

## TP9-BL

Temperature-controlled pyroelectric detector for laser power measurement from nW to 0.5 mW.



### PRODUCT FAMILY KEY FEATURES

#### SPECTRALLY FLAT RESPONSE

These radiometers were developed for NIST, to be used with a broadband spectrometer to act as a spectral transfer standard when calibrating other detectors in the 0.25 to 15  $\mu\text{m}$  range.

#### TEMPERATURE CONTROLLED POWER MEASUREMENT

Each head is composed of a low noise detector, thermistor, TE cooler and heatsink to compensate for any temperature change

#### THE ULTIMATE CHOICE IN MEASUREMENT STABILITY

Temperature control down to 0.05°C from 20 to 30°C gives a temperature coefficient <0.01 %, thus a voltage output stable to 0.01 %

#### 2 SIZES AVAILABLE

- TP5-BL: 5 mm  $\varnothing$  pyroelectric sensor with organic black coating
- TP9-BL: 9 mm  $\varnothing$  pyroelectric sensor with organic black coating

#### TO BE USED WITH THE STEP-CONTROLLER

Plug your TP sensor into the STEP-Controller for power supply and temperature control. You can then use the analog output with a scope or lock-in

#### COMPATIBLE STAND

[STAND-D-233](#)

## SPECIFICATIONS

### MEASUREMENT CAPABILITIES

Maximum average power (continuous)	500 $\mu\text{W}$
Noise equivalent power <sup>1</sup>	5 nW
Spectral range <sup>2</sup>	0.25 - 15 $\mu\text{m}$
Typical rise time	0.2 s
Power calibration uncertainty	$\pm 2.5$ %
Chopper frequency <sup>3</sup>	10 Hz, 50% duty cycle
Temperature stability	$\pm 0.05^\circ\text{C}$
Voltage response stability	$\pm 0.01\%$

1. With STEP-Controller and scope. Noise is < 11 nW RMS with STEP-controller and Lock-In.

2. NIST-traceable calibration at 632.8 nm.

3. SDC-500 digital optical chopper sold separately

### DAMAGE THRESHOLDS

Maximum average power density	50 mW/cm <sup>2</sup>
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### PHYSICAL CHARACTERISTICS

Aperture diameter	9 mm
Absorber	BL
Dimensions	50.8 $\varnothing$ X 48.3D mm
Weight	0.227 kg

### ORDERING INFORMATION

TP9-BL

## INTERESTED IN THIS PRODUCT?

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