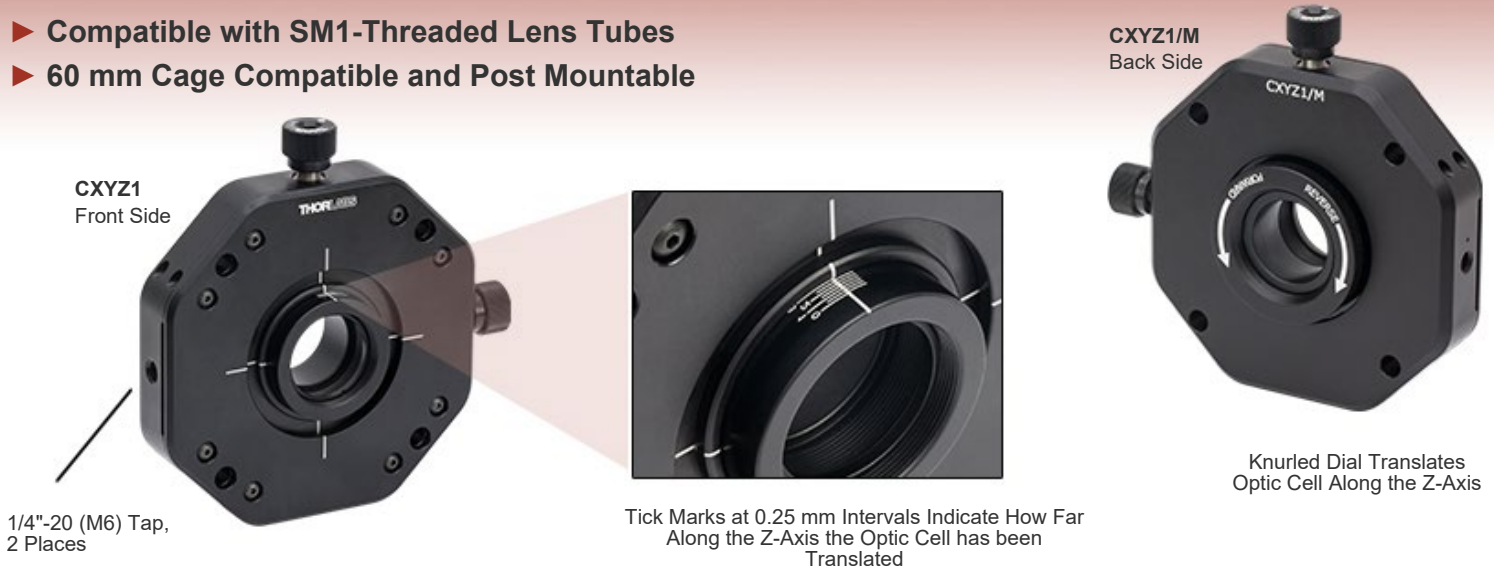<div style="border:2px solid red;">

CXYZ1/M - August 21, 2024

Item # CXYZ1/M was discontinued on August 21, 2024. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

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XYZ TRANSLATOR FOR Ø1" OPTICS

► **±2.5 mm of X and Y Travel and ±1.5 mm of Z Travel**
► **Compatible with SM1-Threaded Lens Tubes**
► **60 mm Cage Compatible and Post Mountable**

CXYZ1/M
Back Side

CXYZ1
Front Side

1/4"-20 (M6) Tap,
2 Places

Tick Marks at 0.25 mm Intervals Indicate How Far Along the Z-Axis the Optic Cell has been Translated

Knurled Dial Translates Optic Cell Along the Z-Axis

OVERVIEW

Features

- ±2.5 mm (±0.10") Travel in X and Y Axes
- ±1.5 mm (±0.06") Non-Rotating Z-Axis Travel
- Accepts Ø1" (Ø25.4 mm) Optics up to 0.39" (10.0 mm) Thick
- SM1 (1.035"-40) Threading for Compatibility with Our Extensive Line of SM1 Lens Tubes
- Compatible with 60 mm Cage Systems
- Two 1/4"-20 (M6) Tapped Holes for Right- and Left-Handed Post Mounting Orientations

