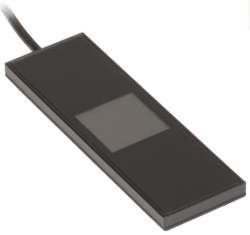
Microscope Slide Thermal Power Head



S175C

Description

The S175C Microscope Power Sensor Head is designed to measure the illumination power in microscopes. The housing shares dimensions with a microscope slide and fits standard microscope objective stages in both upright and inverted setups. The thermal sensor can handle a wide power range from less than 100 µW to 2 W in the specified wavelength range.

The power head features a large, high sensitivity thermal detector with a broadband absorber coating. The detector is protected by an easily cleanable even glass window with a refraction index of n = 1.52 that allows the usage of focusing liquids.

To align and focus the beam in inverted setups, an alignment mark is laser engraved to the bottom of the sensor housing.

The S175C is compatible with all new Thorlabs display units. A non-volatile memory in the sensor connector contains sensor information data and the NIST- and PTB-traceable calibration data.

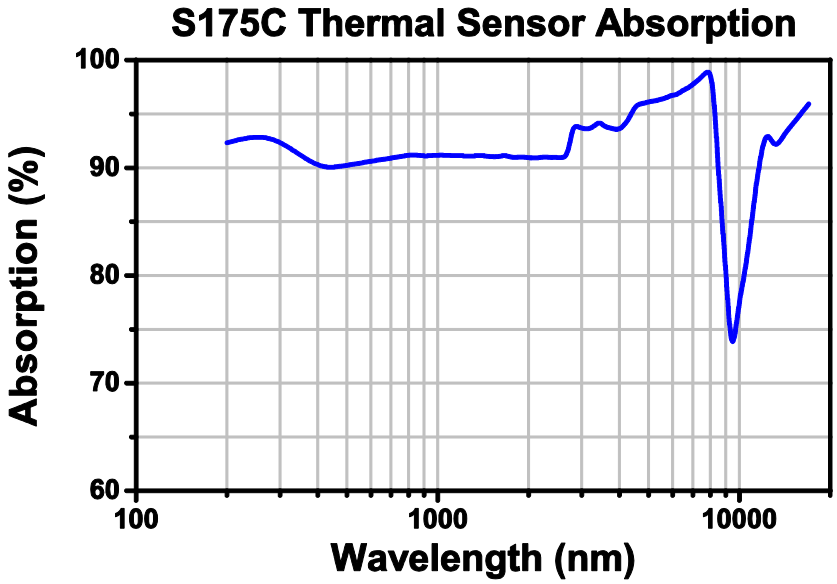
Please be aware that thermal sensors are sensitive to air vents and strong ambient temperature changes. For accurate measurements a zeroing of the display is mandatory when the light unexposed sensor has settled to its ambient temperature.

