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



# CHA

ABOVE CEILING

May 2020
PAAC-303

The CHA unheated 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.

## OPTIONS

### HEATING

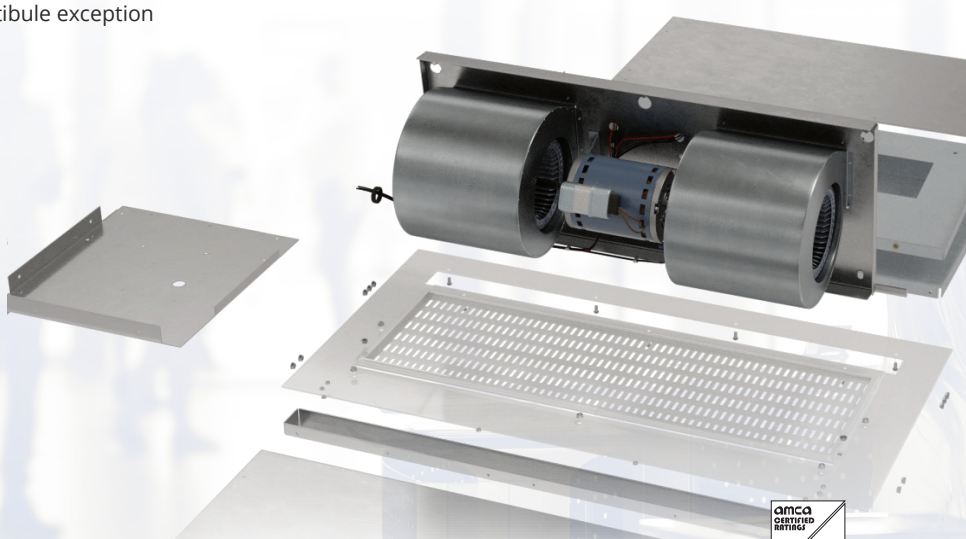


## AT A GLANCE

| 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˚)



### RECOMMENDED CONTROLS & ACCESSORIES

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

Powered Aire Inc. certifies that the Model CHA 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.

May 2020
PAAC-303

# CHA | PERFORMANCE

## CHA | 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-1-36 | 36 | 2757 | 1268 | 91% | 0.61 | 1 | 3/4 | 179 |
| CHA-1-48 | 48 | 2674 | 1765 | 91% | 0.84 | 1 | 3/4 | 195 |
| CHA-1-60 | 60 | 2396 | 1845 | 73% | 0.87 | 1 | 3/4 | 225 |
| CHA-2-72 | 72 | 2757 | 2356 | 91% | 1.22 | 2 | 3/4 | 358 |
| CHA-2-84 | 84 | 2708 | 3033 | 91% | 1.45 | 2 | 3/4 | 371 |
| CHA-2-96 | 96 | 2674 | 3530 | 91% | 1.68 | 2 | 3/4 | 384 |
| CHA-2-108 | 108 | 2520 | 3610 | 73% | 1.71 | 3 | 3/4 | 397 |
| CHA-3-108 | 108 | 2757 | 3804 | 91% | 1.83 | 3 | 3/4 | 537 |
| CHA-3-120 | 120 | 2608 | 4121 | 73% | 2.06 | 3 | 3/4 | 550 |
| CHA-3-132 | 132 | 2696 | 4798 | 91% | 2.29 | 3 | 3/4 | 563 |
| CHA-4-144 | 144 | 2757 | 5072 | 91% | 2.44 | 4 | 3/4 | 716 |
| **CHA1-42 is not AMCA Certified** | | | | | | | | |
| CHA-1-42 | 42 | 2716 | 1517 | 91% | 0.73 | 1 | 3/4 | 187 |

