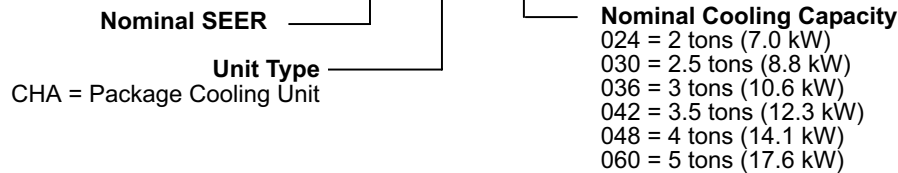


MODEL NUMBER IDENTIFICATION

10 CHA 024



FEATURES

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APPLICATIONS

Designed for outdoor installations at ground level or rooftop for residential applications.

APPROVALS

Ratings are certified by ETL.
Cooling ratings according to DOE test procedures.
Cooling ratings in accordance with ARI Standard 210/240-94.
Units are listed by ETL for U.S. and Canada.
Packaged unit and components within bonded for grounding to meet safety standards required by ETL.
ISO 9001 Registered Manufacturing Quality System.
Each unit test operated at the factory before shipment ensuring dependable operation at start-up.

EQUIPMENT WARRANTY

Compressor - Five year limited warranty in residential applications, one year in non-residential applications.
All other covered components - five year limited warranty in residential applications, one year in non-residential applications.
Refer to Lennox Equipment Limited Warranty Certificate included with unit for specific details.

CABINET

Low profile.
Compact footprint.
Fully insulated to minimize heat loss.
Powder paint for maximum durability.
Easy service access.
Coil guard furnished.
One piece, "no-leak" top design.
Interchangeable panel for horizontal to down-flow airflow conversion (shipped for horizontal).

Visit us at www.lennox.com
For the latest technical information, www.davenet.com

FEATURES

REFRIGERATION SYSTEM

External service gauge ports.

Compressor

Heavy duty, high efficiency reciprocating compressor. Scroll compressor on 048 and 060 models.

Overload protected.

Running gear spring mounted within sealed housing (except 048, 060 models).

Resiliently mounted on rubber mounts.

Compressor cover reduces operating sound levels.

Evaporator and Condenser Coils

Copper tube with enhanced fin coils.

Condenser Fan

Weather protected heavy duty condenser fan motor with aluminum fan for long life.

Totally enclosed motor.

SUPPLY AIR BLOWER

Insulated compartment to reduce sound.

Easy service split ring design with quick plug-in wiring.

Multi-speed motor for wide airflow range.

PSC pre-lubricated motor for low maintenance and maximum efficiency.

Dynamically balanced blower with resilient motor mounts for smooth and quiet operation.

CONTROLS

Solid-state blower control.

Two pole contactor for improved reliability.

Trade available components.

Color coded wiring for easy service.

AIR FILTERS (REQUIRED)

Not furnished - must be field provided.

Filter rack furnished.

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

ELECTRIC HEAT (5-25 KW)

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.

Supplemental thermal cutoff limit control, provides positive protection in case of excessive temperatures.

Factory assembled with controls installed and wired.

CONTROLS

Outdoor Thermostat Kit

Outdoor thermostat can be used to lock out some electric heating elements on indoor units where two stage control is applicable.

Outdoor thermostat maintains heating load on low power input as long as possible before allowing full power load to come on line.

Thermostat kit and mounting box must be ordered extra.

Timed-Off Control (5 minutes)

Prevents compressor short-cycling and allows time for suction and discharge pressure to equalize.

Permits compressor start-up in an unloaded condition.

Automatic reset with 5 minute delay between compressor shut-off and start-up.

Low Ambient Control Kit

Units operate satisfactorily down to 45°F (7°C) outdoor air temperature without any additional controls.

Low Ambient Control Kit can be field installed, allowing unit operation down to 30°F (-1°C).

High Pressure Switch Kit

Shuts off unit if abnormal operating conditions cause the discharge pressure to rise above setting.

