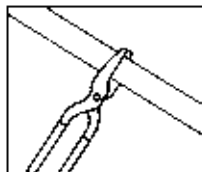


# CWM

PDS CWM

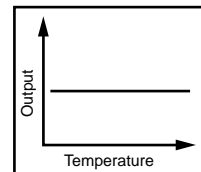
## Constant Wattage Medium Temperature Heating Cable



Cut To Length in Field

Maintains up to  
**350°F**  
  
Withstands up to  
**392°F**

Medium Temperature



Constant Wattage Output

- **Uniform Thermal Output**
- **Accurate, Easy to Control and Monitor**
- **Low Energy Cost**
- **No Inrush at Any Ambient**
- **Industrial/Process and Commercial/Construction Applications**
- **Flexible to Most Any Configuration**
- **Fluoropolymer Jacket**
- **Maximum Exposure Temperature Power Off 392°F, 200°C**
- **Steam Cleanable on Process Equipment up to 190 PSIG (Power Off)**
- **4, 8 and 12 Watts per Foot**
- **120, 208-277 and 480 Volts Available From Stock**



**Chromalox**<sup>®</sup>  
PRECISION HEAT AND CONTROL

### Description

Chromalox CWM heating cable is a proven, reliable solution for industrial process temperature maintenance and freeze protection. CWM features a parallel heating core that produces uniform thermal output over its entire length. Using a single power point, you can easily configure and install a heat tracing system as short as several feet or as long as 780 feet right in the field. System design only requires that you match the CWM cable thermal output to the heat loss of your piping system.

CWM is flexible at most ambient temperatures and can be wrapped around piping and complex fittings. It is rugged, easy to monitor and maintain temperature, and has zero inrush at start-up. With 392°F (200°C) fluoro-polymer electrical insulation over-jacketing, CWM has outstanding electrical and thermal properties, and is well-suited for most chemically hostile environments. An extensive range of Wattages and Voltages are available immediately from Chromalox stock.

### Approvals\*

**UL** Listed for ordinary areas  
(4 & 8 W/Ft., 120V & 208-277V)

**CSA** Certified for ordinary and Class I, Div. 2, Groups A, B, C and D; Class II, Div. 2, Groups F and G. Rated Temperature Class T3:\*\*

\* Depends on specific model.

\*\* Exception: Cable surface temperature shall not exceed 190°C in Class II, Div. 2, Group F; 165°C in Class II, Div. 2, Group G.

### Features

- Durable, fluoropolymer jacket ensures long service life and can be used in some hostile environments.
- Flexible, easy to install on most equipment and delivers long-term reliable performance.
- Eliminates the need for oversized wiring or switchgear.
- Accurate temperature, reliable electric heat that can be consistently controlled and easily monitored.
- Safe and rugged.
- Parallel circuitry allows cut-to-length.
- High performance, rated to withstand up to 392°F saturated steam (190 PSIG) temperature (power off).
- Low profile, uses standard size thermal insulation on piping and process equipment.