**!** For a unit over 12 feet long, consult factory.

## CHA | Velocity Projection Model

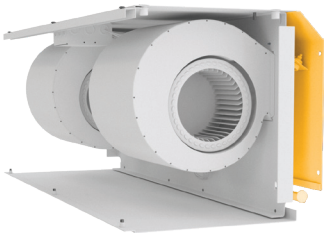
| DISTANCE FROM NOZZLE | 40" | 80" | 120" | 160" | 200" |
|---|---|---|---|---|---|
| CHA-1-36 Core Velocity (fpm) | 1500 | 1053 | 839 | 722 | 536 |
| CHA-1-48 Core Velocity (fpm) | 1388 | 908 | 715 | 602 | 556 |
| CHA-1-60 Core Velocity (fpm) | 1217 | 770 | 603 | 523 | 467 |

## CHA | Sound Levels

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

## CHA | Single Phase Motor Options

| | | | | | |
|---|---|---|---|---|---|
| **Voltages available** | 120 | 208/230 | 480 | 575 | For dual speed motors, consult factory. For three phase motors, consult factory |
| **Amp draw per motor** | 8.0 | 3.6 | 2.0 | 1.5 | |



### Performance Highlight

Perfect for customer facing spaces in retail environments, the model CED positions the blowers pointing toward the back of the air curtain. Here they fill a specially designed plenum that when pressurized is more efficient and lowers the operational sound level.

**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.**

Powered Aire Inc. certifies that the Model CHA 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.

May 2020
**PAAC-303**

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# CHA-E

ABOVE CEILING

May 2020
PAAC-205

Intertek

MADE IN THE USA

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.

## OPTIONS

### HEATING



### FILTER

½" Cleanable

### GRILLE COLOR

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

## AT A GLANCE

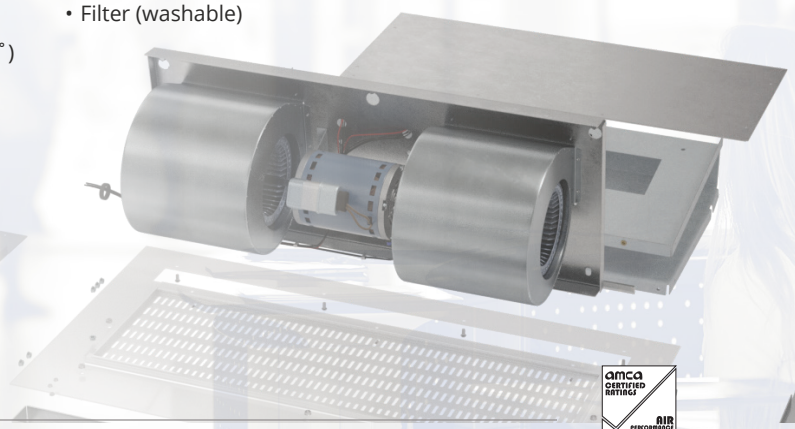
| Single Incremental Widths | Max Installation Height | Heavy Duty Motors |
|---|---|---|
| 3' to 12' | 14' | ¾ HP |

### 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 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.

May 2020
PAAC-205

# 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 | Heater kW | Temp. Rise (˚F) | Weight (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|
| CHA-1-36E | 36 | 2443 | 1197 | 86% | 0.59 | 1 | 3/4 | 10 | 26.7 | 182 |
| CHA-1-48E | 48 | 2338 | 1543 | 79% | 0.7 | 1 | 3/4 | 10 | 20.7 | 204 |
| CHA-1-60E | 60 | 1923 | 1596 | 82% | 0.73 | 1 | 3/4 | 10 | 20 | 230 |
| CHA-2-72E | 72 | 2443 | 2394 | 86% | 1.18 | 2 | 3/4 | 20 | 26.7 | 364 |
| CHA-2-84E | 84 | 2383 | 2740 | 79% | 1.29 | 2 | 3/4 | 20 | 23.3 | 382 |
| CHA-2-96E | 96 | 2338 | 3086 | 79% | 1.4 | 2 | 3/4 | 20 | 20.7 | 397 |
| CHA-2-108E | 108 | 2107 | 3139 | 79% | 1.43 | 3 | 3/4 | 20 | 20.3 | 417 |
| CHA-3-108E | 108 | 2443 | 3591 | 86% | 1.77 | 3 | 3/4 | 30 | 26.7 | 546 |
| CHA-3-120E | 120 | 2401 | 3937 | 79% | 1.88 | 3 | 3/4 | 30 | 24.3 | 570 |
| CHA-3-132E | 132 | 2367 | 4283 | 79% | 1.99 | 3 | 3/4 | 30 | 22.4 | 584 |
| CHA-4-144E | 144 | 2443 | 4788 | 86% | 2.36 | 4 | 3/4 | 40 | 26.7 | 728 |
| **CHA1-42E is not AMCA Certified** | | | | | | | | | | |
| CHA-1-42E | 42 | 2390 | 1370 | 83% | 0.65 | 1 | 3/4 | 10 | 23.3 | 193 |

