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

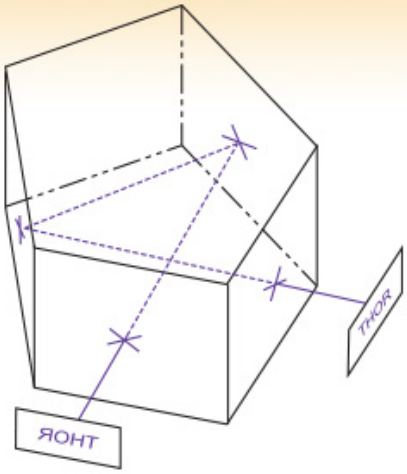
THORLABS

PS932M - Aug. 26, 2016

Item # PS932M was discontinued on Aug. 26, 2016. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

- **90° Deviation of Beam without Changing Polarization Handedness**
- **N-BK7 Prism with Aluminum-Coated Reflective Faces**
- **30 mm Cage Cube Mount with SM1-Threaded Ports**

PS932M

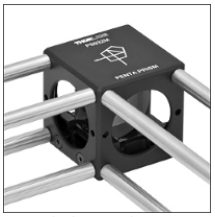


OVERVIEW

Features

- Deviate Beams without Reversal or Inversion of the Beam Profile
- 90° Beam Deviation is Insensitive to Beam/Prism Alignment
- N-BK7 Prism with Aluminum-Coated Reflective Faces
- Post Mountable and 30 mm Cage System Compatible

Click to Enlarge
CCM1-PS932/M two SM1-threaded ports and has two closed sides to minimize light leakage.



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Mounted Penta Prisms are Compatible with Thorlabs' 30 mm Cage System

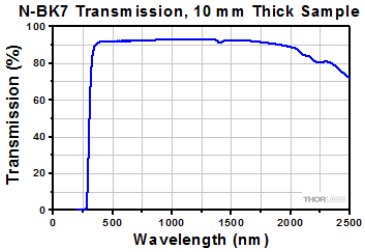
Penta prisms deviate a beam by 90° degrees without reversing or inverting an image (i.e., without changing the polarization handedness). In addition the 90° beam deviation is not dependent on a precise alignment of the prism with respect to the incoming beam or image, making penta prisms an effective alternative to turning mirrors. The only limitation on alignment is the clear aperture of the housing.

Thorlabs' Mounted Penta Prism is fabricated from N-BK7 with two aluminized reflective faces protected by an inconel and black paint overcoat. It features a clear aperture of >Ø12 mm and is mounted inside a standard 30 mm cage system cage cube. The prism is epoxied within a cage cube mount and cannot be removed. The housing provides an 8-32 (M4) tap for post mounting, SM1-threaded (1.035"-40) input and output ports, and four 4-40-tapped holes for cage rods on the entrance and exit faces. The PS932M features four SM1-threaded ports, while the CCM1-PS932/M has SM1-threaded ports only at the exit and entrance faces of the prism. Any Ø1" lens tube cap can be used to close off the unused ports in the PS932M. The penta prism cage cube can also be connected to other cage cubes using cage rods and ERSCA adapters. For a complete selection of our cube-mounted optics please see the *Mounted Optics Guide* tab.

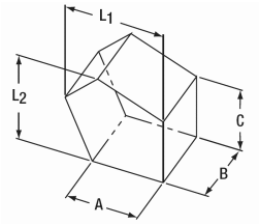
We also offer 10, 20, 40, and 60 mm unmounted penta prisms. Empty 30 mm cage cubes are available for mounting our 20 mm unmounted penta prism.

Specifications	
Prism Material	N-BK7[a]
Unmounted Prism	PS932
Reflective Coating	Aluminum with Inconel and Black Paint Overcoat
Clear Aperture	>Ø12 mm[b]
Surface Flatness	λ/10 at 633 nm
Surface Quality	40-20 Scratch-Dig
Angular Tolerances	±1 arcmin
Beam Deviation	90° ± 1 arcmin
Prism Dimensions	A = B = C = 20 mm $L_1 = L_2 = 28.3$ mm
Dimensional Tolerance	±0.1 mm

- Click Link for Detailed Specifications on the Substrate Glass
- The clear aperture of the mounted prism is limited by the housing.



