



Electro-Optics Technology, Inc.

Innovative High Quality Laser Solutions

DUAL-STAGE

250 W Fiber Laser Isolator



EOT's 250 W Dual-stage Fiber Laser Output Isolator has been specifically designed to enable safe operation of CW and pulsed fiber lasers at unprecedented average and peak power levels as well as market-leading pulse energies.

Dual-stage isolation provides industrial performance while ensuring reflected light does not promote self-lasing of amplifiers or become amplified to levels which degrade mid-stage isolators. Peak isolation at design wavelength ensures sufficient isolation over full Raman-shifted range.

Utilizing high damage threshold and ultra-low absorbing materials, these isolators provide high transmission of light in the forward direction and strong attenuation of light in the reverse direction.

FEATURES

- Integrated beam-expanding telescope
- Supports both CW and pulsed operation
- Ultra-low thermal lensing
- Near-zero, power-dependent, beam size reduction
- Ideal for high peak power and high pulse energy applications
- Integrated thermistor to protect against over-temperature operating conditions in high back-reflection operating environments

OPTIONS

- Fan-cooled option
- Water-cooled option
- Customization available

APPLICATIONS

- Welding
- Marking
- Laser Cleaning
- Engraving
- Micromachining



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SPECIFICATIONS

Fiber Types^a	Contact EOT
Maximum Incident Average Power	250 W
Center Wavelength	1065 nm
Optical Bandwidth	1040 nm to 1120 nm
M² Degradation	<10%
Standard Output Beam Diameter (1/e²)^b	3 mm, 5 mm, 7.5 mm, 10 mm
Insertion Loss of light through fiber core^c	<0.56 dB
Isolation at 10 °C to 50 °C	>37 dB
Isolation at 30 °C	>42 dB
Return Loss	<-50 dB
Reverse Power Handling^d	50 W continuous 250 W thermistor temperature <70 °C
Maximum Pulse Energy	5 mJ
Peak Power	60 kW
Operating Temperature	10 °C to 50 °C
Storage Temperature	-20 °C to 70 °C
Storage Humidity, non-condensing	5% to 90%

Product specifications are subject to change. All products are RoHS compliant.

^a Standard fiber length is 3 m, protective Teflon tubing length is 2.15 m in a 2 m armor cable jacket. Customers should contact EOT regarding other fiber requirements.

^b Unless otherwise specified by customer

^c Insertion loss of light through fiber cladding is not included in the insertion loss specification.

^d Case temperature ≤ 50 °C

* Patent pending

NOTE: It is recommended that the isolator be attached to the laser enclosure using a compression fitting that secures only the outer, metal reinforced jacket. The inner PTFE tube is meant as an abrasion barrier for the optical fiber and should be allowed to move freely with the fiber.