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

## CHA-E | Velocity Projection Model

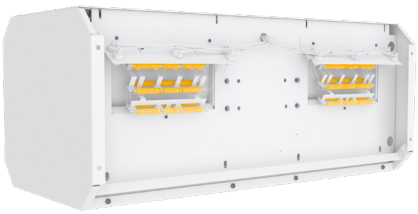
| DISTANCE FROM NOZZLE | 40" | 80" | 120" | 160" | 200" |
|---|---|---|---|---|---|
| CHA-1-36-E Core Velocity (fpm) | 1044 | 833 | 711 | 530 | 363 |

## CHA-E | Sound Levels

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

## CHA-E | Single Phase Motor Options

| | | | | | |
|---|---|---|---|---|---|
| **Voltages available** | 120 | 208/230 | 480 | 575 | For dual speed motors, consult factory. For three phase motors, consult factory |
| **Amp draw per motor** | 8.0 | 3.6 | 2.0 | 1.5 | |



### 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.**

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.

May 2020
**PAAC-205**

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# CHA-E | ELECTRICAL

## CHA-E | AMP Draw, Circuits & Breaker Size Table

*** With optional branch fusing for Single Point Power (SPP)**
**^ SPP by default**
**‡ High amp draws may be prohibitive. Reduced and custom kW available. Contact Factory.**

| MODEL | AMP DRAW (Breaker Size) | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 208 / 1 / 60 | | | 240 / 1 / 60 | 208 / 3 / 60 | | | | 240 / 3 / 60 | | | 480 / 3 / 60 | | | 575 / 3 / 60 |
| | Separate Supply Circuits | | | | Separate Supply Circuits | | | | Separate Supply Circuits | | | Separate Supply Circuits | | | |
| | 1 | 2 | SPP* | Circuit 1 | 1 | 2 | 3 | SPP* | 1 | 2 | SPP* | 1 | 2 | SPP* | Circuit 1 |
| CHA-1-36E<br>CHA-1-48E<br>CHA-1-48E<br>CHA-1-42E | 27.6 (35) | 24.0 (35) | 51.6 (70) | 45.3 (60) | 31.4 (40) | - | - | ^ | 27.7 (35) | - | ^ | 14.0 (20) | - | ^ | 11.5 (15) |
| CHA-2-72E<br>CHA-2-84E<br>CHA-2-96E<br>CHA-2-108E | ‡ | - | ‡ | ‡ | 35.0 (45) | 27.8 (35) | - | 62.7 (80) | 31.3 (40) | 24.1 (35) | 55.4 (70) | 28.1 (40) | - | ^ | 23.1 (30) |
| CHA-3-108E<br>CHA-3-120E<br>CHA-3-132E | ‡ | - | ‡ | ‡ | 38.6 (50) | 27.8 (35) | 27.8 (35) | 94.0 (125) | 46.9 (60) | 36.1 (50) | 83.0 (110) | 42.1 (60) | - | ^ | 34.6 (45) |
| CHA-4-144E | ‡ | - | ‡ | ‡ | ‡ | - | - | ‡ | ‡ | - | ‡ | 32.1 (45) | 24.1 (35) | 56.2 (80) | 46.2 (60) |


