56 Sparta Avenue • Newton, New Jersey 07860
(973) 300-3000 Sales • (973) 300-3600 Fax
www.thorlabs.com

THORLABS

S1LM9 - March 11, 2015

Item # SM1LM9 was removed from our e-commerce site on March 11, 2015. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

PASSIVE TO CAN LASER DIODE MOUNTS

- **Fixed Mounts for TO-38, TO-46, Ø5.6 mm, Ø9 mm, and TO-3 Laser Diodes**
- **Lens Tube and Cage System Options Compatible with Strain Relief Cables**
- **Post Mounting Bracket**

LM9F
Shown with Ø9 mm Laser Diode

S05LM56
SM05-Threaded Mount for Ø5.6 mm Laser Diodes

S1LDM9
SM1-Threaded Mount for Ø9 mm Laser Diodes

CP1LM56
30 mm Cage Plate for Ø5.6 mm Laser Diodes

Application Idea

Ø9 mm Laser Diode with SR9 ESD Protection/Strain Relief Cable in a KM100T Kinematic Mount

[Hide Overview](#)

OVERVIEW

Thorlabs offers post-mountable, SM-threaded, and cage-compatible passive mounts for TO can laser diodes. Passive mounts are also available for fiber-pigtailed laser diodes, as well as unmounted light emitting diodes (LEDs).

Passive Mounts for Optoelectronics	
	Compatible Packages
Laser Diode Mounts	Ø5.6 mm, Ø9 mm, TO-38, TO-46, TO3
LED Mounts	T1-3/4, TO-18, TO-39, TO-46

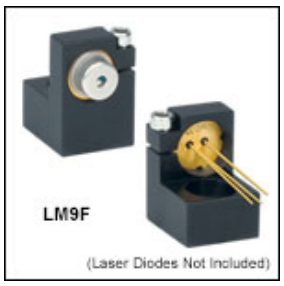
Click to Enlarge
Collimated 30 mm-Cage-Mounted Laser Diode Shown Mounted Within a 60 mm Cage System, Allowing for Rotation of the Fast Axis
Construction Details

The LM9F passive mount is compatible with our Ø5.6 mm and Ø9 mm laser diodes and allows for mounting to Ø1/2" Posts. SM05-threaded (0.535"-40) and SM1-threaded (1.035"-40) mounts are available for laser diodes in Ø5.6 mm, Ø9 mm, TO-38, and TO-46 packages. The external threading on SM-threaded mounts allows them to be used in a wide variety of SM05- or SM1-compatible optomechanics, including our Kinematic Mounts, Lens Tubes, XY Translating Mounts, 16 mm Cage Plates (SM05 compatible), and 30 mm Cage Plates (SM1 compatible). 30 mm Cage System-compatible and post-mountable cage plate mounts are also available for mounting Ø5.6 mm, Ø9 mm, and TO-3 laser diodes.

Laser Diode Temperature Warning
Please note that these diode mounts do not have any temperature regulation or temperature measurement capability, which only makes them suitable for diodes that do not require active cooling. For our selection of temperature-controlled mounts, please click here. Running a laser diode at a high operating temperature can significantly shorten its lifetime.

Hide Post-Mountable Laser Diode Holder

Post-Mountable Laser Diode Holder



The LM9F laser diode mount provides a simple solution for quick and easy mounting of Ø5.6 mm or Ø9 mm laser diodes that do not require temperature control. The diodes are secured in the mount using a top-located cap screw with a 5/64" (2 mm) hex. The included adapter for mounting Ø5.6 mm diodes is shown to the right. The Ø5.6 mm diode is secured by clamping the diode within the adapter. In addition, the #8 (M4) counterbore on this mount allows it to be secured to our Ø1/2" Posts, letting you easily set the height and direction of the laser diode.

Additionally, Thorlabs offers temperature-controlled mounts, as well as laser diode current controllers.

Click to Enlarge
LM9F with a Ø5.6 mm Adapter and Laser Diode

Part Number	Description	Price	Availability
LM9F	Ø1/2" Post-Mountable Laser Diode Mount for Ø5.6 mm and Ø9 mm Laser Diodes	$26.00	3-5 Days

Hide Laser Diode Lens Tube Mounts

Laser Diode Lens Tube Mounts

Thorlabs offers SM05-threaded (0.535"-40) and SM1-threaded (1.035"-40) lens tube mounts to accommodate laser diodes in TO-38, TO-46, Ø5.6 mm, and Ø9 mm packages. We also offer one SM05-threaded and one SM1-threaded mount that are compatible with both Ø5.6 mm and Ø9 mm packages. All of these laser diode mounts are designed such that the laser diode is aligned to the optical axis of the lens tube, enabling easy assembly of lens-tube-based setups.

The laser diode can be directly inserted into the mount and held in place with the included retaining ring (see the table to the right for details). The mounts that are compatible with Ø5.6 mm and Ø9 mm packages include an adapter that must be inserted when using a Ø5.6 mm diode.

