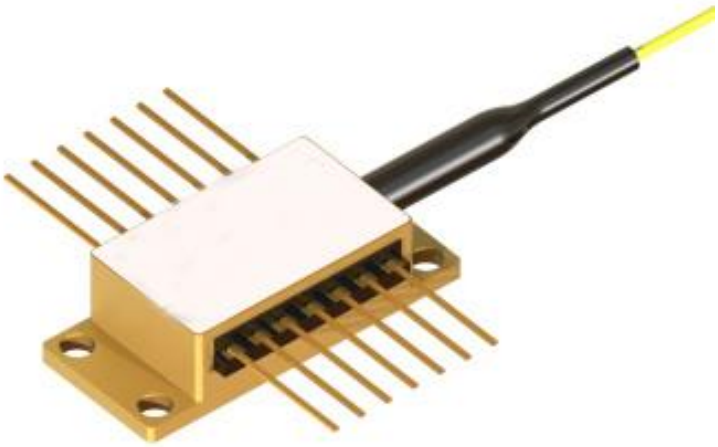
990nm 150mW PM Fiber-Coupled Laser Diode



Product Description

The fiber-coupled laser diodes from idealphotonics feature a compact structure, easy integration and high stability. They also reduce optical loss during long-distance transmission, maintain beam quality, and meet the requirements of high-demanding applications.

Product features

High-efficiency fiber coupling；Multiple wavelengths available；Low-noise output；Compact and modular；Fast modulation

Part Number

MP-FP-990-150-14BF-PA

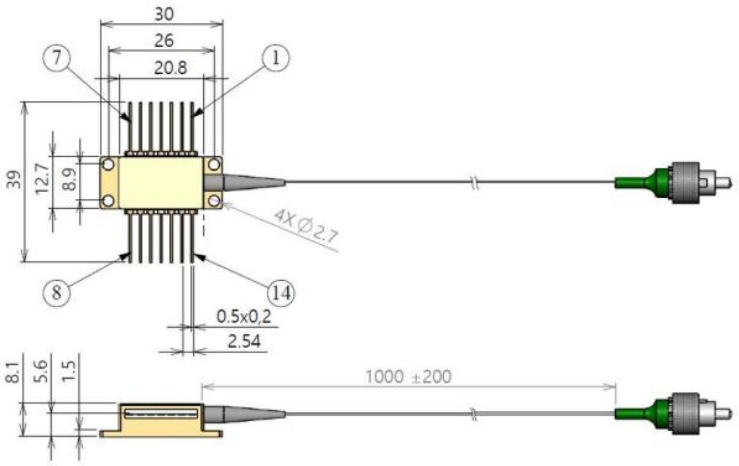
Application area

Fiber Optic Sensing | Medical Equipment | Industrial Processing | Optical Communication | Scientific Research Experiments

Core parameters

Center Wavelength	Output Power
990 nm	150mW

Dimension Drawing



Pin identification:
1. TEC "+"
2. Thermistor
3. Monitor PD anode (Bias "-")
4. Monitor PD cathode (Bias "+")
5. Thermistor
6. -
7. -
8. -
9. -
10. LD anode ("+")
11. LD cathode ("-")
12. -
13. Case
14. TEC "-"

General Parameters

Product Parameters

Available Power Options					
Condition:	CW operation, chip temperature 25°C, package mounted on room-temperature heat sink				
Part Number	Output Power (Pout), mW	Operating Current (mA)		Forward Voltage (V)	
		Typ.	Max.	Typ.	Max.
MP-FP-9XX-150	150	300	370	1.6	1.8
MP-FP-9XX-200	200	350	420	1.6	1.8
MP-FP-9XX-250	250	400	470	1.6	1.8

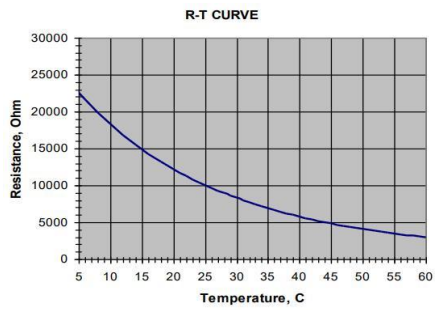
Specifications					
Condition:	CW operation, chip temperature 25°C, package mounted on room-temperature heat sink				
Parameter	Symb.	Min.	Typ.	Max.	Unit
Un-twisted Output Power	-	1.1×Pout	1.3×Pout	-	mW
Available Wavelength Range	λ	900	-	1010	nm

