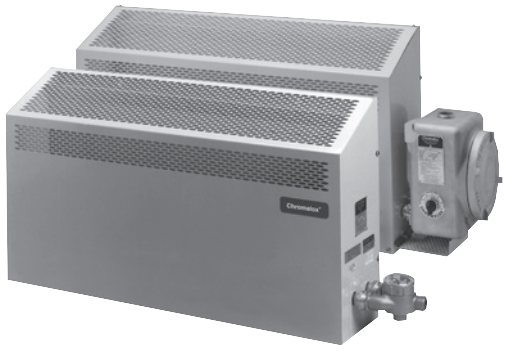
CVEP

Explosion Proof Convection Heater

- **1.6 - 9 kW**
- **5,459 - 30,708 Btuh**
- **120, 208, 240, 277, 480 and 575 Volt**
- **1 & 3 Phase**
- **Built-in & Prewired Control Options**
- **UL Listed and CSA Certified for Class 1, Division 1 or 2, Group B, C & D Environments**
- **CE Approved Models Available**



Description

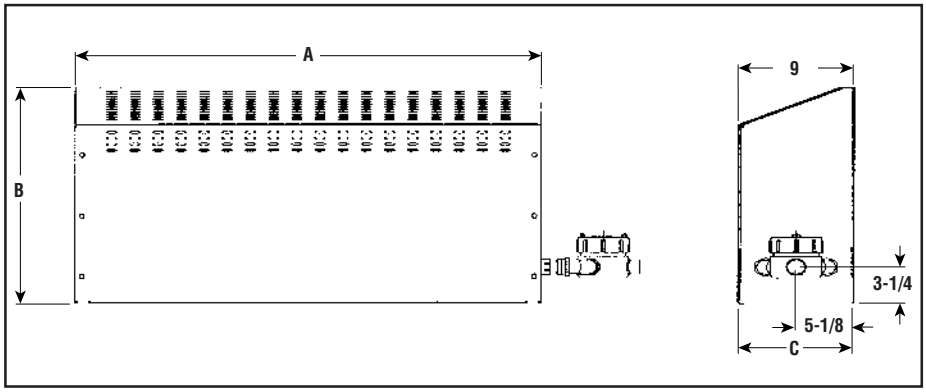
Type CVEP explosion proof convection heater is designed to provide a rugged, corrosion-resistant heat source for areas where volatile flammable liquids, gases or vapors are present. All basic models without controls are UL listed and CSA certified for use in areas designated as Class 1, Division 1 or 2 Group B, C or D locations.

Applications

- Petroleum Refineries, Gasoline Storage and Dispensing Areas
- Industrial Areas Using Flammable Liquids in Dip Tanks
- Petroleum Refineries
- Dry Cleaning Plants
- Utility and Natural Gas Plants
- Aircraft Hangers/Fueling Areas
- Solvent Extraction Plants
- Storage Areas for Flammable Products or Batteries
- Sewage Treatment Plants
- Hydrogen Atmospheres

Refer to WR-80EP in the Controls section.

Dimensions (Inches)



Dimensions (Inches)

kW	A	B	C
1.6, 1.8 and 3.6	34	20	9
3.2 and 7.6	58	20	9
4.0, 4.5 and 9.0	70	20	9

Construction

Cabinet — Sloped top, constructed of heavy 16 gauge steel, polyester powder coated for maximum corrosion resistance.

Explosion Proof Junction Box — For conduit entry and ease of power wiring.

Heating Elements — Sealed, metal sheath, heavy-duty, low watt density, enclosed high grade resistance wire embedded in MgO refractory core. Elements are inserted in a copper tube with aluminum fins.

Features

Integral Mounting Brackets allow for easy wall installation.

Sloped Top Cabinet ensures maximum ventilation by preventing objects from being placed on the top which would restrict air flow.

Designed for Areas Classified

- Class I, Division 1 or 2, Groups B, C, D
- Temperature Code T3A 180°C (356°F) or T2A 280°C (536°F)

Optional Features (Factory Installed)

- Thermostat
- Magnetic Contactor
- Control Voltage Transformer

Advantages

- Easy Installation
- Clean, Safer Heat Source
- Pre-Wired Control Options
- Long Life

