

High Power 2 μm Fiber Optical Isolator

(up to 50W, SM, PM, LMA, DCM)



DATASHEET

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Applications

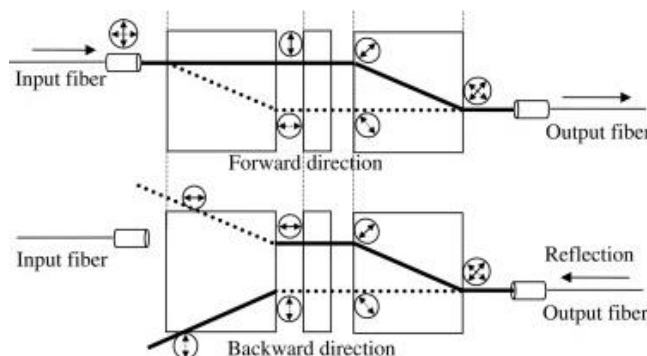
- Laser Pump Source
- Optical Fiber Amplifier
- Laser Manufacturing
- Laser Marking

Features

- Center wavelength 1950 nm
- > 20 dB isolation
- ≤ 1 dB insertion loss typical
- Various power ratings from ~100 mW to 10 W
- High Power
- High Isolation
- High Reliability
- Low IL, PDL & TDL
- Cost Effective



This 2 μm passive device transmits high power light from input fiber into output fiber while blocking the unwanted light from back reflection and scattering. Leveraging Agiltron's proprietary magneto-optic technology and advanced micro-optic techniques, it offers compact size, high power handling, low loss, and exceptional reliability at a competitive cost. For optical power levels below 20W, heatsink fins are utilized for thermal management, while a proprietary passive liquid cooling system ensures reliable heat dissipation for power levels exceeding 20W. Agiltron provides polarization-independent, polarization-maintaining, and custom-designed versions with integrated filter and power monitor, with support for a broad wavelength range and compatibility with specialized fibers.



Specifications

Parameter	Min	Typical	Max	Unit
Center Wavelength	1940, 2000, 2050, 2100			nm
Wavelength Bandwidth		± 50		nm
Insertion Loss ^[1]	Single Stage	≤1.2		dB
	Dual Stage	≤1.5		
Isolation	Single Stage	≥16		dB
	Dual Stage	≥35		
Polarization Dependent Loss	Single Stage	≤0.15		dB
	Dual Stage	≤0.2		
Extinction ratio ^[2]		≥18		dB
Return Loss		≥50		dB
Power Handling		1, 2, 3, 5, 10		W
Fiber Type	SMF-28e, SM1950, SM2000, PM1550, PM1950, 10/130DCF			
Operating Temperature	0		+65	°C
Storage Temperature	-40		+85	°C
Dimensions	Ø 5.5x35, 80x12x10			mm

Notes:

- [1]. Without connectors
- [2]. PM fiber only

Note: For a polarized input light version, the isolation is optimized to block the light reflection of the same polarization. Although lights of other polarizations may also be blocked, the extinction may be poor. PM isolators can be specially made to block backward propagating lights of all polarizations. PM isolators can also be made with a light polarizing function.

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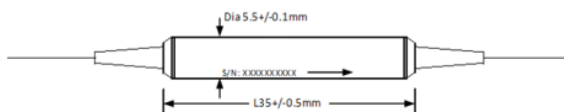
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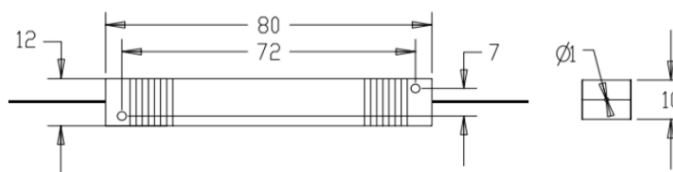
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Mechanical Footprint Dimensions (mm)

