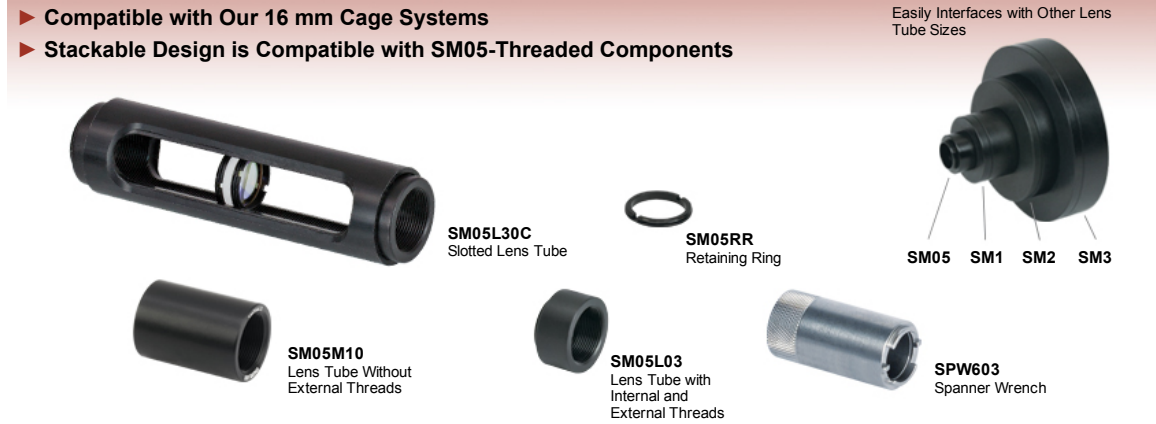


Products Home / Optomechanical Components / Lens Tube Systems / Ø1/2" Lens Tubes / Ø1/2" Lens Tubes

Ø1/2" Lens Tubes

- ▶ Directly Accepts Ø1/2" (12.7 mm) Optics
- ▶ Compatible with Our 16 mm Cage Systems
- ▶ Stackable Design is Compatible with SM05-Threaded Components



Related Items

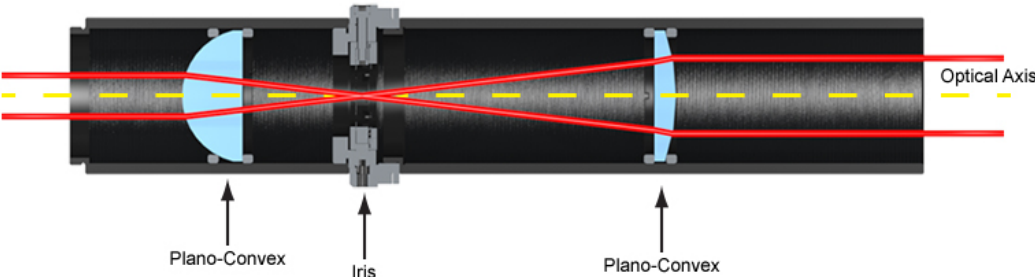


OverviewThreading SpecsFeedback

Features

- Easily Construct Multi-Element Optical Systems
- Wide Range of SM05-Compatible Optomechanical Components Available
- Directly Accepts Ø1/2" (Ø12.7 mm) Optics
- Compatible with Our [16 mm Cage Systems](#)
- Available With or Without External SM05 Threads
- Can be Used with Ø5 - Ø9 mm Optics by Purchasing a [Small Optic Adapter](#)

Lens tubes are ideal for creating compact optical subassemblies. The Ø1/2" lens tubes sold here can be used to house one or several optical elements, as shown in the diagram of a beam expander below. Optics are separated and secured by retaining rings that are positioned at the desired depth within the lens tube using our SPW603 spanner wrench. Depending on the item purchased, one or two retaining rings are included (see below for details). Additional retaining rings can be purchased separately. In addition to the Ø1/2" lens tubes featured on this page, Thorlabs also offers [Ø1"](#), [Ø30 mm](#), [Ø2"](#), and [Ø3"](#) versions, each of which is equipped with an SM series thread standard that depends on the tube diameter.



