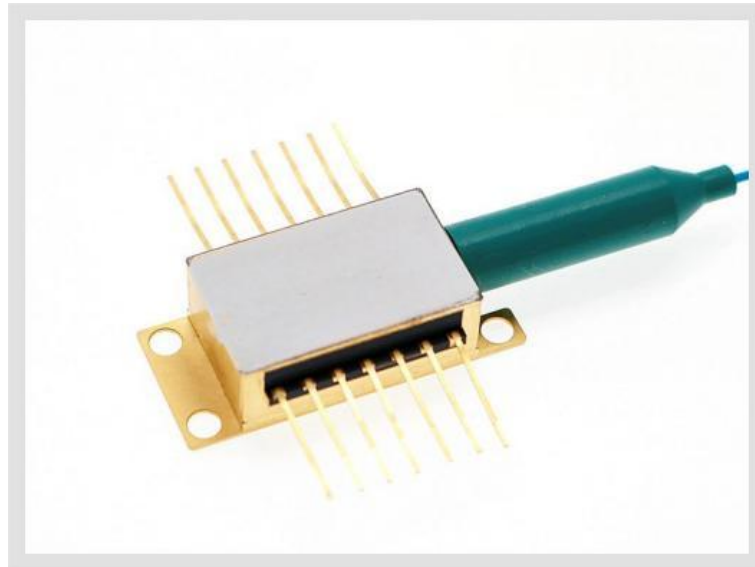


450nm 20mW SM FP Laser Diode



- **Product Description**

450nm FP is a single-mode laser diode module designed specifically for optical measurement and communication. The laser adopts a standard 14-pin butterfly package, with a built-in monitoring photodiode (PD) and thermoelectric cooler (TEC), and is coupled to PM Fiber. The pigtail of this module is 0.7-1.0m single-mode polarization-maintaining fiber, with an FC/APC connector interface.



● Product features

Optical output power: 30mW; FC/APC connector; 14-pin butterfly package;
High-efficiency coupling to single-mode fiber ; Continuous wave (CW) or pulsed operation mode ; Built-in monitoring photodiode (PD) and thermoelectric cooler (TEC); Single-mode (SM) or polarization-maintaining (PM) fiber (0.9mm diameter)

● Part Number

MP-FP-450-20-14BF-SA

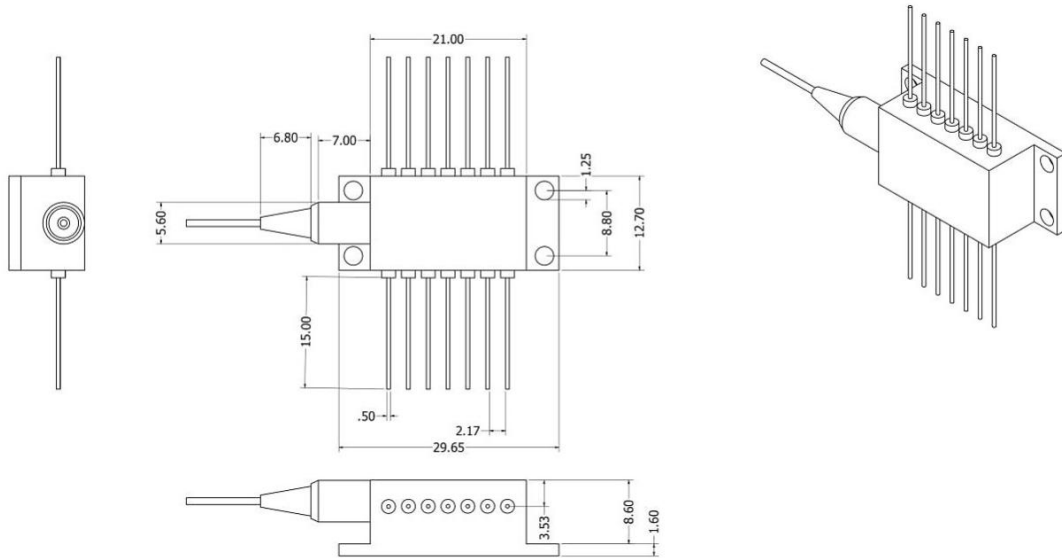
● Application area

Fiber optic transmission systems | Laser interferometry | Laser indication |
Test light sources

