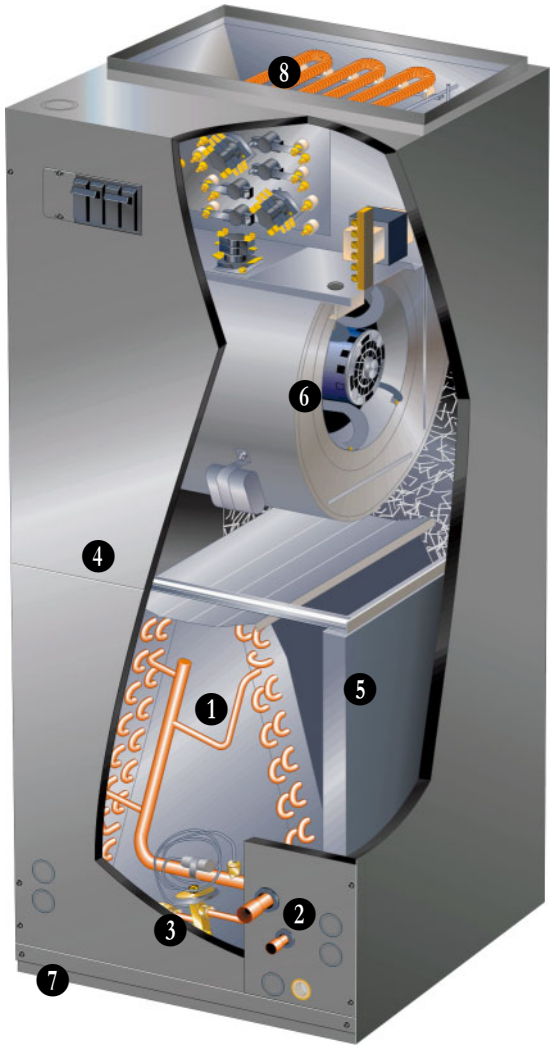
APPLICATIONS

3 to 5 ton nominal sizes.
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 bulletins in section, Air Conditioners for cooling capacities.
See bulletins in section, Heat Pump Outdoor Units for cooling and heating capacities.
Optional field installed electric heaters available in several sizes for additive heating capacity.

REFRIGERATION SYSTEM

1 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 heat transfer.
Flared shoulder tubing joints and silver soldering provide tight, leakproof joints.
Coil thoroughly factory tested under high pressure to insure leakproof construction.



2 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.

3 Check and Expansion Valve Furnished

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

CABINET

4 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.

Multi-Position Capability

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

5 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.

CABINET - CONTINUED

OPTIONS/ACCESSORIES

Down-Flow Additive Base

Additive base required for models with electric heat installed in down-flow position on combustible floors.

Horizontal Support Frame Kit

Provides support of unit in horizontal applications.
Consists of (2) 1 x 1-1/2 x 32-5/8 in. and (2) 1 x 3 x 53-7/8 in. painted heavy gauge cold rolled steel support channels with assembly and suspending holes.
Bolts and nuts furnished for field assembly.
Suspending rods must be field provided.

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

Raises unit 16 in. above floor for side return air duct connection.
Eliminates need for wooden platform construction.
All aluminum construction.
Two adjustable frames fit all sizes.

Wall Hanging Bracket Kit (Up-Flow Only)

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

BLOWER

6 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.

FILTER

7 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.

CONTROLS

Transformer & Blower Cooling Relay

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

OPTIONAL ELECTRIC HEAT

8 Field install internal to unit cabinet.
Available in several voltages and 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.
575V electric heaters are shipped with a 575V to 460V step-down transformer.

Circuit Breaker Models

ECB29-5CB, -6CB, -8CB, -9CB, -10CB, -12.5CB, -15CB, -20CB, -25CB and -30CB (208/240V-1ph) and ECB29-15CB, -20CB and -25CB (208/240V-3ph) 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, eliminating the need for field provided disconnect.
Consult local electrical code in your area.

EvenHeater™ Models

Electric heat is staged to provide supplemental heat to meet desired comfort levels.
EHC control board stages the heat on and off based on the demand of the provided (field installed) supply plenum thermistor.
Temperature set point (85, 100, 115 or 130°F) is selected by use of a jumper pin on the EHC control board.
ECB29EH-9CB, -12.5CB, -15CB and -20CB heaters are equipped with circuit breakers for overload and short circuit protection.
Factory provided and field mounted in 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.

OPTIONS/ACCESSORIES

Circuit Breaker Cover Kit

Flexible plastic cover protects circuit breaker. Recommended in areas with high humidity to prevent nuisance tripping.

Single-Point Power Source Control Box

Control Box may be used with optional electric heat when single power supply is connected to multi-circuit electric heat.
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.
Dimensions (H x W x D) : 7 x 7 x 4 in.

Step-down Transformer (575V Applications)

460V-3 phase units can be used in 575V applications.
575V electric heaters are shipped with a 575V to 460V step-down transformer.
If no electric heat is used, order a 575V Step-down Transformer Kit.

SPECIFICATIONS

General Data	**Model Number**	**CB29M-41**	**CB29M-46**	**CB29M-51**	**CB29M-65**
	Nominal tonnage	3	3.5	4	5
	Refrigerant	R-22	R-22	R-22	R-22
Connections	Suction (vapor) line (o.d.) - in. sweat	3/4	7/8	1-1/8	1-1/8
	Liquid line (o.d.) - in. sweat	3/8	3/8	3/8	3/8
	Condensate - in. fpt	(2) 3/4	(2) 3/4	(2) 3/4	(2) 3/4
Indoor Coil	Net face area - ft.[2]	4.44	4.44	5.0	5.0
	Tube outside diameter - in.	3/8	3/8	3/8	3/8
	Number of rows	2	3	3	3
	Fins per inch	14	12	12	12
Blower	Wheel nominal diameter x width - in.	10 x 8	10 x 9	11-1/2 x 9	11-1/2 x 9
	Blower motor output - hp	1/3	1/2	3/4	3/4
[1] **Filters**	Size of filter - in.	20 x 20 x 1	20 x 20 x 1	20 x 22 x 1	20 x 22 x 1
Shipping Data -1 package	lbs.	156	160	181	181

ELECTRICAL DATA

Voltage - phase	208/230-1 [2] 460-3	208/230 - 1	208/230 - 1 [2] 460 - 3	208/230 - 1 [2] 460 - 3
[3] Maximum overcurrent protection (unit only) all voltages	15	15	15	15
Minimum circuit ampacity (unit only) - 208/230V / 460v	3 / 2	6 / na	6 / 3	6 / 3

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Circuit Breaker Cover Kit	**93M85**	**93M85**	**93M85**	**93M85**
Down-Flow Additive Base	**44K15**	**44K15**	**44K15**	**44K15**
Electric Heat	2.5 to 30 kW - See Electric Heat Data tables			
Horizontal Support Frame Kit	**56J18**	**56J18**	**56J18**	**56J18**
Side Return Unit Stand (Up-Flow Only)	**45K32**	**45K32**	**45K32**	**45K32**
Single Point Power Source Control Box	**21H39**	**21H39**	**21H39**	**21H39**
Step-Down Transformer Kit For 575V applications	**66K90**	- - -	**66K90**	**66K90**
Wall Hanging Bracket Kit (Up-Flow Only)	**45K30**	**45K30**	**45K30**	**45K30**

[1] One disposable frame type filter furnished.
[2] Blower motor is 460V - 1 phase. Optional electric heat is 460V - 3 phase.
[3] HACR type breaker or fuse.

