S322C Thermal Power Head

The *S322C* is a power meter head, designed for power measurements up to 250W with low drift and good resolution. It is an ideal choice for light sources with a broadband spectrum like ASE, LED, filament lamps or swept sources, where calibrated photodiodes fail due to their strong wavelength dependency. The sensor works from the UV to the IR with a flat response with low back reflection from the high damage threshold broadband coating. Another excellence is the average power measurement from pulsed laser sources whereby the peak power may be higher than the maximum rated power as long it doesn't exceed the damage threshold of the maximum power density.
To perform accurate measurements the *S322C* has to be zeroed before starting a measurement. For power levels above 50W the fan must be connected with the 12VDC power supply to ensure a stable measurement. The head has a built in thermistor to control a overheating of the sensor.
The *S322C* is compatible with all available Thorlabs power meter consoles. A non-volatile memory in the sensor connector contains sensor information data and the NIST and PTB traceable calibration data.

Technical Specifications

Sensor Model	S322C
Optical Power Range (Continuous)	100mW - 200W
Wavelength Range	0.25-11µm
Application	CW and Long Pulses (Diode, ArIo, KrIo, Dye, CO2, He-Cd, (Nd-YAG))
Detector Type	Thermal Surface Absorber
Coating	High Power Broadband HPB
Detector Size (active area)	Ø25mm
Distance Frontface to Detector	13mm
Power Resolution [1)]	5mW
Calibration Uncertainty	+/- 3% @ 1064nm [2)] +/- 5% @ 266nm - 1064µm [3)]
Linearity	+/- 1%
Max Intermittent Power (2min max)	250W
Max. Average Power Density	4kW/cm² (CO2)
Max. Pulse Energy Density	0.5J/cm² (1ns pulse) 10J/cm² (1ms pulse)
Response time with display (0-90%) [2)]	1 sec.
Cooling	Forced Air w. Fan 12VDC Power-Supply included
Head Temperature Measurement	Thermistor 2kΩ
Sensor Dimensions	100 x 100 x 87 mm³
Connector Cable Length	1.5m
Connector	Sub-D 9p male
Mounting and accessories	SM1 adapter via 4 x #4-40 cage threads
Post	M6, 75mm post included
Weight	0.75 kg
Console Compatibility	PM100D, PM100A, PM100USB, PM200, PM320E

[1)] with PM100D console, acceleration circuit off
[2)] Other calibration wavelengths on request
[3)] Spectral calibration - the response values for wavelength correction outside this calibration range, is interpolated from the general absorption curve of the absorber.

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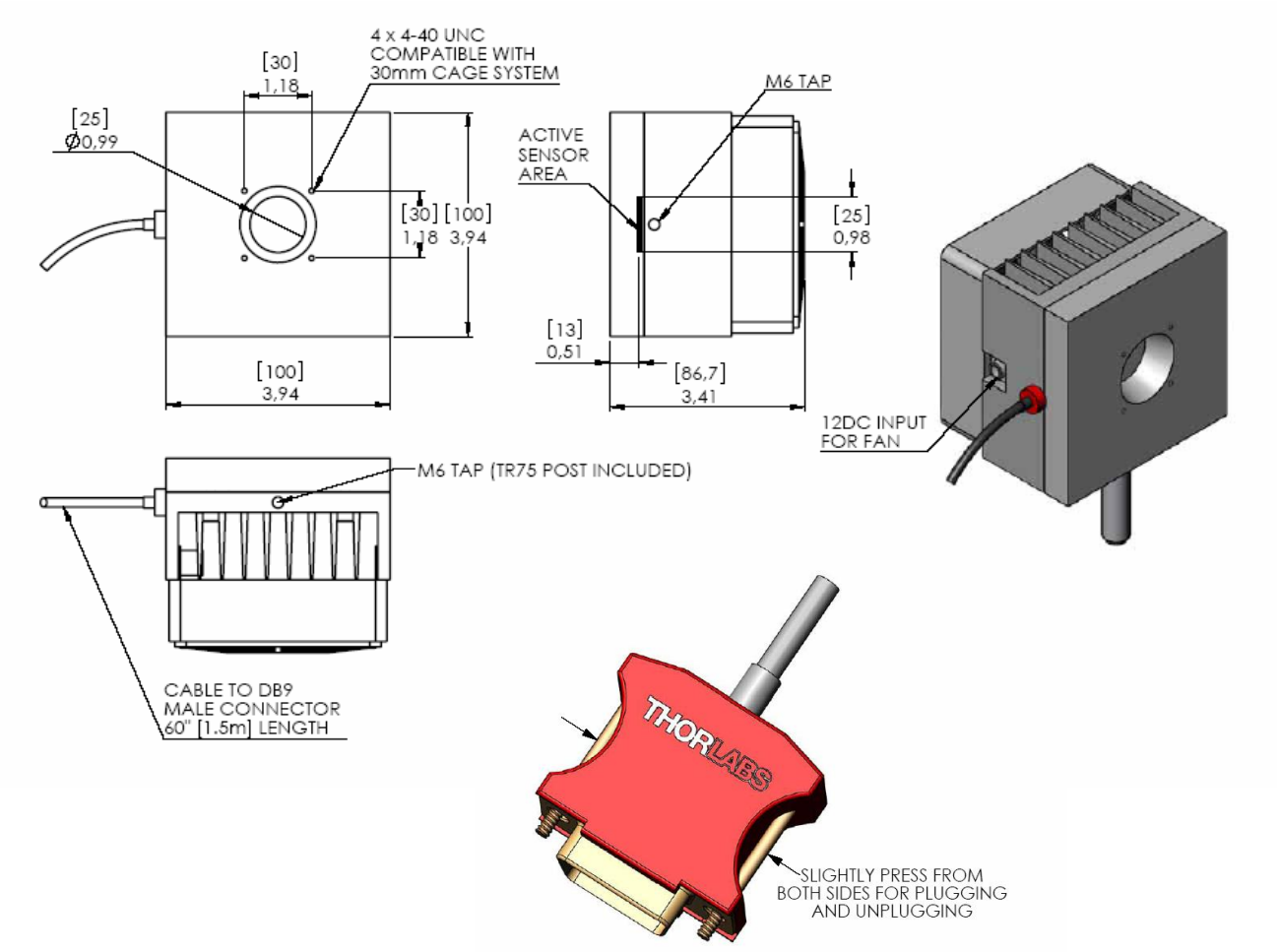
Mechanical Drawing