● Core parameters

Center Wavelength	Connectors
450nm	FC/APC

● Dimension Drawing



● General Parameters

Detailed parameters

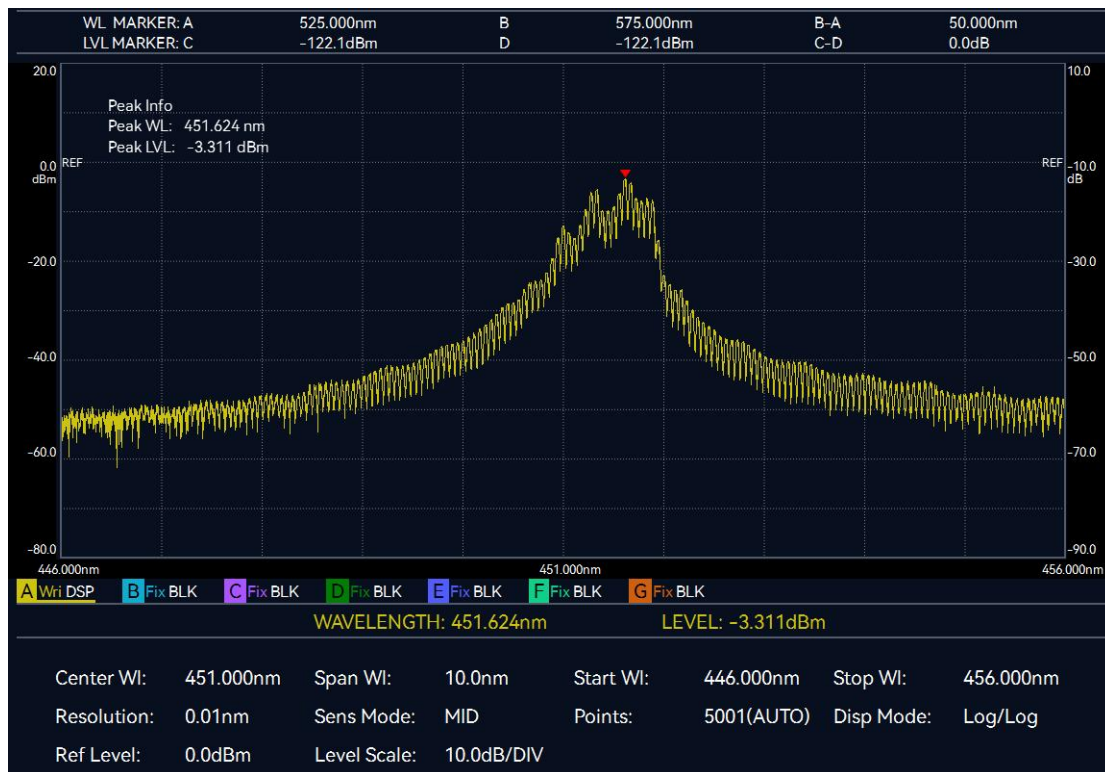
Electrical/Optical Properties (Substrate Temperature = 25°C, CW Bias unless otherwise noted)

Parameters	symbol	Minimum	Typical values	Maximum	unit
Center wavelength	λ	445	450	455	nm
Spectral width	$\Delta\lambda$	0.6	0.8	1.2	nm
Threshold current	I_{th}		20	30	mA
Operating current	I_{op}		120	150	mA
Fiber output power	Pf	10	20	30	mW
Photodiode dark current (at reverse voltage VRD=5V)	I_d			0.1	uA