Specifications

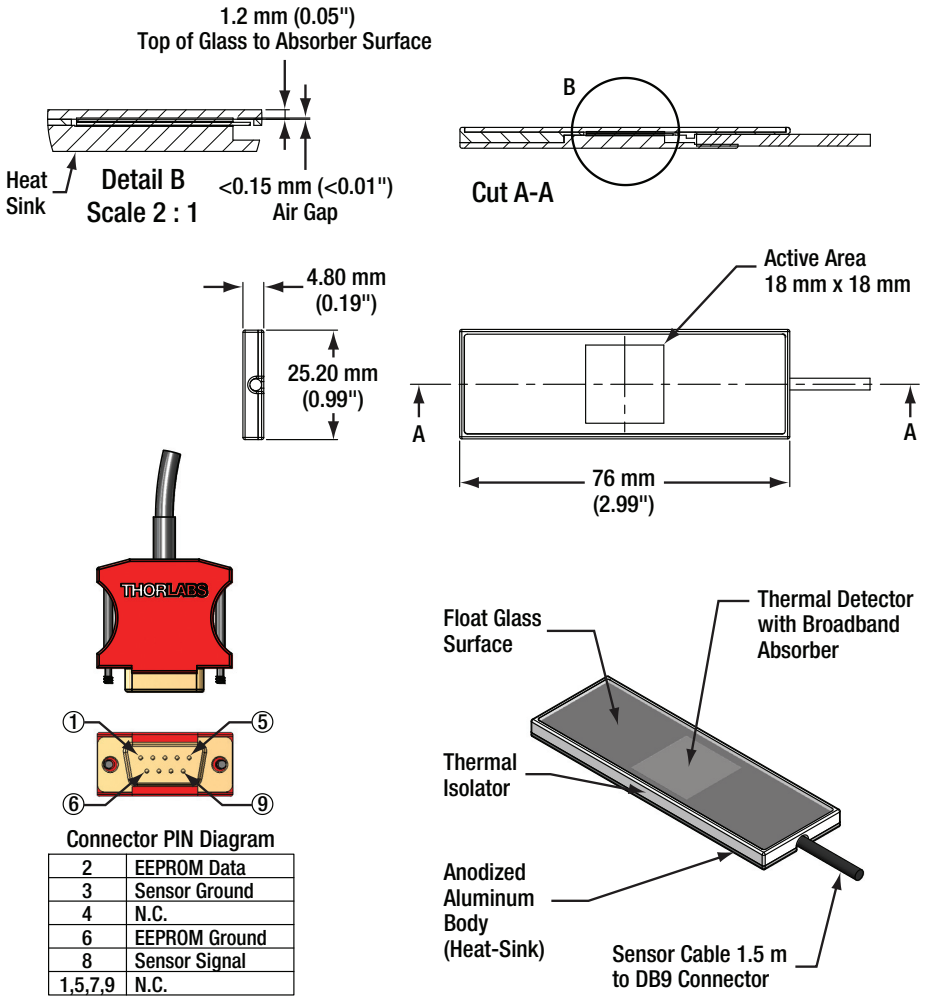
S175C	
Detector Type	Thermal Volume Absorber
Wavelength Operating Range	300 nm - 10.6 µm
Optical Power Working Range	100 µW - 2 W
Max Average Power Density	200 W/cm²
Max Pulse Energy Density	0.1 J/cm² (1 µs Pulse), 1 J/cm² (1 ms Pulse)
Linearity	±0.5%
Resolution[a]	10 µW
Measurement Uncertainty[b]	±3% @ 1064 nm; ±5% @ 300 nm - 10.6 µm
Typical Application	Low Power Lasers
Laser Types	Diode, Diode Arrays, He-Ne, Dye, Ion Lasers (Ar+, Kr+)
Coating/Diffuser	Broadband
Cooling	Convection
Console Compatibility	PM100D, PM100A, PM100USB, PM200, PM320E
Response Time	<2 s
Sensor Dimensions	76 mm x 25.2 mm x 4.8 mm
Active Detector Area	18 mm x 18 mm
Input Aperture	18 mm x 18 mm
Cable Length	1.5 m
Connector	Sub-D 9p Male
Weight	0.05 kg
Post Mounting	N/A

[a] Measured with the PM200 console
[b] Beam diameter > 1 mm

Typical Absorption Curve



Drawings



2	EEPROM Data
3	Sensor Ground
4	N.C.
6	EEPROM Ground
8	Sensor Signal
1,5,7,9	N.C.

Cleaning and Maintenance

There are no serviceable parts in the S175C head. The housing may be cleaned by wiping with a soft damp cloth. The glass surface can be cleaned with appropriate solvents like Isopropanol.

If you suspect a problem with your S175C, please call Thorlabs and an engineer will be happy to assist you.

As long as the sensor has not been exposed to excessive optical power (please pay attention to the maximum ratings in the technical specifications), the calibration should be very stable over long periods of time (well over a year). To keep the accuracy and performance of the S175C, Thorlabs recommends a yearly recalibration, starting one year after purchase.

Precautions and Warranty Information

Thorlabs, Inc. Life Support and Military Use Application Policy is stated below:

THORLABS' PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS OR IN ANY MILITARY APPLICATION WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF THORLABS, INC. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.

2. A critical component is any component in a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system or to affect its safety or effectiveness.

3. The Thorlabs products described in this document are not intended nor warranted for usage in Military Applications.

