

SM1L10H - May 18, 2021

Item # SM1L10H was discontinued on May 18, 2021 For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

TEMPERATURE-CONTROLLED AND HEAT-SINK LENS TUBES

- ▶ Temperature-Controlled Lens Tube for Temperature-Sensitive Optical Components
- ▶ Passive-Heat-Sink Lens Tubes with 0.25 °C/W Thermal Resistance
- ▶ Compatible with Our SM1 Lens Tubes



SM1L10H
Temperature-Controlled
Lens Tube



HSLT2
Passive-Heat-Sink
Lens Tube



Application Idea

SM1L10H
Temperature-Controlled
Lens Tube Connected to a
TC200 Temperature Controller

OVERVIEW

Features

- Temperature-Controlled Lens Tube for Heating Ø1" Optical Components
- Lens Tubes with Passive Heat Sink for Cooling Ø1" Optics
- Directly Compatible with SM1-Threaded (1.035"-40) Lens Tubes

Thorlabs offers lens tubes featuring controlled heating and passive cooling. The SM1L10H Temperature-Controlled Lens Tube can heat Ø1" optics up to 75 °C, which is ideal for tuning the performance of temperature-sensitive components and preventing condensation from forming on a lens surface. This lens tube is also equipped with an embedded NTC 10 kΩ thermistor that provides temperature feedback and automatic temperature control with the compatible TC200 Temperature Controller (sold separately).

For cooling Ø1" optical components exposed to large amounts of heat, our HSLT2 Passive-Heat-Sink Lens Tube features a low 0.25 °C/W thermal resistance with an exposed surface area of 79 square inches (510 cm²) and is directly compatible with SM1 or SM2 Lens Tubes.

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Temperature-Controlled Lens Tube

- ▶ SM1 Lens Tube Featuring Controlled Heating for Ø1" Optics
- ▶ Embedded NTC 10 kΩ Thermistor Provides Temperature Feedback
- ▶ Directly Compatible with Our SM1-Threaded (1.035"-40) Lens Tubes

The SM1L10H Temperature-Controlled Lens Tube is a small heating device that is compatible with our Ø1" Lens Tubes. It is an ideal choice for applying heat to mounted optics in order to control their performance as a function of temperature. It can also be used to prevent condensation from forming on optics.

Optics can be secured inside the heating chamber with the included SM1RR retaining ring. The SM1L10H contains an embedded NTC 10 kΩ thermistor that provides temperature feedback and allows automated control of the internal heating element. It is directly compatible with our TC200 Temperature Controller.

The temperature-controlled lens tube can be post mounted using an SMR1(/M) Fixed Lens Mount.

Specifications	
Temperature Range	Room Ambient to 75 °C Max
External Dimensions	Ø1.85" x 1.43" Long (Ø47 mm x 36 mm Long)
Clear Aperture	Ø0.90" (Ø22 mm)
Temperature Sensor	NTC 10 kΩ Thermistor (BETA = 3750)
Heater Resistance	19.7 Ω ± 10%
Maximum Heating Capacity	30 Watts
Maximum Heater Current	700 mA (@ 10 W)
Compatible Lens Tube	SM1 (1.035"-40)
Recommended Heater Controller	TC200(-EC)



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SM1L10H Mounted to a Ø1/2" Post via an SMR1 Fixed Mount

Part Number	Description	Price	Availability
SM1L10H	Temperature-Controlled SM1 Lens Tube, One SM1RR Retaining Ring Included	\$287.84	Lead Time

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Passive-Heat-Sink Lens Tube

- ▶ Lens Tubes Equipped with Heat Sink for Passive Cooling
- ▶ Offers 0.25 °C/W Thermal Resistance Over 2.10" (53.3 mm) Length
- ▶ Internal SM1 (1.035"-40) Threading Directly Compatible with Our Ø1" Lens Tubes
- ▶ External SM2 (2.035"-40) Threading for Compatibility with Our Ø2" Lens Tubes

The HSLT2 Passive-Heat-Sink Lens Tube provides the ability to cool down a lens tube setup that may be subject to an unusual amount of heat. By providing a total surface area of 79 square inches (510 cm²), it provides a thermal resistance of 0.25 °C/W. Ø1" optical components can be mounted into the HSLT2 lens tube using two SM1RR retaining rings (included). This lens tube features internal SM1 threading and external SM2 threading for compatibility with our SM1 and SM2 Lens Tubes, respectively. It can also be mounted to SM05, SM30, or SM3 setups using our Lens Tube Adapters.



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HSLT2 Heat-Sink Lens Tube Secured to a QTH10 Tungsten-Halogen Lamp

Part Number	Description	Price	Availability
HSLT2	Passive-Heat-Sink SM1 Lens Tube with External SM2 Threads, Two SM1RR Retaining Rings Included	\$81.16	Today

