POWERED AIRE Inc.
AIRE CURTAINS
888-321-AIRE (2473)
PoweredAire.com

v5.0.1

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ECE ECE-E

ECE

The ECE from Powered Aire offers the core benefits of a traditional air curtain (temperature separation, insect control and the reduction of unwanted outside elements) along with energy saving technology designed to lessen the usage of a building's energy consumption (reduce energy bills). Powered Aire's ECo-Motor™ models feature electrically commutated (EC) motors that are significantly more energy efficient than traditional PSC motors. The motors are specifically designed for air curtain applications, with the time between motor activation and maximum speed less than 1 second.

OPTIONS

HEATING

Electric. . . . . .ECE-E
Hot Water. . . . . .pg 49
Steam . . . . . .pg 49

FILTER

½" Cleanable

AT A GLANCE

Single Incremental Widths	Max Installation Height	Heavy Duty Motors
3' to 12'	14'	¾ HP

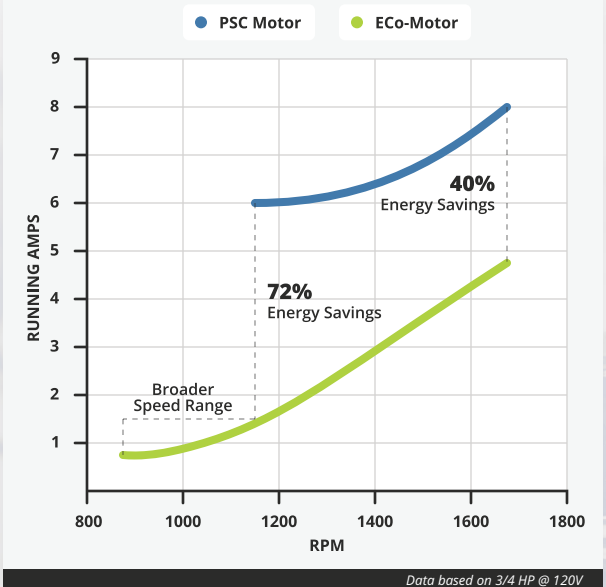
KEY DESIGN FEATURES

- Outer cabinet constructed of 18-gauge 304 stainless steel with #3 finish
- 3/4 HP EC (Electronically Commutated) direct-drive motor(s) with 2:1 speed turndown ratio and instantaneous startup
- High-efficiency discharge plenum with adjustable air foil vane (+/-20˚)
- **Electiric Only:** Factory mounted single-stage electric heaters
- **Electiric Only:** Single point power connection available (see electrical table)
- **Electiric Only:** Alternate heater kW available (consult factory)

RECOMMENDED CONTROLS & ACCESSORIES

- Activation by 24V magnetic door switch
- Toggle disconnect switch
- SmartTouch Pro or Lite controller
- Filter (washable)

MEASURING EFFICIENCY



Data based on 3/4 HP @ 120V

ECE & ECE-E | PERFORMANCE

ECE & ECE-E | Performance Table

MODEL	Nozzle Width (in.)	Max. FPM at Nozzle	Avg. FPM	Max. CFM	CFM at Nozzle	Outlet Velocity Uniformity	Number of Motors	Motor HP	Weight (lbs) Unheated/Heated
ECE-1-36 (E)	36	4218	3695	2899	2541	95%	1	3/4	90 / 95
ECE-1-42 (E)	42	4218	3169	3384	2532	93%	1	3/4	97 / 102
ECE-1-48 (E)	48	4218	2771	3867	2559	92%	1	3/4	104 / 109
ECE-1-60 (E)	60	4218	2218	4374	2528	91%	1	3/4	117 / 121
ECE-2-60 (E)	60	4218	3315	5050	3812	94%	2	3/4	147 / 155
ECE-2-72 (E)	72	4218	3696	5803	5082	95%	2	3/4	169 / 177
ECE-2-84 (E)	84	4218	3169	6766	5063	93%	2	3/4	187 / 195
ECE-2-96 (E)	96	4218	2773	7732	5081	92%	2	3/4	203 / 210
ECE-3-108 (E)	108	4218	3702	8702	7623	95%	3	3/4	245 / 255
ECE-3-120 (E)	118	4218	3174	9668	7614	94%	3	3/4	274 / 284
ECE-3-132 (E)	133	4218	2792	10853	7589	94%	3	3/4	290 / 301
ECE-4-144 (E)	145	4218	3696	11606	10164	95%	4	3/4	338 / 354

