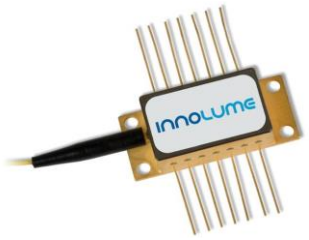
Innolume GmbH
Konrad-Adenauer-Allee 11, 44263 Dortmund/Germany
Phone: +49 231 47730 200; Web: www.innolume.com

DFB-13XX-YY-50

Fiber Coupled Distributed-Feedback Laser Diode



Features:

- 50mW output power ex-single mode fiber in 1280-1330nm wavelength range
- Optional monitor photodiode
- Optional integrated optical isolator (OI)
- Mode-hop free continious tuning (subject to OI option)
- Proprietary mirror coating technology enabling high reliability
- Individual burn-in and thermal cycling screening
- RoHS compliance

SPECIFICATIONS

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

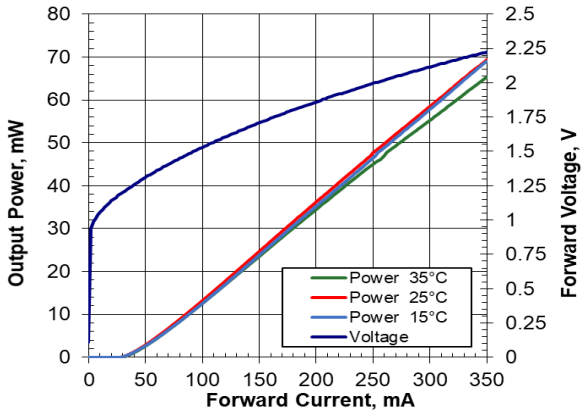
Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	Pout	50			mW
Operating Current	Iop		300	400	mA
Operating Voltage	Vop		1.8	3.5	V
Kink-free output power*		1.1×Pout	1.3×Pout		mW
Range of available wavelength	λ	1280		1330	nm
Mean wavelength tolerance				1	nm
Linewidth at Pout	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		100	130	pm/°C
Wavelength current tunability	Δλ/ΔI		6	8	pm/mA
Sidemode suppression ratio	SMSR	40			dB
Threshold current	Ith		35	70	mA
Polarization Extinction Ratio	PER	15			dB

* ΔP/ΔI > 0 (ΔI=1mA)

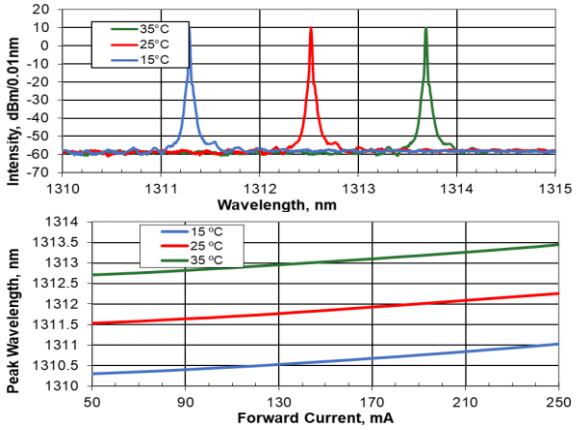
TYPICAL PERFORMANCE for reference only*

Test conditions: CW operation, the case is mounted on room temperature heatsink

Light-Current-Voltage Characteristics



Spectral Characteristics



* Performance is given for the DFB-1312-PM-50 device.

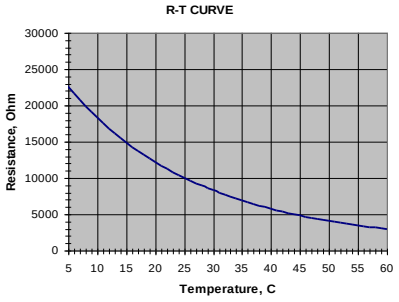
Innolume GmbH
Konrad-Adenauer-Allee 11, 44263 Dortmund/Germany
Phone: +49 231 47730 200; Web: www.innolume.com

ABSOLUTE MAXIMUM RATINGS

Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	Iop+50	mA
Thermo Electric Cooler current	-	3	A
Thermo Electric Cooler voltage	-	4	V
Fiber bend radius	-	3	cm
Chip operating temperature range	5	45	°C
Case operating temperature range	0	70	°C
Storage temperature range	-40	85	°C