BLOWER DATA

CB29M-41 BLOWER PERFORMANCE (208/230V)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	1495	650	1110	510	895	415
.05	1485	640	1120	510	910	415
.10	1475	625	1130	510	920	410
.15	1460	615	1130	510	925	400
.20	1445	600	1130	505	930	390
.25	1425	585	1130	475	930	380
.30	1405	570	1125	465	925	370
.40	1355	540	1100	435	905	350
.50	1295	510	1060	405	870	330
.60	1230	480	1010	380	820	310
.70	1150	450	945	350	750	290
.75	1110	435	905	335	715	280

CB29M-41 BLOWER PERFORMANCE (460V - 1 ph)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	1455	665	1120	535	925	420
.05	1445	655	1120	530	935	420
.10	1430	645	1120	520	945	415
.15	1420	635	1115	510	950	410
.20	1400	620	1110	500	950	405
.25	1385	605	1105	485	950	385
.30	1365	590	1095	475	945	380
.40	1325	555	1080	450	925	360
.50	1275	520	1055	425	890	345
.60	1220	475	1025	400	845	325
.70	1160	430	990	375	785	310
.80	1090	375	950	350	715	290

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

BLOWER DATA

CB29M-46 BLOWER PERFORMANCE (208/230V)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	1750	725	1495	580	1250	520
.05	1740	720	1495	580	1255	520
.10	1725	710	1490	575	1255	500
.15	1700	700	1475	565	1250	490
.20	1675	690	1460	550	1235	475
.25	1645	680	1435	535	1220	460
.30	1610	665	1405	520	1200	445
.40	1525	635	1335	490	1140	415
.50	1420	605	1245	455	1065	385
.60	1295	570	1135	420	970	355
.70	1155	535	1000	380	850	325
.80	995	495	850	345	715	295
.85	905	475	765	325	640	280

CB29M-51 BLOWER PERFORMANCE (208/230V)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	2050	1005	1785	800	1590	660
.05	2030	990	1770	795	1570	655
.10	2005	980	1750	785	1550	650
.15	1975	970	1730	775	1530	645
.20	1950	955	1710	765	1510	640
.25	1920	940	1685	755	1490	635
.30	1890	930	1660	745	1465	630
.40	1820	900	1605	725	1415	615
.50	1745	875	1545	705	1365	600
.60	1665	845	1485	680	1305	580
.70	1580	820	1415	660	1245	555
.75	1535	805	1375	650	1210	540

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

CB29M-51 BLOWER PERFORMANCE (460V - 1 ph)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	2135	960	1895	800	1695	680
.05	2110	945	1875	785	1675	675
.10	2080	935	1855	775	1660	665
.15	2055	920	1830	765	1640	655
.20	2025	910	1805	755	1620	645
.25	1995	895	1780	740	1595	640
.30	1965	885	1755	730	1575	630
.40	1905	860	1700	710	1525	610
.50	1840	835	1640	685	1470	590
.60	1770	810	1580	665	1415	575
.70	1700	785	1515	640	1355	555
.80	1630	760	1445	620	1295	535
.85	1595	745	1410	605	1260	525

CB29M-65 BLOWER PERFORMANCE (460V - 1 ph)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps					
	High		Medium		Low	
	cfm	Watts	cfm	Watts	cfm	Watts
.00	2230	1145	2050	925	1790	750
.05	2200	1135	2030	915	1770	740
.10	2170	1120	2005	910	1745	735
.15	2140	1110	1980	900	1725	725
.20	2110	1095	1960	890	1705	715
.25	2080	1085	1930	880	1680	705
.30	2045	1075	1905	870	1655	695
.40	1980	1050	1845	845	1605	675
.50	1910	1025	1785	825	1550	660
.60	1835	1000	1715	800	1490	640
.70	1760	975	1645	775	1425	620
.80	1680	950	1565	745	1360	600
.90	1600	925	1485	720	1290	585

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 (208/230V)

External Static Pressure in. w.g.	Air Volume and Motor Watts at Specific Blower Taps									
	High		Medium-High		Medium		Medium-Low		Low	
	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts	cfm	Watts
.00	2245	1080	2130	930	2000	820	1800	695	1565	570
.05	2220	1070	2105	920	1980	815	1780	690	1550	570
.10	2190	1060	2080	915	1955	805	1760	680	1535	565
.15	2165	1050	2055	905	1935	795	1735	670	1520	560
.20	2135	1040	2030	895	1910	785	1715	665	1500	555
.25	2105	1030	2000	885	1880	780	1690	655	1480	550
.30	2070	1020	1970	875	1855	770	1665	645	1460	540
.40	2005	995	1910	855	1795	750	1610	630	1415	530
.50	1935	975	1845	830	1735	730	1555	610	1365	515
.60	1855	950	1775	810	1665	710	1495	595	1310	500
.70	1775	925	1695	785	1595	690	1430	580	1245	485
.80	1690	900	1615	755	1520	665	1365	560	1180	470
.90	1600	875	1530	730	1440	645	1290	545	1105	455
.95	1555	865	1490	715	1395	635	1255	535	1070	450