Click to Enlarge
Click to Download Data

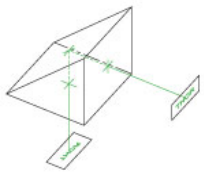
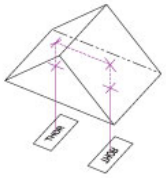
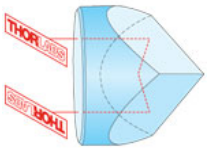
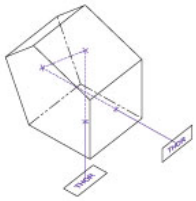
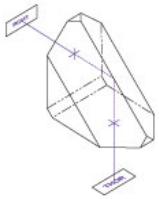
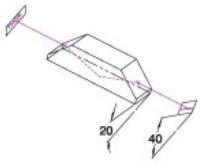
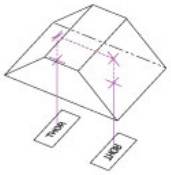


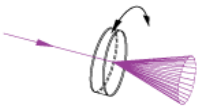
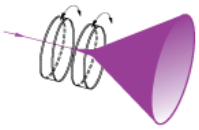
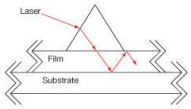
Prism Dimension Schematic

Selection Guide for Prisms

Thorlabs offers a wide variety of prisms, which can be used to reflect, invert, rotate, disperse, steer, and collimate light. For prisms and substrates not listed below, please contact Tech Support.

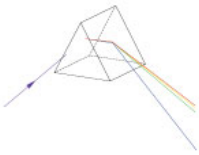
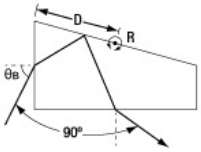
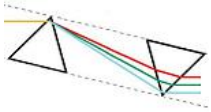
Beam Steering Prisms

Prism	Material	Deviation	Invert	Reverse or Rotate	Illustration	Applications
Right Angle Prisms	N-BK7, UV Fused Silica, Germanium, Calcium Fluoride, or Zinc Selenide	90°	90°	No		90° reflector, independent of entrance beam angle. Used in optical systems such as telescopes and periscopes.
		180°	180°	No		180° reflector, independent of entrance beam angle. Acts as a non-reversing mirror and can be used in binocular configurations.
Retroreflectors	N-BK7	180°	180°	No		180° reflector, independent of entrance beam angle. Beam alignment and beam delivery. Substitute for mirror in applications where orientation is difficult to control.
Penta Prisms and Mounted Penta Prisms	N-BK7	90°	No	No		90° reflector, without inversion or reversal of the beam profile. Can be used for alignment and optical tooling.
Roof Prisms	N-BK7	90°	90°	180° Rotation		90° reflector, inverted and rotated (deflected left to right and top to bottom). Can be used for alignment and optical tooling.
Unmounted Dove Prisms and Mounted Dove Prisms	N-BK7	No	180°	2x Prism Rotation		Dove prisms may invert, reverse, or rotate an image based on which face the light is incident on. Prism in a beam rotator orientation.
		180°	180°	No		Prism acts as a non-reversing mirror.