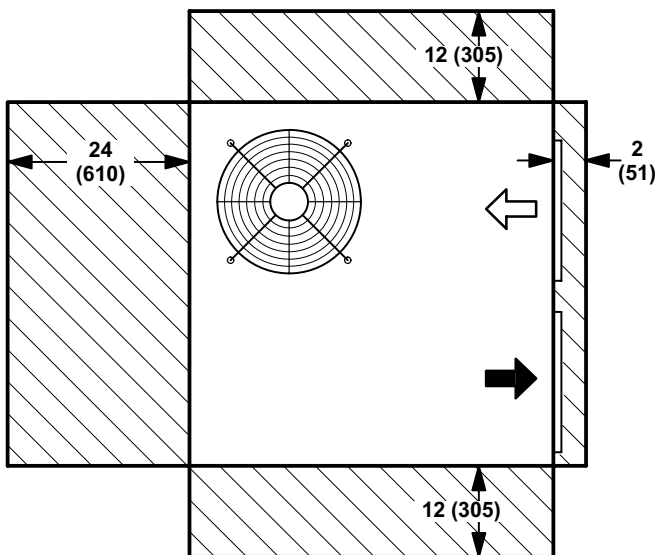
Protects compressor from excessive condensing pressure.

Automatic reset.

Thermostat

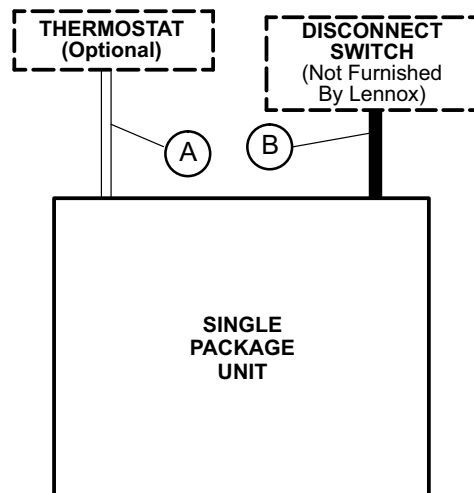
See Thermostat bulletins in Controls section and Lennox Price Book for a complete list of thermostats.

INSTALLATION CLEARANCES - IN. (MM)



NOTE — Top Clearance Unobstructed.

FIELD WIRING



NOTE - All wiring must conform to NEC or CEC and local electrical codes.

A- Four Wire Low Voltage (Electro-mechanical)

- Five Wire Low Voltage (Electronic)

B- Two Wire Power (See Electrical Data Table)