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

CB29M-41 AND CB29M-46 - ELECTRIC HEAT DATA

SINGLE PHASE ELECTRIC HEAT						CB29M-41					CB29M-46				
			Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity Circuit		[5] Maximum Overcurrent Protection Circuit		[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity Circuit		[5] Maximum Overcurrent Protection Circuit	
Model Number	No. of Stages	Volts	kW	[1] Btuh		1	2	1	2		1	2	1	2
5 kW 4 lbs. ECB29-5 **(28K31)** Terminal block; ECB29-5CB **(28K32)** 30A Circuit breaker	1	208	3.8	12,800	2.4	26	- - -	30	- - -	4.4	29	- - -	30	- - -
		220	4.2	14,300	2.4	29	- - -	30	- - -	4.4	32	- - -	35	- - -
		230	4.6	15,700	2.4	29	- - -	30	- - -	4.4	32	- - -	35	- - -
		240	5.0	17,100	2.4	29	- - -	30	- - -	4.4	32	- - -	35	- - -
6 kW 4 lbs. ECB29-6 **(47L22)** Terminal block; ECB29-6CB **(47L23)** 35A Circuit breaker	1	208	4.5	15,400	2.4	30	- - -	**[4] 30**	- - -	4.4	33	- - -	35	- - -
		220	5.0	17,100	2.4	34	- - -	35	- - -	4.4	37	- - -	40	- - -
		230	5.5	18,800	2.4	34	- - -	35	- - -	4.4	37	- - -	40	- - -
		240	6.0	20,500	2.4	34	- - -	35	- - -	4.4	37	- - -	40	- - -
8 kW 5 lbs. ECB29-8 **(28K33)** Terminal block; ECB29-8CB **(28K34)** 45A Circuit breaker	1	208	6.0	20,500	2.4	40	- - -	**[4] 40**	- - -	4.4	42	- - -	45	- - -
		220	6.7	22,900	2.4	45	- - -	45	- - -	4.4	47	- - -	50	- - -
		230	7.3	25,100	2.4	45	- - -	45	- - -	4.4	47	- - -	50	- - -
		240	8.0	27,300	2.4	45	- - -	45	- - -	4.4	47	- - -	50	- - -
9 kW 5 lbs. ECB29-9CB **(10L11)** 50A Circuit breaker; ECB29EH-9CB **(91K67)** 50A Circuit breaker	2	208	6.8	23,100	2.4	44	- - -	**[4] 45**	- - -	4.4	47	- - -	50	- - -
		220	7.6	25,800	2.4	50	- - -	50	- - -	4.4	53	- - -	60	- - -
		230	8.3	28,200	2.4	50	- - -	50	- - -	4.4	53	- - -	60	- - -
		240	9.0	30,700	2.4	50	- - -	50	- - -	4.4	53	- - -	60	- - -
10 kW 6 lbs. ECB29-10 **(28K35)** Terminal block; ECB29-10CB **(28K36)** 60A Circuit breaker	2	208	7.5	25,600	2.4	48	- - -	**[4] 50**	- - -	4.4	55	- - -	60	- - -
		220	8.4	28,700	2.4	55	- - -	60	- - -	4.4	58	- - -	60	- - -
		230	9.2	31,400	2.4	55	- - -	60	- - -	4.4	58	- - -	60	- - -
		240	10.0	34,100	2.4	55	- - -	60	- - -	4.4	58	- - -	60	- - -
12.5 kW 10 lbs. ECB29-12.5CB **(28K37)** (1) 25A & (1) 50A Circuit breaker; ECB29EH-12.5CB **(91K68)** (1) 25A & (1) 50A Circuit breaker	2	208	9.4	32,000	2.4	22	31	25	**[4] 45**	4.4	25	31	25	**[4] 45**
		220	10.5	35,800	2.4	25	35	25	50	4.4	28	35	30	50
		230	11.5	39,200	2.4	25	35	25	50	4.4	28	35	30	50
		240	12.5	42,600	2.4	25	35	25	50	4.4	28	35	30	50
15 kW 12 lbs. ECB29-15CB **(28K38)** (1) 30A & (1) 60A Circuit breaker; ECB29EH-15CB (**91K69)** (1) 30A & (1) 60A Circuit breaker	2	208	11.3	38,400	2.4	26	37	30	**[4] 50**	4.4	29	37	30	**[4] 50**
		220	12.6	43,000	2.4	29	42	30	60	4.4	32	42	35	60
		230	13.5	47,000	2.4	29	42	30	60	4.4	32	42	35	60
		240	15.0	51,200	2.4	29	42	30	60	4.4	32	42	35	60
20 kW 19 lbs. ECB29-20CB **(11L31)** (1) 50A & (1) 60A Circuit breaker; ECB29EH-20CB **(91K70)** (1) 50A & (1) 60A Circuit breaker	2	208	15.0	51,200	2.4	45	41	**[4] 45**	60	4.4	47	41	50	60
		220	16.8	57,300	2.4	50	46	50	60	4.4	52	46	60	60
		230	18.4	62,700	2.4	50	46	50	60	4.4	52	46	60	60
		240	20.0	68,200	2.4	50	46	50	60	4.4	52	46	60	60
THREE PHASE ELECTRIC HEAT						**CB29M-41**					**CB29M-46**				
8 kW 5 lbs. ECB29-8 **(28K42)** Terminal Block	1	208	6.0	20,500	2.4	24	- - -	25	- - -	4.4	27	- - -	30	- - -
		220	6.7	22,900	2.4	27	- - -	30	- - -	4.4	30	- - -	30	- - -
		230	7.3	25,100	2.4	27	- - -	30	- - -	4.4	30	- - -	30	- - -
		240	8.0	27,300	2.4	27	- - -	30	- - -	4.4	30	- - -	30	- - -
10 kW 6 lbs. ECB29-10 **(28K43)** Terminal block	1	208	7.5	25,600	2.4	29	- - -	30	- - -	4.4	32	- - -	35	- - -
		220	8.4	28,700	2.4	33	- - -	35	- - -	4.4	36	- - -	40	- - -
		230	9.2	31,400	2.4	33	- - -	35	- - -	4.4	36	- - -	40	- - -
		240	10.0	34,100	2.4	33	- - -	35	- - -	4.4	36	- - -	40	- - -
ECB29-10 **(28K47)** (3) 20A Fuses	1	440	8.4	28,700	1.3	17	- - -	20	- - -	Not Available				
		460	9.2	31,400	1.3	17	- - -	20	- - -					
		480	10.0	34,100	1.3	17	- - -	20	- - -					
15 kW 12 lbs. ECB29-15CB **(28K44)** (1) 50A Circuit breaker	1	208	11.3	38,400	2.4	42	- - -	**[4] 45**	- - -	4.4	45	- - -	**[4] 45**	- - -
		220	12.6	43,000	2.4	48	- - -	50	- - -	4.4	51	- - -	60	- - -
		230	13.5	47,000	2.4	48	- - -	50	- - -	4.4	51	- - -	60	- - -
		240	15.0	51,200	2.4	48	- - -	50	- - -	4.4	51	- - -	60	- - -
ECB29-15 **(28K48)** (3) 25A Fuses	1	440	12.6	43,000	1.3	24	- - -	25	- - -	Not Available				
		460	13.8	47,000	1.3	24	- - -	25	- - -					
		480	15.0	51,200	1.3	24	- - -	25	- - -					
20 kW 19 lbs. ECB29-20CB **(28K45)** (2) 35A Circuit breaker	2	208	15.0	51,200	2.4	29	21	**[4] 30**	**[4] 30**	4.4	32	21	35	**[4] 30**
		220	16.8	57,300	2.4	33	24	35	35	4.4	36	24	40	35
		230	18.4	62,700	2.4	33	24	35	35	4.4	36	24	40	35
		240	20.0	68,200	2.4	33	24	35	35	4.4	36	24	40	35

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only — does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on "CB" circuit breaker models must be replaced with size noted.

[5] HACR type circuit breaker or fuse.

