

Fixed Narrowband “Aspirin Tablet” Isolators (IO-D Series)

The IO-D Series “Aspirin Tablet” Isolators are designed for applications requiring a very small Isolator. These Isolators utilize BIG (bismuth-iron-garnet) film as the Faraday rotating material. To retain the very small size, dichroic Very Low Power Polarizers are used. Isolator bodies are Aluminum or Stainless Steel. Stainless steel bodies use approved zero outgassing epoxies for vacuum environment applications. VLP Polarizers absorb the unwanted polarization vector, and are therefore limited in laser power capability.



760nm TO 850nm Fixed Narrowband “Aspirin Tablet” Isolators

Catalog Number	Aperture	Select λ Between	Use Between	Transmittance	Isolation	Max Power (cw)
IO-D- λ	1.75 mm	760-810 nm ²⁾	± 6 nm	48-55%	≥ 38 dB	80 mW
IO-D-830 ¹⁾	1.75 mm	830 nm ²⁾	± 6 nm	~35%	≥ 38 dB	60 mW
IO-D-850 ¹⁾	1.75 mm	850 nm ²⁾	± 6 nm	~25%	≥ 38 dB	50 mW

¹⁾ IO-D isolators have VLP polarizers. Proper alignment of VLP polarizers is required because of absorption concerns.

²⁾ Other wavelengths are also available.

1053nm TO 1083nm Fixed Narrowband “Aspirin Tablet” Isolators

Catalog Number	Aperture	Select λ between	Bandwidth	Transmittance	Isolation	Max Power (cw)
IO-D-1053 ¹⁾	1.75 mm	1053 nm ²⁾	± 6 nm	$\geq 70\%$	≥ 42 dB	150 mW
IO-D-1064 ¹⁾	1.75 mm	1064 nm ²⁾	± 6 nm	$\geq 80\%$	≥ 42 dB	500 mW
IO-D-1083 ¹⁾	1.75 mm	1083 nm ²⁾	± 6 nm	$\geq 85\%$	38-43 dB	1 W

¹⁾ IO-D isolators have VLP polarizers. Proper alignment of VLP polarizers is required because of absorption concerns.

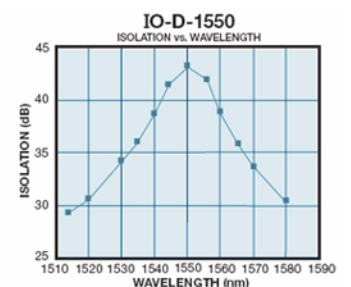
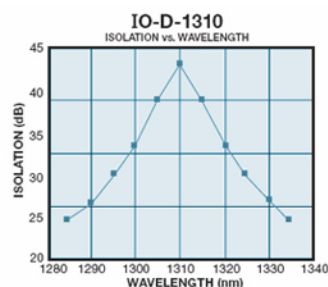
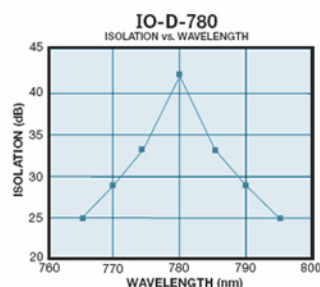
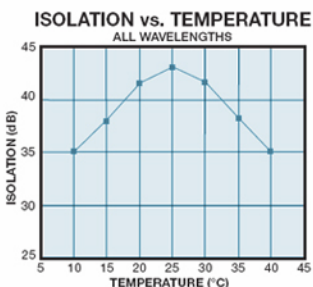
²⁾ Other wavelengths are also available.

1290nm TO 1660nm Fixed Narrowband “Aspirin Tablet” Isolators

Catalog Number	Aperture	Select λ between	Use between	Transmittance	Isolation	Max Power (cw)
IO-D- λ ¹⁾	1.75 mm	1290-1325 nm ²⁾	± 20 nm	~96%	≥ 40 dB	1 W
IO-D- λ ¹⁾	1.75 mm	1450-1660 nm ²⁾	± 20 nm	~96%	≥ 40 dB	1 W
IO-D-1550-SS ¹⁾	1.70 mm	1550 nm ²⁾	± 20 nm	~96%	≥ 40 dB	1 W

¹⁾ IO-D isolators have VLP polarizers. Proper alignment of VLP polarizers is required because of absorption concerns.

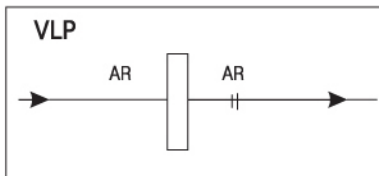
²⁾ Other wavelengths are also available.



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

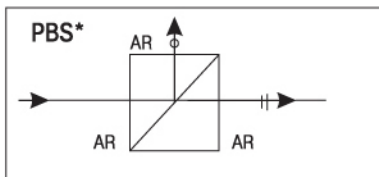
Note : Pulsed measurements made at 1064nm 20ns pulse width 20Hz



VLP Polarizers

- Thin glass plate
- AR Coated
- Extinction³ ≥ 45 dB

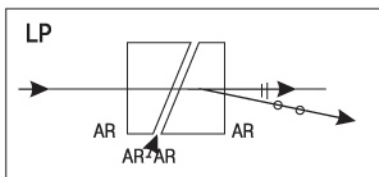
- Dichroic Polarizer
- Transmittance³ ≥ 95% ($\lambda > 1250\text{nm}$)
- Absorbs unwanted polarization



*PBS Polarizers

- Cemented prism beamsplitter
- AR Coated
- Extinction³ ≥ 33 dB

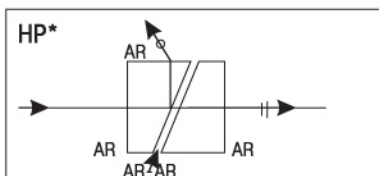
- Energy Injection at 90°
- Transmittance/reflectance³ ≥ 95%



LP Polarizers

- Air-spaced design
- Extinction³ ≥ 53dB

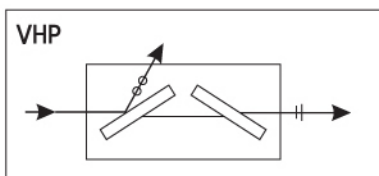
- Transmittance³ ≥ 98%
- AR Coated



*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.