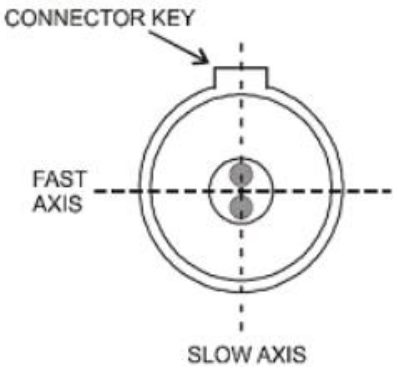
Average Wavelength Tolerance	-	-	-	5	nm
Spectral Bandwidth at -3dB level at Pout	Δλ	-	<0.5	4	nm
Threshold Current	Ith	-	70	100	mA
Wavelength Temperature Tunability	Δλ/ΔT	0.3	-	0.4	nm/°C
Polarization Extinction Ratio	PER	12	-	-	dB

* ΔP/ΔI > 0 (ΔI=5mA)

Absolute Maximum Ratings			
Parameter	Min.	Max.	Unit
Laser Diode Reverse Voltage	-	2	V
Laser Diode CW Forward Current	-	Iop+300	mA
Thermoelectric Cooler Current	-	3	A
Thermoelectric Cooler Voltage	-	4	V
Fiber Bending Radius	3	-	cm

Chip Operating Temperature Range	5	40	°C
Package Operating Temperature Range	0	70	°C
Storage Temperature Range	-40	85	°C

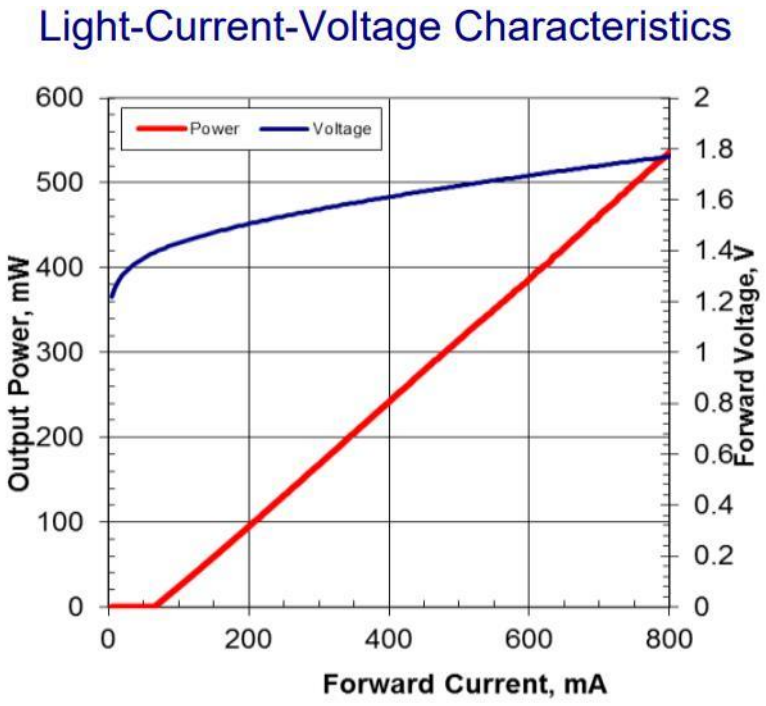
Thermistor Specifications			Fiber Optic Specifications			
Parameter	Value	Unit	Parameter	HI1060	PM980	Unit
Thermistor Type	NTC		Numerical Aperture (Typ.)	0.14	0.12	
Resistance @25°C	10 ± 0.1	kOhm	Cutoff Wavelength	920±50	900±70	nm
Beta 0-50°C	3375±1%	K	Mode Field Diameter (@1060nm)	6.2±0.3	6.6±0.3	μm
			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)		

	Align connector with PANDA fiber
	 **Output light is polarized along the slow a xis of the PM fiber**

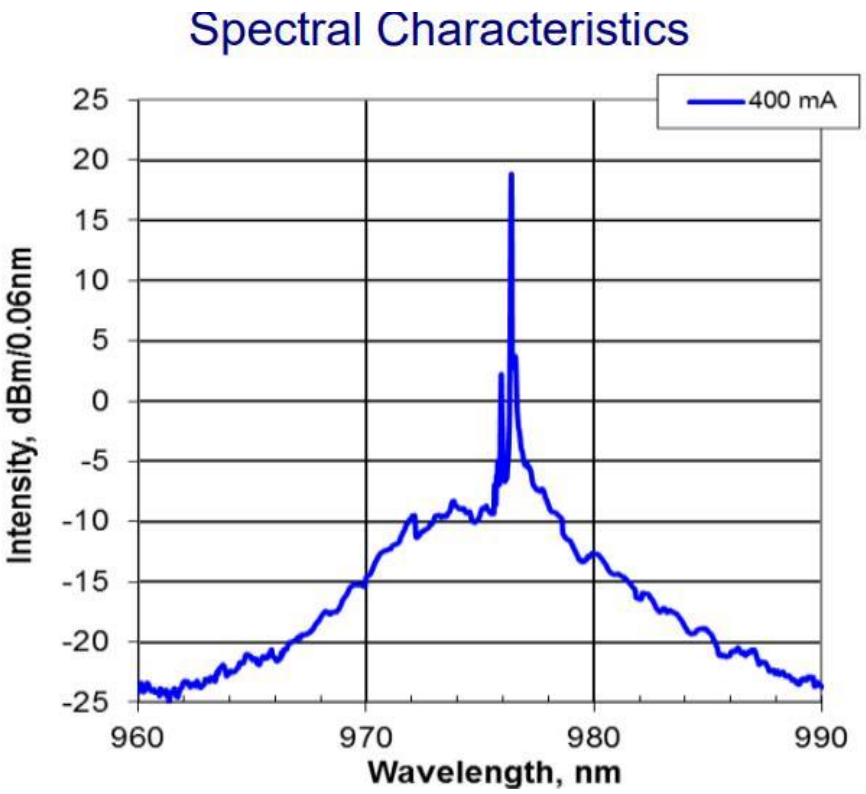
Product Characteristics

Typical performance curves for reference only

Photoelectric Current-Voltage Characteristics



Spectrum - (Resolution 0.05nm)



Notes

The light emitted by this equipment is invisible and may be harmful to human eyes. When the equipment is running, avoid directly viewing the fiber connector. When operating with the connector open, appropriate laser safety goggles must be worn.Absolute maximum ratings can only be applied to the equipment for a short time. Long-term exposure to maximum ratings or exposure to more than one maximum rating may cause equipment damage or affect the reliability of the equipment. Operating the equipment outside the maximum ratings may lead to equipment failure or safety hazards. The power supply used with the component must be used to ensure that the maximum forward current is not

exceeded.Equipment on the heat sink requires a suitable heat sink. The device must be mounted on the heat sink using 4 screws (tightened in an X-pattern, initial torque set to 0.075Nm, final X-pattern screw tightening to 0.15Nm) or fixtures. The flatness deviation of the heat sink surface must be less than 0.05mm. It is recommended to use indium foil or thermally conductive soft material as the thermal interface between the bottom of the housing and the heat sink. Thermally conductive grease is not recommended.Avoid back reflection from the equipment. It may affect the equipment performance in terms of spectral and power stability. It may also cause catastrophic damage to the facet. It is strongly recommended to use an optical isolator to block back reflection.Do not pull the fiber. Do not bend the fiber with a radius smaller than 3 cm. During installation, always protect the fiber end face from any contamination or damage. After removing the dust cap covering the fiber end face, gently wipe isopropyl alcohol or ethanol with an optical lens cleaning tissue or cotton swab, and carefully clean the fiber end face in one direction. Operate the equipment only with clean fiber connectors.Electrostatic discharge is the main cause of unexpected product failure. Take extreme preventive measures to prevent ESD. During equipment installation, ESD protection must be maintained — use wrist straps, grounded work surfaces and strict