CVEP

Convection Heater For Hazardous Locations

Specifications and Ordering Information

Electrical					Model	Stock	PCN	Wt. (Lbs.)
kW	Volts	Phase	Amps	Btuh				
Temperature Code T3A (356°F, 180°C) Group B, C, and D								
1.6	208	1	7.7	5,500	CVEP-16-81-00-00	NS	088336	58
1.6	208	3	4.5	5,500	CVEP-16-83-00-00	NS	086844	58
1.6	240	1	6.7	5,500	CVEP-16-21-00-00	NS	086852	58
1.6	240	3	3.8	5,500	CVEP-16-23-00-00	NS	086860	58
1.6	277	1	5.8	5,500	CVEP-16-71-00-00	NS	086879	58
1.6	480	1	3.3	5,500	CVEP-16-41-00-00	NS	086887	58
1.6	480	3	1.9	5,500	CVEP-16-43-00-00	NS	086895	58
1.6	575	1	2.8	5,500	CVEP-16-61-00-00	NS	086908	58
3.2	208	1	15.4	11,000	CVEP-32-81-00-00	NS	086916	94
3.2	208	3	9.0	11,000	CVEP-32-83-00-00	NS	086924	94
3.2	240	1	13.3	11,000	CVEP-32-21-00-00	NS	086932	94
3.2	240	3	7.7	11,000	CVEP-32-23-00-00	NS	086940	94
3.2	277	1	11.6	11,000	CVEP-32-71-00-00	NS	086959	94
3.2	480	1	6.7	11,000	CVEP-32-41-00-00	NS	086967	94
3.2	480	3	3.8	11,000	CVEP-32-43-00-00	NS	086975	94
3.2	575	1	5.6	11,000	CVEP-32-61-00-00	NS	086983	94
4	208	1	19.2	13,600	CVEP-40-81-00-00	NS	086991	112
4	208	3	11.1	13,600	CVEP-40-83-00-00	NS	087003	112
4	240	1	16.7	13,600	CVEP-40-21-00-00	NS	087011	112
4	240	3	9.6	13,600	CVEP-40-23-00-00	NS	087020	112
4	277	1	14.4	13,600	CVEP-40-71-00-00	NS	087038	112
4	480	1	8.3	13,600	CVEP-40-41-00-00	NS	087046	112
4	480	3	4.8	13,600	CVEP-40-43-00-00	NS	087054	112
4	575	1	7	13,600	CVEP-40-61-00-00	NS	087062	112
Temperature Code T2A (536°F, 280°C) Group B, C, and D								
1.8	120	1	15	6,140	**CVEP-18-11-00-00**	**S**	**028759**	46
1.8	208	1	8.7	6,140	**CVEP-18-81-00-00**	**S**	**028767**	46
1.8	208	3	5	6,140	CVEP-18-83-00-00	NS	028775	46
1.8	240	1	7.5	6,140	**CVEP-18-21-00-00**	**S**	**028783**	46
1.8	240	3	4.4	6,140	CVEP-18-23-00-00	NS	028791	46
1.8	277	1	6.5	6,140	CVEP-18-71-00-00	NS	028804	46
1.8	480	1	3.7	6,140	CVEP-18-41-00-00	NS	028812	46
1.8	480	3	2.2	6,140	CVEP-18-43-00-00	NS	028820	46
3.6	208	1	17.3	12,300	**CVEP-36-81-00-00**	**S**	**087070**	58
3.6	208	3	10	12,300	CVEP-36-83-00-00	NS	087089	58
3.6	240	1	15	12,300	**CVEP-36-21-00-00**	**S**	**087097**	58
3.6	240	3	8.7	12,300	CVEP-36-23-00-00	NS	087100	58
3.6	277	1	13	12,300	**CVEP-36-71-00-00**	**S**	**087118**	58
3.6	480	1	7.5	12,300	**CVEP-36-41-00-00**	**S**	**087126**	58
3.6	480	3	4.3	12,300	CVEP-36-43-00-00	NS	087134	58
3.6	575	1	6.3	12,300	CVEP-36-61-00-00	NS	087142	58
7.6	208	1	36.5	24,000	CVEP-76-81-00-00	NS	085913	94
7.6	208	3	21.1	24,000	CVEP-76-83-00-00	NS	085921	94
7.6	240	1	31.7	24,000	CVEP-76-21-00-00	NS	085930	94
7.6	240	3	18.3	24,000	CVEP-76-23-00-00	NS	085948	94
7.6	277	1	27.4	24,000	CVEP-76-71-00-00	NS	085956	94
7.6	480	1	15.8	24,000	CVEP-76-41-00-00	NS	085964	94
7.6	480	3	9.2	24,000	CVEP-76-43-00-00	NS	085972	94
7.6	575	1	13.2	24,000	CVEP-76-61-00-00	NS	085980	94
9	208	1	43.3	30,700	CVEP-90-81-00-00	NS	087230	112
9	208	3	25	30,700	CVEP-90-83-00-00	NS	087249	112
9	240	1	37.5	30,700	CVEP-90-21-00-00	NS	087257	112
9	240	3	21.7	30,700	CVEP-90-23-00-00	NS	087265	112
9	277	1	32.5	30,700	CVEP-90-71-00-00	NS	087273	112
9	480	1	18.8	30,700	CVEP-90-41-00-00	NS	087281	112
9	480	3	10.8	30,700	CVEP-90-43-00-00	NS	087290	112
9	575	1	15.7	30,700	CVEP-90-61-00-00	NS	087302	112
Stock CVEP with Built-in Thermostat								
1.8	120	1	15	6,140	**CVEP-18-11-00-42**	**S**	**028839**	59
1.8	208	1	8.7	6,140	**CVEP-18-81-00-42**	**S**	**028847**	59
1.8	240	1	7.5	6,140	CVEP-18-21-00-42	NS	028855	59
1.8	277	1	6.5	6,140	CVEP-18-71-00-42	NS	028863	59
1.8	480	1	3.7	6,140	CVEP-18-41-32-42[1]	NS	028871	69
3.6	208	1	17.3	12,300	**CVEP-36-81-00-42**	**S**	**028644**	60
3.6	240	1	15	12,300	**CVEP-36-21-00-42**	**S**	**028660**	60
3.6	480	1	7.5	12,300	CVEP-36-41-32-42[1]	NS	028652	70