[Click to Enlarge](#)

When an engraved lens tube is attached to another lens tube, the engraving of the connected end is no longer visible.

Additional Lens Tube Sizes

[Ø1"](#)  
[Ø30 mm](#)  
[Ø2"](#)  
[Ø3"](#)

Ø1/2" Shortcuts

[Lens Tube Couplers](#)  
[SM Thread Adapters](#)  
[Lens Tube Mounts](#)  
[End Caps](#)  
[Kinematic Mounts](#)  
[Fixed Lens Mounts](#)  
[Rotational Mounts](#)  
[Translation Mounts](#)

Lens Tube Compatible Products

[Thread Adapters](#) [Terminated Fiber Adapters](#) [Collimation Package Adapters](#) [LED Mounts](#) [LD Mounts](#) [Aspheric Lens Mounts](#) [Iris, Apertures, and Shutters](#) [Alignment Tools](#)

Ø1/2" Stackable Lens Tubes



[Zoom](#)

Stackable Design Enables Multi-Element Optical Systems  
SM05-Threaded (0.535"-40) Bore Directly Accepts Ø1/2" (12.7 mm) Optics  
Accommodates Ø5 - Ø9 mm Optics by Purchasing a [Small Optic Adapter](#)  
Directly Compatible with Our [16 mm Cage Assembly Systems](#)

These stackable Ø1/2" lens tubes provide a fast and easy means for building compact optical assemblies. Their stackable design and direct interfacing with any SM05-threaded (0.535"-40) components provide flexibility for complex optomechanical assemblies. One SM05RR Retaining Ring is included with each lens tube.

Item #	L <sub>1</sub>	L <sub>2</sub>	Thread Depth
SM05L03	0.41" (10.4 mm)	0.08" (2.0 mm)	0.30" (7.6 mm)
SM05L05	0.61" (15.5 mm)		0.50" (12.7 mm)
SM05L10	1.11" (28.2 mm)		1.00" (25.4 mm)

3/17/2017

Ø1/2" Lens Tubes

Item #	L	L	Thread Depth
SM05L15	1.61" (40.9 mm)		1.50" (38.1 mm)
SM05L20	2.11" (53.6 mm)		2.00" (50.8 mm)
SM05L30	3.11" (79.0 mm)		3.00" (76.2 mm)

SM05 (0.535"-40) External Thread

SM05 (0.535"-40) Internal Thread

Retention Lip

Includes One Retaining Ring

Alternatives

Ø1", Ø2", and Ø3" Stackable Lens Tubes

Ø1" and Ø2" Lens Tube Extensions

Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal	Price	Available / Ships
	<input type="text"/>		<a href="#">SM05L03</a> SM05 Lens Tube, 0.30" Thread Depth, One Retaining Ring Included	\$13.80	✓ Today
	<input type="text"/>		<a href="#">SM05L05</a> SM05 Lens Tube, 0.50" Thread Depth, One Retaining Ring Included	\$14.10	✓ Today
	<input type="text"/>		<a href="#">SM05L10</a> SM05 Lens Tube, 1" Thread Depth, One Retaining Ring Included	\$15.10	✓ Today
	<input type="text"/>		<a href="#">SM05L15</a> SM05 Lens Tube, 1.5" Thread Depth, One Retaining Ring Included	\$16.40	✓ Today
	<input type="text"/>		<a href="#">SM05L20</a> SM05 Lens Tube, 2" Thread Depth, One Retaining Ring Included	\$20.20	✓ Today
	<input type="text"/>		<a href="#">SM05L30</a> SM05 Lens Tube, 3" Thread Depth, One Retaining Ring Included	\$24.30	✓ Today