### Applications

#### Industrial / Process

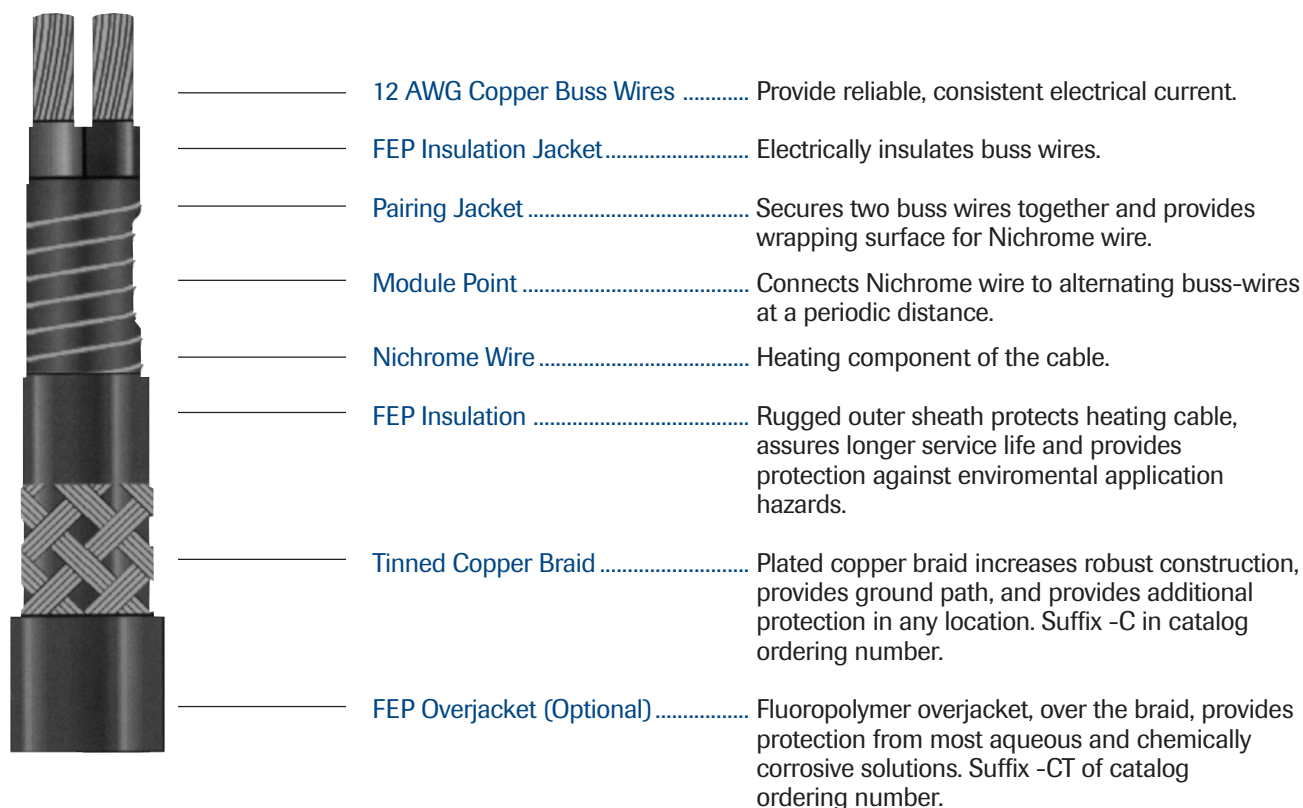
- Petrochemical
- Oil Refineries/Drilling Rigs
- Food Processing
- Transfer Piping & Vessels
- Power Plants
- Chemical Processing

#### Commercial / Construction

- Freeze Protection
- Frost Heave Protection
- Winterized Cooling Water Lines

# CWM - Constant Wattage Medium Temp. Heating Cable

## Construction



## Heating Cable System Design

### 1. Calculate Heat Loss

Using the chromalox Design Guide for Heat Tracing (PJ304) calculate the heat loss of the system. To calculate the heat loss you will need to know pipe diameter, insulation type and thickness, minimum ambient temperature and the pipe maintenance temperature.

### 2. Select Cable Rating

After calculating the heat loss in the pipe and adjusting for any application deviations, you may determine which cable rating to choose.

**Temperature** Make sure that the maintenance temperature does not exceed the CWM maximum maintenance temperature rating. Do not overlap cable.

**Jacket Material** Overjacket (-CT) is recommended for environments where exposure to corrosives and moisture is likely.

**Rating Selection** Select the cable whose wattage output exceeds the heat loss of the system. For example, if the heat loss is 7.2 W/Ft., select CWM8.

If necessary, adjust the cable rating for the supply Voltage. Cable ratings are based on nominal voltages of 120, 240 or 480 Volts. If the Voltage is different from any of these, derate the cable according to the following table.

# Constant Wattage Medium Temp. Heating Cable - CWM

## Output Wattage at Alternate Voltages

Cable Rating	120 Volts	208 Volts	220 Volts	240 Volts	277 Volts	480 Volts
CWM12-1C	12.0	-	-	-	-	-
CWM8-1C	8.0	-	-	-	-	-
CWM4-1C	4.0	-	-	-	-	-
CWM12-2C	3.0	9.0	10.1	12.0	-	-
CWM8-2C	2.0	6.0	6.7	8.0	-	-
CWM4-2C	-	3.0	3.4	4.0	-	-
CWM12-4C	-	2.3	2.5	3.0	4.0	12.0

### 3. Determine Total Cable Length

In addition to the system piping, in-line equipment such as valves, flanges and pipe supports require additional heat tracing to maintain the system operating temperatures. Refer to the Chromalox Design Guide (PJ304). Guidelines for tracing tanks and vessels are also given in the Chromalox Design Guide (PJ304).

#### Specifications

Model Number	Output (W/Ft.)	Nominal Voltage (Vac)	Circuit Load (Amps/Ft.)	Maximum Circuit Length (Ft.)	Module Length (Ft.)
CWM4-1C(T)	4	120	0.033	350	2.5
CWM8-1C(T)	8	120	0.067	240	2.5
CWM12-1C(T)	12	120	0.100	200	2.5
CWM4-2C(T)	4	240	0.017	700	2.5
CWM8-2C(T)	8	240	0.033	480	2.5
CWM12-2C(T)	12	240	0.050	400	2.5
CWM12-4C(T)	12	480	0.025	780	2.5

### 4. Select Accessories

Chromalox has a complete line of accessories specifically designed for use with the CWM cable. Use only Chromalox accessories to ensure the performance of the heat trace system. When ordering accessories, specify quantity, model number and PCN (Product Code Number).