CB29M-51 AND CB29M-65 - ELECTRIC HEAT DATA

SINGLE PHASE ELECTRIC HEAT						CB29M-51							CB29M-65						
	Model Number	No. of Stages	Input			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity Circuit			[5] Maximum Overcurrent Protection Circuit			[2] Blower Motor Full Load Amps	[3] Minimum Circuit Ampacity Circuit			[5] Maximum Overcurrent Protection Circuit		
			Volts	kW	[1] Btuh		1	2	3	1	2	3		1	2	3	1	2	3
5 kW 4 lbs.	ECB29-5 **(28K31)** Terminal Block	1	208	3.8	12,800	4.5	29	---	---	30	---	---	4.6	29	---	---	30	---	---
	ECB29-5CB **(28K32)** 30A Circuit breaker		220	4.2	14,300	4.5	32	---	---	35	---	---	4.6	32	---	---	35	---	---
			230	4.6	15,700	4.5	32	---	---	35	---	---	4.6	32	---	---	35	---	---
			240	5.0	17,100	4.5	32	---	---	35	---	---	4.6	32	---	---	35	---	---
6 kW 4 lbs.	ECB29-6 **(47L22)** Terminal Block	1	208	4.5	15,400	4.5	33	---	---	35	---	---	4.6	33	---	---	35	---	---
	ECB29-6CB **(47L23)** 35A Circuit breaker		220	5.0	17,100	4.5	37	---	---	40	---	---	4.6	37	---	---	40	---	---
			230	5.5	18,800	4.5	37	---	---	40	---	---	4.6	37	---	---	40	---	---
			240	6.0	20,500	4.5	37	---	---	40	---	---	4.5	37	---	---	40	---	---
8 kW 5 lbs.	ECB29-8 **(28K33)** Terminal Block	1	208	6.0	20,500	4.5	42	---	---	45	---	---	4.6	42	---	---	45	---	---
	ECB29-8CB **(28K34)** 45A Circuit breaker		220	6.7	22,900	4.5	48	---	---	50	---	---	4.6	48	---	---	50	---	---
			230	7.3	25,100	4.5	48	---	---	50	---	---	4.6	48	---	---	50	---	---
			240	8.0	27,300	4.5	48	---	---	50	---	---	4.6	48	---	---	50	---	---
9 kW 5 lbs.	ECB29-9CB **(10L11)** 50A Circuit breaker	2	208	6.8	23,100	4.5	47	---	---	50	---	---	4.6	47	---	---	50	---	---
	ECB29EH-9CB **(91K67)** 50A Circuit breaker		220	7.6	25,800	4.5	53	---	---	60	---	---	4.6	53	---	---	60	---	---
			230	8.3	28,200	4.5	53	---	---	60	---	---	4.6	53	---	---	60	---	---
			240	9.0	30,700	4.5	53	---	---	60	---	---	4.6	53	---	---	60	---	---
10 kW 6 lbs.	ECB29-10 **(28K35)** Terminal Block	2	208	7.5	25,600	4.5	51	---	---	60	---	---	4.6	51	---	---	60	---	---
	ECB29-10CB **(28K36)** 60A Circuit breaker		220	8.4	28,700	4.5	58	---	---	60	---	---	4.6	58	---	---	60	---	---
			230	9.2	31,400	4.5	58	---	---	60	---	---	4.6	58	---	---	60	---	---
			240	10.0	34,100	4.5	58	---	---	60	---	---	4.6	58	---	---	60	---	---
12.5 kW 10 lbs.	ECB29-12.5CB **(28K37)** (1)25A &(1) 50A Circuit Breaker	2	208	9.4	32,000	4.5	25	31	---	25	**[4] 45**	---	4.6	25	31	---	25	**[4] 45**	---
	ECB29EH-12.5CB **(91K68)** (1)25A &(1) 50A Circuit Breaker		220	10.5	35,800	4.5	27	35	---	30	50	---	4.6	28	35	---	30	50	---
			230	11.5	39,200	4.5	27	35	---	30	50	---	4.6	28	35	---	30	50	---
			240	12.5	42,600	4.5	27	35	---	30	50	---	4.6	28	35	---	30	50	---
15 kW 12 lbs.	ECB29-15CB **(28K38)** (1)30A & (1)60A Circuit breaker	2	208	11.3	38,400	4.5	29	37	---	30	**[4] 50**	---	4.6	29	37	---	30	**[4] 50**	---
	ECB29EH-15CB (**91K69**) (1)30A & (1)60A Circuit breaker		220	12.6	43,000	4.5	32	42	---	35	60	---	4.6	32	42	---	35	60	---
			230	13.5	47,000	4.5	32	42	---	35	60	---	4.6	32	42	---	35	60	---
			240	15.0	51,200	4.5	32	42	---	35	60	---	4.6	32	42	---	35	60	---
20 kW 19 lbs.	ECB29-20CB **(11L31)** (1)50A & (1)60A Circuit breaker	2	208	15.0	51,200	4.5	47	41	---	50	60	---	4.6	47	41	---	50	60	---
	ECB29EH-20CB **(91K70)** (1)50A & (1)60A Circuit breaker		220	16.8	57,300	4.5	53	46	---	60	60	---	4.6	53	46	---	60	60	---
			230	18.4	62,700	4.5	53	46	---	60	60	---	4.6	53	46	---	60	60	---
			240	20.0	68,200	4.5	53	46	---	60	60	---	4.6	53	46	---	60	60	---
25 kW 19 lbs.	ECB29-25CB **(28K40)** (3) 50A Circuit breaker	3	208	18.8	64,100	4.5	44	31	31	**[4] 45**	**[4] 45**	**[4] 45**	4.6	44	31	31	**[4] 45**	**[4] 45**	**[4] 45**
			220	21.0	71,700	4.5	49	35	35	50	50	50	4.6	50	35	35	50	50	50
			230	23.0	78,300	4.5	49	35	35	50	50	50	4.6	50	35	35	50	50	50
			240	25.0	85,300	4.5	49	35	35	50	50	50	4.6	50	35	35	50	50	50
30 kW 19 lbs.	ECB29-30CB **(28K41)** (3) 60A Circuit breaker	3	208	22.5	76,900	Not Available							4.6	51	37	37	60	**[4] 50**	**[4] 50**
			220	25.2	86,000								4.6	58	42	42	60	60	60
			230	27.5	94,000								4.6	58	42	42	60	60	60
			240	30.0	102,400								4.6	58	42	42	60	60	60

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only — does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on "CB" circuit breaker models must be replaced with size noted.

[5] HACR type circuit breaker or fuse.