						Same properties as a retro-reflector or right angle (180° orientation) prism in an optical setup.
Wedge Prisms	N-BK7	Models Available from 2° to 10°	No	No		Beam steering applications. By rotating one wedged prism, light can be steered to trace the circle defined by 2 times the specified deviation angle.
			No	No		Variable beam steering applications. When both wedges are rotated, the beam can be moved anywhere within the circle defined by 4 times the specified deviation angle.
Coupling Prisms	Rutile (TiO_2) or GGG	Variable[a]	No	No		High index of refraction substrate used to couple light into films. Rutile used for $n_{film} > 1.8$ GGG used for $n_{film} < 1.8$

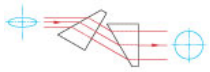
- Depends on angle of incidence and index of refraction

Dispersive Prisms

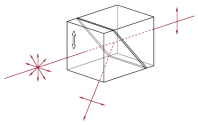
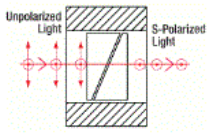
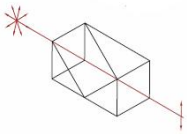
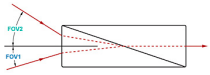
Prism	Material	Deviation	Invert	Reverse or Rotate	Illustration	Applications
Equilateral Prisms	F2, N-SF11, Calcium Fluoride, or Zinc Selenide	Variable[a]	No	No		Dispersion prisms are a substitute for diffraction gratings. Use to separate white light into visible spectrum.
Pellin Broca Prisms	N-BK7, UV Fused Silica, or Calcium Fluoride	90°	90°	No		Ideal for wavelength separation of a beam of light, output at 90°. Used to separate harmonics of a laser or compensate for group velocity dispersion.
Dispersion Compensating Prism Pairs	Fused Silica, Calcium Fluoride, SF10, or N-SF14	Variable Vertical Offset	No	No		Compensate for pulse broadening effects in ultrafast laser systems. Can be used as an optical filter, for wavelength tuning, or dispersion compensation.

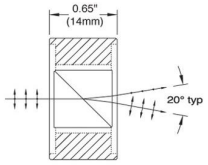
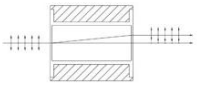
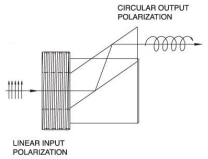
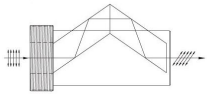
- Depends on angle of incidence and index of refraction

Beam Manipulating Prisms

Prism	Material	Deviation	Invert	Reverse or Rotate	Illustration	Applications
Anamorphic Prism Pairs	N-KZFS8 or N-SF11	Variable Vertical Offset	No	No		Variable magnification along one axis. Collimating elliptical beams (e.g., laser diodes) Converts an elliptical beam into a circular beam by magnifying or contracting the input beam in one axis.

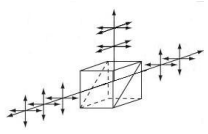
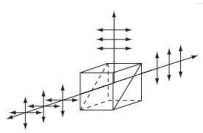
Polarization Altering Prisms

Prism	Material	Deviation	Invert	Reverse or Rotate	Illustration	Applications
Glan-Taylor, Glan-Laser, and α-BBO Glan-Laser Polarizers	Glan-Taylor: Calcite Glan-Laser: α-BBO or Calcite	*p*-pol. - 0° *s*-pol. - 112°[a]	No	No		Double prism configuration and birefringent calcite produce extremely pure linearly polarized light. Total Internal Reflection of *s*-pol. at the gap between the prism while *p*-pol. is transmitted.
Rutile Polarizers	Rutile (TiO_2)	*s*-pol. - 0° *p*-pol. absorbed by housing	No	No		Double prism configuration and birefringent rutile (TiO_2) produce extremely pure linearly polarized light. Total Internal Reflection of *p*-pol. at the gap between the prisms while *s*-pol. is transmitted.
Double Glan-Taylor Polarizers	Calcite	*p*-pol. - 0° *s*-pol. absorbed by housing	No	No		Triple prism configuration and birefringent calcite produce maximum polarized field over a large half angle. Total Internal Reflection of *s*-pol. at the gap between the prism while *p*-pol. is transmitted.
Glan Thompson Polarizers	Calcite	*p*-pol. - 0° *s*-pol. absorbed by housing	No	No		Double prism configuration and birefringent calcite produce a polarizer with the widest field of view while maintaining a high extinction ratio. Total Internal Reflection of *s*-pol. at the gap between the prism while *p*-pol. is transmitted.

