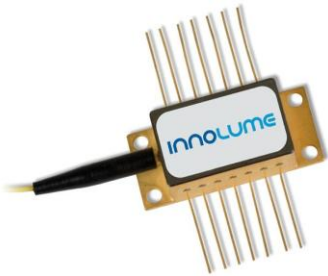


## LD-1160-BF-300

Fiber Coupled High Power Laser Diode – 300mW @1160nm ex-fiber



### Features:

- InAs/GaAs Quantum Dot based diode laser
  - Proprietary mirror coating technology enabling high reliability
  - CW or pulse (down to 2ns pulse width) operation
- 
- High reliable Au/Sn-technology
  - Optional: polarization maintaining PM980 fiber
  - Optional: integrated monitor photodiode for power control

### Specification

DATE: 9<sup>th</sup> February 2010

## SPECIFICATIONS

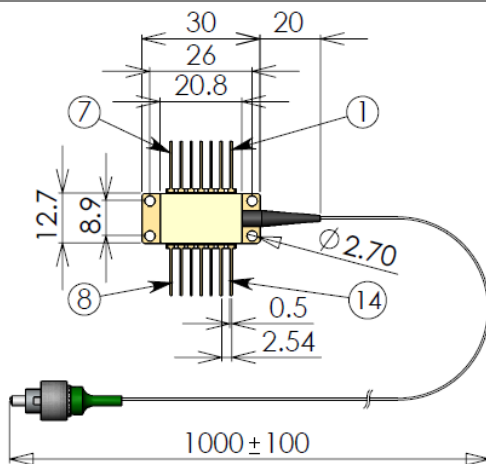
Test conditions: CW operation, thermistor temperature 25°C

Parameters	Symb.	Min.	Typ.	Max.	Unit
Output power	$P_{out}$	200	300		mW
Mean wavelength at $P_{out}$ <sup>1</sup>	$\lambda_P$	1150	1160	1170	nm
Spectral width @ -3dB level at $P_{out}$	$\Delta\lambda$		10	14	nm
Wavelength temperature tunability	$\Delta\lambda/\Delta T$	0.45	0.5	0.55	nm/°C
Threshold current	$I_{th}$		100	180	mA
Operating current at $P_{out}$	$I_{op}$		1100	1300	mA
Forward voltage at $P_{out}$	$V_f$		1.6	1.8	V
Polarization Extinction Ratio <sup>2</sup>	PER	15	17		dB
Recommended operating temperature (on thermistor)	$T_{op}$	15	25	30	°C

<sup>1</sup> Weighted mean ("center of mass") spectral point.

<sup>2</sup> In the case of polarization maintaining fiber.

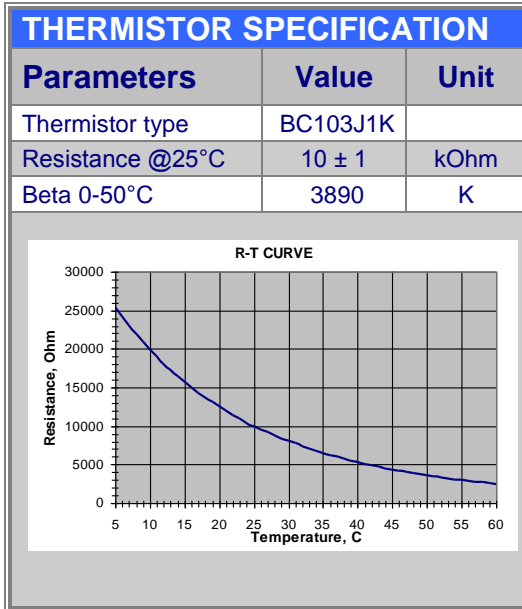
## DIMENSIONS (All sizes in mm)



### Pin identification:

1. TEC "+"
2. Thermistor
- 3.
- 4.
5. Thermistor
- 6.
- 7.
- 8.
- 9.
10. Laser Diode anode "+"
11. Laser Diode cathode "-"
- 12.
13. Case
14. TEC "-"

ABSOLUTE MAXIMUM RATINGS			
Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		1	V
Laser Diode CW forward current		1500	mA
Thermo Electric Cooler current		3	A
Thermo Electric Cooler voltage		4	V
Storage temperature range (in original sealed pack)	5	80	°C
Case operating temperature range	10	50	°C



FIBER SPECIFICATION			
Parameters	HI1060	PANDA PM980	Unit
Numerical aperture (Typical)	0.14	0.14	
Cutoff wavelength	920±50	920±50	nm
Mode-field diameter (@1060nm)	6.2±0.3	6.6±0.3	µm
Cladding diameter	125±1	125±1	µm
Coating diameter	245±15	245±15	
Length	1.0 ± 0.1		m
Connector	FC/APC connector		

## SAFETY AND OPERATING INSTRUCTIONS

The laser light emitted from this device is invisible and will be harmful to the human eye. Avoid looking directly into the output fiber or into the collimated beam along its optical axis when the device is in operation. Proper laser safety eyewear must be worn during operation.

Operating the laser diode outside of its maximum ratings may cause device failure or a safety hazard. Power supplies used with the component must be employed such that the maximum forward current cannot be exceeded. A proper heatsink for the laser diode module on thermal radiator is required. The module must be mounted on radiator with screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of In-foil or similar between bottom of the module and heatsink for thermal interface.

Carefully handle the fragile fiber, do not apply any stress, do not pull the fiber, do not bend fiber with a radius smaller than 3cm. Operate the laser module with clean fiber connector only. Periodically check and clean the connector if necessary. To clean the connector use suitable fiber cleaning tools (e.g. special cleaning tissue for optics). Perform cleaning only while the laser is switched off. Protect the fiber connector with protection cap while it's unplugged.

ESD PROTECTION – Electrostatic discharge is the primary cause of unexpected Laser Diode failure. Take extreme precaution to prevent ESD. Use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling laser diodes.

LASER RADIATION  
 AVOID EXPOSURE TO THE BEAM  
 CLASS 3B LASER PRODUCT

**CAUTION**  
 STATIC SENSITIVE DEVICE  
 OBSERVE PRECAUTIONS

**DANGER**

VISIBLE AND/OR INVISIBLE LASER RADIATION  
 AVOID EYE OR SKIN EXPOSURE TO  
 DIRECT OR SCATTERED RADIATION

DIODE LASER  
 MAX POWER 0.5W  
 WAVELENGTH 1000 - 1400 nm  
 CLASS IIIb LASER PRODUCT