CB29M-51 AND CB29M-65 - ELECTRIC HEAT DATA

THREE PHASE ELECTRIC HEAT

	Model Number	No. of Stages	Input Volts	Input kW	Input [1] Btuh	CB29M-51 [2] Blower Motor Full Load Amps	CB29M-51 [3] Minimum Circuit Ampacity Circuit 1	CB29M-51 [3] Minimum Circuit Ampacity Circuit 2	CB29M-51 [7] Maximum Overcurrent Protection Circuit 1	CB29M-51 [7] Maximum Overcurrent Protection Circuit 2	CB29M-65 [2] Blower Motor Full Load Amps	CB29M-65 [3] Minimum Circuit Ampacity Circuit 1	CB29M-65 [3] Minimum Circuit Ampacity Circuit 2	CB29M-65 [7] Maximum Overcurrent Protection Circuit 1	CB29M-65 [7] Maximum Overcurrent Protection Circuit 2
8 kW 5 lbs.	ECB29-8 **(28K42)** Terminal Block	1	208	6.0	20,500	4.5	27	- - -	30	- - -	4.6	27	- - -	30	- - -
			220	6.7	22,900	4.5	30	- - -	30	- - -	4.6	30	- - -	30	- - -
			230	7.3	25,100	4.5	30	- - -	30	- - -	4.6	30	- - -	30	- - -
			240	8.0	27,300	4.5	30	- - -	30	- - -	4.6	30	- - -	30	- - -
10 kW 6 lbs.	ECB29-10 **(28K43)** Terminal Block	1	208	7.5	25,600	4.5	32	- - -	35	- - -	4.6	32	- - -	35	- - -
			220	8.4	28,700	4.5	36	- - -	40	- - -	4.6	36	- - -	40	- - -
			230	9.2	31,400	4.5	36	- - -	40	- - -	4.6	36	- - -	40	- - -
			240	10.0	34,100	4.5	36	- - -	40	- - -	4.6	36	- - -	40	- - -
	ECB29-10 **(28K47)** (3) 20A Fuses	1	440	8.4	28,700	1.9	17	- - -	20	- - -	2.3	18	- - -	20	- - -
			460	9.2	31,400	1.9	17	- - -	20	- - -	2.3	18	- - -	20	- - -
			480	10.0	34,100	1.9	17	- - -	20	- - -	2.3	18	- - -	20	- - -
15 kW 12 lbs.	ECB29-15CB **(28K44)** (1) 50A Circuit breaker	1	208	11.3	38,400	4.5	45	- - -	**[4] 45**	- - -	4.6	45	- - -	**[4] 45**	- - -
			220	12.6	43,000	4.5	51	- - -	60	- - -	4.6	51	- - -	60	- - -
			230	13.5	47,000	4.5	51	- - -	60	- - -	4.6	51	- - -	60	- - -
			240	15.0	51,200	4.5	51	- - -	60	- - -	4.6	51	- - -	60	- - -
	ECB29-15 **(28K48)** (3) 25A Fuses	1	440	12.6	43,000	1.9	25	- - -	25	- - -	2.3	25	- - -	25	- - -
			460	13.8	47,000	1.9	25	- - -	25	- - -	2.3	25	- - -	25	- - -
			480	15.0	51,200	1.9	25	- - -	25	- - -	2.3	25	- - -	25	- - -
20 kW 19 lbs.	ECB29-20CB **(28K45)** (2) 35A Circuit breaker	2	208	15.0	51,200	4.5	32	21	35	**[4] 30**	4.6	32	21	35	**[4] 30**
			220	16.8	57,300	4.5	36	24	40	35	4.6	36	24	40	35
			230	18.4	62,700	4.5	36	24	40	35	4.6	36	24	40	35
			240	20.0	68,200	4.5	36	24	40	35	4.6	36	24	40	35
	ECB29-20 **(28K49)** (3) 35A Fuses	1	440	16.8	57,300	1.9	32	- - -	35	- - -	2.3	33	- - -	35	- - -
			460	18.4	62,700	1.9	32	- - -	35	- - -	2.3	33	- - -	35	- - -
			480	20.0	68,200	1.9	32	- - -	35	- - -	2.3	33	- - -	35	- - -
	[5] ECB29-20 **(28K51)** (3) 25A Fuses	1	550	16.8	57,300	[6] 1.9	26	- - -	30	- - -	[6] 2.3	27	- - -	30	- - -
			575	18.4	62,700	[6] 1.9	26	- - -	30	- - -	[6] 2.3	27	- - -	30	- - -
			600	20.0	68,200	[6] 1.9	26	- - -	30	- - -	[6] 2.3	27	- - -	30	- - -
25 kW 19 lbs.	ECB29-25CB **(28K46)** (2) 45A Circuit Breaker	2	208	18.8	64,100	4.5	39	27	**[4] 40**	**[4] 40**	4.6	39	27	**[4] 40**	**[4] 40**
			220	21.0	71,700	4.5	43	30	45	45	4.6	43	30	45	45
			230	23.0	78,300	4.5	43	30	45	45	4.6	43	30	45	45
			240	25.0	85,300	4.5	43	30	45	45	4.6	43	30	45	45
	ECB29-25 **(28K50)** (3) 40A Fuses	2	440	21.0	71,700	1.9	40	- - -	45	- - -	2.3	40	- - -	45	- - -
			460	23.0	78,300	1.9	40	- - -	45	- - -	2.3	40	- - -	45	- - -
			480	25.0	85,300	1.9	40	- - -	45	- - -	2.3	40	- - -	45	- - -
	[5] ECB29-25 **(28K52)** (3) 35A Fuses	2	550	21.0	71,700	[6] 1.9	32	- - -	35	- - -	[6] 2.3	33	- - -	35	- - -
			575	23.0	78,300	[6] 1.9	32	- - -	35	- - -	[6] 2.3	33	- - -	35	- - -
			600	25.0	85,300	[6] 1.9	32	- - -	35	- - -	[6] 2.3	33	- - -	35	- - -

NOTE - Circuit 1 Minimum Circuit Ampacity includes the Blower Motor Full Load Amps.

[1] Electric heater capacity only — does not include additional blower motor heat capacity.

[2] Amps shown are for blower motor only.

[3] Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F.

[4] Bold text indicates that the circuit breaker on "CB" circuit breaker models must be replaced with size noted.