Add To Cart

Ø1/2" Lens Tubes Without External Threads

SM05M05

SM05M10

SM05-Threaded (0.535"-40) Bore Directly Accepts Ø1/2" (12.7 mm) Optics

Accommodates Ø5 - Ø9 mm Optics by Purchasing a [Small Optic Adapter](#)

Unlike Stackable Lens Tubes, Optics can be Accessed from Both Ends

Use [Lens Tube Couplers](#) to Stack Multiple Lens Tubes

Allows Coupling of Two Externally SM05-Threaded Components

Unlike our Ø1/2" stackable lens tubes featured above, these internally threaded lens tubes do not feature a lip at one end nor do they have external SM05 threading. Therefore, optics housed inside can be accessed from both ends. To join these lens tubes end-to-end, use an [SM05T2](#) Lens Tube Coupler. Two SM05RR Retaining Rings are included with each lens tube.

SM05 (0.535"-40) Internal Thread

Includes Two Retaining Rings

Alternatives

Ø1" and Ø2" Lens Tubes Without External Threads

Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal	Price	Available / Ships
	<input type="text"/>		<a href="#">SM05M05</a> <b>Customer Inspired!</b> SM05 Lens Tube Without External Threads, 1/2" Long, Two Retaining Rings Included	\$13.80	✓ Today
	<input type="text"/>		<a href="#">SM05M10</a> <b>Customer Inspired!</b> SM05 Lens Tube Without External Threads, 1" Long, Two Retaining Rings Included	\$15.10	✓ Today
	<input type="text"/>		<a href="#">SM05M15</a> SM05 Lens Tube Without External Threads, 1.5" Long, Two Retaining Rings Included	\$15.90	✓ Today
	<input type="text"/>		<a href="#">SM05M20</a> <b>Customer Inspired!</b> SM05 Lens Tube Without External Threads, 2" Long, Two Retaining Rings Included	\$16.90	✓ Today
	<input type="text"/>		<a href="#">SM05M25</a> <b>NEW!</b> SM05 Lens Tube Without External Threads, 2.5" Long, Two Retaining Rings Included	\$17.25	✓ Today
	<input type="text"/>		<a href="#">SM05M30</a> <b>Customer Inspired!</b> SM05 Lens Tube Without External Threads, 3" Long, Two Retaining Rings Included	\$18.40	✓ Today

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Ø1/2" Slotted Lens Tubes

SM05L20C

Easy Access to Optics

Rotatable Slip Shield Protects Optics

Compatible with SM05 (0.535"-40) Threaded Components

Available in 2" (50.8 mm) and 3" (76.2 mm) Thread Depths

These stackable Ø1/2" lens tubes with side slots provide a fast and easy means for building complex optical assemblies and adjusting the optics without disassembling the setup. Optics can be inserted into the tube and locked into position using the included SM05RR retaining rings. Simply thread the first retaining ring to the desired depth, add the optic, and then use a second retaining ring to secure the optic. Optics can be manually adjusted via the side slots without the use of a spanner wrench. The rotatable slip shield included with the lens tube has an inner diameter of 0.71" (17.9 mm) and fits over the lens tube slots to prevent unwanted light from entering the system and to keep the optical setup free from debris.

THORLABS SM05L20C

The dust cover can be opened or closed by rotating it in either direction.

Alternatives

Ø1" and Ø2" Slotted Lens Tubes

Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal	Price	Available / Ships
	<input type="text"/>		<a href="#">SM05L20C</a> SM05 Slotted Lens Tube, 2" Thread Depth, 2 Retaining Rings Included	\$51.00	✓ Today

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https://www.thorlabs.com/newgrouppage9.cfm?objectgroup\_id=3306&pn=SM05L03

2/3



**SM05L30C** SM05 Slotted Lens Tube, 3" Thread Depth, 2 Retaining Rings Included



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## Ø1/2" Retaining Rings and Spanner Wrenches



