

Uncooled FBG 980nm Pump Laser 3 Pin Package

Up to 250mW, Single mode



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The PLFU Series consists of uncooled, single-mode 980 nm pump laser modules packaged in an ultra-compact 3-pin micro-package, with operating power up to 250 mW. The emission wavelength is stabilized by a Bragg grating (FBG) located inside the module, with a 125 μm single-mode HI1060™ fiber pigtail for easy fiber routing and management. To reduce cost and simplify the package, the module does not incorporate a thermistor or a back-facet monitor photodiode. The module is designed to meet Telcordia™ GR-468-CORE reliability requirements for hermetic 980 nm pump laser modules.

Specifications *

Parameter	Min	Typical	Max	Unit
Center Wavelength	972		976	nm
Wavelength tuning vs temperature ($T_{\text{grating}} = 0$ to 80°C)			0.02	nm/ $^\circ\text{C}$
Spectral Width	@ -3 dB		1.0	nm
	@ -13 dB		1.0	
Threshold current ^[1]			100	mA
Nominal operating power	50		250	mW
Forward current ^[2]	$P_{\text{nom}} = 100$ mW		300	mA
	$P_{\text{nom}} = 150$ mW		400	
	$P_{\text{nom}} = 200$ mW		500	
	$P_{\text{nom}} = 250$ mW		600	
Forward voltage			1.9	V
Peak wavelength tolerance			± 0.5	nm
Power in band ^[3]	90			%
Optical power stability (Peak to peak, 1 Hz-50 kHz, 60 sec)	$10\text{mW} \leq P < 20\text{mW}$		0.2	dB
	$20\text{mW} \leq P \leq 250\text{mW}$		0.1	
Power consumption, EOL	$P_{\text{nom}} = 100$ mW		0.5	W
	$P_{\text{nom}} = 150$ mW		0.7	
	$P_{\text{nom}} = 200$ mW		1	
	$P_{\text{nom}} = 250$ mW		1.1	
Operating Temperature	0		+80	$^\circ\text{C}$
Storage Temperature	-40	25	+85	$^\circ\text{C}$
Lead soldering temperature (10s max, $T_{\text{case}} = 25^\circ\text{C}$)			350	$^\circ\text{C}$
LD forward drive current (10s maximum)			650	mA
LD reverse voltage			2	V
ESD damage			500	V
Fiber bend radius	7.5			mm
Axial pull force (1x1min)			5	N
Fiber type	HI1060TM, CS1016-A or equivalent			

[1]. I_{th} is the intersection point with the x-axis of a linear fit of the P(I) curve between 15mW and 50mW

[2]. EOL forward current $I_{\text{EOL}} = 1.1 \times \text{IBOL}$

[3]. P_{band} is defined as the power within the band $\lambda_p \pm 1.5$ nm vs the total output power

* The following parameters are specified BOL for a $T_{\text{case}} = 0^\circ\text{C}$ to 80°C , $V_{\text{BFM}} = -5\text{V}$ and -50dB max back-reflection unless otherwise stated.

Features

- Ultra-compact package footprint
- Up to 250 mW operating power
- Extended operating temperature range
- 125 μm cladding HI1060™ pigtail
- RoHS compliant

Applications

- Instrument
- Medical
- Printing
- Lighting
- Materials Processing
- Compact size, low power consumption
- Erbium-Doped Fiber Amplifiers (EDFA)
- Sensors



