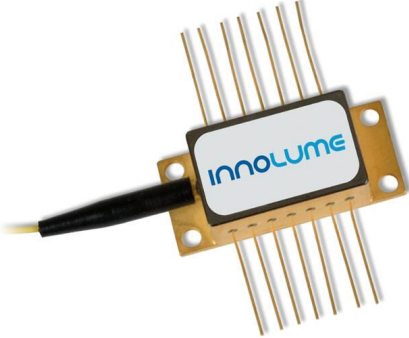


LD-12XX-FBG-XXX	
Fiber Bragg Grating wavelength locked High Power Laser Diode	
	Features: <ul style="list-style-type: none"> • InAs/GaAs Quantum Dot based diode laser • Up to 300mW output power ex-single mode fiber • Available wavelength range 1175-1280nm • Polarization maintaining Corning PM980 fiber • Fiber Bragg grating stabilized external cavity laser • Proprietary mirror coating technology enabling high reliability • High reliable Au/Sn-technology • Optional: monitor photodiode for power control
	Application: <ul style="list-style-type: none"> • Raman Amplifier
	<div> Specification </div> <div> DATE: 14th June 2010 </div>

SPECIFICATIONS					
Test conditions: CW operation, chip temperature 25°C, the module is mounted on room temperature heatsink.					
Parameters	Symb.	Min.	Typ.	Max.	Unit
Output power	P _{out}	Table 1			mW
Range of available peak wavelength	λ _P	1175		1280	nm
Peak wavelength at P _{out}	λ _P	λ _P -2	λ _P	λ _P +2	nm
Spectral Bandwidth @ -3dB level at P _{out}	Δλ		0.5	1.5	nm
Wavelength shift with FBG temperature	Δλ/ΔT _{FBG}		9	12	pm/°C
Threshold current	I _{th}		100	180	mA
Operating current at P _{out}	I _{op}	Table 1			mA
Forward voltage at P _{out}	V _f	Table 1			V
Polarization Extinction Ratio	PER	15	17		dB
Monitor photodiode responsivity ¹			0.1		μA/mW
Recommended operating temperature (on thermistor)	T _{op}	15	25	30	°C

¹ In the case of monitor photodiode option chosen.

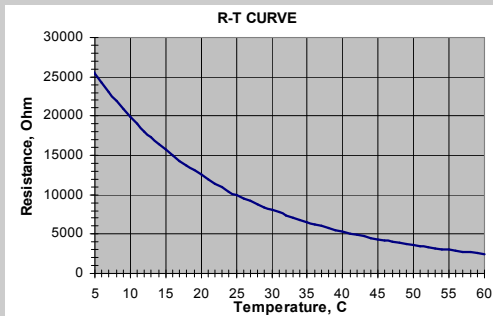
TABLE 1							
Test conditions: CW operation, chip temperature 25°C, the module is mounted on room temperature heatsink.							
Output Power (mW)	Operating current (mA)			Forward voltage (V)			Part Number
	Min.	Typ.	Max.	Min.	Typ.	Max.	
100	350	400	550		1.3	1.4	LD-1XXX-FBG-100
150	450	600	750		1.4	1.5	LD-1XXX-FBG-150
200	650	800	950		1.5	1.6	LD-1XXX-FBG-200
250	900	950	1100		1.6	1.7	LD-1XXX-FBG-250
300	1000	1100	1400		1.7	1.8	LD-1XXX-FBG-300

ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage		2	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
Lead soldering temperature (max. 5 sec.)		250	°C
Case operating temperature range	10	50	°C

THERMISTOR SPECIFICATION

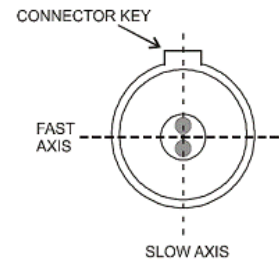
Parameters	Value	Unit
Thermistor type	BC103J1K	
Resistance @25°C	10 ± 1	kOhm
Beta 0-50°C	3890	K



