POWERED AIRE Inc.
AIRE CURTAINS
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PoweredAire.com

CHA-E

ABOVE CEILING

May 2020
PAAC-205

The CHA-E electrically heated air curtain has been tested in accordance with ANSI/AMCA 220 and meets the criteria for use as an exception to the vestibule requirement in Climate Zones 3 and above. It is specifically designed to be dropped into the ceiling above customer entryways where a standard air curtain is not desired. Multiple color/finish options are available.

OPTIONS

HEATING

Unheated . . . . . .pg 21
Hot Water . . . . . .pg 27
Steam . . . . . .pg 27

FILTER

½" Cleanable

GRILLE COLOR

The white grille is standard with this model. Consult factory for custom color or metal.

AT A GLANCE

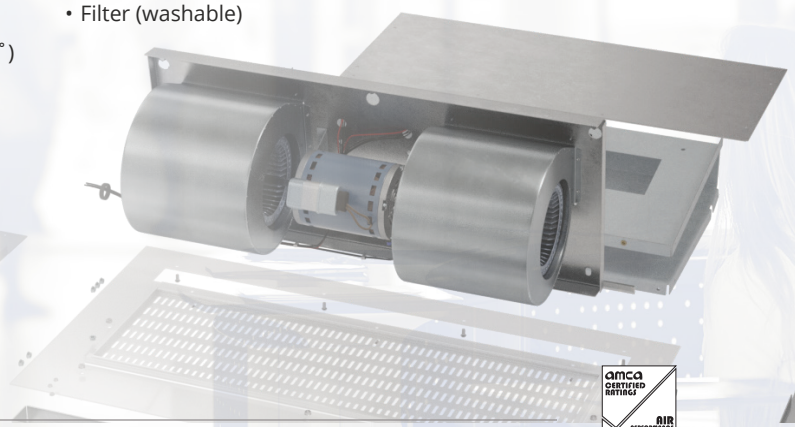
Single Incremental Widths	Max Installation Height	Heavy Duty Motors
3' to 12'	14'	¾ HP

KEY DESIGN FEATURES

- Meets ASHRAE 90.1 and IECC requirements for vestibule exception
- AMCA tested performance
- White decorative intake grille with hinged access panel (consult factory for custom finishes)
- 3/4 HP ODP (Open Drip Proof) direct-drive dual-speed motor(s)
- High-efficiency discharge plenum with adjustable air foil vane (+/-20˚)
- Factory mounted single-stage electric heaters
- Single point power connection available (see electrical table)
- Alternate heater kW available (consult factory)

RECOMMENDED CONTROLS & ACCESSORIES

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



Powered Aire Inc. certifies that the Model CHA-E Air Curtain shown herein is licensed to bear the AMCA Seal for Air Performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

CHA-E | PERFORMANCE

CHA-E | Performance Table

MODEL	Nozzle Width (in.)	Average Outlet Velocity (FPM)	Air Flow Rate (CFM)	Outlet Velocity Uniformity	Power Rating (kW)	Number of Motors	Motor HP	Weight (lbs)
CHA-1-36E	36	2443	1197	86%	0.59	1	3/4	182
CHA-1-48E	48	2338	1543	79%	0.7	1	3/4	204
CHA-1-60E	60	1923	1596	82%	0.73	1	3/4	230
CHA-2-72E	72	2443	2394	86%	1.18	2	3/4	364
CHA-2-84E	84	2383	2740	79%	1.29	2	3/4	382
CHA-2-96E	96	2338	3086	79%	1.4	2	3/4	397
CHA-2-108E	108	2107	3139	79%	1.43	3	3/4	417
CHA-3-108E	108	2443	3591	86%	1.77	3	3/4	546
CHA-3-120E	120	2401	3937	79%	1.88	3	3/4	570
CHA-3-132E	132	2367	4283	79%	1.99	3	3/4	584
CHA-4-144E	144	2443	4788	86%	2.36	4	3/4	728
CHA1-42E is not AMCA Certified								
CHA-1-42E	42	2390	1370	83%	0.65	1	3/4	193

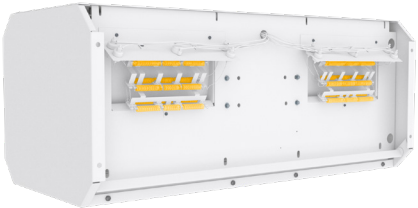
! **For a unit over 12 feet long, or a non-standard electric heater, consult factory.**

CHA-E | Velocity Projection Model

DISTANCE FROM NOZZLE	40"	80"	120"	160"	200"
CHA-1-36-E Core Velocity (fpm)	1044	833	711	530	363

CHA-E | Sound Levels

Normal speed	63 dBA	Measured 10 ft. from unit in a free field based on a 1 motor unit



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.

The AMCA Certified Ratings Seal applies to airflow rate, average outlet velocity, outlet velocity uniformity, velocity projection and power rating at free delivery only. Rated data shown are based on tests of units with heating elements present but not in use.