Stock Status: **S** = stock AS = assembly stock NS = non-stock
To Order—Specify model, PCN, kW, volts, phase and quantity.
CE approved models available. Contact your Chromalox representative.

Note —
1. Includes control transformer and contactor
2. Other sizes and configurations available, contact your Local Chromalox Sales office.

CVEP

Explosion Proof Convection Heater *(cont'd.)*

Ordering Information

To Order — Complete the Model Number using the Matrix provided.

Power & Temp. Control Options

Power Control Combination	Thermostat Option	Figure Number
00	00	1
00	40[1]	5
00	42[2]	2
30 - 35	00	4
30 - 35	40	5
30 - 35	42	3

[1] **Thermostat option: 40**
Temperature range: 40˚ - 90˚F
Electrical Rating: 25 Amp 24V, 120V, 240V AC 22 Amp 277 VAC
Higher Voltage or 3 phase requires magnetic contactor option and transformer

[2] **Thermostat option: 42**
Temperature range: 50˚ - 90˚F
Electrical Rating: 22 Amps 125/277 VAC
Higher Voltage or 3 phase requires magnetic contactor option and transformer

Model — Explosion Proof Convection Heater

CVEP

Code — Watts

16 = 1600		**40** = 4000	
18 = 1800		**45** = 4500	
32 = 3200		**76** = 7600	
36 = 3600		**90** = 9000	

Code — Voltage

1 = 120		**6** = 575	
2 = 240		**7** = 277	
3 = 380		**8** = 208	
4 = 480		**9** = 600	
5 = 415			

Code — Phase

1 = Single
3 = Three

Code — Power Control Options (See Options Table)

00 = no transformer no contactor
30 = (24V) transformer and contactor
31 = no transformer with contactor(24V)
32 = (120V) transformer and contactor
33 = no transformer with contactor(120V)
34 = no transformer with contactor(208/240V)
35 = no transformer with contactor(277V)

Code — Thermo/Class Options (See Options Table)

00 = no thermo B, C & D
40 = thermo in box B, C & D
42 = thermo C & D

CVEP	**16**	**1**	**1**	**30**	**42**	**Typical Model Number**

CE approved models available. Contact your Chromalox representative.

Dimensions (Inches)