***Model CHA*** | *Above Ceiling*

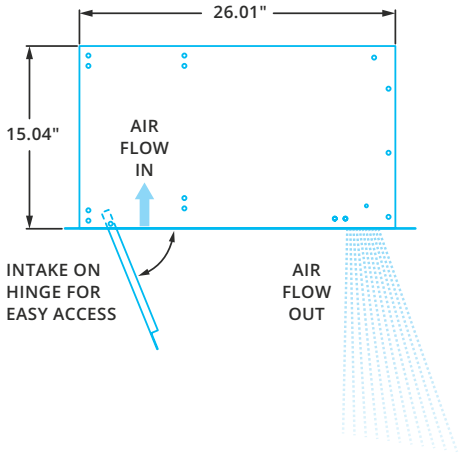

***Model CHA*** | *Above Ceiling*

# CHA & CHA-E | MECHANICAL DETAILS & DRAWINGS

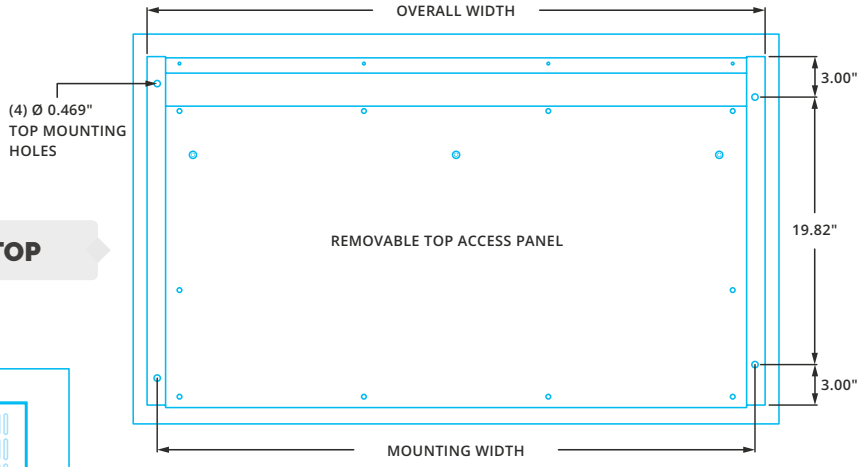
## CHA & CHA-E | Mechanical Information Table

| MODEL | Overall Width | 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 |