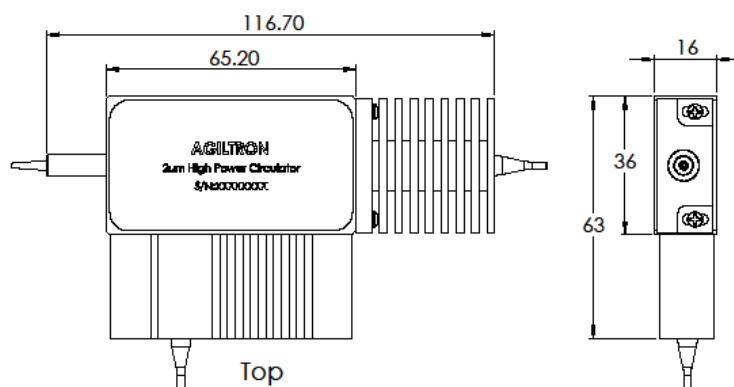
For 1~5W



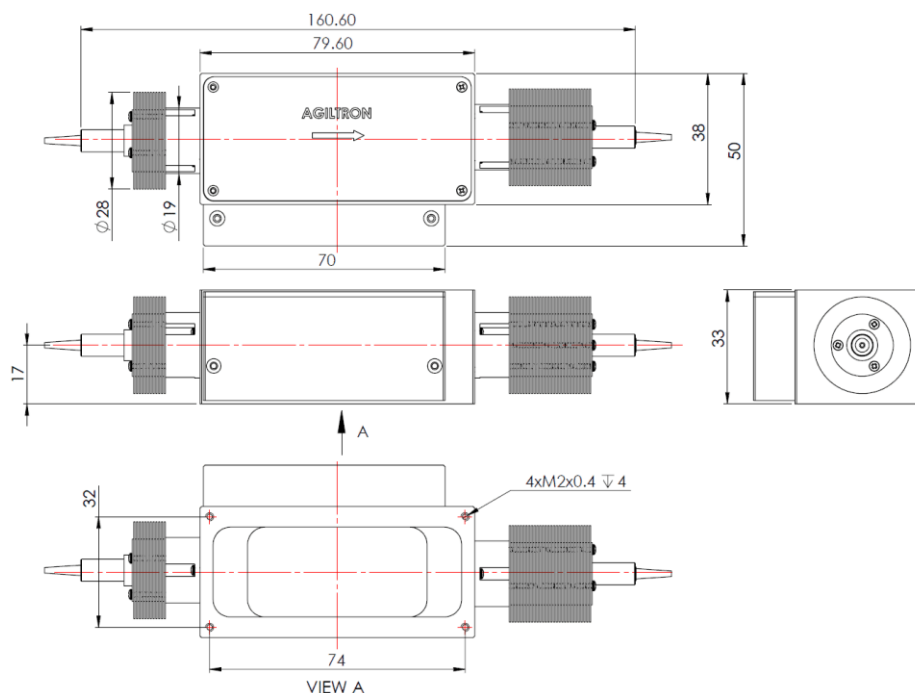
For 6~10W



For 15~30W



For 50W



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

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Ordering Information (Part Number)

Prefix	Type	Wavelength	Power Handling	Stage	Fiber Type	Fiber Cover	Fiber Length	Connector ^{[1] [2]}
OI2H-	Regular = 11 PM = 12 Special = 00	1940 = 1 2000 = 2 2050 = 3 Special = 0	0.5W = 1 2W = 2 3W = 3 5W = 5 10W = 6 20W = 7 30W = 8 40W = 9 50W = A	Single = 1 Dual = 2 Three = 3	SMF28 = 1 SM1950 = 9 PM1950 = 8 PM 1550 = 5 10/130DCF = 7 Special = 0	Bare fiber = 1 900um tube = 3 Armor cable = 5 Special = 0	0.25m = 1 0.5m = 2 1.0m = 3 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Special = 0

Note:

- [1]. The regular connector can only handle 0.5W. We make high-power connector (\$390 ea)
- [2]. 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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