

1550 Isolator / 1480nm WDM



thermal matching high reliability, compact Ø=4.2mm, 40dB isolation

DATASHEET

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Features

- Low Insertion Loss
- High Isolation
- Low PDL
- High Reliability
- Low Cost

Applications

- Optical Fiber Amplifier
- Pump Laser Source
- Fiber Optic Sensor
- Instrumentation

The OIWD Series 3-port fiber optical isolator integrates a 1480 nm WDM with a 1550 nm isolator in a compact format of 4.2 mm diameter and 32 mm length. It guides single mode 1550 nm light in the forward direction while minimizing back reflection and back scattering in the reverse direction for both polarized and unpolarized light. A third port directs single mode 1480 nm light into one of the isolator ports for pumping an erbium-doped fiber. Leveraging Agiltron's advanced all-glass thermal matching micro-optics design, the isolator offers ultra-high reliability, high stability over a wide operating range (-45°C to 85°C), low insertion loss, dual-stage high isolation, and a compact structure. Automated production also makes it cost-effective. These Telcordia-qualified components are ideal for applications in fiber amplifier systems, pump laser diodes, and optical fiber sensors.

Specifications

Parameter	Min	Typical	Max	Unit
Isolator Operation Wavelength	1528		1564	nm
Isolator Channel Insertion Loss (-20 to 80 °C)	0.6	0.7	1	dB
Isolator Channel Isolation (-20 to 80 °C)	35	40	45	dB
Pump Channel Wavelength Range	1450		1495	nm
Pump Channel Insertion Loss (-20 to 80 °C)		0.5	0.6	dB
Pump Channel Isolation (-20 to 80 °C)			15	dB
Signal Channel Isolation (-20 to 80 °C)			25	dB
Polarization Dependent Loss			0.2	dB
Polarization Mode Dispersion ^[1]			0.1	ps
Return Loss (Input/Output)	55		0.1	dB
Directivity	55			dB
Wavelength Dependent Loss			0.45	dB
Operating Temperature	-45		+80	°C
Storage Temperature	-50		+85	°C
Optical Power Handling			500	mW

[1]. Special order for PMD ≤ 0.05ps with compensator

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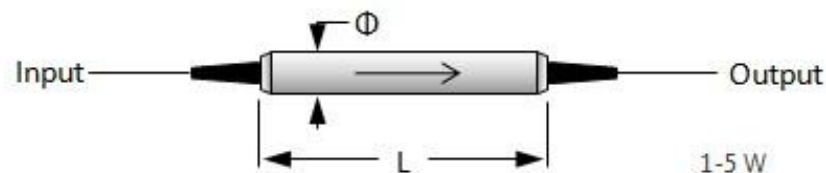
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Mechanical Dimensions (mm)

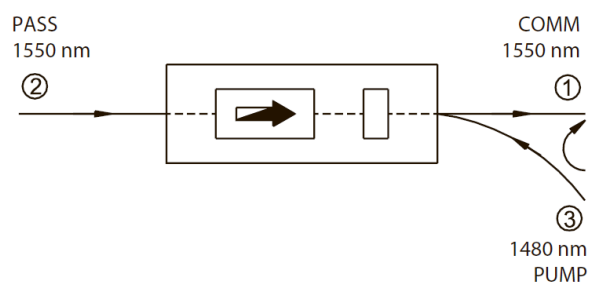


$\varnothing=4.2\text{mm}$ $L=32\text{mm}$

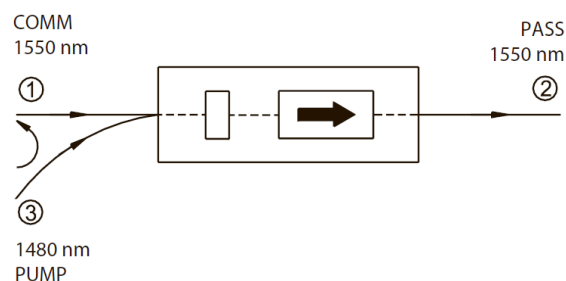
*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Configurations