	Model	Description	PCN
Power Connection	RTPC	DL Series power connection set kit.	See DL Accessories
	RTST	DL Series splice and tee set kit.	See DL Accessories
	RTES	DL Series end seal kit.	See DL Accessories
Fiberglass Tape	FT-1	Tape to affix cable to pipe, 180' roll x 1/2", install on 12" centers.	382520
	FT-2	Tape to affix cable to pipe, 66' roll x 1/2", install on 12" centers	383611
Aluminum Tape	AT-1	Tape to aid heat transfer, 180 foot roll. Apply over cable along entire length of circuit.	383355

# CWM - Constant Wattage Medium Temp. Heating Cable

## 5. Determine Installation Methods/Tape Requirements

Pipe maintenance temperatures can vary significantly depending on whether aluminum or fiberglass tape is used. Aluminum tape improves heat transfer and permits cables to maintain higher temperatures than when cable is applied to bare metal pipe. Do not overlap the cable.

### Maximum Maintenance Temperatures (°F)

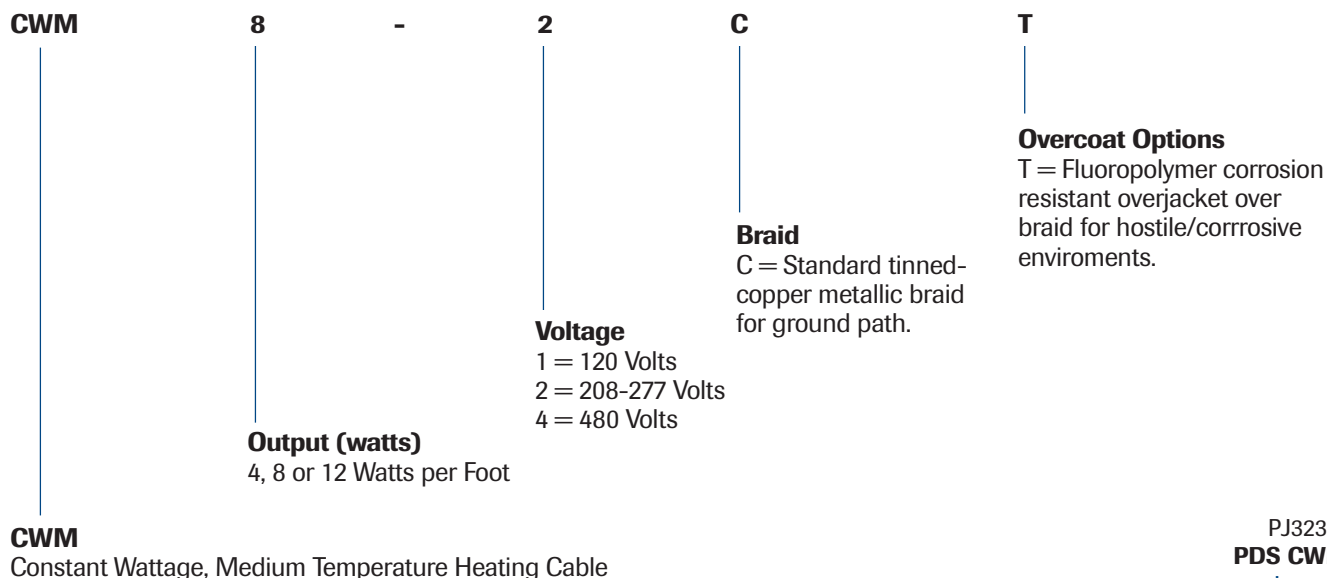
Output (W/Ft.)	3	4	6	6.7	8	9	10.1	10.6	12
w/o AT-1	340	325	293	282	262	246	229	222	200
w/AT-1	350	344	332	328	320	314	307	304	296

## Ordering Information

Output (W/Ft.)	Voltage (Vac)	Model Number	PCN	Output (W/Ft.)	Voltage (Vac)	Model Number	PCN
4	120	CWM4-1C	392040	12	120	CWM12-1C	392227
		CWM4-1CT	392075			CWM12-1CT	392251
	208-277	CWM4-2C	392059		208-277	CWM12-2C	392235
		CWM4-2CT	392083			CWM12-2CT	392260
8	120	CWM8-1C	392139	12	480	CWM12-4C	392243
		CWM8-1CT	392163			CWM12-4CT	392278
	208-277	CWM8-2C	392147				
		CWM8-2CT	392171				

**To Order:** Specify length, Model Number, PCN and Installation Accessories.

## Model Numbers



PJ323-1  
PDS CWM  
June 04  
99-003