High-Power Reflector

Med-2 Series HPR

Applications

- Laser Surgery
- Material Processing
- Infrared Countermeasures
- Directed Energy

Features

- Power Handling
- High efficiency
- Value
- Reliability
- Partnership

The Med-2 Series HPR fiber Bragg-grating (FBG) cavity reflectors are specifically designed for high-power Continuous-Wave (CW) and Quasi-Continuous-Wave (QCW) Thulium (Tm) medical fiber lasers emitting at 1940 nm.

indie's primary goal for the Med-2 Series HPR reflectors is to ensure long-term reliable operation of medical Tm fiber laser systems.

indie has developed proprietary manufacturing processes to minimize FBG heating for lasers operating at 1940 nm.

Applications include medical fiber lasers for urology and surgery.

Features Details

- **Power handling:** The unique FBG manufacturing processes and efficient heat management of the HPR reflectors allows for reliable operation in medical lasers.
- **High efficiency:** By limiting component heating, thereby improving optical conversion efficiency, the HPR reflectors reduce overall laser system costs.
- **Value:** The Med-2 Series HPR reflectors ensure that each laser oscillator produces optimum power, simplifying laser system design and lowering the cost per watt.
- **Reliability:** With very consistent performance levels and quality manufacturing, long-term, stable operation is ensured for both CW and QCW operation.
- **Partnership:** indie will work through the entire product development process, from prototyping to mass production.

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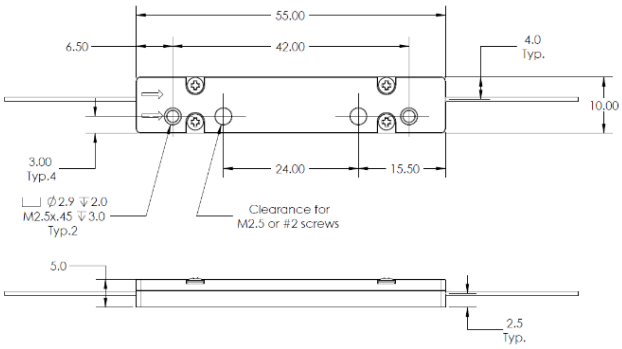
Standard Specifications[1]

Parameters		High reflector	Low reflector	Units
Center wavelength at room temperature[2]		1940		nm
Wavelength mismatch (low vs high reflector)		≤0.2		nm
Reflection bandwidth[3]		1.0 to 3.0 at 95%	0.3 to 1.0 at 50%	nm
Reflectivity[4]		≥99.5	5 to 20	%
Side mode suppression ratio		≥20	≥10	dB
Fiber type		Double clad fiber, non-PM		
Fiber core/cladding numerical aperture, typical		0.09/0.46		
Fiber core/cladding diameter, typical		25/400		µm
Power handling[5]	Pump average power (793 nm)[6]	200		W
	Pump peak power (793 nm)[6]	1500		W
	Signal average power	100		W
	Signal peak power (QCW)[6]	1000		W
Pigtail length (on each side)		Standard: 1		m
Packaging		Low index recoat or indie's heat dissipation package		
Indie's heat dissipation package cover color		Black	Gray	
RoHS compliant		Yes		

Package Dimensions



[1] Contact indie for customized configurations with non-standard specifications.
[2] Room temperature = 20 °C to 23 °C
[3] Bandwidths to be selected within the indicated ranges.
[4] Low reflector reflectivity value to be selected within the indicated range.
[5] The heat dissipation package case temperature must be maintained between 15°C and 40°C in operation to meet the power handling specifications. For recoated versions and while in operation, the FBG must be maintained below 70°C using appropriate heat sink.
[6] For pulse duration range of 0.1-12 ms. in QCW