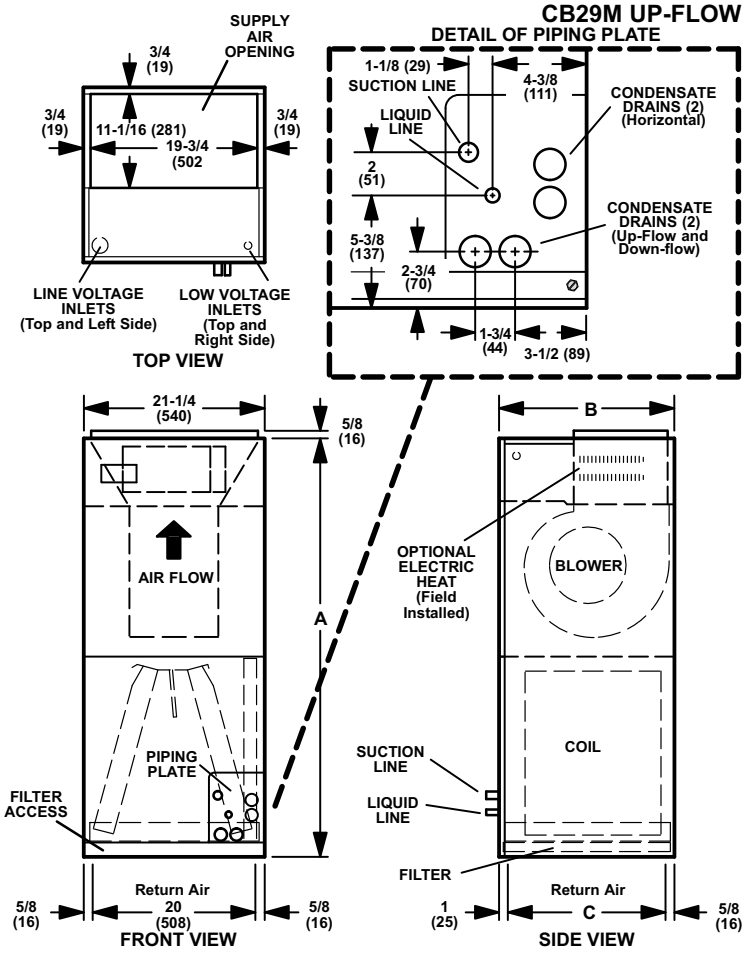
[5] All 575V electric heaters are used with 460V blower coil units. A 575V to 460V Step-down transformer for the blower coil unit is furnished with all 575V electric heaters.

[6] Blower motor is rated at **460V.**

[7] HACR type circuit breaker or fuse.

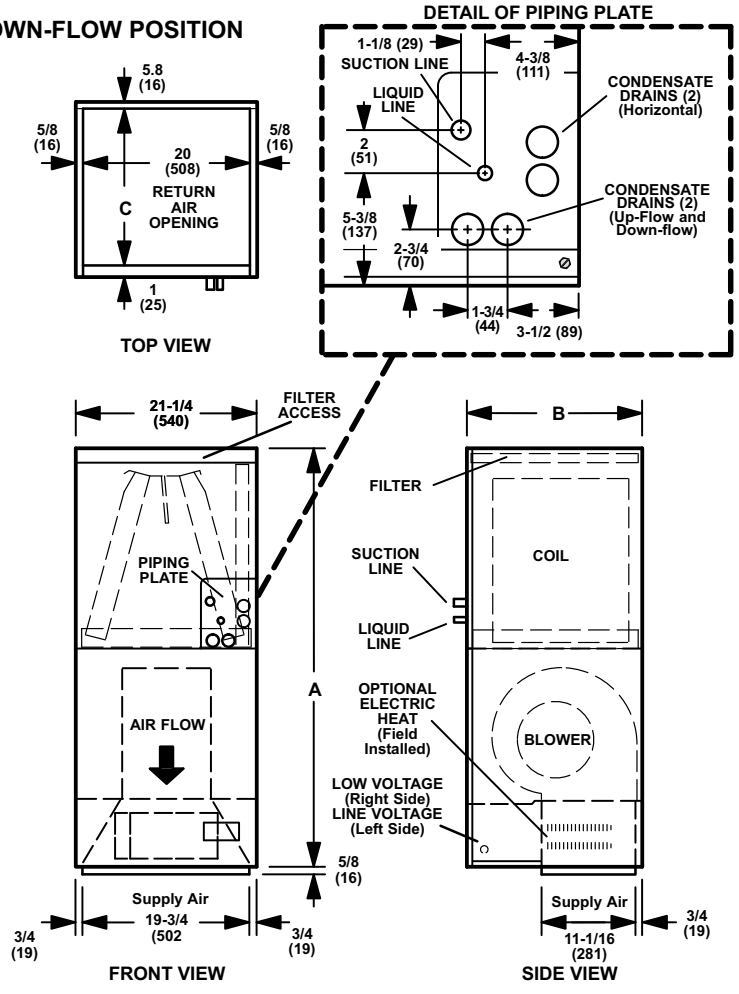
DIMENSIONS - INCHES (MM)

CB29M UP-FLOW POSITION



Model No.	CB29M-41 CB29M-46		CB29M-51 CB29M-65	
	inch	mm	inch	mm
A	49-1/4	1251	52-1/2	1334
B	20-5/8	524	22-5/8	575
C	19	483	21	533