THERMISTOR SPECIFICATION

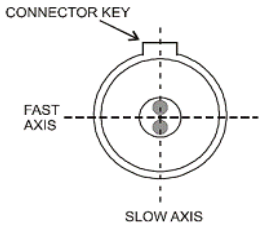
Parameters	Value	Unit
Thermistor type	NTC	-
Resistance @25°C	10 ± 0.1	kOhm
Beta 0-50°C	3375±1%	K



FIBER SPECIFICATION

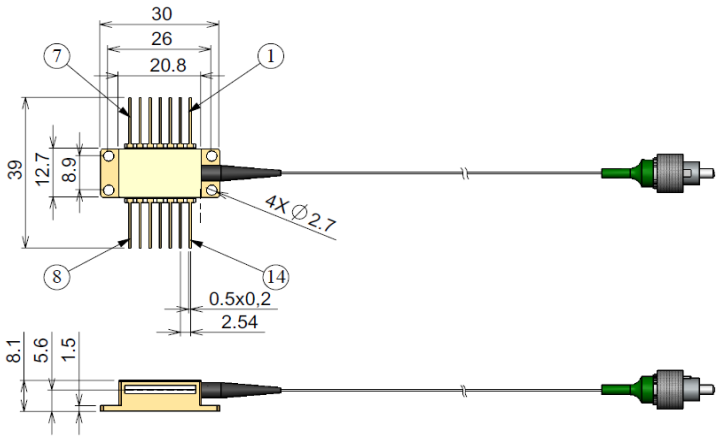
Parameters	PM1300	SMF-28	Unit
Numerical aperture (Typical)	0.12	0.14	
Cutoff wavelength	1260	1260	nm
Mode-field diameter (@1060nm)	9.2±0.4	9.0±0.5	μm
Cladding diameter	125±1	125±1	μm
Coating diameter	245±15	245±15	μm
Length	1.0 ± 0.1	1.0 ± 0.1	m
Connector	FC/APC (narrow key)		

Connector alignment to the PANDA fiber



The output light is polarized along the slow axis of PM fiber.

DIMENSIONS (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 "-"

Innolume GmbH
Konrad-Adenauer-Allee 11, 44263 Dortmund/Germany
Phone: +49 231 47730 200; Web: www.innolume.com

SAFETY AND OPERATING INSTRUCTIONS

The light emitted from this device is invisible and can be harmful to the human eye. Avoid looking directly into the fiber connector when the device is in operation. Proper laser safety eyewear must be worn during operation with open connector.

Absolute Maximum Ratings may be applied to the device for short period of time only. Exposure to maximum ratings for extended period of time or exposure to more than one maximum rating may cause damage or affect the reliability of the device. Operating the device 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 device on thermal radiator is required. The device must be mounted on radiator with 4 screws (bolt down in X-style fashion with initial torque set to 0.075Nm and final X-style bolt down at 0.15Nm) or with clamps. The deviation from flatness of radiator surface must be less than 0.05mm. It's recommended using of Indium foil or thermal conductive and soft material between bottom of the case and heatsink for thermal interface. It's undesirable to use thermal grease for this.

Avoid back reflection to the device. It may give impact on the device performance in aspects of spectrum and power stability. It also may cause fatal facet damage. Using of optical isolators is highly recommended to block back reflection.

Do not pull the fiber. Do not bend a fiber with a radius smaller than 3 cm. Fiber tip should always be protected from any contamination or damage during the process of installation. After removing the dust-preventing cap covered at fiber tip, carefully clean fiber tip by wiping through one direction using optical lens cleaning paper or cotton swab dabbed with Iso-Propanol or Ethyl alcohol. Operate the device with clean fiber connector only.

Electrostatic discharge is the primary cause of unexpected product failure. Take extreme precaution to prevent ESD. During device installation, ESD protection has to be maintained - use wrist straps, grounded work surfaces and rigorous antistatic techniques when handling the product.

Example of Part Number Identification

DFB-1310-PM-50 -> 50mW output power at wavelength 1310nm, PM1300 fiber

DFB-1310-HI-50 -> 50mW output power at wavelength 1310nm, SMF-28 fiber

DFB-1312-PM-50 -> 50mW output power at central wavelength 1310nm, PM1300 fiber

NOTE: Innolume product specifications are subject to change without notice