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CHA-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)							
	kW	Temp Rise (˚F)	208 / 1 / 60			240 / 1 / 60		
			Circuit 1	Circuit 2	SPP	Circuit 1	Circuit 2	SPP
CHA-1-36E / 48E / 60E	14.0	28	-	-	-	32.8A (45)	29.2A (40)	61.9A (80)
	12.0	24	32.4A (45)	28.8A (40)	61.3A (80)	28.6A (40)	25.0A (35)	53.6A (70)
	▶ 10.0	20	27.6A (35)	24.0A (35)	51.7A (70)	45.3A (60)	-	-
CHA-2-72E / 84E / 96E / 108E	28.0	28	-	-	-	‡	‡	‡
	24.0	24	-	-	-	‡	‡	‡
	▶ 20.0	20	‡	‡	‡	‡	‡	‡
CHA-3-108E / 120E / 132E	42.0	31	-	-	-	‡	‡	‡
	36.0	27	-	-	-	‡	‡	‡
	▶ 30.0	22	‡	‡	‡	‡	‡	‡
CHA-4-144E	56.0	37	-	-	-	‡	‡	‡
	48.0	32	-	-	-	‡	‡	‡
	▶ 40.0	27	‡	‡	‡	‡	‡	‡

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
CHA-1-36E / 48E / 60E	14.0	28	42.5A (60)	-	-	37.3A (50)	-	-
	12.0	24	36.9A (50)	-	-	32.5A (45)	-	-
	▶ 10.0	20	31.4A (40)	-	-	27.7A (35)	-	-
CHA-2-72E / 84E / 96E / 108E	28.0	28	46.1A (60)	38.9A (50)	84.9A (110)	40.9A (60)	33.7A (45)	74.6A (100)
	24.0	24	40.5A (60)	33.3A (45)	73.8A (100)	36.1A (50)	28.9A (40)	64.9A (90)
	▶ 20.0	20	35.0A (45)	27.8A (35)	62.7A (80)	31.3A (40)	24.1A (35)	55.3A (70)
CHA-3-108E / 120E / 132E	42.0	31	‡	‡	‡	‡	‡	‡
	36.0	27	‡	‡	‡	‡	‡	‡
	▶ 30.0	22	‡	‡	‡	46.9A (60)	36.1A (50)	83.0A (110)
CHA-4-144E	56.0	37	‡	‡	‡	‡	‡	‡
	48.0	32	‡	‡	‡	‡	‡	‡
	▶ 40.0	27	‡	‡	‡	‡	‡	‡

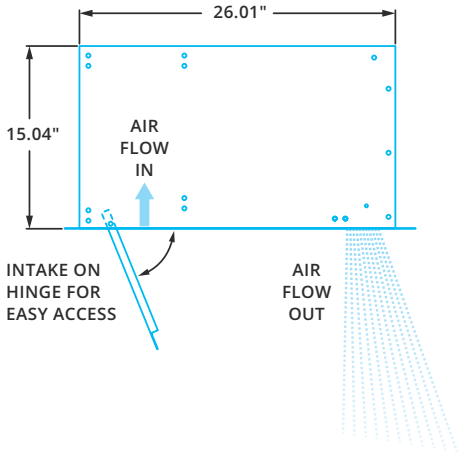
Models	AMP DRAW (Breaker Size)					
	kW	Temp Rise (˚F)	480 / 3 / 60			575 / 3 / 60
			Circuit 1	Circuit 2	SPP	Circuit
CHA-1-36E / 48E / 60E	14.0	28	18.8A (25)	-	-	-
	12.0	24	16.4A (25)	-	-	-
	▶ 10.0	20	14.0A (20)	-	-	11.5A (15)
CHA-2-72E / 84E / 96E / 108E	28.0	28	37.7A (50)	-	-	-
	24.0	24	32.9A (45)	-	-	-
	▶ 20.0	20	28.1A (40)	-	-	23.1A (30)
CHA-3-108E / 120E / 132E	42.0	31	31.3A (40)	25.3A (35)	56.5A (80)	-
	36.0	27	27.7A (35)	21.7A (30)	49.3A (70)	40.6A (60)
	▶ 30.0	22	42.1A (60)	-	-	34.6A (45)
CHA-4-144E	56.0	37	41.7A (60)	33.7A (45)	75.4A (100)	-
	48.0	32	36.9A (50)	28.9A (40)	65.7A (90)	-
	▶ 40.0	27	32.1A (45)	24.1A (35)	56.1A (80)	46.2A (60)

