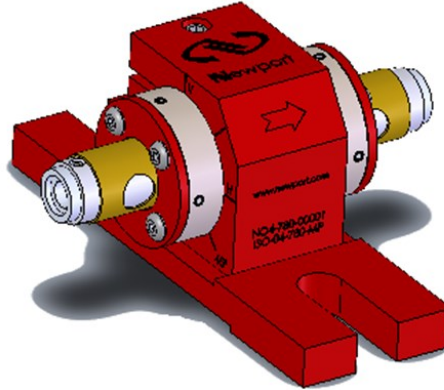
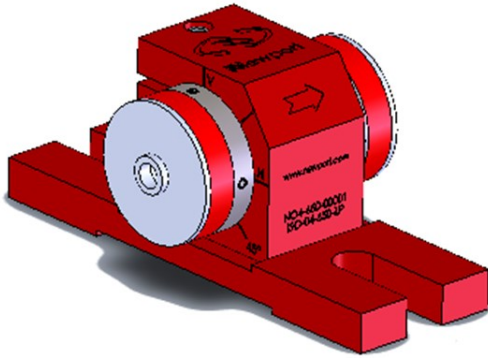


# 500-1030nm Wavelength Tunable Faraday Isolators

Newport's 500-1030nm Faraday Isolators rotate the plane of polarized light 45° in the forward direction and an additional 45° of non-reciprocal rotation in the reverse direction while maintaining the light's linear polarization. The Faraday Isolator provides high transmission in the forward direction and strongly attenuates any light traveling in the reverse direction, effectively protecting laser diodes from the deleterious effects of back reflections. Newport's 500-1030nm Faraday Isolators can be ordered with dichroic glass polarizers to minimize the size of the device for low power applications or they can be ordered with polarizing beam splitter cube polarizers for applications where maximum transmission is required and power levels do not permit the use of dichroic glass polarizers. By aligning the output polarizer orthogonal to the backward traveling light, isolation can be maximized within the usable wavelength range of the Faraday Isolator.



## Benefits:

- Eliminate frequency instability in single frequency laser diodes
- Eliminate parasitic oscillations due to ASE in amplified laser systems

## Features:

- Wavelength tunability allows optimal isolation at a variety of wavelengths
- Isolators centered at 650nm, 780nm, 850nm, and 980nm can be ordered with either dichroic glass polarizers or polarizing beam splitter cube polarizers
- Optional  $\lambda/2$  plate available for all isolators<sup>a</sup>
- Two isolators can be used in series to attain 60dB isolation which is often required for single frequency laser diodes

## Specifications<sup>b</sup>:

Low Power Isolators <sup>c</sup>					
Center Wavelength (nm)	Spectral Range (nm)	Isolation at 22°C (dB) <sup>f</sup>	Transmission at 22°C (%) <sup>e</sup>	Polarizer Type	Damage Threshold <sup>g</sup>
650	630-700	>30	>72.5	Dichroic Glass	25W/cm <sup>2</sup> CW
780	740-860	>30	>82	Dichroic Glass	25W/cm <sup>2</sup> CW
850	840-960	>30	>88	Dichroic Glass	25W/cm <sup>2</sup> CW
980	960-1030	>30	>90	Dichroic Glass	25W/cm <sup>2</sup> CW
Medium Power Isolators <sup>c</sup>					
532	500-600	>27	>88	PBS Cube	1J/cm <sup>2</sup> at 10ns
650	600-680	>27	>88	PBS Cube	1J/cm <sup>2</sup> at 10ns
780	730-830	>27	>88	PBS Cube	1J/cm <sup>2</sup> at 10ns
850	800-880	>27	>88	PBS Cube	1J/cm <sup>2</sup> at 10ns
980	950-1010	>27	>88	PBS Cube	1J/cm <sup>2</sup> at 10ns

<sup>a</sup> The addition of a waveplate may restrict wavelength range.

<sup>b</sup> Product specifications are subject to change.