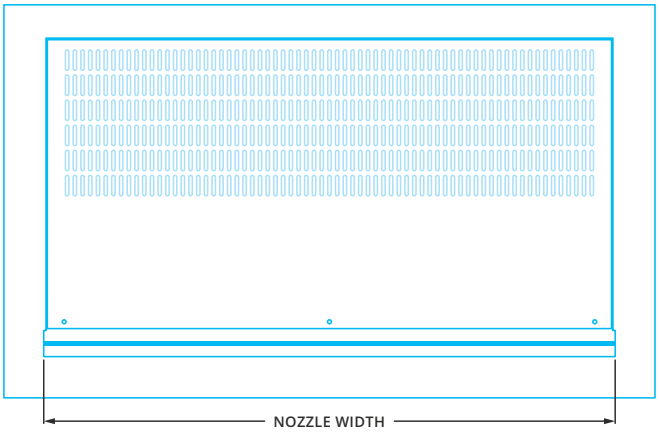
### SIDE




### TOP




### BOTTOM




### FRONT

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CHA-HW CHA-ST

# CHA-HW/ST

ABOVE CEILING

## OPTIONS

### HEATING
Unheated . . . . . .pg 21
Electric. . . . . .pg 23

### FILTER
½" Cleanable

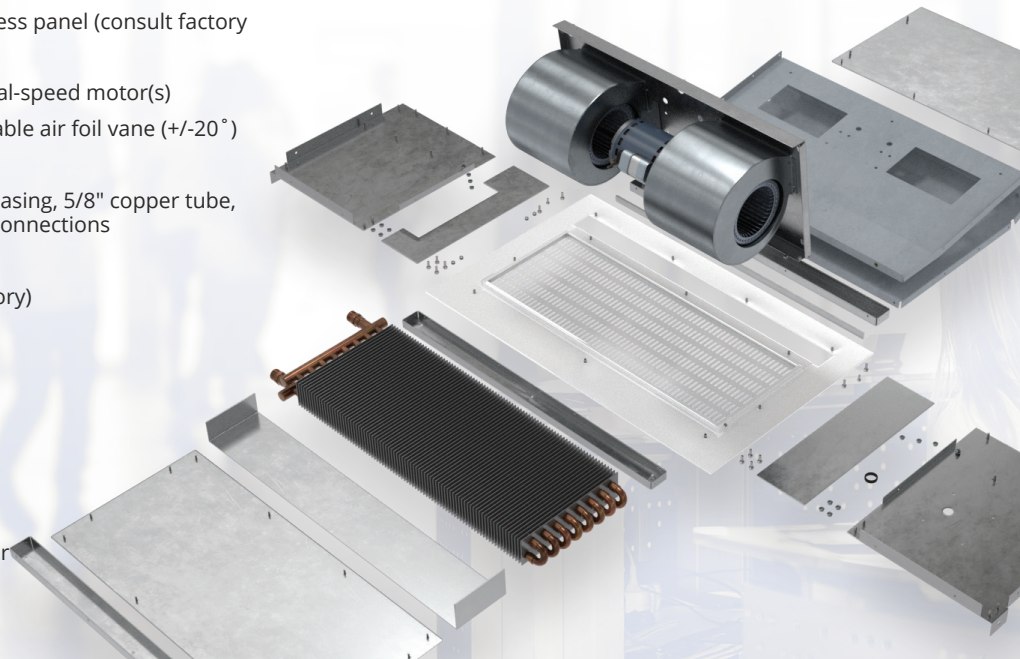
### GRILLE COLOR
The white grille is standard with this model. Consult factory for custom color or metal.

## AT A GLANCE

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

### KEY DESIGN FEATURES

- 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˚)
- Coil made to AHRI Standard 410
- Hot water coil comprised of galvanized steel casing, 5/8" copper tube, aluminum fins, and same end supply/return connections
- Leak tested at 450 psi
- Custom coil selections available (consult factory)



### RECOMMENDED CONTROLS & ACCESSORIES

- Activation by 24V magnetic door switch
- Toggle disconnect switch
- SmartTouch controller
- Hot water or steam control valve with actuator
- Filter (washable)

# CHA-HW/ST | PERFORMANCE

## CHA-HW/ST | Performance Table

| MODEL | Nozzle Width (in.) | FPM | CFM | Outlet Velocity Uniformity | Number of Motors | Motor HP | Hot Water | | Steam | | Weight (lbs) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | mbtu / Hour | Temp. Rise (˚F) | mbtu / Hour | Temp. Rise (˚F) | |
| CHA-1-36HW/ST | 36 | 2757 | 1268 | 91% | 1 | 3/4 | 54.5 | 36.3 | 53 | 35.4 | 113 |
| CHA-1-42HW/ST | 48 | 2608 | 1521 | 91% | 1 | 3/4 | 58 | 35.7 | 60.7 | 35.2 | 213.2 |
| CHA-1-48HW/ST | 48 | 2674 | 1765 | 91% | 1 | 3/4 | 69.7 | 36.2 | 70.2 | 36.5 | 145 |
| CHA-1-60HW/ST | 60 | 2396 | 1845 | 73% | 1 | 3/4 | 74 | 36.8 | 70.6 | 35.1 | 180 |
| CHA-2-72HW/ST | 72 | 2757 | 2356 | 91% | 2 | 3/4 | 104.2 | 34.8 | 108.7 | 36.2 | 249 |
| CHA-2-84HW/ST | 84 | 2708 | 3033 | 91% | 2 | 3/4 | 121.6 | 35.6 | 125.9 | 36.8 | 281 |
| CHA-2-96HW/ST | 96 | 2674 | 3530 | 91% | 2 | 3/4 | 139 | 36.1 | 142.9 | 37.1 | 306 |
| CHA-2-108HW/ST | 108 | 2520 | 3610 | 73% | 2 | 3/4 | 135.8 | 34.5 | 134.3 | 34.1 | 329 |
| CHA-3-108HW/ST | 108 | 2757 | 3804 | 91% | 3 | 3/4 | 161.4 | 35.9 | 164.1 | 36.5 | 365 |
| CHA-3-120HW/ST | 120 | 2608 | 4121 | 73% | 3 | 3/4 | 178.9 | 36.3 | 181.1 | 36.8 | 406 |
| CHA-3-132HW/ST | 132 | 2696 | 4798 | 91% | 3 | 3/4 | 196.3 | 36.7 | 198 | 37 | 470 |

**!** **For a unit over 12 feet long, consult factory. Heater data based on AMCA licensed values from unheated units.**

## CHA-HW/ST | Sound Levels

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

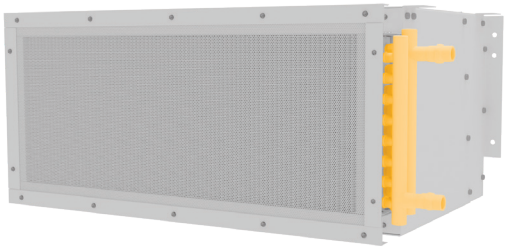
## CHA-HW/ST | Single Phase Motor Options

| | | | | | |
|---|---|---|---|---|---|
| **Voltages available** | 120 | 208/230 | 480 | 575 | For three phase motors, consult factory |
| **Amp draw per motor** | 8.0 | 3.6 | 2.0 | 1.5 | |

## NOTE

**When requesting a quote for a Hot Water/Steam heated air curtain, please provide:**

- Specifics of water/steam entering and exiting the air curtain
- Location for water/steam supplies and returns (both on one side or one each side)



### Performance Highlight

Made-to-order steam or hot water coil mounted to intake of air curtain. Coil consists of 5/8 in. O.D. copper tubes and aluminum fins. Coils certified to ARI standard 410.

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# CHA-HW/ST | MECHANICAL DETAILS & DRAWINGS

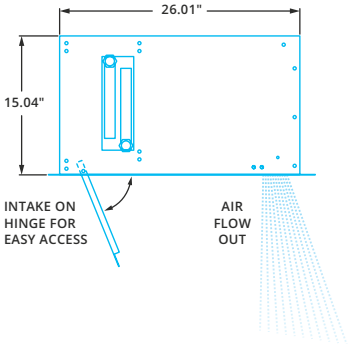
## CHA-HW/ST | Mechanical Information Table

| MODEL | Overall Width (in.) | Nozzle Width (in.) | Mounting Width (in.) |
|---|---|---|---|
| CHA-1-36HW/ST | 39.8 | 36 | 38.3 |
| CHA-1-42HW/ST | 44.7 | 42 | 43.2 |
| CHA-1-48HW/ST | 51.8 | 48 | 50.3 |
| CHA-1-60HW/ST | 63.8 | 60 | 62.3 |
| CHA-2-72HW/ST | 75.8 | 72.07 | 74.3 |
| CHA-2-84HW/ST | 87.8 | 84.07 | 86.3 |
| CHA-2-96HW/ST | 100.6 | 96.07 | 99.1 |
| CHA-2-108HW/ST | 112.6 | 108.07 | 111.1 |
| CHA-3-108HW/ST | 112.6 | 108.15 | 111.1 |
| CHA-3-120HW/ST | 124.6 | 120.15 | 123.1 |
| CHA-3-132HW/ST | 136.6 | 132.15 | 135.1 |
| CHA-4-144HW/ST | 148.6 | 144.22 | 147.1 |