FIBER SPECIFICATION

Parameters	PANDA PM980	Unit
Numerical aperture (Typical)	0.14	
Cutoff wavelength	920±50	nm
Mode-field diameter (@1060nm)	6.2±0.3	μm
Cladding diameter	125±1	μm
Coating diameter	245±15	
Core-to-cladding offset	≤0.5	μm
Length	1.3 ± 0.2	μm
Distance from FBG to laser chip	0.8 ± 0.2	m
Connector	FC/APC connector or bare cleaved end	

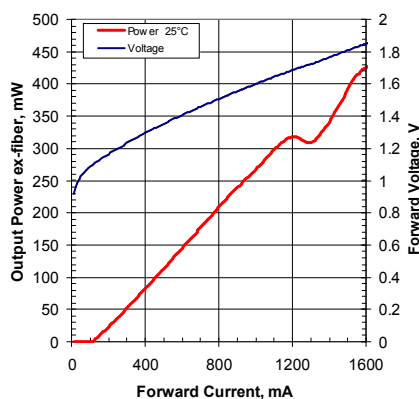
Connector alignment to the PANDA fiber



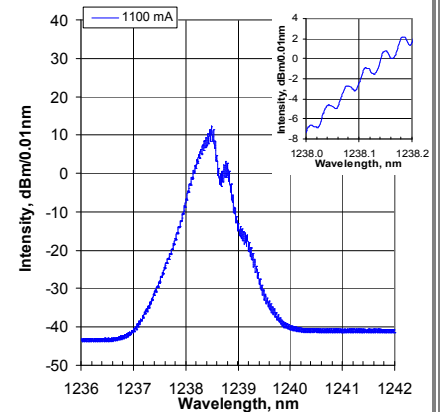
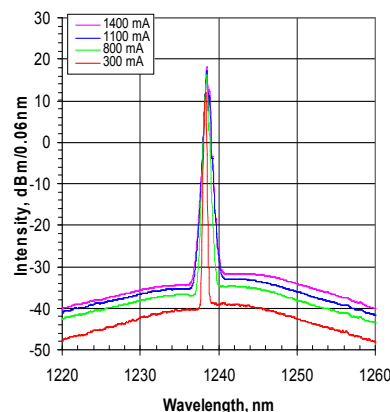
TYPICAL PERFORMANCE for reference only¹

Test conditions: CW operation, chip temperature 25°C, the module is mounted on room temperature heatsink.

Light-Current-Voltage Characteristics

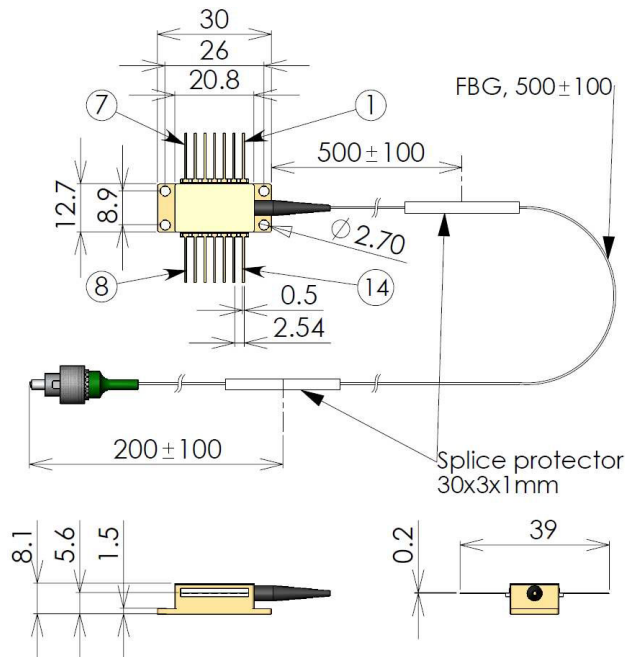


Spectra Characteristics



¹ Performance is given for the device with wavelength 1238.5nm. Similar performance is expected for the other wavelengths in the 1175-1280nm range.

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 "-"

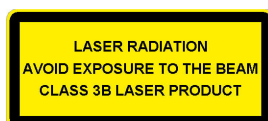
SAFETY AND OPERATING INSTRUCTIONS

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.



Part Number Identification:

LD-1240-FBG-300 -> 300mW output power at peak wavelength 1240nm

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