- Field Wiring Not Furnished -

SPECIFICATIONS

General Data		Model No.	10CHA024	10CHA030	10CHA036	10CHA042	10CHA048	10CHA060
Nominal Tonnage (kW)			2 (3.5)	2.5 (8.8)	3 (10.6)	3.5 (12.3)	4 (14.1)	5 (17.6)
Cooling Performance	¹ Cooling capacity - Btuh (kW)		23,400 (6.9)	29,000 (8.5)	35,000 (10.3)	41,000 (12.0)	47,000 (13.8)	58,000 (17.0)
	Total unit watts		2540	3150	3850	4460	5050	6445
	¹ SEER (Btuh/Watt)		10.0	10.0	10.0	10.0	10.0	10.0
	EER (Btuh/Watt)		9.2	9.2	9.1	9.2	9.3	9.0
	² Sound Rating Number (dB)		76	76	80	80	80	80
Refrigerant Charge (HCFC-22)			3 lbs 4 oz. (1.90 kg)	3 lbs. 3 oz. (1.45 kg)	3 lbs. 10 oz. (2.21 kg)	4 lbs 9 oz. (2.07 kg)	5 lbs 13 oz. (2.64 kg)	6 lbs. 14 oz. (3.12 kg)
Condenser Coil	Net face area - sq. ft. (m ²)		9.3 (0.86)	10.3 (0.96)	10.3 (0.96)	14.4 (1.34)	15.4 (1.43)	17.5 (1.63)
	Tube diameter - in. (mm) & No. of rows		5/16 (7.9) - 1	3/8 (9.5) - 1	3/8 (9.5) - 1	3/8 (9.5) - 1	3/8 (9.5) - 1	3/8 (9.5) - 1
	Fins per inch (m)		18 (709)	18 (709)	18 (709)	18 (709)	18 (709)	18 (709)
Condenser Fan	Motor horsepower (W)		1/8 (93)	1/8 (93)	1/4 (187)	1/4 (187)	1/4 (187)	1/4 (187)
	Motor watts		170	170	250	250	325	325
	Diameter - in. (mm) & No. of blades		18 (457) - 3	18 (457) - 3	18 (457) - 4	18 (457) - 4	20 (508) - 4	20 (508) - 4
	Air Volume - cfm (L/s)		2100 (990)	2100 (990)	2300 (1085)	2300 (1085)	3000 (1415)	3000 (1415)
Evaporator Coil	Net face area - sq. ft. (m ²)		3.6 (0.33)	3.6 (0.33)	3.6 (0.33)	4.2 (0.39)	6.1 (0.57)	6.1 (0.57)
	Tube diameter - in. (mm) & No. of rows		3/8 (9.5) - 2	3/8 (9.5) - 2	3/8 (9.5) - 3	3/8 (9.5) - 3	3/8 (9.5) - 3	3/8 (9.5) - 3
	Fins per inch (m)		14 (551)	14 (551)	14 (551)	14 (551)	15 (591)	15 (591)
Evaporator Blower	Motor horsepower (W)		1/2 (373)	1/2 (373)	1/2 (373)	1 (746)	1 (746)	1 (746)
	Wheel size diameter x width - in. (mm)		10 x 6 (152 x 203)	10 x 8 (254 x 203)	10 x 8 (254 x 203)	10 x 9 (254 x 229)	12 x 10 (305 x 254)	12 x 10 (305 x 254)
Condensate drain size fpt - in. (mm)			(1) 3/4 (19)	(1) 3/4 (19)	(1) 3/4 (19)	(1) 3/4 (19)	(1) 3/4 (19)	(1) 3/4 (19)
No. & size of filters - in. (mm) Not furnished			(1) 24 x 25 x 1 (610 x 635 x 25)	(1) 24 x 25 x 1 (610 x 635 x 25)	(1) 24 x 25 x 1 (610 x 635 x 25)	(1) 28 x 25 x 1 (711 x 635 x 25)	(1) 30 x 30 x 1 (762 x 762 x 25)	(1) 30 x 30 x 1 (762 x 762 x 25)
Weight Data	Net weight of basic unit - lbs. (kg)		260 (118)	280 (127)	300 (136)	330 (150)	420 (191)	440 (200)
	Shipping Basic unit - lbs. (kg) 1 Pkg.		275 (125)	295 (134)	315 (143)	345 (157)	435 (197)	455 (206)
Electrical characteristics (60 hz)			208/230V-1ph	208/230V-1ph	208/230V-1ph	208/230V-1ph	208/230V-1ph	208/230V-1ph

ELECTRICAL DATA

Electrical Data		208/230V	208/230V	208/230V	208/230V	208/230V	208/230V
Line voltage data - 60hz-1 phase		208/230V	208/230V	208/230V	208/230V	208/230V	208/230V
³ Maximum overcurrent protection (amps)		25	30	30	35	40	45
⁴ Minimum Circuit Ampacity		16.6	20.8	24.9	26.7	34.1	38.1
Unit power factor		.98	.99	.95	.93	.98	.98
Compressor	Rated load amps	10.5	13.7	16.4	17.2	21.8	25.0
	Locked rotor amps	56	76.1	96	105	116	170
Condenser Coil Fan Motor	Full load amps	0.9	0.9	1.8	1.8	1.8	1.8
	Locked rotor amps	1.7	1.7	3.8	3.8	3.8	3.8
Evaporator Coil Blower Motor	Full load amps	2.6	2.6	2.6	3.4	5.0	5.0
	Locked rotor amps	5.5	5.5	5.5	8.3	10.9	10.9