To aid in threading the retaining ring into the mount, we recommend using our selection of spanner wrenches. Our SPW801 Adjustable Spanner Wrench can be used to secure the laser diode into any of these mounts. Alternatively, the table to the right also lists the compatible fixed spanner wrench for each mount, if available.

Each laser diode mount is equipped with internal 13/32"-40 threads that allow our ESD protection and strain relief cables to be attached.

SM-Threaded Laser Diode Mount Compatibility				
Item #	Laser Diode Package	External Mounting Threads	Compatible Spanner Wrenches	
			Mount	Laser Diode Retaining Ring
S05LM38	TO-38	SM05 (0.535"-40)	SPW801	SPW801
S05LM46	TO-46			
S05LM56	Ø5.6 mm			
S05LDM9	Ø9 mm			
S05LM9	Ø5.6 & Ø9 mm			
S1LM38	TO-38	SM1 (1.035"-40)	SPW909 SPW801	
S1LM46	TO-46			
S1LM56	Ø5.6 mm			
S1LDM9	Ø9 mm			
S1LM9	Ø5.6 & Ø9 mm			

To operate and control the mounted laser diodes, please see our line of laser diode current controllers. If your application requires mounting a temperature-

controlled laser diode into a lens tube setup, please see the LDM21 and TCLDM9 lens-tube-compatible temperature-controlled laser diode mounts for standard and high-power laser diodes, respectively.

Part Number	Description	Price	Availability
S05LM38	SM05-Threaded Mount for TO-38 Laser Diodes	$25.00	Today
S05LM46	SM05-Threaded Mount for TO-46 Laser Diodes	$28.00	Today
S05LM56	SM05-Threaded Mount for Ø5.6 mm Laser Diodes	$25.00	Today
S05LDM9	SM05-Threaded Mount for Ø9 mm Laser Diodes	$25.00	Today
S05LM9	Customer Inspired!SM05-Threaded Mount for Ø5.6 mm and Ø9 mm Laser Diodes	$24.00	Today
S1LM38	SM1-Threaded Mount for TO-38 Laser Diodes	$30.00	Today
S1LM46	SM1-Threaded Mount for TO-46 Laser Diodes	$35.00	Today
S1LM56	SM1-Threaded Mount for Ø5.6 mm Laser Diodes	$30.00	Today
S1LDM9	SM1-Threaded Mount for Ø9 mm Laser Diodes	$30.00	Today
S1LM9	SM1-Threaded Mount for Ø5.6 mm and Ø9 mm Laser Diodes	$28.00	Today

Hide Laser Diode Cage Plate Mounts

Laser Diode Cage Plate Mounts

- Cage Plates to Mount Ø5.6 mm TO Can, Ø9 mm TO Can, or TO-3 Laser Diodes
- CP1LM56(/M) and CP1LM9(/M) have 3/16"-100 Hex Adjusters for Fine Positioning (Item # F19SS075)
- Cage Plates are Part of our Cage System Collimation Kits

These cage plates provide precision mounting of the laser diode without the use of adapters, which ensures maximum centration for good beam quality and alignment to the cage system. They are fully compatible with our 30 mm cage system and can be mounted on Ø1/2" posts using the bottom-located 8-32 (M4) tapped hole.

Click for Details

Click for Details

CP1LM9 (left) and CP04 (right) Laser Diode Mounts, Each Shown Holding a Laser Diode and Mounted to a Ø1/2" Post

For the Ø5.6 mm and Ø9 mm laser diode cage plates, the distance between the laser diode and an adjacent cage plate can be precisely set using a 3/16"-100 adjuster (5/64" hex, Item # F19SS075). The laser diode is secured with a retaining ring that can be tightened using a spanner wrench. The Ø5.6 mm mount is compatible with our SPW801 spanner wrench only, while the Ø9 mm mount is compatible with the SPW301 and SPW801 spanner wrenches. To align the laser chip axis to the cage system, access ports on the front of the mount allow rotation of the laser diode using tweezers prior to fully threading the retaining ring (see photo to the right). After the laser diode is mounted, a strain relief cable can be screwed into the back of the cage plate for electrical connections.

The TO-3 cage plate can be mounted directly onto any heat sink that is designed to accept TO-3 laser packages. Two #6 counterbores allow the laser diode to be mounted to the plate. The mounting area is cut 1 mm oversized in all directions to allow adjustment of the laser for centration within the cage system. This cage plate is not compatible with our strain relief cables.

Part Number	Description	Price	Availability
CP1LM56	30 mm Cage Plate Mount for Ø5.6 mm TO Can Laser Diodes	$46.40	Today
CP1LM9	30 mm Cage Plate Mount for Ø9 mm TO Can Laser Diodes	$46.40	Today
CP04	30 mm Cage Plate Mount for TO3 Laser Diodes	$71.10	Today
CP1LM56/M	30 mm Cage Plate Mount for Ø5.6 mm TO Can Laser Diodes, Metric	$46.40	Today
CP1LM9/M	30 mm Cage Plate Mount for Ø9 mm TO Can Laser Diodes, Metric	$46.40	Today

Visit the *Passive TO Can Laser Diode Mounts* page for pricing and availability information:
http://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=366