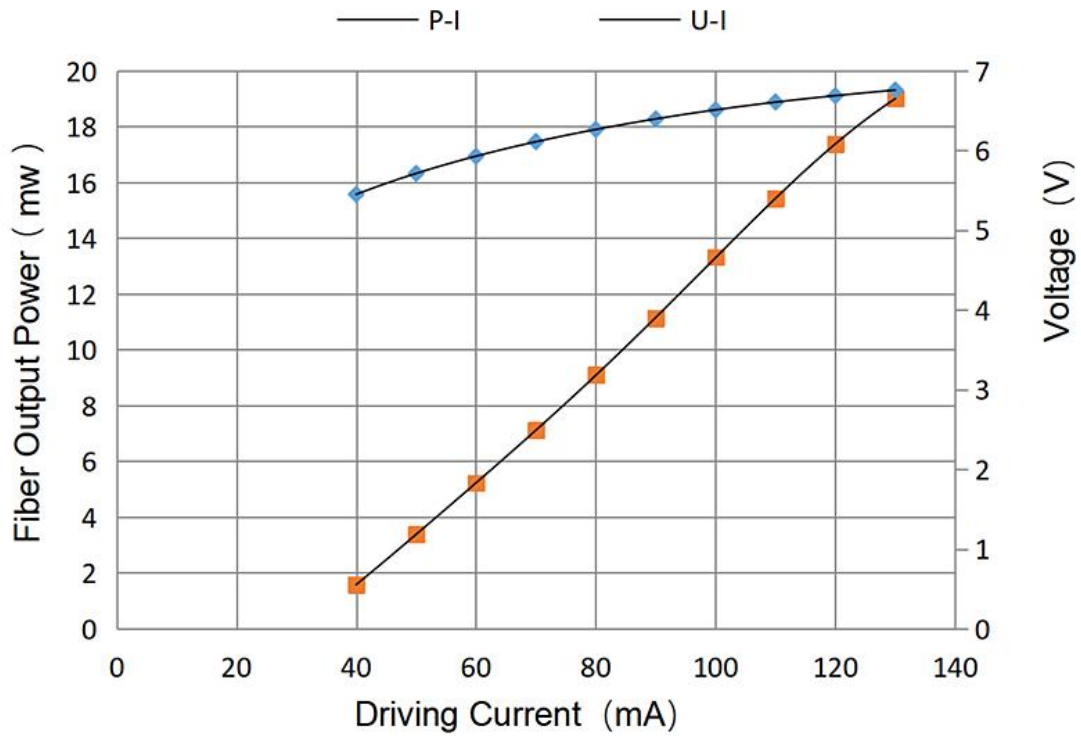


Matting ratio (polarization version)	PER	17	20		dB
Coupled fiber type	PM Fiber				
Forward voltage	Vf		6	8	V
Thermistor resistance value	RT	9.5	10	10.5	KΩ
Thermistor temperature coefficient			-4.4		%/°C
connectors	FC/APC				