Wollaston Prisms and Wollaston Polarizers	Calcite	Symmetric *p*-pol. and *s*-pol. deviation angle	No	No		Double prism configuration and birefringent calcite produce the widest deviation angle of beam displacing polarizers. *s*-pol. and *p*-pol. deviate symmetrically from the prism. Wollaston prisms are used in spectrometers and polarization analyzers.
Beam Displacing Prisms	Calcite	2.7 or 4.0 mm Beam Displacement	No	No		Single prism configuration and birefringent calcite separate an input beam into two orthogonally polarized output beams. *s*-pol. and *p*-pol. are displaced by 2.7 or 4.0 mm. Beam displacing prisms can be used as polarizing beamsplitters where 90^{o} separation is not possible.
Fresnel Rhomb Retarders	N-BK7	Linear to circularly polarization Vertical Offset	No	No		λ/4 Fresnel Rhomb Retarder turns a linear input into circularly polarized output. Uniform λ/4 retardance over a wider wavelength range compared to birefringent wave plates.
		Rotates linearly polarized light 90°	No	No		λ/2 Fresnel Rhomb Retarder rotates linearly polarized light 90°. Uniform λ/2 retardance over a wider wavelength range compared to birefringent wave plates.

- s-polarized light is not pure and contains some p-polarized reflections.

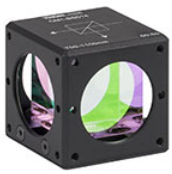
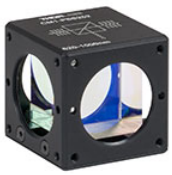
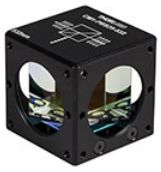
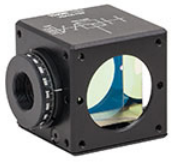
Beamsplitter Prisms

Prism	Material	Deviation	Invert	Reverse or Rotate	Illustration	Applications
Beamsplitter Cubes	N-BK7	50:50 splitting ratio, 0° and 90° *s*- and *p*- pol. within 10% of each other	No	No		Double prism configuration and dielectric coating provide 50:50 beamsplitting nearly independent of polarization. Non-polarizing beamsplitter over the specified wavelength range.
Polarizing Beamsplitter Cubes	N-BK7, UV Fused Silica, or N-SF1	*p*-pol. - 0° *s*-pol. - 90°	No	No		Double prism configuration and dielectric coating transmit *p*-pol. light and reflect *s*-pol. light. For highest polarization use the transmitted beam.

MOUNTED OPTICS GUIDE

30 mm Cage-Cube-Mounted Optics Selection Guide

The table below provides links to all of our 30 mm Cage-Cube-Mounted optics. For our selection of 16 mm Cage-Cube-Mounted Optics, please see our 16 mm Cage Systems guide.

		
Non-Polarizing Beamsplitter Cube	Polarizing Beamsplitter Cube	High-Power Polarizing Beamsplitter Cube
		
Pellicle Beamsplitters	Laser Line Polarizing Beamsplitter Cube	Circular / Variable Polarizers
		
Penta Prisms	Turning Mirrors	Variable Beamsplitters / Attenuators

30 mm Cage Cube Empty Optic Mounts Selection Guide

	
Rectangular Dichroic Mirrors and Filters	Empty Compact 30 mm Cage Cube

Part Number	Description	Price	Availability
CCM1-PS932/M	**Customer Inspired!30 mm Cage Cube-Mounted Penta Prism, 12 mm x 14 mm Clear Aperture, M4 Tap**	**$150.00**	**Today**
PS932M	**30 mm Cage Cube-Mounted Penta Prism, 12 mm x 14 mm Clear Aperture**	**$150.00**	**Lead Time**

Visit the *Mounted Penta Prism* page for pricing and availability information:
https://www.thorlabs.com/newgrouppage9.cfm?objectgroup_id=6827