OPTIONAL ACCESSORIES - MUST BE ORDERED EXTRA

Electric Heat - kW range		5-7-10	5-7-10-15-20	5-7-10-15-20	5-7-10-15-20	10-15-20-25	10-15-20-25
High Pressure Switch		42K89	42K89	42K89	42K89	42K89	42K89
Low Ambient Control Kit		42K88	42K88	42K88	42K88	42K88	42K88
Outdoor Thermostat Kit	Thermostat Kit	56A87	56A87	56A87	56A87	56A87	56A87
	Mounting Box	31461	31461	31461	31461	31461	31461
Timed-Off Control		42K90	42K90	42K90	42K90	42K90	42K90

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

¹ Rated in accordance with ARI Standard 210/240; 95°F (35°C) outdoor air temperature, 80°F (27°C) db / 67°F (19°C) wb entering evaporator air.

² Sound Rating Number rated in accordance with test conditions included in ARI Standard 270.

³ HACR type circuit breaker or fuse.

⁴ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirement.

OPTIONAL ELECTRIC HEAT DATA - 1 PHASE

Electric Heat Model No., & Net Weight	No. of Steps	Volts Input	Electric Heat kW Input	Electric Heat Btuh Input	Electric Heat Only - 1 Minimum Circuit Ampacity		
					Circuit 1	Circuit 2	Circuit 3
10CHA024							
5 kW ECH29-05 71K18 4 lbs. (2 kg)	1	208	3.8	12,800	26.0	---	---
		220	4.2	14,300	27.1	---	---
		230	4.6	15,700	28.3	---	---
		240	5.0	17,100	29.5	---	---
7 kW ECH29-07 74K64 5 lbs. (2 kg)	1	208	5.3	18,100	35.1	---	---
		220	5.9	20,100	36.7	---	---
		230	6.4	21,800	38.0	---	---
		240	7.0	23,900	40.0	---	---
10 kW ECH29-10 71K19 5 lbs. (2 kg)	1	208	7.5	25,600	48.6	---	---
		220	8.4	28,700	51.1	---	---
		230	9.2	31,400	53.3	---	---
		240	10.0	34,100	55.6	---	---
10CHA030 AND 10CHA036							
5 kW ECH29-05 71K18 4 lbs. (2 kg)	1	208	3.8	12,800	26.0	---	---
		220	4.2	14,300	27.1	---	---
		230	4.6	15,700	28.3	---	---
		240	5.0	17,100	29.5	---	---
7 kW ECH29-07 74K64 5 lbs. (2 kg)	1	208	5.3	18,100	35.1	---	---
		220	5.9	20,100	36.7	---	---
		230	6.4	21,800	38.0	---	---
		240	7.0	23,900	40.0	---	---
10 kW ECH29-10 71K19 5 lbs. (2 kg)	1	208	7.5	25,600	48.6	---	---
		220	8.4	28,700	51.1	---	---
		230	9.2	31,400	53.3	---	---
		240	10.0	34,100	55.6	---	---
15 kW ECH29-15 71K20 17 lbs. (8 kg)	1	208	11.3	38,600	48.6	22.6	---
		220	12.6	43,000	51.1	23.8	---
		230	13.8	47,100	53.3	25.0	---
		240	15.0	51,200	55.6	26.0	---
20 kW ECH29-20 71K21 20 lbs. (9 kg)	1	208	15.0	51,200	48.6	45.1	---
		220	16.8	57,300	51.1	47.8	---
		230	18.4	62,800	53.3	50.0	---
		240	20.0	68,300	55.6	52.1	---
10CHA042							
5 kW ECH29-05 71K18 4 lbs. (2 kg)	1	208	3.8	12,800	26.8	---	---
		220	4.2	14,300	28.1	---	---
		230	4.6	15,700	29.3	---	---
		240	5.0	17,100	30.3	---	---
7 kW ECH29-07 74K64 5 lbs. (2 kg)	1	208	5.3	18,100	35.9	---	---