Available Accessories

The *S322C* is compatible to the Thorlabs imperial and metric post and post-holder series. For attaching fiber adapters or other optics four UNC 4-40 threads that are compatible with the Thorlabs 30mm cage system are arranged around the detector area.

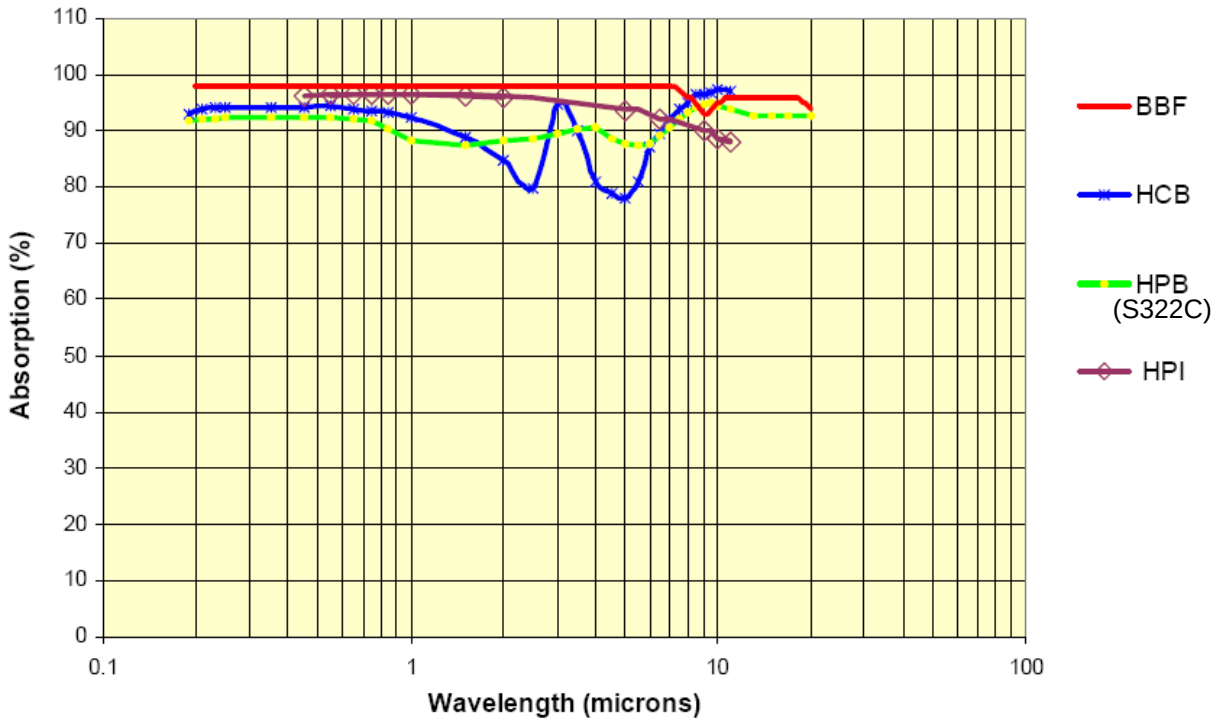
SM1A19	Replacement adapter plate SM1 outer thread to 30mm cage threads to accommodate **S120-xx** series fiber adapters
PMPS12	Replacement power supply 12VDC/1A

Cleaning and Maintenance

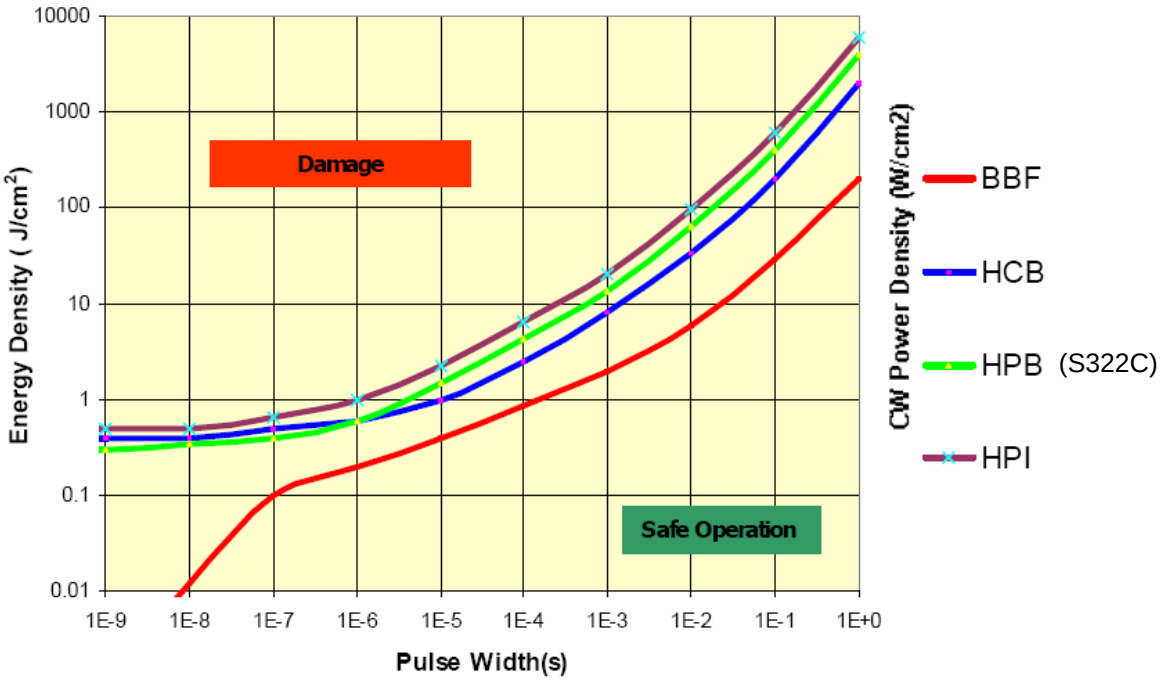
There are no serviceable parts in the *S322C* thermal head. The housing may be cleaned by wiping with a soft damp cloth. The detectors on the thermal heads cannot be cleaned. Gently blow off any debris using compressed air. If any scratches or other signs of damage remain on the sensor area, contact Thorlabs service department for repair or replacement. If you suspect a problem with your *S322C* 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 *S322C*, Thorlabs recommends a yearly recalibration, starting one year after purchase.

General Absorption Curves



Pulse Energy Ratings and Damage Thresholds



WEEE

As required by the WEEE (Waste Electrical and Electronic Equipment Directive) of the European Community and the corresponding national laws, Thorlabs offers all end users in the EC the possibility to return “end of life” units without incurring disposal charges.

This offer is valid for Thorlabs electrical and electronic equipment

- sold after August 13th 2005
- marked correspondingly with the crossed out “wheelie bin” logo (see fig. 1)
- sold to a company or institute within the EC
- currently owned by a company or institute within the EC
- still complete, not disassembled and not contaminated

As the WEEE directive applies to self contained operational electrical and electronic products, this “end of life” take back service does not refer to other Thorlabs products, such as

- pure OEM products, that means assemblies to be built into a unit by the user (e. g. OEM laser driver cards)
- components
- mechanics and optics
- left over parts of units disassembled by the user (PCB’s, housings etc.).

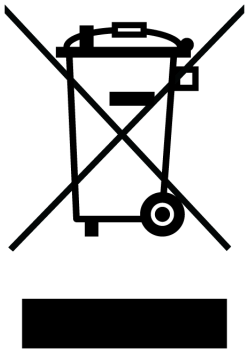
If you wish to return a Thorlabs unit for waste recovery, please contact Thorlabs or your nearest dealer for further information.

Waste treatment on your own responsibility

If you do not return an “end of life” unit to Thorlabs, you must hand it to a company specialized in waste recovery. Do not dispose of the unit in a litter bin or at a public waste disposal site.

Ecological background

It is well known that WEEE pollutes the environment by releasing toxic products during decomposition. The aim of the European RoHS directive is to reduce the content of toxic substances in electronic products in the future.
The intent of the WEEE directive is to enforce the recycling of WEEE. A controlled recycling of end of live products will thereby avoid negative impacts on the environment.



Crossed out “wheelie bin” symbol