Innolume GmbH
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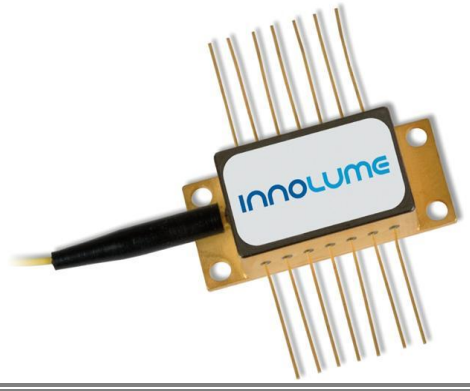
LD-1260-BF-300

High Power Diode Laser – 300mW @1260nm in single mode fiber



Features:

- InAs/GaAs Quantum Dot based diode laser
- Proprietary mirror coating technology enabling long life-time
- CW or pulse (down to 2ns) operation
- High reliable Au/Sn-technology
- Optional: polarization maintaining fiber PM980 (PER>15dB)
- Optional: monitor photodiode for power control

Specification

DATE: 12th March. 2010

SPECIFICATIONS

Test conditions: CW operation at P_{out} , thermistor temperature 25°C

Parameters	Symb.	Min.	Typ.	Max.	Unit
Output power	P_{out}	300			mW
Mean wavelength at P_{out}	λ_P	1250	1260	1270	nm
Spectral width (FWHM)	$\Delta\lambda$		6	10	nm
Wavelength temperature tunability	$\Delta\lambda/\Delta T$	0.55	0.6	0.65	nm/°C
Threshold current	I_{th}		150	190	mA
Operating current	I_{op}		1100	1300	mA
Forward voltage	V_f		1.6	1.9	V
Polarization extinction ratio [1]	PER	15	17		dB
Monitor photodiode responsivity [2]			0.1		μA/mW
Recommended operating temperature (on thermistor)	T_{op}	10	25	40	°C

[1] In the case of PM980 fiber option chosen.
[2] In the case of monitor photodiode option chosen.

ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		2	V
Laser Diode CW forward current		I_{op}+200	mA
Thermo Electric Cooler current		3	A
Thermo Electric Cooler voltage		4	V
Fiber bend radius		3	cm
Storage temperature range (in original sealed pack)	5	80	°C
Case operating temperature range	5	50	°C

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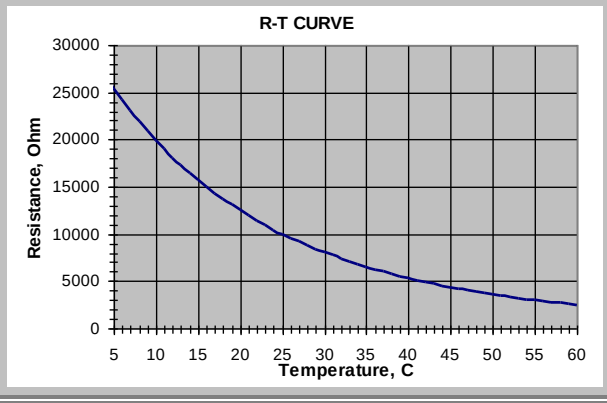
THERMISTOR SPECIFICATION

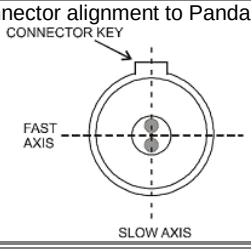
Parameters	Value	Unit
Thermistor type	BC103J1K	
Resistance @25°C	10 ± 1	kOhm
Beta 0-50°C	3890	K



FIBER SPECIFICATION

Parameters	HI1060	PANDA PM980	Unit
Mode-field diameter	6.2±0.3	6.6±1.0	μm
Cladding diameter	125±0.5	125±1	μm
Coating diameter	245±10	245±15	μm
Numerical Aperture	0.14		
Core-to-cladding offset	≤0.3	≤0.5	μm
Length	1.0 ± 0.5	1.0 ± 0.5	m
Connector	FC/APC	FC/APC	