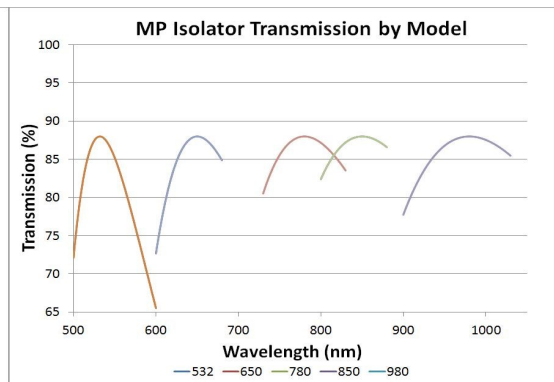
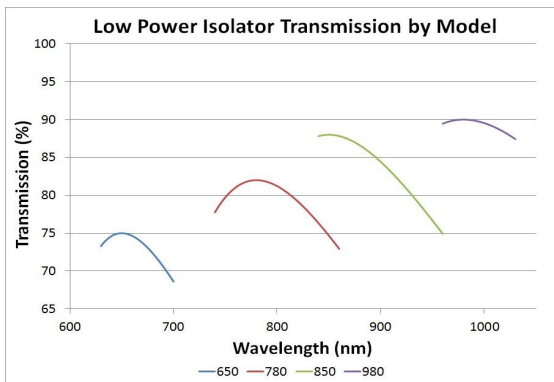
<sup>c</sup> RoHS compliant.

<sup>d</sup> When placed between crossed polarizers having an extinction ratio of  $\geq 1000:1$ .

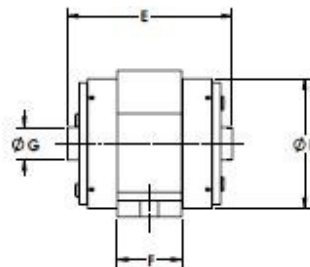
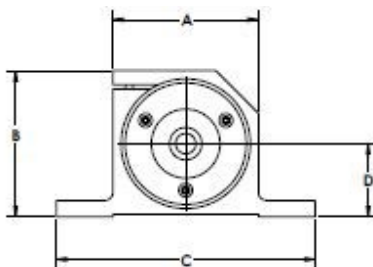
<sup>e</sup> At center wavelength.

<sup>f</sup> When tuned for maximum isolation.

<sup>g</sup> Isolators with PBS cube polarizers have CW damage threshold of 2kW/cm<sup>2</sup>.

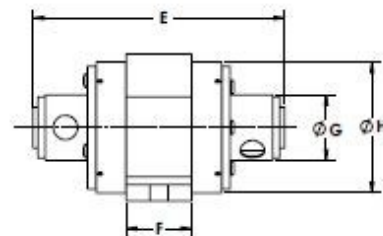
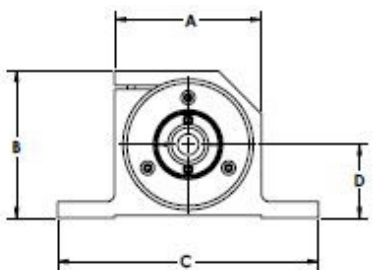


## Wavelength Tunable Low Power Isolator Dimensions<sup>a</sup>:



Center Wavelength (nm)	A	B	C	D	E	F	G	H
650	1.13	1.27	3.00	0.71	1.60	1.00	0.24	0.88
780	1.13	1.27	3.00	0.71	1.75	1.00	0.24	0.88
850	1.25	1.46	3.00	0.84	1.90	1.00	0.24	1.00
980	1.50	1.71	3.00	0.96	2.07	1.00	0.24	1.25

## Wavelength Tunable Medium Power Isolator Dimensions<sup>a</sup>:



Center Wavelength (nm)	A	B	C	D	E	F	G	H
532	1.13	1.27	3.00	0.71	2.22	1.00	0.41	0.88
650	1.13	1.27	3.00	0.71	2.30	1.00	0.41	0.88
780	1.13	1.27	3.00	0.71	2.46	1.00	0.41	0.88
850	1.25	1.46	3.00	0.84	2.62	1.00	0.41	1.00
980	1.50	1.71	3.00	0.96	2.77	1.00	0.41	1.25

<sup>a</sup>All dimensions in inches