

Fiber Optic Isolators



MODELS

Key Features

- Very low insertion loss, high isolation and high return loss
- Minimal polarization dependent loss, and very low polarization mode dispersion
- All models have an epoxy-free optical path, resulting in increased isolation performance, stability and long term reliability
- Compact and light weight assembly allows easy integration in small laboratory, field, and system applications

Note:

Model ISC, ISS and ISU isolators feature 1 meter, single-mode, SMF-28 900 μm tight buffer fiber pigtailed.



Newport's Fiber Optic Isolators are passive, fiber-pigtailed devices which reduce back reflections and backscattering of light into the laser diode source.

Four models are available to meet your particular isolation requirements.

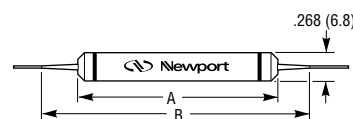
The Standard ISC Model isolator features typical peak isolations of > 40dB, very low polarization-dependent loss and low polarization mode dispersion.

The Enhanced ISS Model and Supreme ISU Model isolators feature extremely low polarization mode dispersion and stable performance over a wide wavelength and temperature range.

Additional Benefits

- Optical path is epoxy-free
- Compact and light weight package
- Excellent stability and reliability

Dimensions

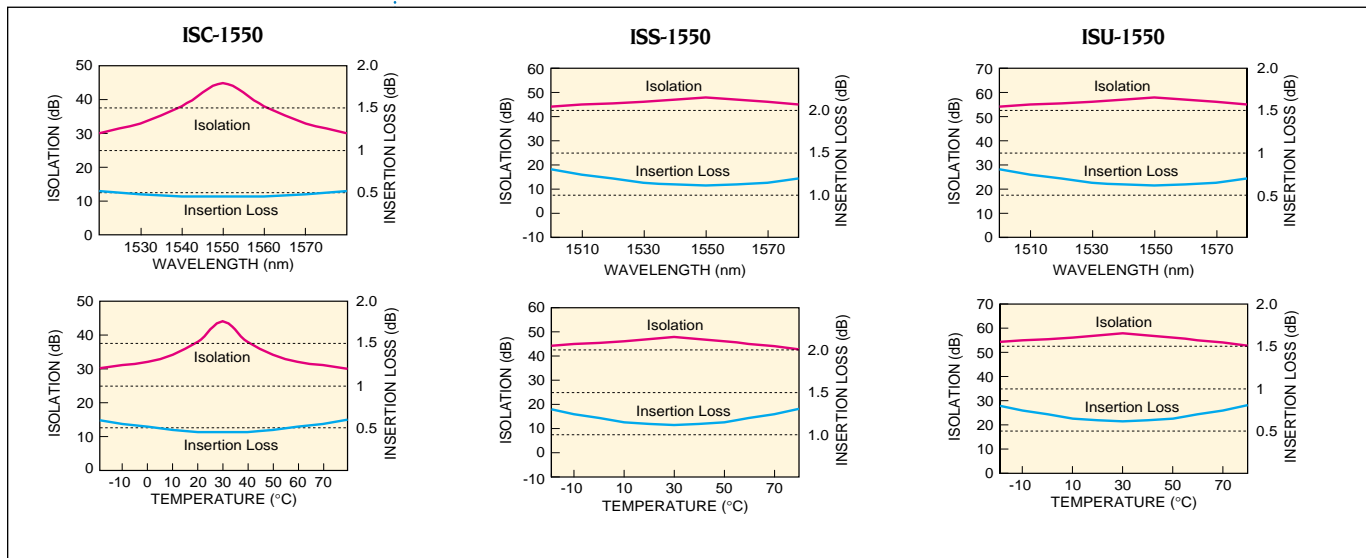


MODEL	DIMENSION	
	A	B
ISC	1.38 (35)	2.17 (55)
ISS	1.57 (40)	2.36 (60)
ISU	1.57 (40)	2.36 (60)

Parameter	Model ISC	Model ISS	Model ISU
Peak Isolation [dB]	> 40	> 50	> 60
Minimum Isolation [dB] (±20 nm over center wavelength)	> 32	> 44	> 48
Insertion loss (Typ.) ¹⁾ [dB]	0.4	1.0	0.6
Maximum Insertion Loss [dB]	≤ 0.5	≤ 1.3	≤ 0.7
Return Loss (Input/Output) [dB]	≥ 65/60	≥ 60/55	≥ 65/60
Polarization Dependent Loss (PDL) [dB]	< 0.1	< 0.2	< 0.1
Polarization Mode Dispersion (PMD) [ps]	< 0.5	< 0.15	< 0.05
Center Wavelength [nm]			1550, 1310
Operating Temperature [°C]			-20 to +60
Maximum Optical Power [mW]			300
Storage Temperature [°C]			-40 to +85

1) Without fiber optic connectors

Typical Performance





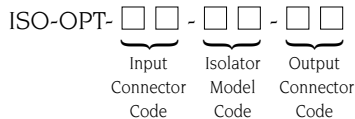
High Temperature Storage Test	85°C for 5,000 hours
Low Temperature Storage Test	-40°C for 5,000 hours
Damp Heat Test	75°C/95% RH for 5,000 hours
Temperature Cycling Test	-40°C to 75°C for 5,000 cycles, rate 1°C/min. dwell 1 hour at extremes
Water Immersion Test	43°C for 168 hours, pH = 5.5
Vibration Test	10–2,000 Hz random, 20 g, 3 axes
Impact Test	8 drops, 1.8 meters high onto concrete, 3 axes
Fiber Torsion Test	180° twist with 5 N force, both directions
Fiber Pulling Test	0.23 kg.

Ordering Information

Model	Description	Model Code ⁽¹⁾
ISC-1550	Standard Fiber Optic Isolator — 1550 nm	10
ISC-1310	Standard Fiber Optic Isolator — 1310 nm	15
ISS-1550	Enhanced Fiber Optic Isolator — 1550 nm	20
ISS-1310	Enhanced Fiber Optic Isolator — 1310 nm	25
ISU-1550	Supreme Fiber Optic Isolator — 1550 nm	30
ISU-1310	Supreme Fiber Optic Isolator — 1310 nm	35

1) Use code only when ordering with connectors, as described below.

Fiber Optic Connector Options



Please use the following connector codes and the isolator model codes, shown in the table below when ordering a specific configuration.

Example: ISO-OPT-55-10-NN

ISC-1550 Fiber Optic Isolator with FC/APC connector on input side and no connector on output side.

Note: Fiber optic connector termination costs are non-refundable due to the custom nature of the assembly. **Note:** For connector pricing, see page 5-34.

Connector Style	Code
No Connector	NN
ST/PC	25
FC/PC	45
FC/SPC	50
FC/APC	55
SC/PC	65
SC/APC	75

Applications

The characteristics and reliability of Newport's Fiber Optic Isolators make them suitable for all laboratory and systems application, such as:

- fiber optic amplifiers
- fiber optic ring lasers
- high-speed and coherent fiber optic communication systems
- fiber optic links in CATV applications

In addition, single polarization isolators are useful in fiber optic gyro systems, laser diode integrated optic modulator interfaces, and a variety of instrumentation and testing applications.