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CPVM - November 11, 2021

Item # CPVM was discontinued on November 11, 2021. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

VERTICAL MOUNTING PLATE

- ▶ Vertically Mount Cage Systems to a Breadboard
- ▶ 30 mm and 60 mm Cage Compatible Options

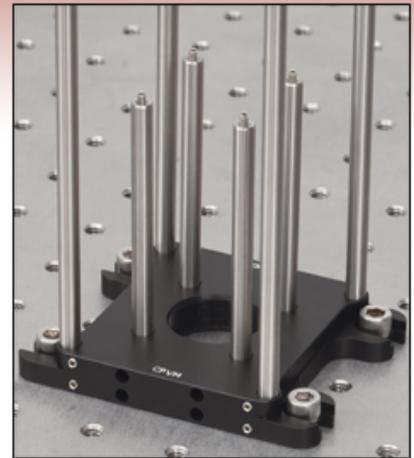
Application Idea



CPVM
Vertically Mounts 30 mm
and 60 mm Cage Systems



UBP2
Vertically Mounts
30 mm Cage Systems



See the Application Tab for Other Ideas

OVERVIEW

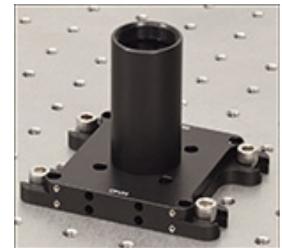
Features

- Vertically Mounts a Cage System to an Optical Table
- 30 mm and 60 mm Cage System Compatible Options
- Counterbored Slots for Mounting to Imperial and Metric Breadboards

These mounting plates allow a cage system to be mounted vertically on an optical table surface. Each plate is attached to an optical table using a counterbored slot, making them compatible with metric and imperial tables and breadboards.

The CPVM mounting plate is compatible with 30 mm and 60 mm cage systems and has a footprint of approximately 3.0" x 2.8" (50.5 mm x 71.1 mm). This plate uses through holes with side-located 4-40 locking setscrews to attach ER Cage Rods. A center-located internally SM1-threaded through hole allows the use of our line of externally SM1-threaded components.

The UB2(/M) mounting plate is compatible with 30 mm cage systems and has a footprint of 2.5" x 2.5" or 65 mm x 65 mm. This plate utilizes four 4-40 tapped holes to attach ER Cage Rods. A center-located counterbored slot for 1/4" (M6) cap screws allows for rotation and translation of the plate. An array of 1/4"-20 (M6) and 8-32 (M4) mounting holes are also available for mounting other optical components, such as our optical post assemblies. Please see below for an application shot showing a 30 mm cage system vertically mounted using this base plate.

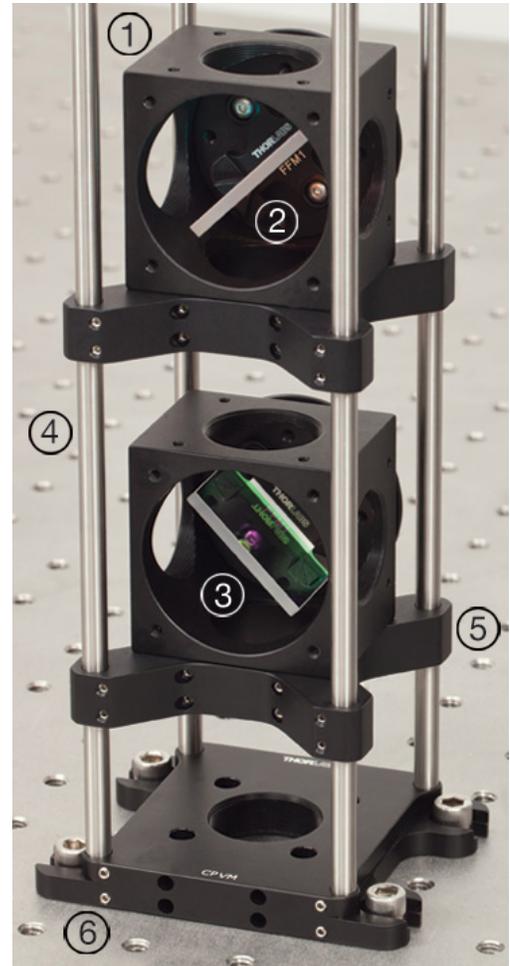


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 The CPVM Mounting Plate is Compatible
 with SM1-Threaded Components

Dual-Height Beam Director

The CPVM Vertical Mounting Plate can be used to construct vertical cage systems on both imperial and metric breadboards. The photo below depicts a dual-height beam director mounted to an optical table with the CPVM.