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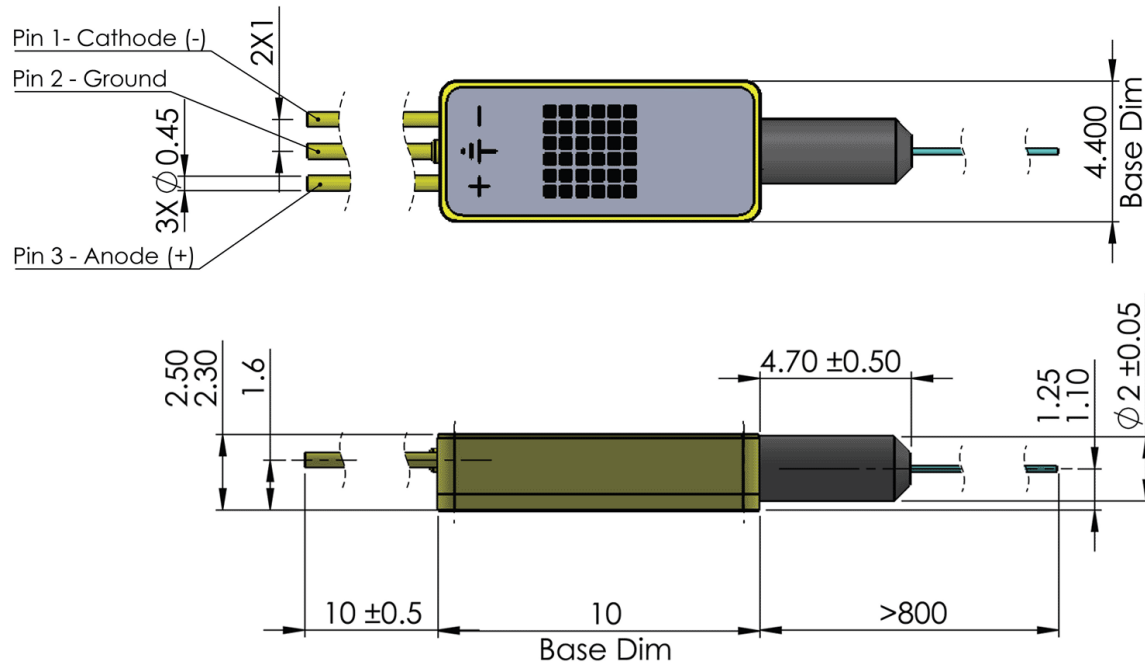
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Mechanical Dimension (mm)



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

Electrical Connection

PIN ASSIGNMENT

N°	Description
1	Laser Cathode
2	Case ground
3	Laser Anode



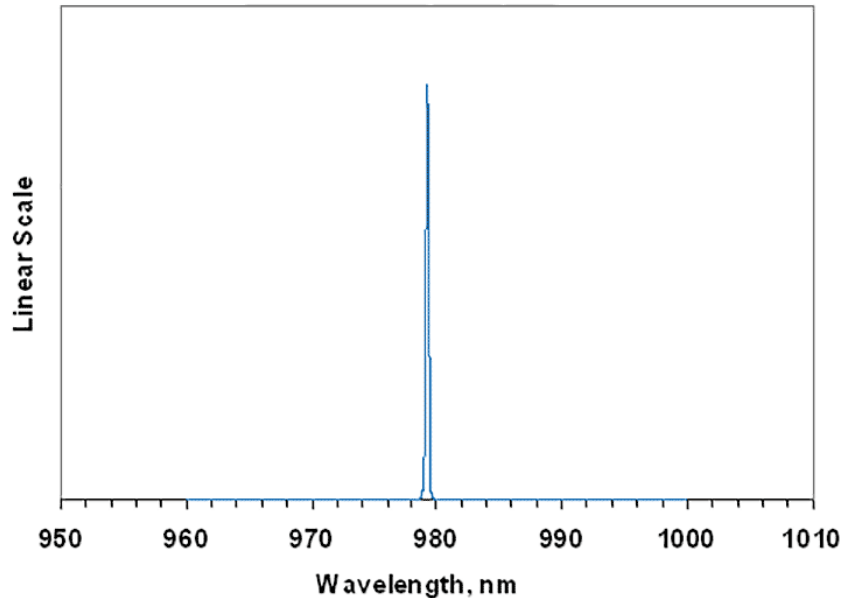
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Typical Spectrum



Ordering Information (Part Number)

	980	1	1	1	☐	☐	☐
Prefix	Wavelength	Output Power	Linewidth	Fiber Type	Fiber Buffer	Fiber Length	Connector ^[1]
PLFU-	980nm = 980 Special = 000	0.25W = 1	1nm = 1	Hi1060 = 1 Special = 0	0.9mm Tube = 3 Special = 0	0.25 m = 1 0.5 m = 2 Special = 0	Non = 1 FC/APC = 2 FC/PC = 3

[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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Caution Electrostatic Sensitivity



- Never touch laser diode and the module using hands
- Always use protections when handle a laser diode
- Recommend mounting the laser diode using an ionic gun and ESD finger cots



Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR). FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All versions of this laser are Class 1M laser products, tested according to IEC 60825-1:2007 / EN 60825-1:2007. An additional warning for Class 1M laser products. For diverging beams, this warning shall state that viewing the laser output with certain optical instruments (for example eye loupes, magnifiers, and microscopes) within a distance of 100 mm may pose an eye hazard. For collimated beams, this warning shall state that viewing the laser output with certain instruments designed for use at a distance (for example telescopes and binoculars) may pose an eye hazard.

Wavelength = 1.3/1.5 μm .

Maximum power = 30 mW.



*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

*IEC is a registered trademark of the International Electrotechnical Commission.