SM05RR Retaining Rings Secure Ø1/2" Optics

## SM05LTRR Retaining Rings Provide Stress-Free, Light-Tight Mounting of Ø1/2" Components

### SM05PRR Plastic Retaining Rings Provide Gentler Contact with Optic Surfaces

### Spanner Wrenches Provide One-Handed Adjustment of SM05RR Retaining Rings

SPW801 Adjustable Spanner Wrench can Accommodate Diameters from 0.12" (3.0 mm) to 2.89" (73.4 mm)

Thorlabs offers three different kinds of SM05 (0.535"-40) Retaining Rings. The SM05RR is our Standard Aluminum Retaining Ring that ships with our Ø1/2" lens tubes as well as many other Thorlabs components, and is available individually and in packs of 10.



















If desired, the SM05RR can be swapped out for an SM05LTRR, which is a Retaining Ring equipped with a Buna-N O-ring designed to reduce stress on the optical component and to produce a light-tight seal. Another option is the SM05PRR, which is a plastic retaining ring that provides gentler contact with the surface of optics than our standard Ø1/2" retaining rings. Please keep in mind that due to the increased thicknesses of the SM05LTRR and SM05PRR retaining rings, the maximum optical thickness that can be housed inside our standard SM05-compatible mounts will be diminished in some cases. The clear aperture of the SM05LTRR retaining ring is also slightly diminished in comparison to the standard and plastic SM05 retaining rings.

To position and adjust these retaining rings, choose from two spanner wrench options. The SPW603 Spanner Wrench has a hollow design that enables retaining rings for our SM05 series of lens tubes to be adjusted and installed without obscuring the beam path. The handle is knurled for improved grip. For use with longer lens tubes, multiple SPW603 spanning wrenches can be stacked to extend the wrench's maximum reach. Alternatively, the SPW801 Adjustable Spanner Wrench can also be used to position any SM05 retaining rings. Please note that the SPW801 wrench can withstand a maximum torque of 80 inch pounds. In addition, we offer the SPB05 Spanner Bit, which can be used with a manual driver handle with a standard 1/4" hex socket. The SPB05 is included as part of the SPB600 Spanner Wrench Bit Kit.

Retaining Ring Clear Apertures	
Item #	Inner Diameter
SM05RR	0.44" (11.0 mm)
SM05LTRR	0.32" (8.1 mm)
SM05PRR	0.44" (11.0 mm)

<b>Alternatives</b>	<u>Ø1"</u> , <u>Ø2"</u> , and <u>Ø3"</u> Fixed Diameter Spanner Wrenches	<u>Ø1"</u> , <u>Ø2"</u> , and <u>Ø3"</u> Retaining Rings
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Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal		Price	Available / Ships
	<input type="text"/>		<a href="#">SM05RR</a>	SM05 Retaining Ring for Ø1/2" Lens Tubes and Mounts	\$4.00	✓ Today
	<input type="text"/>		<a href="#">SM05RR-P10</a>	SM05 Retaining Ring for Ø1/2" Lens Tubes and Mounts, 10 Pack	\$36.00	✓ Today
	<input type="text"/>		<a href="#">SM05LTRR</a>	SM05 Series Stress-Free Retaining Ring	\$18.80	✓ Today
	<input type="text"/>		<a href="#">SM05PRR</a>	<b>Customer Inspired!</b> SM05 Plastic Retaining Ring for Ø1/2" Lens Tubes and Mounts	\$5.10	✓ Today
	<input type="text"/>		<a href="#">SPW603</a>	SM05 Spanner Wrench, Length = 1"	\$24.50	✓ Today
	<input type="text"/>		<a href="#">SPW801</a>	Adjustable Spanner Wrench	\$98.00	✓ Today
	<input type="text"/>		<a href="#">SPW102</a>	Adjustable Spanner Wrench, Replacement Blade Set	\$28.50	✓ Today
	<input type="text"/>		<a href="#">SPB05</a>	SM05 Spanner Bit	\$24.50	✓ Today

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