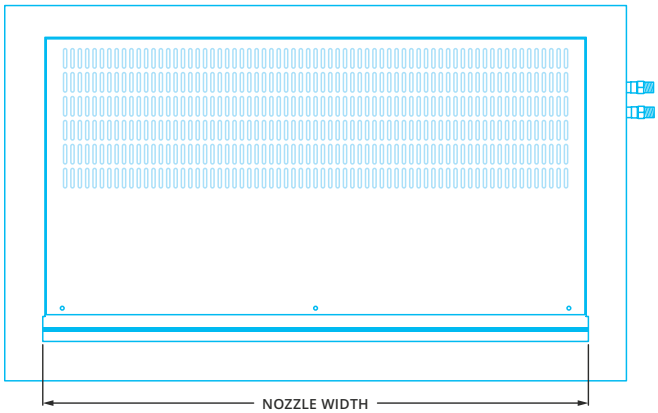
## NOTE

1. Installer is responsible for structurally sound mounting of the unit.
2. Verify that overall dimensions will fit in the opening.
3. Size steam trap (provided by others) by 3x's the manufacturer's recommended size for satisfactory operation.
4. Coil connections are shown on right hand side, but they can be located on either right or left side of unit.

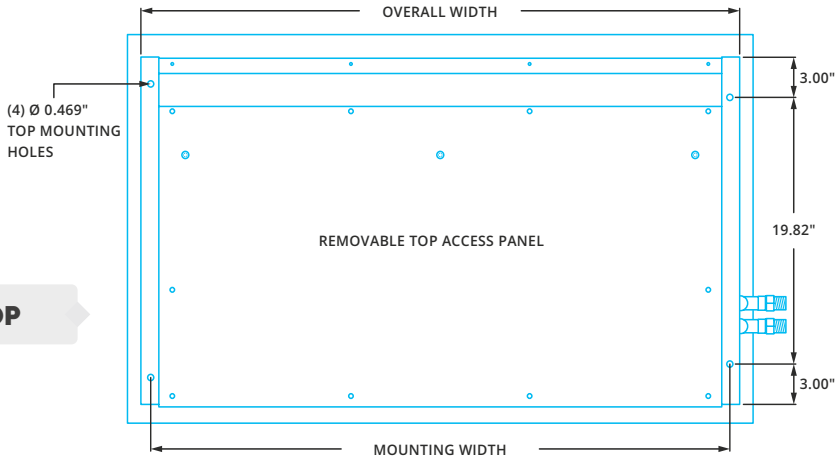
### SIDE



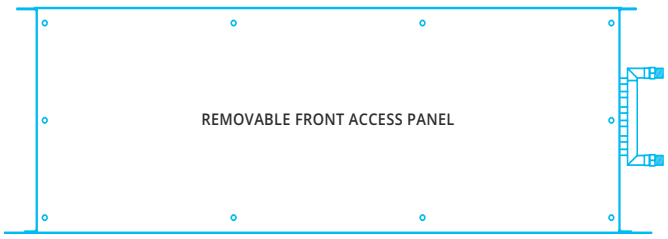

### BOTTOM




### TOP




### FRONT



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

## IMPORTANT

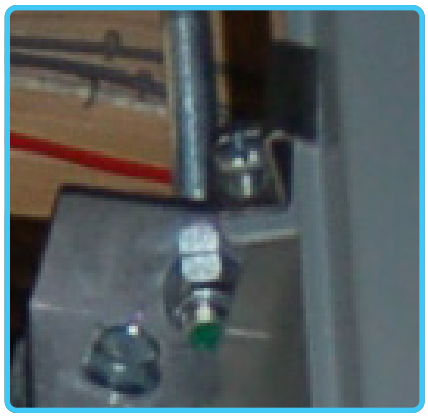
- Trained and experienced mechanic / electrician required.
- **WARNING:**
  Risk of electrical shock, can cause injury or death: Disconnect all remote electrical supplies before servicing.
- Units must be field wired in accordance with all applicable local, state, provincial and national codes, including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