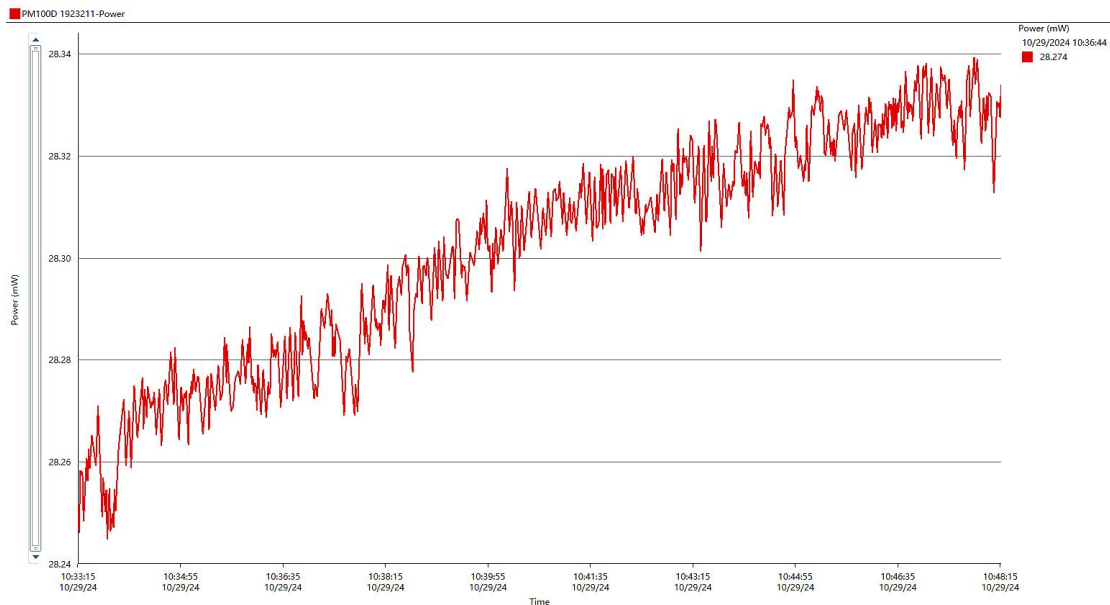
Spectrum



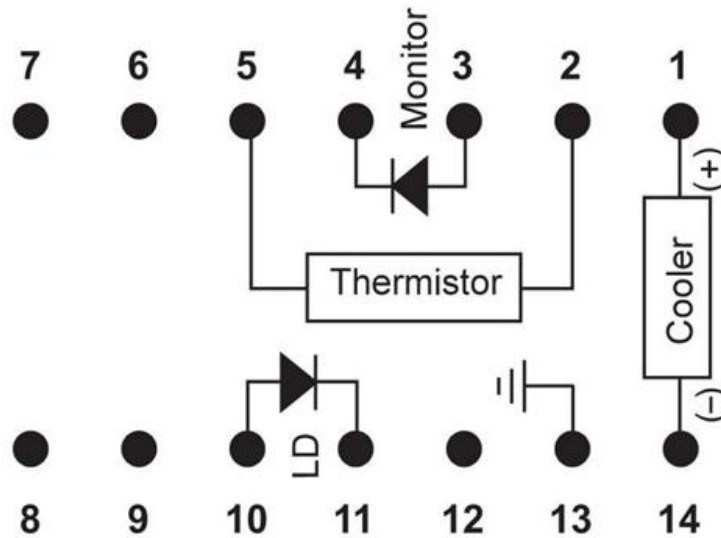
Optical Power - Current Curve



Power stability



Pin type



1	Thermoelectric cooler (Anode)	8	N/C
2	Thermistor	9	N/C
3	Monitor photodiode anode (Cathode)	10	Laser diodes (Anodes)
4	Monitor photodiode cathode (Anode)	11	Laser diodes (Cathode)
5	Thermistor	12	N/C
6	N/C	13	Case ground
7	N/C	14	Thermoelectric cooler (Cathode)



Absolute maximum rating

project	unit	Minimum	Typical values	Maximum
Shell temperature	°C	-5	25	70
Chip temperature	°C	+10	25	40
Operating current	mA	0	120	150
Forward voltage	V	5	6	8
Semiconductor Refrigerator (TEC) Current	A	-	1.2	1.4
Laser diode (LD) reverse voltage	V	-	-	1.8
Photodiode (PD) reverse voltage	V	-	-	10

Purchase information

MP-FP-□□□□-☆-A8▽-XX

□□□□: Wavelength

405:405nm

520:520nm

633:633nm

680:680nm

850:850nm



1550: 1550nm

☆: **Output Power**

A: 20mW

B: 30mW

▽: **WavelengthTolerance**

1: ±1nm

2: ±2nm

XX: Fiber and Connector Type

SA=HP460+ FC/APC

SP=HP460+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC