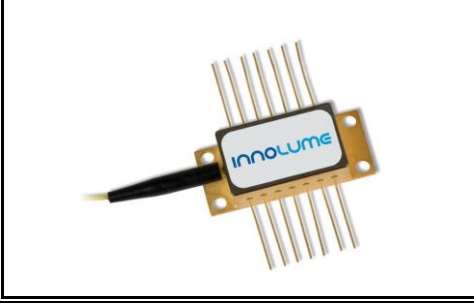


## DFB-12XX-YY-50

### Fiber Coupled Distributed-Feedback Laser Diode with Integrated Optical Amplifier



- Features:**
- 50mW output power ex-single mode fiber in 1200-1280nm wavelength range
  - Optional monitor photodiode
  - Optional integrated optical isolator (OI)
  - Mode-hop free continuous tuning (subject to OI option)
  - Proprietary mirror coating technology enabling high reliability
  - Individual burn-in and thermal cycling screening
  - RoHS compliance

### SPECIFICATIONS

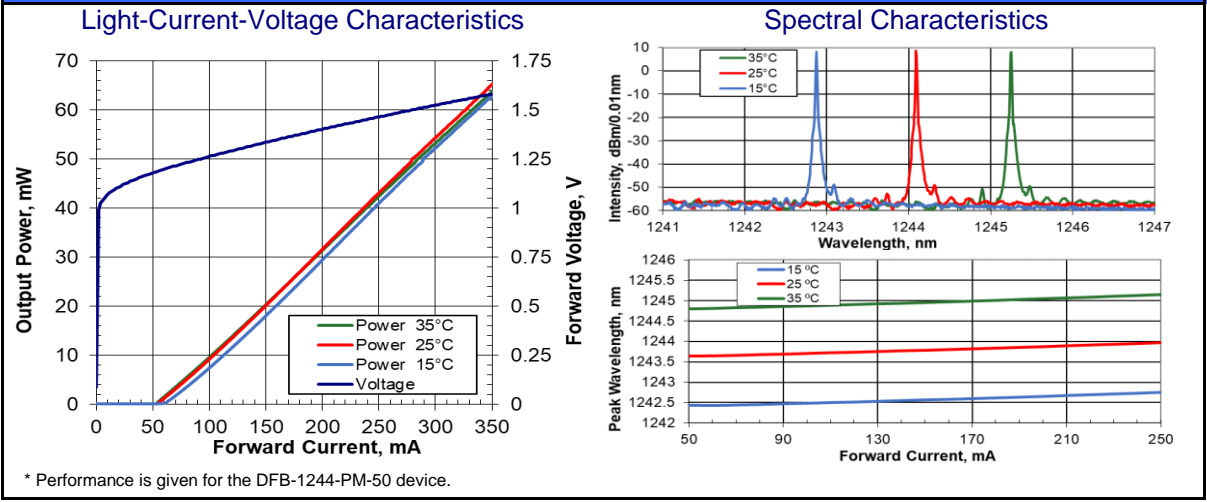
Test conditions: CW operation, chip temperature 25°C, the case is mounted on room temperature heatsink

Parameters	Symb.	Min.	Typ.	Max.	Unit
Operating Power	P <sub>out</sub>	50			mW
Operating Current	I <sub>op</sub>		300	400	mA
Operating Voltage	V <sub>op</sub>		1.8	3.5	V
Kink-free output power*		1.1×P <sub>out</sub>	1.3×P <sub>out</sub>		mW
Range of available wavelength	λ	1200		1280	nm
Mean wavelength tolerance				1	nm
Linewidth at P <sub>out</sub>	Δλ			5	MHz
Wavelength temperature tunability	Δλ/ΔT		100	115	pm/°C
Wavelength current tunability	Δλ/ΔI		4	6	pm/mA
Sidemode suppression ratio	SMSR	40			dB
Threshold current	I <sub>th</sub>		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



ABSOLUTE MAXIMUM RATINGS			
Parameters	Min.	Max.	Unit
Laser Diode reverse voltage	-	2	V
Laser Diode CW forward current	-	lop+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			FIBER SPECIFICATION			
Parameters	Value	Unit	Parameters	HI1060	PM980	Unit
Thermistor type	NTC	-	Numerical aperture (Typical)	0.14	0.12	
Resistance @25°C	10 ± 0.1	kOhm	Cutoff wavelength	920±50	900±70	nm
Beta 0-50°C	3375±1%	K	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	µm
			Length	1.0 ± 0.1	1.0 ± 0.1	m
			Connector	FC/APC (narrow key)		
<p>The output light is polarized along the slow axis of PM fiber.</p>						

DIMENSIONS (in mm)	
	<p><b>Pin identification:</b></p> <ol style="list-style-type: none"> <li>1 TEC "+"</li> <li>2 Thermistor</li> <li>3 Monitor PD anode (optional)</li> <li>4 Monitor PD cathode (optional)</li> <li>5 Thermistor</li> <li>6 -</li> <li>7 -</li> <li>8 -</li> <li>9 -</li> <li>10 Laser Diode anode "+"</li> <li>11 Laser Diode cathode "-"</li> <li>12 -</li> <li>13 Case</li> <li>14 TEC "-"</li> </ol>

## 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-1260-PM-50 -> 50mW output power at wavelength 1260nm, PM-980 fiber

DFB-1260-HI-50 -> 50mW output power at wavelength 1260nm, HI-1060 fiber

DFB-1244-PM-50 -> 50mW output power at wavelength 1244nm, PM-980 fiber

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