CHA & CHA-E | MECHANICAL DETAILS & DRAWINGS

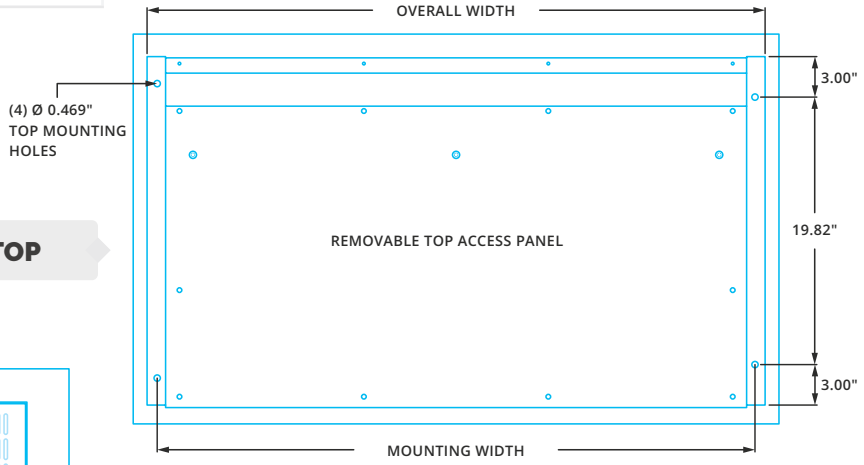
CHA & CHA-E | Mechanical Information Table

MODEL	Overall Width (in.)	Nozzle Width (in.)	Mounting Width (in.)
CHA-1-36 (E)	39.8	36	38.3
CHA-1-42 (E)	44.7	42	43.2
CHA-1-48 (E)	51.8	48	50.3
CHA-1-60 (E)	63.8	60	62.3
CHA-2-72 (E)	75.8	72.07	74.3
CHA-2-84 (E)	87.8	84.04	86.3
CHA-2-96 (E)	100.6	96.07	99.1
CHA-2-108 (E)	112.6	108.07	111.1
CHA-3-108 (E)	112.6	108.15	111.1
CHA-3-120 (E)	124.6	120.15	123.1
CHA-3-132 (E)	136.6	132.15	135.1
CHA-4-144 (E)	148.6	144.22	147.1

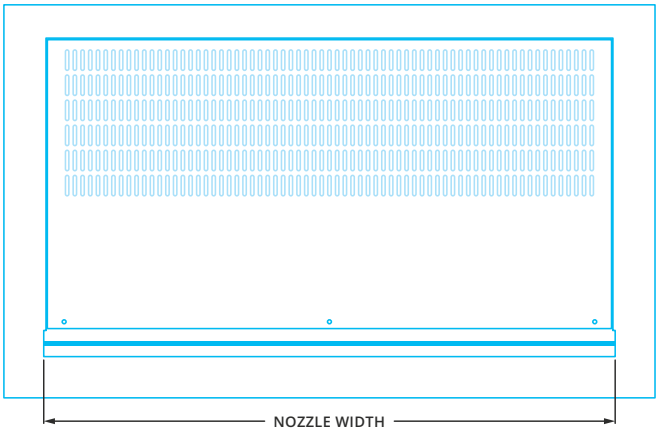
SIDE



TOP



BOTTOM



FRONT

CHA, CHA-E, CHA-HW/ST | INSTALLATION

IMPORTANT

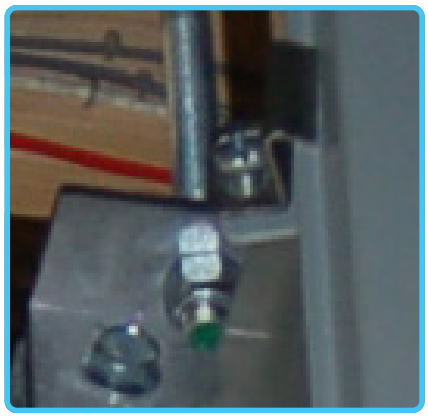
- Trained and experienced mechanic / electrician required.
- **WARNING:**
  Risk of electrical shock, can cause injury or death: Disconnect all remote electrical supplies before servicing.
- Units must be field wired in accordance with all applicable local, state, provincial and national codes, including wire size and materials.

NOTE

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.

Unit has four 15/32 inch holes for installing one end of 7/16" threaded rods. The other ends of the threaded rods can be attached to the ceiling. Washers and lock washers or locknuts are recommended. Mounting structure should be of sufficient strength to hold air curtain, and hardware (supplied by others) should be of sufficient strength and quality to support the unit safely.

STEP 1
Remove intake/discharge grille from bottom of air curtain. If ceiling is already in place, determine where air curtain location will be and cut a rectangular hole in the ceiling. The hole will be 1 inch longer and wider than the bottom length and width of the air curtain without the intake/discharge grille.



STEP 2
Suspend air curtain using threaded rods so that the bottom of the unit is centered within the cut out in the ceiling. There will be a 1/2 inch gap around the air curtain. Mount the unit so that the bottom is flush with the ceiling.

STEP 3
Attach the intake/discharge grille to the bottom of the air curtain. The grille is larger than the air curtain to cover the gaps between the air curtain and ceiling.