The Thorlabs CXYZ1(/M) Translation Mount features X-, Y-, and Z-Axis Travel and holds Ø1" optics, up to 0.39" (10.0 mm) thick, against the back lip of the mount using the provided SM1RR retaining ring. XY functionality allows travel perpendicular to the optical axis, while the Z-axis functionality allows for compensation of focusing errors in applications such as fiber alignment or lens mounting. The optic cell has been designed to offer pure X, Y, and Z translation.

The optic cell is internally SM1 (1.035"-40) threaded and is translated along the Z-axis by rotating

Specifications	
X and Y Axis Drivers	1/4"-100 Adjusters[a]
XY Travel	±2.5 mm (±0.10") per Axis
XY Adjustment Resolution	254 µm/rev
Z-Axis Driver	500 µm/rev Adjustment Dial[b]
Z Travel	±1.5 mm (±0.06") (Alignment Tick Marks at 0.25 mm Intervals)
Clear Aperture[c]	Ø0.90" (Ø22.9 mm)
Optic Thickness (Max)	0.39" (10.0 mm)
Optic Mounting	Internal SM1 (1.035"-40) Thread
Post Mounting[d]	Two 1/4"-20 (M6) Tapped Holes (Allows Right- and Left-Handed Orientations)

a. Can be Locked by Replacing the Adjuster Knobs with LN25100 Locking Nuts (Sold Separately)
b. Can be Locked Using SM30RR Retaining Rings (Sold Separately)
c. When Using the Included SM1RR Retaining Ring
d. Can be Directly Mounted to Our Ø1" Pedestal Pillar Posts Using a 1/4"-20 (M6) Setscrew
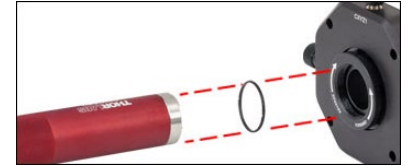
Click to Enlarge
[APPLIST]
[APPLIST]
The CXYZ1(/M) can Easily be Adapted to a 30 mm Cage System Using the LCP02 60 mm to 30 mm Cage Plate Adapter

the zoom adjustment dial on the back of the mount. The optic cell does not rotate during translation. An engraving is included on the knurled dial, indicating the direction that it must be turned for translating the optic cell forward and backwards. Laser-engraved tick marks spaced 0.25 mm apart are included on the optic cell for indicating the Z-axis position. The position can be locked using an SM30RR Retaining Ring (sold separately); see the image to the right for more details.

X and Y translation of the optic cell is actuated using the two 1/4"-100 fine adjusters, which can be locked using our LN25100 Locking Nuts (sold separately). The adjuster knobs must be removed in order to properly engage the threads when using locking nuts. Horizontal and vertical witness lines provide a reference for the XY alignment.

Click to Enlarge
The Z-axis position can be locked by threading an SM30RR retaining ring (sold separately) onto the internal threads of the rear knurled knob. This can be done using the SPW607 Spanner Wrench.

The mount has four through holes for use with our Ø6 mm ER cage rods, making it compatible with our 60 mm Cage Systems. Each cage rod mounting hole has two side-located 4-40 locking setscrews, which use a 0.05" hex key. The mount can easily be adapted to 30 mm Cage Systems by using the LCP02 Cage System Size Adapter, as shown in the image to the left. Two 1/4"-20 (M6) tapped holes are also provided on opposite sides of the XY adjusters for post mounting in right- or left-handed orientations.

Thorlabs also offers a 30 mm cage compatible XYZ translation mount for Ø1/2" optics, available here.