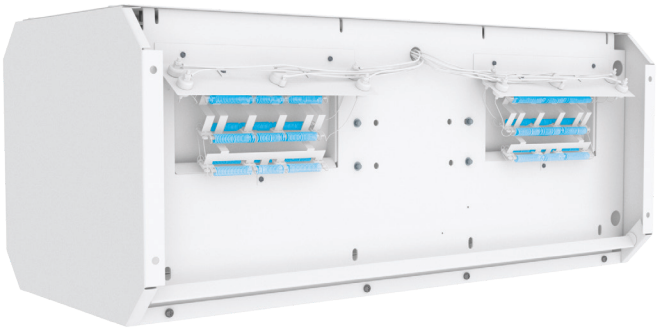
ECE & ECE-E | Sound Levels

High Speed	63 dBA	**Low Speed**	56 dBA	Measured 10 ft. from unit in a free field based on a 1 motor unit

ECE | Amp Draw and (Breaker Options)

Motors	**120V** (MOP)	**208-230V** (MOP)	**277** (MOP)	**480V** (MOP)	**575V** (MOP)
ECE-1-36, 42, 48, 60	9.6A (15)	5.8A (15)	5.0A (15)	*	**
ECE-2-72, 84, 96	19.2A (25)	11.6A (15)	10.0A (15)	*	**
ECE-3-108, 120, 132	28.8A (40)	17.4A (25)	15.0A (20)	*	**
ECE-4-144, 156, 168	38.4A (50)	23.2A (30)	20.0A (30)	*	**

*** Neutral wire will need to be run to use 277V motor. If not, a transformer will be required **A transformer will be required.**



Performance Highlight

Heating elements are mounted inside the plenum, on the discharge side of the blowers. Here, heat won't affect motor life and the heaters are protected from dust that would accumulate on them if they were mounted on the air intake.

ECE-E | ELECTRICAL

AMP Draw, Circuits & Breaker Size Table
ALL AMP DRAWS LISTED BELOW INCLUDE TOTAL DRAW (MOTOR AND HEATERS INCLUDED)
*** Single Point Power (SPP) includes branch fusing and may require remote control panel.**
‡ High amp draws may be prohibitive. Reduced and custom kW available. Contact factory.
▶ Orange arrow denotes recommended kW.

Models	AMP DRAW (Breaker Size) Also available in 277 / 1 / 60 Supply. Please consult factory.							
	kW	Temp Rise (˚F)	208 / 1 / 60			240 / 1 / 60		
			Circuit 1	Circuit 2	SPP	Circuit 1	Circuit 2	SPP
ECE-1-36E / 42E / 48E / 60E	14.0	18	-	-	-	35.0A (45)	29.2A (40)	64.1A (90)
	12.0	15	-	-	-	30.8A (40)	25.0A (35)	55.8A (70)
	▶ 10.0	13	29.8A (40)	24A (35)	53.9A (70)	47.5A (60)	-	-
ECE-2-60E	21.0	18	-	-	-	‡	‡	99.1A (125)
	18.0	15	-	-	-	‡	‡	86.6A (110)
	▶ 15.0	13	‡	‡	83.7A (110)	41.7A (60)	32.4A (45)	74.1A (100)
ECE-2-72E / 84E / 96E	28.0	18	-	-	-	‡	‡	‡
	24.0	15	-	-	-	‡	‡	‡
	▶ 20.0	13	‡	‡	‡	‡	‡	‡
ECE-3-108E / 120E / 132E	42.0	18	-	-	-	‡	‡	‡
	36.0	15	-	-	-	‡	‡	‡
	▶ 30.0	13	‡	‡	‡	‡	‡	‡
ECE-4-144E	56.0	18	-	-	-	‡	‡	‡
	48.0	15	-	-	-	‡	‡	‡
	▶ 40.0	13	‡	‡	‡	‡	‡	‡