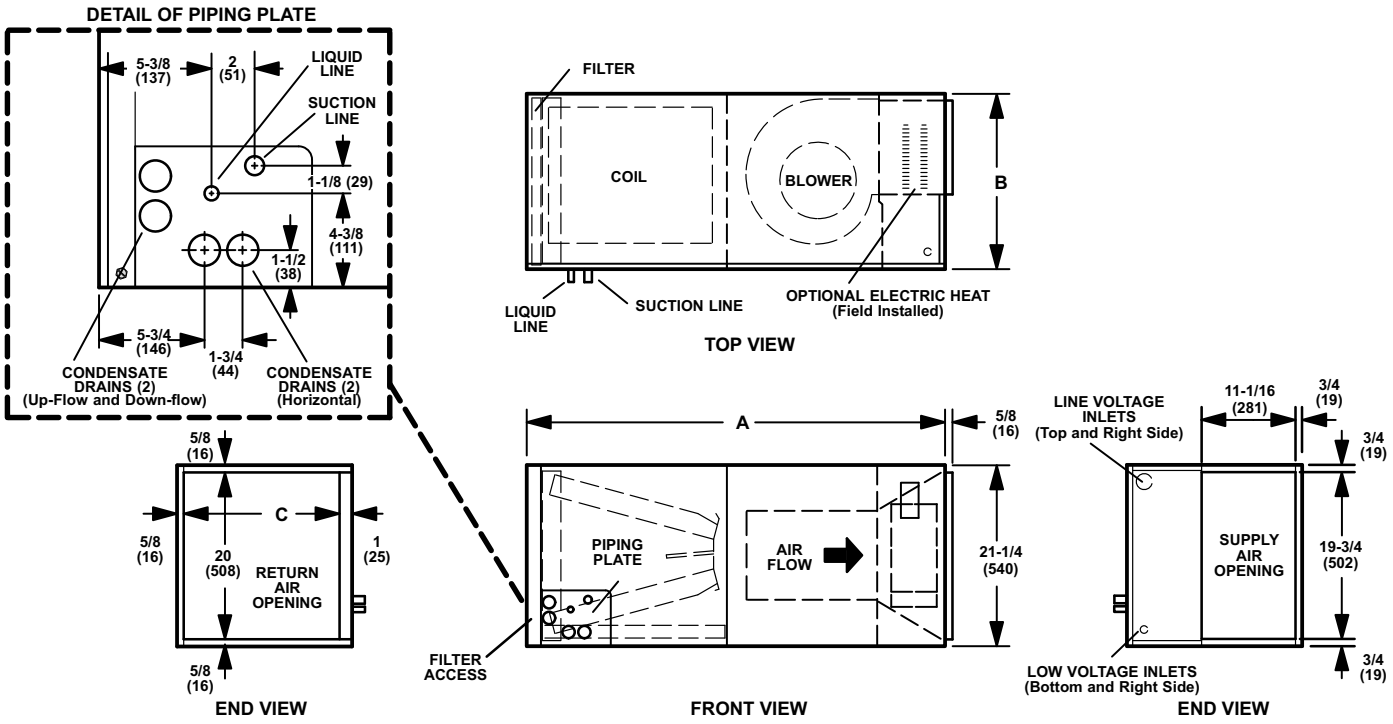
CB29M DOWN-FLOW POSITION



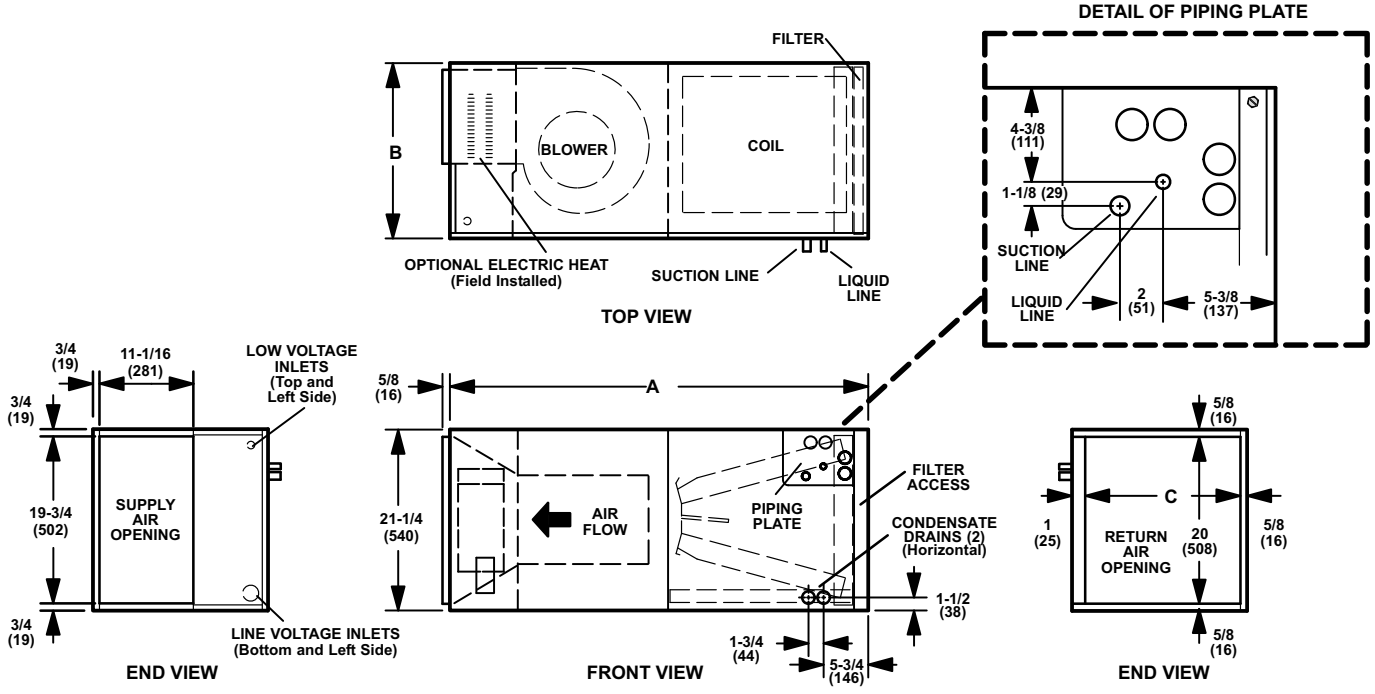
Model No.	CB29M-41 CB29M-46		CB29M-51 CB29M-65	
	inch	mm	inch	mm
A	49-1/4	1251	52-1/2	1334
B	20-5/8	524	22-5/8	575
C	19	483	21	533

DIMENSIONS - INCHES (MM)

CB29M HORIZONTAL POSITION (RIGHT-HAND AIR DISCHARGE)

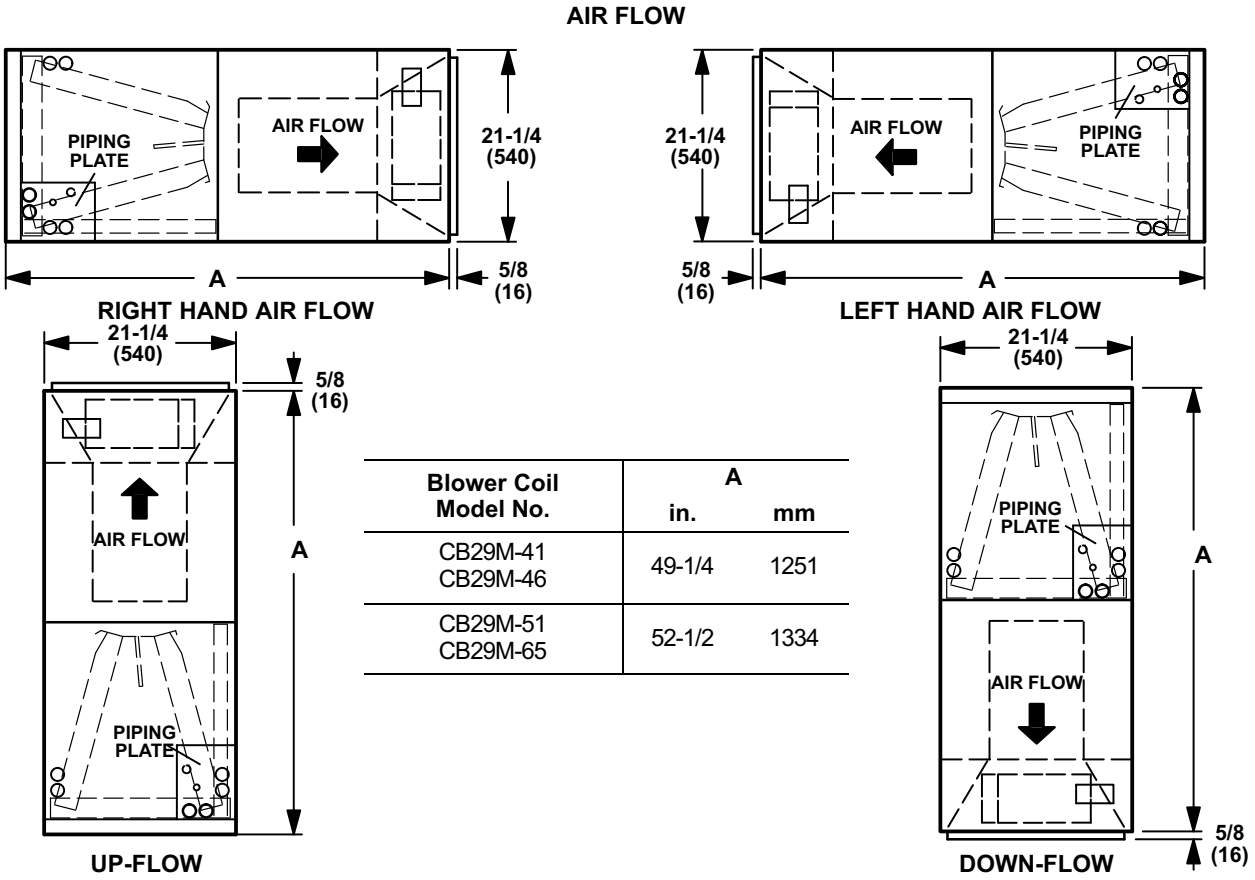


CB29M HORIZONTAL POSITION (LEFT-HAND AIR DISCHARGE)