		220	5.9	20,100	37.7	---	---
		230	6.4	21,800	39.0	---	---
		240	7.0	23,900	40.8	---	---
10 kW ECH29-10 71K19 5 lbs. (2 kg)	1	208	7.5	25,600	49.4	---	---
		220	8.4	28,700	52.1	---	---
		230	9.2	31,400	54.3	---	---
		240	10.0	34,100	56.4	---	---
15 kW ECH29-15 71K20 17 lbs. (8 kg)	1	208	11.3	38,600	49.4	22.6	---
		220	12.6	43,000	52.1	23.8	---
		230	13.8	47,100	53.3	25.0	---
		240	15.0	51,200	56.4	26.0	---
20 kW ECH29-20 71K21 20 lbs. (9 kg)	1	208	15.0	51,200	49.4	45.1	---
		220	16.8	57,300	52.1	23.8	---
		230	18.4	62,800	53.3	25.0	---
		240	20.0	68,300	56.4	52.1	---
10CHA048 AND 10CHA060							
10 kW ECH29-10 71K19 5 lbs. (2 kg)	1	208	7.5	25,600	51.4	---	---
		220	8.4	28,700	54.1	---	---
		230	9.2	31,400	56.3	---	---
		240	10.0	34,100	58.4	---	---
15 kW ECH29-15 71K20 17 lbs. (8 kg)	1	208	11.3	38,600	51.4	22.6	---
		220	12.6	43,000	54.1	23.8	---
		230	13.8	47,100	56.3	25.0	---
		240	15.0	51,200	58.4	26.0	---
20 kW ECH29-20 71K21 20 lbs. (9 kg)	1	208	15.0	51,200	51.4	45.1	---
		220	16.8	57,300	54.1	47.8	---
		230	18.4	62,800	56.3	50.0	---
		240	20.0	68,300	58.4	52.1	---
25 kW ECH29-25 71K22 20 lbs. (9 kg)	1	208	18.8	64,200	51.4	45.1	22.6
		220	21.0	71,700	54.1	47.8	23.8
		230	23.0	78,500	56.3	50.0	25.0
		240	25.0	85,300	58.4	52.1	26.0

¹ Refer to National or Canadian Electrical Code manual to determine wire, fuse and disconnect size requirements. Use wires suitable for at least 167°F (75°C).

RATINGS

NOTE - For Temperatures and Capacities not shown in tables, see bulletin - Cooling Unit Rating Table Correction Factor Data in Miscellaneous Engineering Data section.

10CHA036 COOLING CAPACITY

Table with columns for Entering Wet Bulb Temperature, Total Air Volume (L/s, cfm), Total Cooling Capacity (kW, Btuh), Compressor Motor Watts Input, and Sensible To Total Ratio (S/T) Dry Bulb for outdoor air temperatures of 85°F (29°C), 95°F (35°C), 105°F (41°C), and 115°F (46°C).

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

10CHA042 COOLING CAPACITY

Table with columns for Entering Wet Bulb Temperature, Total Air Volume (L/s, cfm), Total Cooling Capacity (kW, Btuh), Compressor Motor Watts Input, and Sensible To Total Ratio (S/T) Dry Bulb for outdoor air temperatures of 85°F (29°C), 95°F (35°C), 105°F (41°C), and 115°F (46°C).

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

10CHA048 COOLING CAPACITY

Table with columns for Entering Wet Bulb Temperature, Total Air Volume (L/s, cfm), Total Cooling Capacity (kW, Btuh), Compressor Motor Watts Input, and Sensible To Total Ratio (S/T) Dry Bulb for outdoor air temperatures of 85°F (29°C), 95°F (35°C), 105°F (41°C), and 115°F (46°C).