Models	AMP DRAW (Breaker Size)							
	kW	Temp Rise (˚F)	208 / 3 / 60			240 / 3 / 60		
			Circuit 1	Circuit 2	SPP	Circuit 1	Circuit 2	SPP
ECE-1-36E / 42E / 48E / 60E	14.0	18	44.7A (60)	-	-	39.5A (50)	-	-
	12.0	15	39.1A (50)	-	-	34.7A (45)	-	-
	▶ 10.0	13	33.6A (45)	-	-	29.9A (40)	-	-
ECE-2-60E	21.0	18	-	-	-	45.3A (60)	16.8A (25)	62.1A (80)
	18.0	15	-	-	-	40.5A (60)	14.4A (20)	54.9A (70)
	▶ 15.0	13	41.6A (60)	11.6A (15)	53.2A (70)	47.7A (60)	-	-
ECE-2-72E / 84E / 96E	28.0	18	‡	‡	‡	45.3A (60)	33.7A (45)	79.0A (100)
	24.0	15	44.9A (60)	33.3A (45)	78.2A (100)	40.5A (60)	28.9A (40)	69.3A (90)
	▶ 20.0	13	39.4A (50)	27.8A (35)	67.1A (90)	35.7A (45)	24.1A (35)	59.7A (80)
ECE-3-108E / 120E / 132E	42.0	18	‡	‡	‡	‡	‡	‡
	36.0	15	‡	‡	‡	‡	‡	‡
	▶ 30.0	13	‡	‡	‡	‡	‡	‡
ECE-4-144E	56.0	18	‡	‡	‡	‡	‡	‡
	48.0	15	‡	‡	‡	‡	‡	‡
	▶ 40.0	13	‡	‡	‡	‡	‡	‡

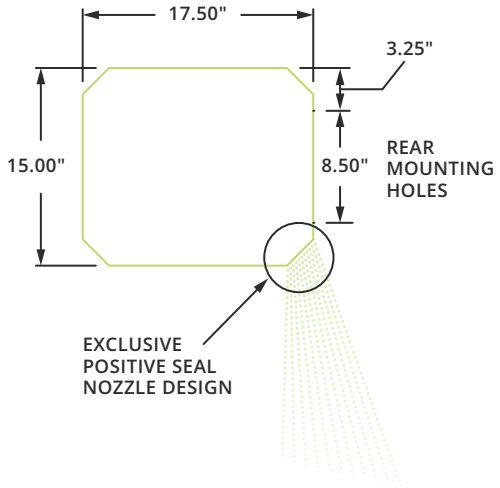
Models	AMP DRAW (Breaker Size) *Also available in 480/ 3 / 60 Supply with Neutral Line. Please consult factory.*							
	kW	Temp Rise (˚F)	480 / 3 / 60 **			575 / 3 / 60 **		
			Circuit 1	Circuit 2	SPP	Circuit 1	Circuit 2	SPP
ECE-1-36E / 42E / 48E / 60E	14.0	18	20.0A (25)	-	-	-	-	-
	12.0	15	17.6A (25)	-	-	-	-	-
	▶ 10.0	13	15.2A (20)	-	-	12.6A (20)	-	-
ECE-2-60E	21.0	18	-	-	-	-	-	-
	18.0	15	27.9A (35)	-	-	23.3A (30)	-	-
	▶ 15.0	13	24.3A (35)	-	-	20.3A (30)	-	-
ECE-2-72E / 84E / 96E	28.0	18	39.9A (50)	-	-	-	-	-
	24.0	15	35.1A (45)	-	-	-	-	-
	▶ 20.0	13	30.3A (40)	-	-	25.3A (35)	-	-
ECE-3-108E / 120E / 132E	42.0	18	35.7A (45)	25.3A (35)	60.9A (80)	-	-	-
	36.0	15	32.1A (45)	21.8A (30)	53.7A (70)	44.8A (60)	-	-
	▶ 30.0	13	46.5A (60)	-	-	38.8A (50)	-	-
ECE-4-144E	56.0	18	46.2A (60)	33.9A (45)	79.9A (100)	-	-	-
	48.0	15	41.4A (60)	29.1A (40)	70.2A (90)	-	-	-
	▶ 40.0	13	36.6A (50)	24.3A (35)	60.6A (80)	30.5A (40)	20.3A (30)	50.6A (70)
			** With Motor Transformer(s)					