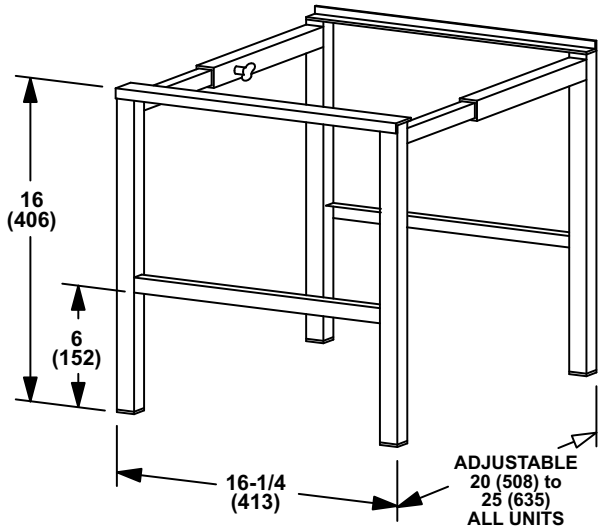
Model No.	A		B		C	
	inch	mm	inch	mm	inch	mm
CB29M-41 CB29M-46	49-1/4	1251	20-5/8	524	19	483
CB29M-51 CB29M-65	52-1/2	1334	22-5/8	575	21	533

DIMENSIONS - INCHES (MM)



Blower Coil Model No.	A	
	in.	mm
CB29M-41 CB29M-46	49-1/4	1251
CB29M-51 CB29M-65	52-1/2	1334

SIDE RETURN UNIT STAND
(Up-Flow Only)



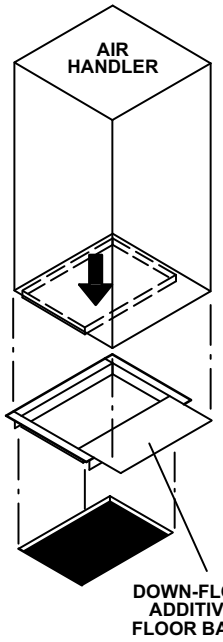
INSTALLATION CLEARANCES WITH ELECTRIC HEAT

Cabinet	0 inch (0 mm)
To Plenum	1 inch (25 mm)
To Outlet Duct within 3 feet (914 mm)	1 inch (25 mm)
Floor	See Note #1
Service / Maintenance	See Note #2

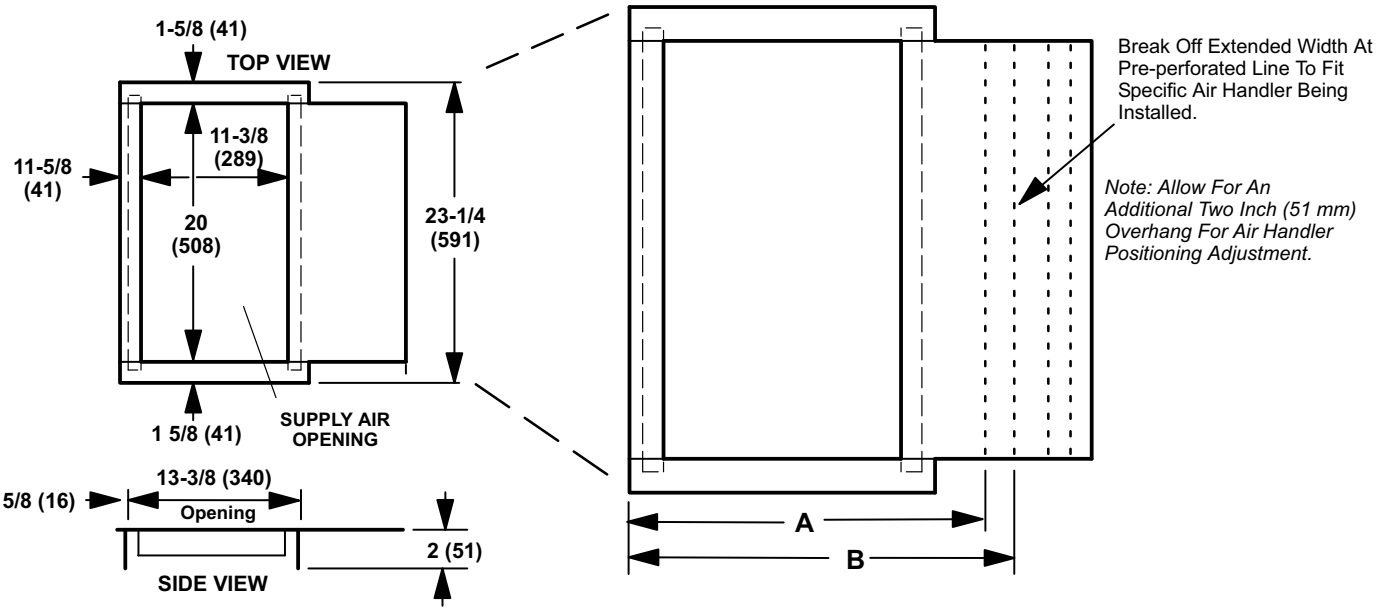
[1] Units installed on combustible floors in the down-flow position with electric heat require optional down-flow additive base.
[2] Front service access - 24 inches (610 mm) minimum.
NOTE - If cabinet depth is more than 24 inches (610 mm), allow a minimum of the cabinet depth plus 2 inches (51 mm).

DIMENSIONS - INCHES (MM)

DOWN-FLOW ADDITIVE FLOOR BASE



Catalog No. - 44K15



Model No.	41, 46		51, 65	
	in.	mm	in.	mm
A	22-5/8	575	- - -	- - -
B	- - -	- - -	24-5/8	625

REVISIONS

Section	Description of Change
Optional Accessories	Updated Optional Down-Flow Additive Base
Dimensions	Updated Optional Down-Flow Additive Base
Installation Clearances	Table updated.

Visit us at www.lennox.com
For the latest technical information, www.lennoxcommercial.com
Contact us at 1-800-4-LENNOX

NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability.
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.