

PM-500-1C

ONE COLOR PYROMETER

***NON-CONTACT, FOR ABSOLUTE ACCURATE
TEMPERATURE MEASUREMENT***



FEATURES:

- **MILL-DUTY, WATER-COOLED, POSITIVE-PRESSURE AIR-PURGED HOUSING**
- **HIGH RESOLUTION OPTICS**
- **MULTIPLE TEMPERATURE RANGES**
- **ANALOG & DIGITAL OUTPUTS**
- **24 VDC or 100 – 240 VAC, 50 Hz / 60 Hz**

The PM-500-1C pyrometer is designed for temperature measurement for metals processing.

APPLICATIONS:

- **Refractories**
- **Reheat Furnaces**
- **Annealing**

DESCRIPTION:

PYROMETER PRINCIPLE:

This class of temperature measurement is based on the measurement of the infrared emission of the measured object. Two basic parameters influence the determination of the temperature from the infrared radiation: “ ϵ ” is the emissivity which depends on the material itself, the shape and roughness of its surface, and then wavelength “ λ ” at which the radiation is measured.

$$\frac{1}{T_b} = \frac{1}{T} - \frac{\lambda}{C2} \ln(\epsilon(\lambda, T) \times \tau(\lambda))$$

T_b: measured temperature

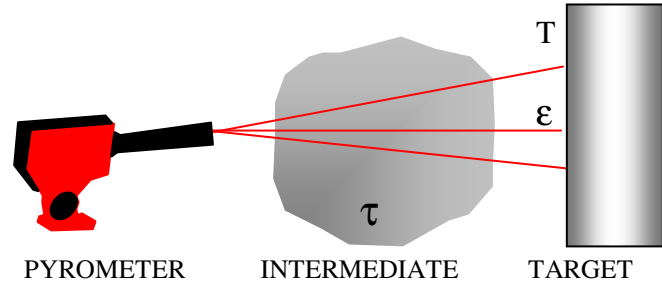
T: true temperature

λ : measured wavelength of the radiation

C2: thermodynamic constant

ϵ : emissivity

τ : transmission spectral of the environment between object and measuring apparatus



The PM-500-1C Pyrometer provides non-contact, real-time temperature monitoring. It can be used as a stand-alone sensor or configured for a multi-sensor network. It is equipped with through-the-lens and laser sighting for alignment and set up, and optional video sighting.

Bi-directional, RS-485 serial communications between the sensor and a computer enable remote setup, monitoring, calibration, and maintenance. This is valuable for installation in hard-to-reach locations.

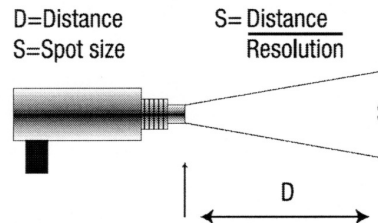
SPECIFICATIONS:

SIGNALS	
ANALOG OUTPUT	4-20 mA, 0-20mA, current loop
DIGITAL OUTPUT	RS485
ELECTRICAL	
POWER SUPPLY	100 to 240 VAC (50-60 Hz), or or 24 VDC
SHIELDED CABLE	4 Meter, high-temperature
MECHANICAL	
HOUSING	Cast aluminium housing rating: IP66 (NEMA 4)
WATER / AIR COOLING	Water / Air-cooling jacket
PROTECTIVE HOOD	Hood with positive pressure air purge: 4-16 liters/min at 2 bars (0.14 -0.56 ft3/min at 29 PSI)
MOUNTING	Fully Adjustable foot mount swivel stand
OPERATING TEMPERATURE	5°C to 65°C (41°F to 150° F) Above 65°C (150° F) auxiliary cooling is required: 1-2 bars at 1-2 liters/min. (14.5 - 29 PSI at 0.035 - 0.07 ft3/min)
TOTAL WEIGHT	12.25 kg. / 27 lbs.

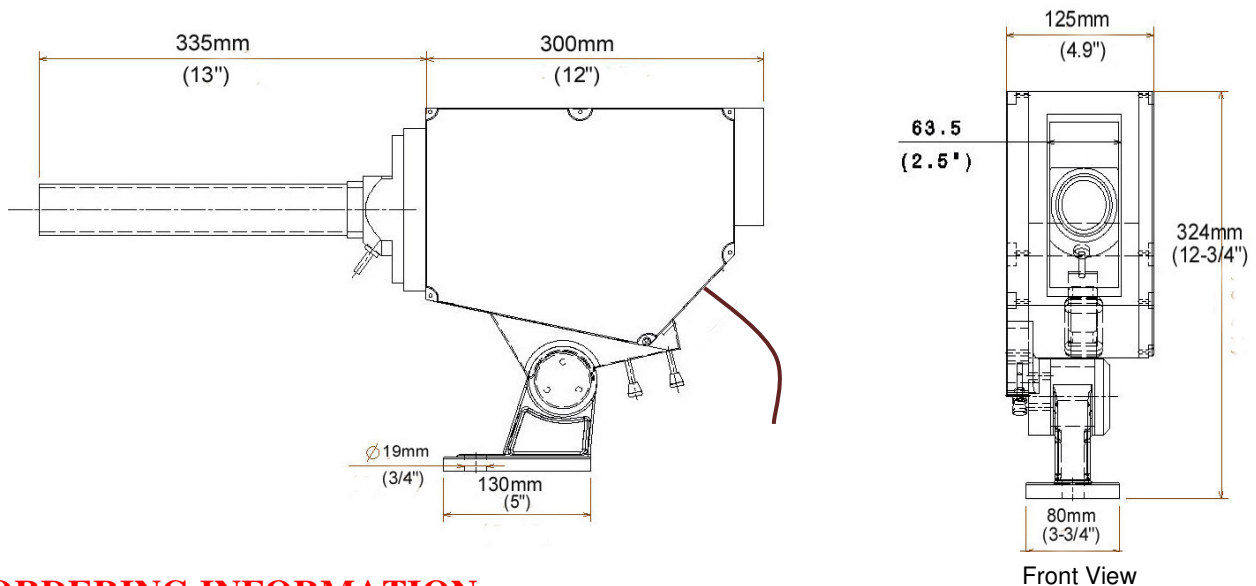
MEASUREMENT:

<u>MODEL</u>	<u>Temperature Range</u>	<u>Spectral Response</u>	<u>Optical Resolution</u>	<u>Response Time</u>
PM-500-1C-A	-40°C to 800°C	8 – 14 μm	70:1	120 ms
	250°C to 1100°C	3.9 μm	70:1	120 ms
PM-500-1C-B	100°C to 600°C	2.3 μm	70:1	20 ms
	300°C to 1100°C	1.6 μm	160:1	2 ms
	450°C to 2250°C	1.6 μm	300:1	2 ms
	450°C to 1740°C	1 μm	160:1	2 ms
	650°C to 3000°C	1 μm	300:1	2 ms
PM-500-1C-C	-40°C to 600°C	8 – 14 μm	33:1	150 mSec
	250°C to 1200°C	3.9 μm	30:1	150 mSec
PM-500-1C-D	-18°C to 500°C	8 – 14 μm	33:1	165mSec
	0°C to 500°C	8 – 14 μm	33:1	165mSec
	200°C to 1000°C	3.9 μm	33:1	165mSec
	500°C to 2000°C	2.2 μm	60:1	100mSec

OPTICS:



DIMENSIONS:



ORDERING INFORMATION:

<u>Model</u>	<u>Temperature Range</u>	<u>Input Voltage</u>
PM-500-1C	- A	• 100-240 VAC
	- B	• 24V DC
	- C	
	- D	