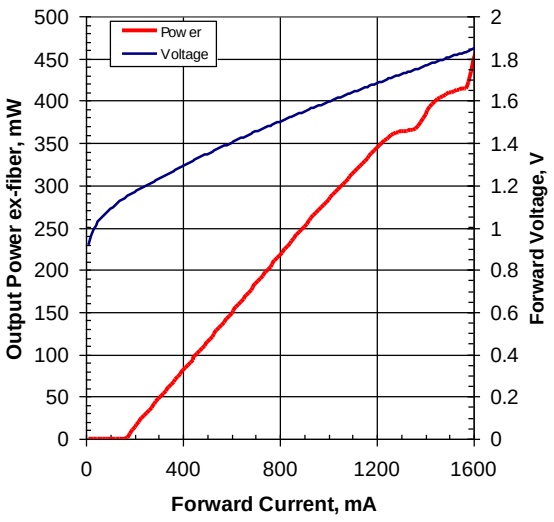
Connector alignment to Panda fiber:



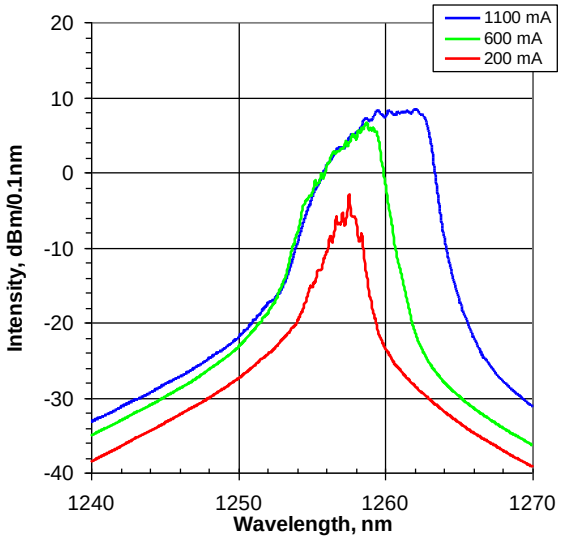
TYPICAL PERFORMANCE

Test condition: CW operation at 25°C thermistor temperature

Light-Current-Voltage Characteristics



Spectra Characteristics



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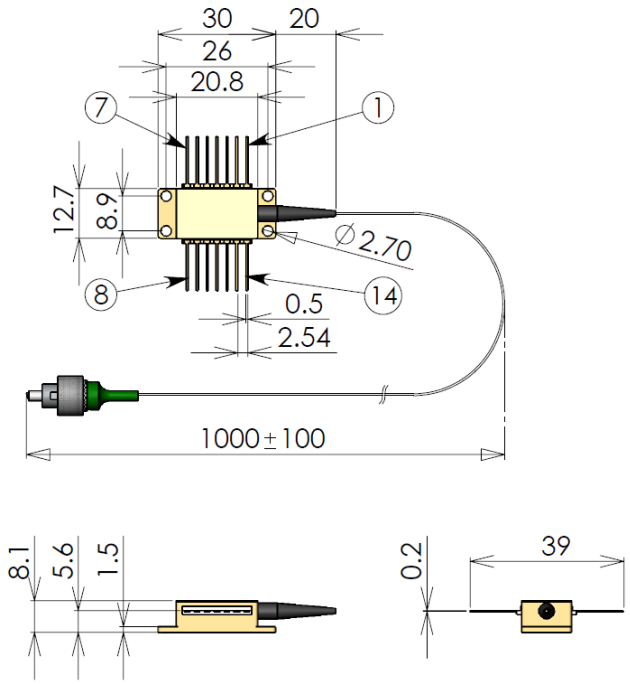
DIMENSIONS (All sizes in mm)



Pin identification:

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

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.

NOTE: Innolume product specifications are subject to change without notice.