ECE & ECE-E | MECHANICAL DETAILS & DRAWINGS

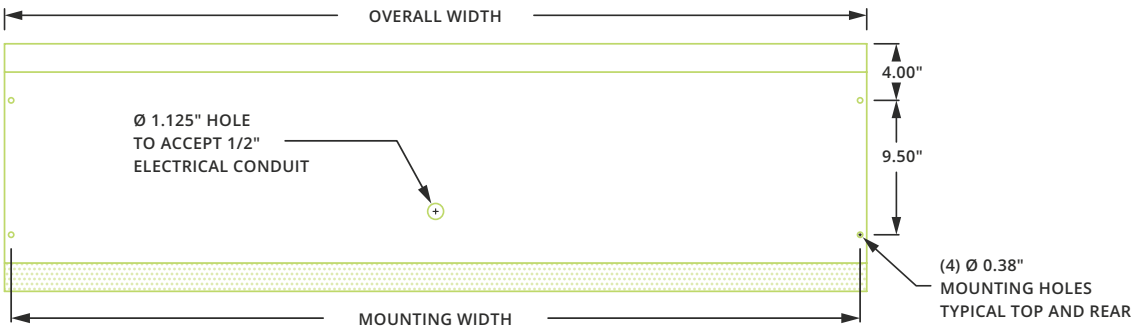
ECE & ECE-E | Mechanical Information Table

MODEL	Nozzle Width (in.)	Overall Width (in.)	Mounting Width (in.)
ECE-1-36 (E)	36	37	36.06
ECE-1-42 (E)	42	43	42.06
ECE-1-48 (E)	48	49	48.06
ECE-1-60 (E)	60	61	60.06
ECE-2-60 (E)	60	61	60.06
ECE-2-72 (E)	72	73	72.06
ECE-2-84 (E)	84	85	84.06
ECE-2-96 (E)	96	97	96.06
ECE-3-108 (E)	108	109	108.06
ECE-3-120 (E)	118	119	118.06
ECE-3-132 (E)	133	134	133.06
ECE-4-144 (E)	145	146	145.06

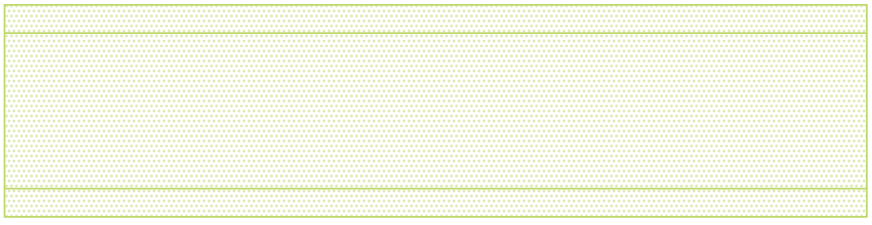
SIDE



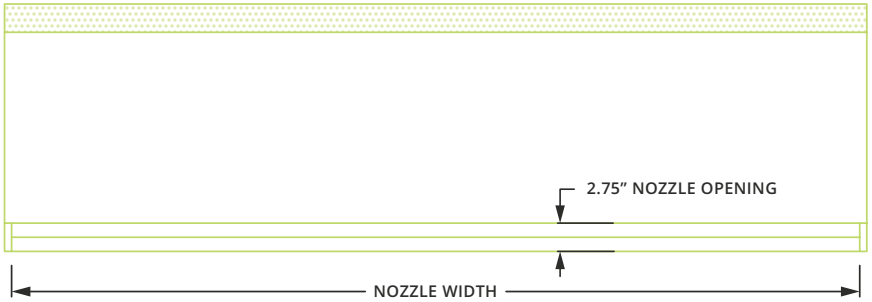
TOP



FRONT



BOTTOM



ECE & ECE-E | INSTALLATION

NOTE: The air curtain should be mounted as close to the door header/opening as possible for maximum performance. For every one inch the bottom of the air curtain is mounted above the door header, the back side of the air curtain should be moved away from the wall ¼ inch.