XYZ Translation Mounts Selection Guide	XYZ Translation Mount for Ø1/2" Optics	XYZ Translation Mount for Ø1" Optics

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CAGE OVERVIEW
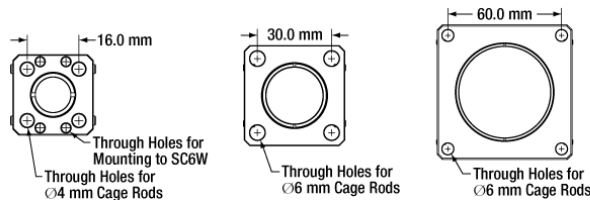
Cage System Overview

The Cage Assembly System provides a convenient way to construct large optomechanical systems with an established line of precision-machined building blocks designed for high flexibility and accurate alignment.

16 mm, 30 mm, and 60 mm Cage System Standards

Thorlabs offers three standards defined by the center-to-center spacing of the cage assembly rods (see image below). The 16 mm cage, 30 mm cage, and 60 mm cage standards are designed to accommodate Ø1/2", Ø1", and Ø2" optics, respectively. Specialized cage plates that allow smaller optics to be directly inserted into our larger cage systems are also available.

Standard Threads

The flexibility of our Cage Assembly System stems from well-defined mounting and thread standards designed to directly interface with a wide range of specialized products. The three most prevalent thread standards are our SM05 Series (0.535"-40 thread), SM1 Series (1.035"-40 thread), and SM2 Series (2.035"-40 thread), all of which were defined to house the industry's most common optic sizes. Essential building blocks, such as our popular lens tubes, directly interface to these standards.

An example of the standard cage plate measurements determining cage system compatibility.

Standard Cage System Measurements			
Cage System	**16 mm**	**30 mm**	**60 mm**
Thread Series	SM05	SM1	SM2
Rod to Rod Spacing	16 mm (0.63")	30 mm (1.18")	60 mm (2.36")
Total Length	25 mm (0.98")	41 mm (1.60")	71.1 mm (2.80")

Cage Components		
Cage Rods	16 mm	These rods are used to connect cage plates, optic mounts, and other components in the cage system. The SR Series Cage Rods are compatible with our 16 mm cage systems, while the 30 mm and 60 mm cage systems use ER Series Cage Rods.
	30 mm	
	60 mm	
Cage Plates	16 mm	These serve as the basic building blocks for a cage system. They may have SM-threaded central bores, smooth bores sized for industry standard optics or to accommodate the outer profile of our SM Series Lens Tubes, or specialized bores for other components such as our FiberPorts.
	30 mm	
	60 mm	
Optic Mounts	16 mm	Thorlabs offers fixed, kinematic, rotation, and translation mounts specifically designed for our Cage Systems.
	30 mm	
	60 mm	
Cage Cubes	16 mm	These cubes are useful for housing larger optical components, such as prisms or mirrors, or optics that need to sit at an angle to the beam path, such as beamsplitters. Our cage cubes are available empty or with pre-mounted optics.
	30 mm	
	60 mm	
Replacement Setscrews		Replacement setscrews are offered for our 16 mm (SS4B013, SS4B025, and SS4B038) and 30 mm (SS4MS5 and SS4MS4) cage systems products.
Post and Breadboard Mounts and Adapters		Mounting options for cage systems can be found on our Cage System Construction pages. Cage Systems can be mounted either parallel or perpendicular to the table surface.
Size Adapters		Cage System Size Adapters can be used to integrate components from different cage system and threading standards.
Specialized Components		Thorlabs also produces specialized cage components, such as Filter Wheels, a HeNe Laser Mount, and a FiberPort Cage Plate Adapter, allowing a wide range of our products to be integrated into cage-mounted optical systems. Explore our Cage Systems Visual Navigation Guide to see the full range of Thorlabs' cage components.

Part Number	Description	Price	Availability
CXYZ1/M	Customer Inspired! XYZ Translation Mount for Ø1" Optics, M6 Taps	$509.62	Today
CXYZ1	Customer Inspired! XYZ Translation Mount for Ø1" Optics, 1/4"-20 Taps	$509.62	Today

Visit the *XYZ Translator for Ø1" Optics* page for pricing and availability information: