

Broadband Adjustable Isolators (IO-NIR Series)

For gas, dye, semiconductor and solid-state lasers, Broadband Adjustable Isolators can be tuned over the designated wavelength range. Our patented tuning technique (4,804,256) retains maximum transmission and isolation over the specified range, while total Faraday rotation is fixed at 45°. The adjustment mechanism moves the Faraday rotator rod in the axial hole in the magnet, thus controlling the length of the Faraday rod that is exposed to the magnetic field. Faraday rotation is directly proportional to the product of length times field (LxH).



Extended Range Isolators
for Ti:Sapphire Lasers.

380nm TO 520nm Broadband Adjustable Isolators (IO-UVS Series)

Catalog Number	Aperture	Use/tune between	Transmittance	Isolation
IO-5-UVS-LP	4.7 mm	380-420 nm	75-80%*	33-40dB
IO-5-BLG-LP	4.7 mm	420-515 nm	78-90%*	36-40dB
IO-5-UVS-HP	4.7 mm	380-420 nm	75-80%*	33-40dB
IO-5-BLG-HP	4.7 mm	420-520 nm	76-87%*	36-40dB

*Transmittance varies with wavelength.

420nm TO 790nm Broadband Adjustable Isolators (IO-BLG Series)

Catalog Number	Aperture	Use/tune between	Transmittance	Isolation
IO-5-BLG-LP	4.7 mm	420-515 nm	78-90%	36-40dB
IO-5-VIS-LP	4.7 mm	510-650 nm	~93%	36-40dB
IO-5-VNR-LP	4.7 mm	610-800 nm	~93%	36-40dB
IO-5-BLG-HP	4.7 mm	420-520 nm	76-87%	36-40dB
IO-5-VIS-HP	4.7 mm	510-650 nm	~88%	38-42dB
IO-5-VNR-HP	4.7 mm	610-790 nm	~90%	38-42dB

610nm TO 1080nm Broadband Adjustable Isolators (IO-NIR, etc, Series)

Catalog Number	Aperture	Use/tune between	Transmittance	Isolation
IO-5-VNR-LP	4.7 mm	610-800 nm	~93%	36-40 dB
IO-5-NIR-LP	4.7 mm	700-925 nm	~93%	36-40 dB
IO-8-NIR-LP	7.8 mm	700-925 nm	~93%	33-38 dB
IO-10-NIR-LP	9.5 mm	700-925 nm	~93%	33-38 dB
IO-5-VNR-HP	4.7 mm	630-790 nm	~92%	38-42 dB
IO-5-NIR-HP	4.7 mm	750-900 nm	~92%	38-42 dB
IO-8-NIR-HP	7.8 mm	750-900 nm	≥ 91%	33-42 dB
IO-10-NIR-HP	9.5 mm	750-900 nm	≥ 91%	33-39 dB
IO-5-TIS2-HP	4.7 mm	780-1000 nm	≥ 91%	≥ 39 dB
IO-5-TIS3-HP	4.7 mm	910-1080 nm	≥ 91%	≥ 39 dB

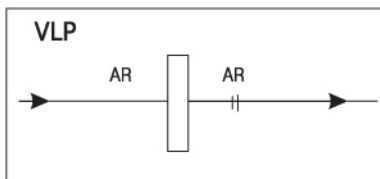
780nm TO 1080nm Broadband Adjustable Isolators (IO-NIR Series)

Catalog Number	Aperture	Use between	Transmittance	Isolation
IO-5-TIS2-HP	4.7 mm	780-1000 nm	≥ 91%	≥ 39%
IO-5-TIS3-HP	4.7 mm	910-1080 nm	≥ 91%	≥ 39%

Types of Polarizers and Power Limits

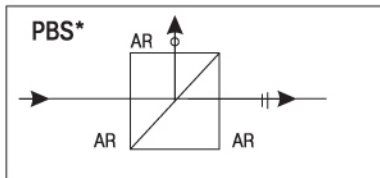
Number	Type of Polarizer	CW	Pulsed
VLP	Dichroic thin plate	25 W/cm ²	300 kW/cm ²
PBS	Polarizing B/S Cube	13 W/cm ²	-
LP	Air-spaced Calcite	100 W/cm ²	25 MW/cm ²
HP	Air-spaced Calcite	500 W/cm ²	150 MW/cm ²
HP-YAG	Air-spaced Calcite	750 W/cm ²	200 MW/cm ²
VHP	Brewster's Angle Plate	20 kW/cm ²	1 GW/cm ²

Note : Pulsed measurements made at 1064nm 20ns pulse width 20Hz



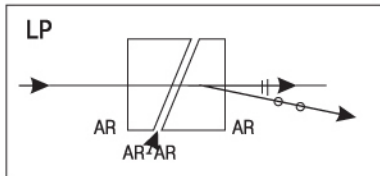
VLP Polarizers

- Thin glass plate
- AR Coated
- Extinction³ ≥ 45 dB
- Dichroic Polarizer
- Transmittance³ ≥ 95% ($\lambda > 1250\text{nm}$)
- Absorbs unwanted polarization



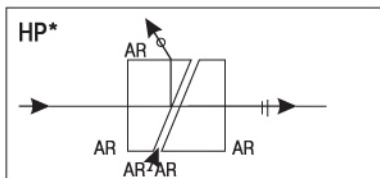
*PBS Polarizers

- Cemented prism beamsplitter
- AR Coated
- Extinction³ ≥ 33 dB
- Energy Injection at 90°
- Transmittance/reflectance³ ≥ 95%



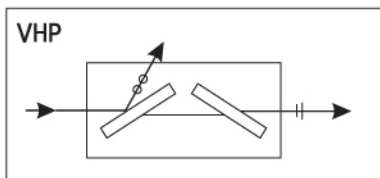
LP Polarizers

- Air-spaced design
- Extinction³ ≥ 53dB
- Transmittance³ ≥ 98%
- AR Coated



*HP Polarizers

- Air-spaced design
- Extinction³ ≥ 53dB
- Transmittance³ ≥ 98%
- AR Coated



VHP Polarizers

- Double dielectric Brewster's Plate
- Highest power damage resistance
- AR coated
- Transmittance³ ≥ 96%
- Extinction³ ≥ 40dB

*Access to beam through side window

The PBS and HP series allow access to the laser beam via the side window.

This entry/exit face is used to sample the rejected energy, or to inject energy into the beam.

The PBS is a cemented beamsplitter cube and therefore is power limited. All faces are AR coated.