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

10CHA060 COOLING CAPACITY

Table with columns for Entering Wet Bulb Temperature, Total Air Volume (L/s, cfm), Total Cooling Capacity (kW, Btuh), Compressor Motor Watts Input, and Sensible To Total Ratio (S/T) Dry Bulb for outdoor air temperatures of 85°F (29°C), 95°F (35°C), 105°F (41°C), and 115°F (46°C).

NOTE — All values are gross capacities and do not include evaporator coil blower motor heat deduction.

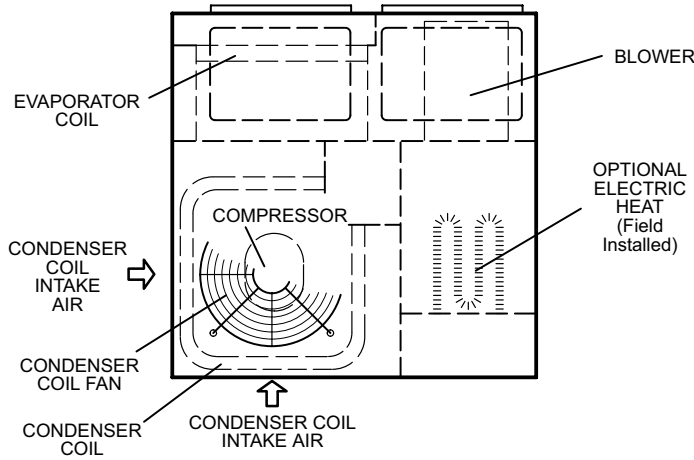
DIMENSIONS - INCHES (MM)

CORNER WEIGHTS

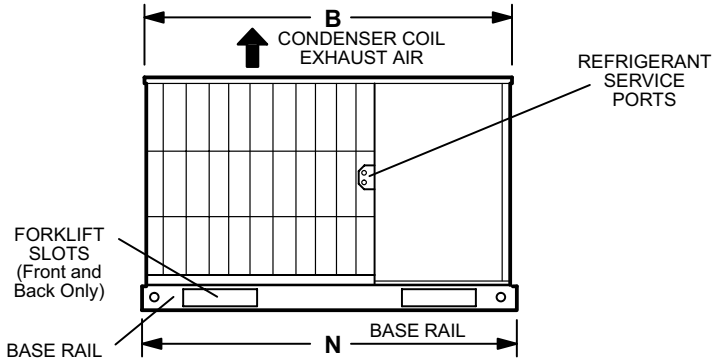
Model Number	AA		BB		CC		DD	
	lbs.	kg	lbs.	kg	lbs.	kg	lbs.	kg
10CHA024	76	34	54	24	59	27	81	37
10CHA030	80	36	58	26	64	29	88	40
10CHA036	86	39	62	28	68	31	94	43
10CHA042	94	43	68	31	75	34	103	47
10CHA048	120	54	86	39	94	43	130	59
10CHA060	125	57	91	41	98	44	136	62

CENTER OF GRAVITY

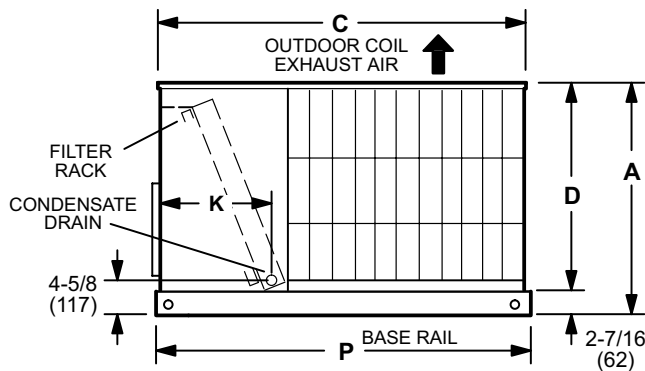
Model Number	EE		FF	
	inch	mm	inch	mm
10CHA024	21-7/8	556	26-1/2	673
10CHA030	21-7/8	556	26-1/2	673
10CHA036	21-7/8	556	26-1/2	673
10CHA042	21-7/8	556	26-1/2	673
10CHA048	23-3/4	603	31-3/4	806
10CHA060	23-3/4	603	31-3/4	806