Type F



Type B



Ordering Information (Part Number)

Prefix	Isolation	Isolator Wavelength	WDM Wavelength	Configuration	Fiber Type	Fiber Cover	Fiber Length	Connector ^[1]
OIWD-	Single Stage = 1 Dual Stage = 2	1550nm = 5 1585nm = 6 Special = 0	1480nm = 4 Special = 0	F = F B = B	SM28 = 1 SM28e = 2 PM1310 = 3 Special = 0	Bare Fiber = 1 900 μm Tube = 2	0.25m = 1 0.5m = 2 1.0m = 3 1.5m = 4 2.0m = 5 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 LC/APC = A LC/UPC = U Special = 0

[1]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

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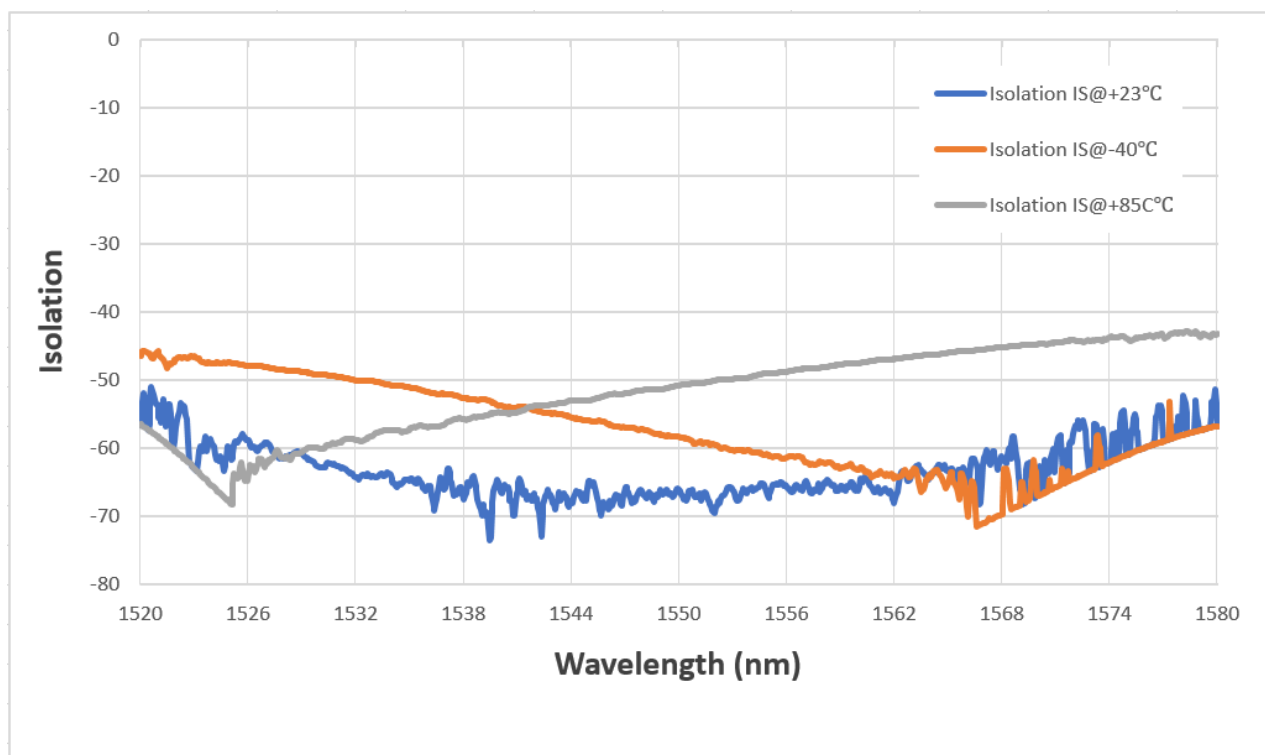