Figure 1

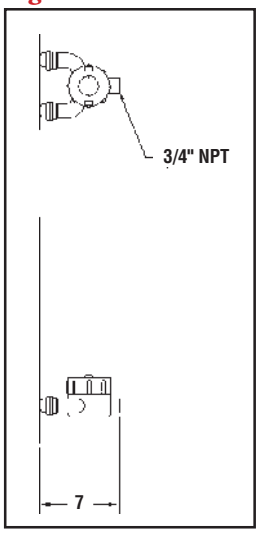


Figure 2

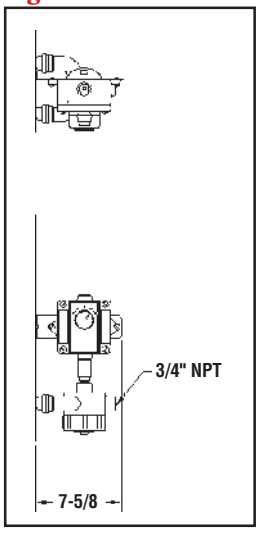


Figure 3

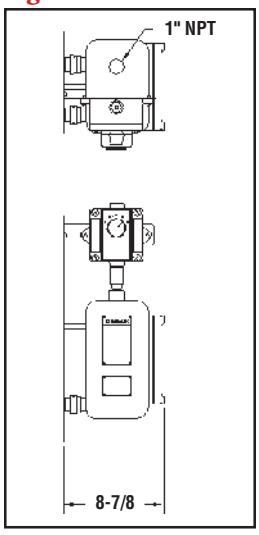


Figure 4

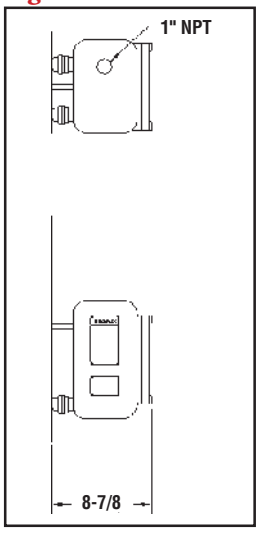
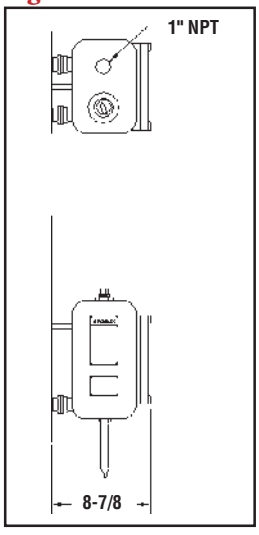


Figure 5



CVEP
Convection Heater For Hazardous Locations
Sample Specifications – U.S. approved models

1. General

1.1 The Explosion-Proof Convection Air Heater Catalog Number _____ Rated _____ Volts, _____ Phase, _____ Watts, shall be designed and constructed for use in hazardous locations.

1.2 ☐ For Groups B, C and D Check This Block
The Heater shall be Underwriters Laboratories Inc. Listed and Canadian Standards Association Certified for constant use in Class I, Groups B, C and D Division 1 or 2 hazardous locations, and National Electric Code minimum gas ignition temperature identification number ☐ T2A, 280°C (536°F) or ☐ T3A, 180°C (356°F).

1.3 ☐ For Groups C and D Check This Block
The Heater shall be Underwriters Laboratories Inc. Listed and Canadian Standards Association Certified for constant use in Class I, Groups C and D Division 1 or 2 hazardous locations, and National Electric Code minimum gas ignition temperature identification number ☐ T2A, 280°C (536°F) or ☐ T3A, 180°C (356°F).

1.4 ☐ For Group D Check This Block
The heater shall be Underwriters Laboratories Inc. Listed and Canadian Standards Association Certified for constant use in Class 1, Group D Division 1 or 2 hazardous locations, and National Electric Code minimum gas ignition temperature identification number ☐ T2A, 280°C (536°F) or ☐T3A, 180°C (356°F).

1.5 The Heater shall be the natural convection type intended for wall mounting.

2. Construction

2.1 The back panel shall be designed to be easily mounted to the wall using keyhole slots.

2.2 The back panel shall be fabricated for 16 gauge steel, 9" deep by 20" high, finished with corrosion resistant polyester powder coating.

2.3 The back panel shall include perforations and a baffle to direct outside air between the panel and the mounting surface.

2.4 The front cabinet shall be easily removable by unthreading 4 bolts from threaded inserts.

2.5 The front cabinet shall be fabricated from 16 gauge steel. 9" deep by 20" high, and coated with corrosion resistant polyester powder coating.

2.6 The front cabinet shall be sloped to prevent objects from being placed on top causing restricted air flow.

3. Elements

3.1 The elements shall be constructed of heavy duty resistance wire insulated by magnesium oxide refractory, which has been highly compacted to transmit heat and act as an electrical insulator.

3.2 The elements are to be contained in a tube assembly, which is then swaged to an O.D. of 1.25".

3.3 The element assembly is inserted into a copper tube with 3" x 3.25" aluminum fins spaced at 48 fins per linear foot.

3.4 The finned assembly is to be mounted to the rear panel by polyester powder-coated brackets.

4. Controls (Optional)

4.1 The CVEP shall include the following built in control features:
☐ operating temperature control
☐ magnetic contactor
☐ control transformer with ☐ 120V ☐ 24V secondary

4.2 The control components shall be factory installed, wired and tested.

5. Terminal Box (For units without transformer or contactor options)

The terminal box shall be constructed of copper free aluminum, to include a grounding lug and to be U.L. listed for Class I hazardous locations (as indicated in 1. General Specifications above.)