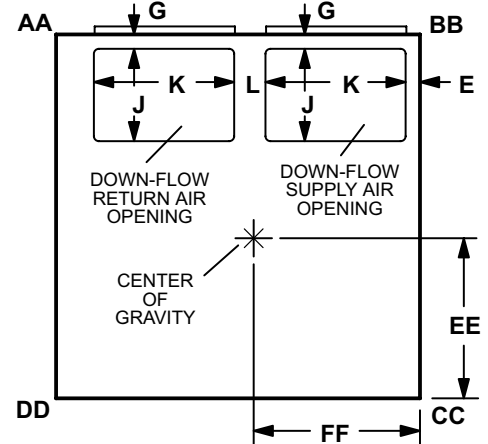
TOP VIEW



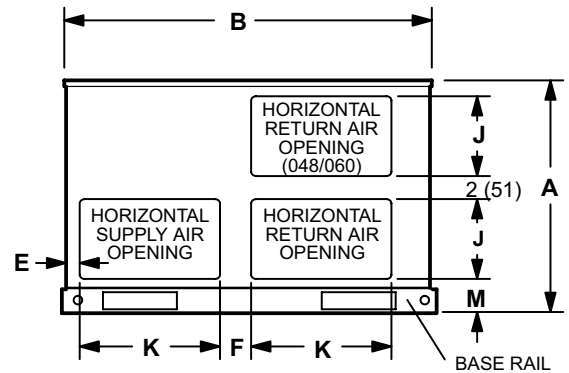
FRONT VIEW



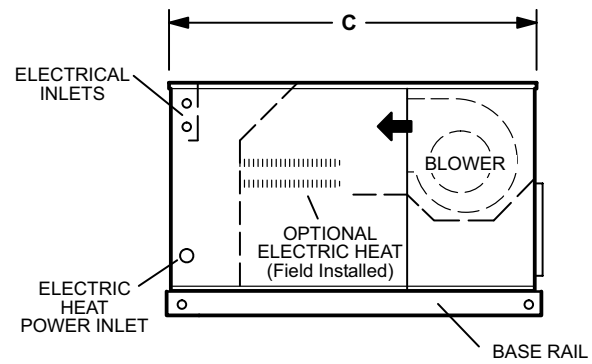
LEFT SIDE



TOP VIEW BASE SECTION



BACK VIEW



RIGHT SIDE

Model Number	A		B		C		D		E		F		G	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
10CHA024, 030, 036	27-11/16	703	45-5/8	1159	45-5/8	1159	25-1/4	641	1-13/16	46	4	102	1-7/8	48
10CHA042	31-11/16	805	45-5/8	1159	45-5/8	1159	29-1/4	743	1-13/16	46	4	102	1-7/8	48
10CHA048, 060	33-11/16	856	54-11/16	1389	49-5/8	1260	31-7/16	799	1-1/8	29	6-1/4	159	2-1/4	57

Model Number	H		J		K		L		M		N		P	
	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm
10CHA024, 030, 036	15-5/8	397	11-1/2	292	17-1/2	445	4	102	5	127	46-3/8	1179	46-3/8	1179
10CHA042	15-5/8	397	11-1/2	292	17-1/2	445	4	102	5	127	46-3/8	1179	46-3/8	1179
10CHA048, 060	17-1/8	435	12	305	21-1/2	546	5-5/8	143	4-1/8	105	55-1/4	1403	50-1/2	1283