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Function Diagram

Isolation vs Wavelength



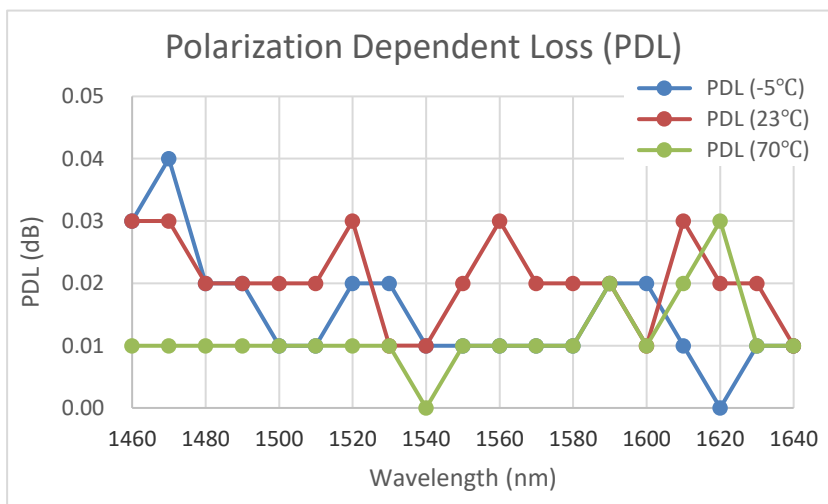
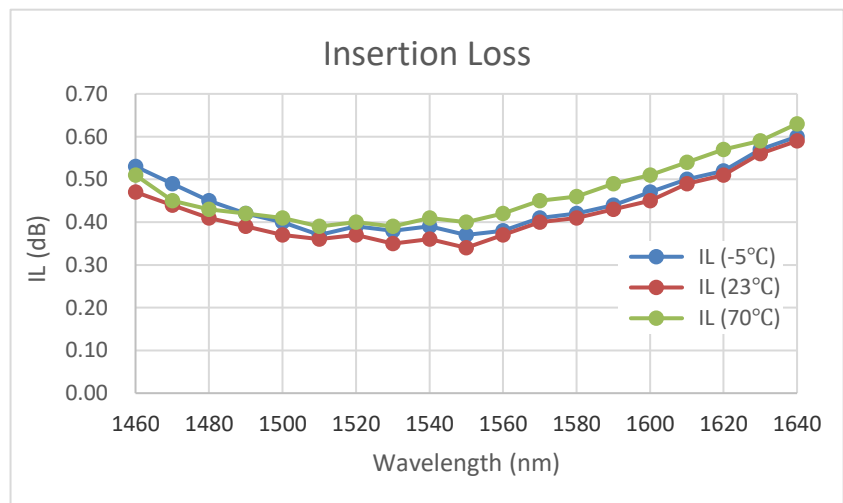
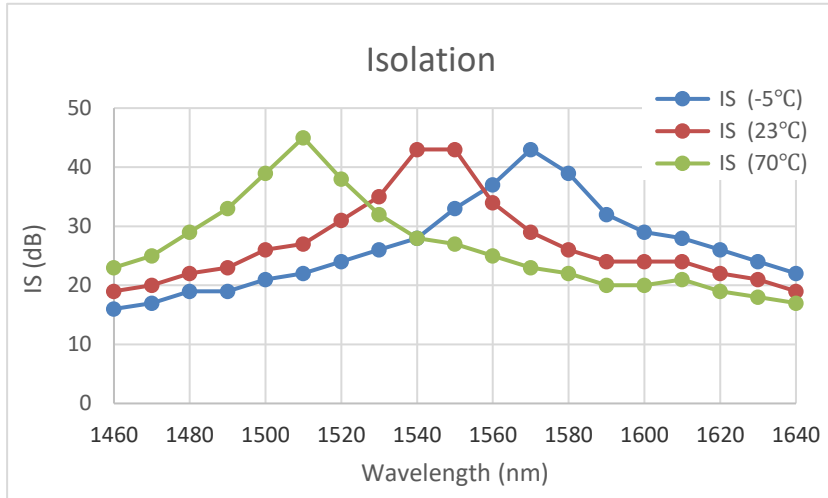
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Typical Wavelength Dependence for Single Stage



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Typical Wavelength Dependence for Dual Stage