A WALL MOUNT

Back side of air curtain has 4 mounting holes capable of accepting four 3/8 mounting bolts or lags, with washers (use these holes only for mounting). Mark and pre-drill mounting surface accurately. A long extension and ratchet will negate the need to remove the motor-blower plate when installing.

Mounting bolts or lags of sufficient size and strength should be installed and tightened through the four 7/8 inch holes in motor/blower plate.

If motor/blower plate has to be removed, the junction box inside the unit must be removed along with any electrical switches that may be in the way.

The electrical switches have a lever that slides in one direction to release the switch contacts from the switch body. All wires will then stay intact for easy installation when replacing the blower plate.

Remove 7/16 whizlock nuts holding plate in place, and slide plate out, rotating top portion of plate so it comes out first. Remember when installing plate to put bottom of plate in first and rotate top in last.

B WALL MOUNT EXTENSION PLATES

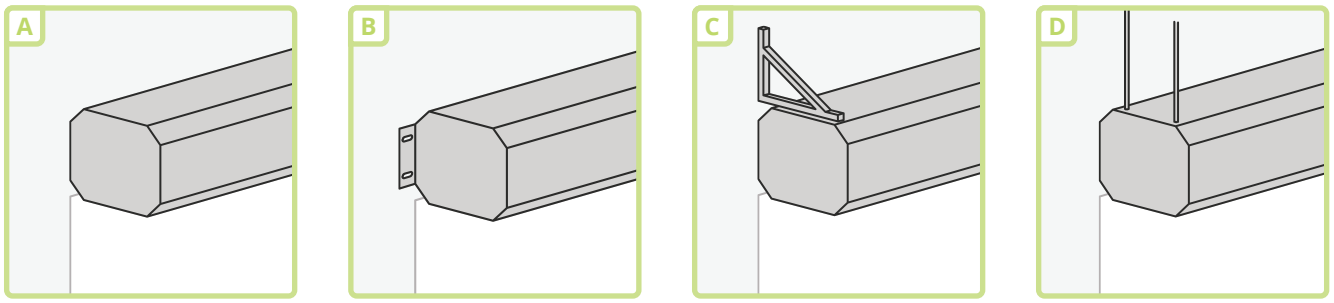
Extension plates bolt onto the back of the unit, utilizing the 4 original mounting holes. Brackets have elongated mounting slots that extend the mounting width by 2-1/2 to 3-1/2 inches.

C BRACKETS

Mounting brackets (also called knee, angle or L-brackets) can be flush to the wall or constructed to account for a projection from the wall. For proper size brackets measure standoff distance from wall to back of where air curtain will be.

D TOP MOUNT

Unit has four 3/8-16 threaded inserts for installing one end of threaded rods. The other ends of the threaded rods can be attached to the ceiling. Threaded rod should not extend more than 3/4 inch into air curtain.

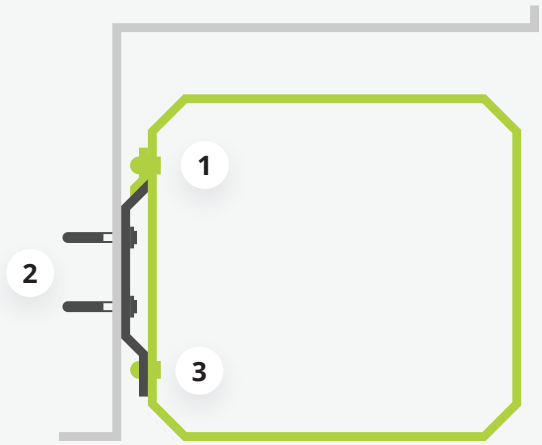


MB123 QUICK MOUNTING PLATE

Optional Installation (See page 240 for more detail)

Step 1
Attach top mounting bracket to back of air curtain using the upper mounting holes on back of unit.

Step 2
Attach the mounting bracket to the wall. Make sure there is sufficient room between mounting plate and ceiling to mount air curtain.

Step 3
Place air curtain over mounting bracket. The top and bottom brackets will lock into place supporting the weight of the air curtain. Attach the bottom bracket to the air curtain using the lower mounting holes.

When mounted, bottom of air curtain is to be flush with bottom of the door header.