Item #	Quantity	Image	Description
C4W	2		30 mm Cage Cube ①
B3C	2		Rotatable Platform (Located on the Back Side of the Cage Cubes)
FFM1	2		Dichroic Filter Mount ②
DMLP	2		Dichroic Filter ③
ER12	4		12" Cage Rod ④
LCP02	2		30 mm to 60 mm Cage Plate Adapter ⑤
SM1T2	2		SM1 (1.035"-40) Coupler (Used to Attach the C4W Cage Cube and LCP02 Cage Plate Adapter)
CPVM	1		Vertical Cage Mount ⑥



CAGE OVERVIEW

Cage System Overview

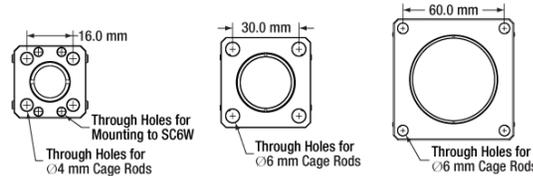
The Cage Assembly System provides a convenient way to construct large optomechanical systems with an established line of precision-machined building blocks designed for high flexibility and accurate alignment.

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 (2.8")

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	
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.

Vertical Mounting Plate for 30 mm and 60 mm Cage Systems

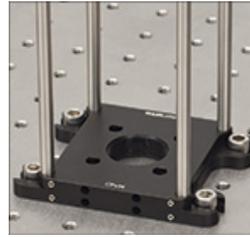


- ▶ Vertically Mounts 30 mm and 60 mm Cage Systems to an Optical Table
- ▶ SM1-Threaded Mounting Hole
- ▶ Counterbored Slots for Mounting to Imperial and Metric Breadboards

The CPVM Vertical Mounting Plate mounts a cage system vertically on an optical table surface. Side-located, counterbored slots can be used to securely mount the plate onto either an imperial or metric breadboard.

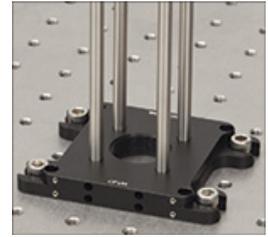
The plate has a total of eight holes on the top surface, which accept our ER Cage Rods. Four of the holes are placed on 60 mm centers for constructing 60 mm Cage Systems. Another set of four holes, on 30 mm centers, are for constructing 30 mm Cage Systems. The ER rods are held in place by sixteen side-located 4-40 setscrews, eight of which are inset into the side of the plate to secure ER rods for a 30 mm cage system. The other eight visible setscrews secure ER rods for a 60 mm cage system.

An SM1-threaded (1.035"-40) hole in the middle of the plate makes the CPVM mounting plate compatible with all of Thorlabs' SM1-threaded components.



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Compatible with 60 mm Cage Systems



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Compatible with 30 mm Cage Systems

Part Number	Description	Price	Availability
CPVM	Customer Inspired! Vertical Cage System Mounting Plate	\$46.54	Lead Time

Vertical Mounting Plate for 30 mm Cage Systems



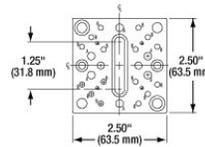
- ▶ Vertically Mounts 30 mm Cage Systems to an Optical Table
- ▶ 1.25" (31.8 mm) Long Counterbored Slot for 1/4" (M6) Cap Screws Allows for Rotation and Translation of the Cage System
- ▶ Other Tapped Holes for General Mounting Applications

The UBP2(M) Universal Base Plate mounts a 30 mm cage system vertically on an optical table surface. ER Cage Rods are attached using the four 4-40 tapped holes located around the center counterbored slot.

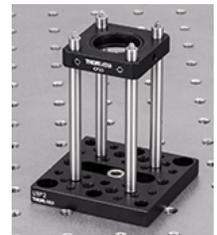
The 1.25" (31.8 mm) long counterbored slot for 1/4" (M6) cap screws is centrally located and allows 360° rotation and translation of the attached cage system. This allows users to mount various cage components in a wide array of orientations outside of what is dictated by the standard 1" (25 mm) hole pattern.

An array of 1/4"-20 (M6) and 8-32 (M4) tapped mounting holes are available for mounting components in various orientations.

Two Counterbored holes for both 1/4" (M6) and #8 (M4) cap screws are also located on both sides of the base plate for mounting optical post assemblies.



Click for Details
Mechanical Drawing



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UBP2 Vertically Mounting a
30 mm Cage System

Part Number	Description	Price	Availability
UBP2/M	Customer Inspired! Universal Base Plate, 65 mm x 65 mm x 10 mm, Metric	\$38.69	Today
UBP2	Customer Inspired! Universal Base Plate, 2.5" x 2.5" x 3/8"	\$38.69	Today