

## S144A Integrated Sphere based Silicon Power Meter Optical Head

### Description:

The S144A is an optical power meter head designed to be used directly with the ThorLabs PM100 and PM30 console system to measure light over the near infrared wavelength range of 800 to 1700nm and provide a NIST traceable optical power measurement. The Integrating Sphere based design allows measuring the optical power widely independent from the divergence angle and beam shape of the incoming beam. The optical power meter head will detect light over the power range of 1 $\mu$ W to 1W. An EEPROM located in the DB9 mating connector will store the NIST calibrated spectral response curve required to provide an accurate power reading.

The S144A optical power meter head is designed for fiber applications and free space. A FC fiber adapter is supplied with the unit, other fiber adapters like SMA and SC are available as accessory and can easily be changed.

8-32 and M4 threaded mounting holes are provided to accommodate posts and post holders.

### Specifications:

Spectra Range:	800 – 1700nm
Sensor:	InGaAs
Optical Power Range:	1 $\mu$ W – 1W (@1550nm)
Resolution:	10nW
Input Aperture:	5mm Diameter (0.20")
Maximum Beam Divergence:	+/- 40°
Measurement Uncertainty:	+/- 5%
Measurement Standard:	NIST Traceable
Damage Threshold:	200W/cm <sup>2</sup>
Operating Temperature:	5°C to 40°C
Storage Temperature:	-20°C to 70°C

### Operation:

To remove or change the fiber adapter, loosen the two M2.5x4 screws and lift-off the adapter. Without fiber adapter the sensor can be used for free-space applications.

### Cleaning and Maintenance:

There are no serviceable parts in the S144A optical head. The housing may be cleaned by wiping with a soft damp cloth. When cleaning the aperture filter of the S144A, treat it as any other fine optic. Gently blow off any debris using compressed air and wipe gently with an optic tissue wetted with propanol. If you suspect a problem with your S144A 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, the calibration should be very stable over long periods of time (well over a year). However, the detector should be calibrated once a year to ensure accuracy.

### Console - Sensor Compatibility:

PM100:	Compatible from firmware version 1.62 (September 2005) Please contact ThorLabs for a free upgrade of the console firmware.
PM30:	Compatible
PM300:	Compatible
S100:	Not compatible, no upgrade possible

## 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 13<sup>th</sup> 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