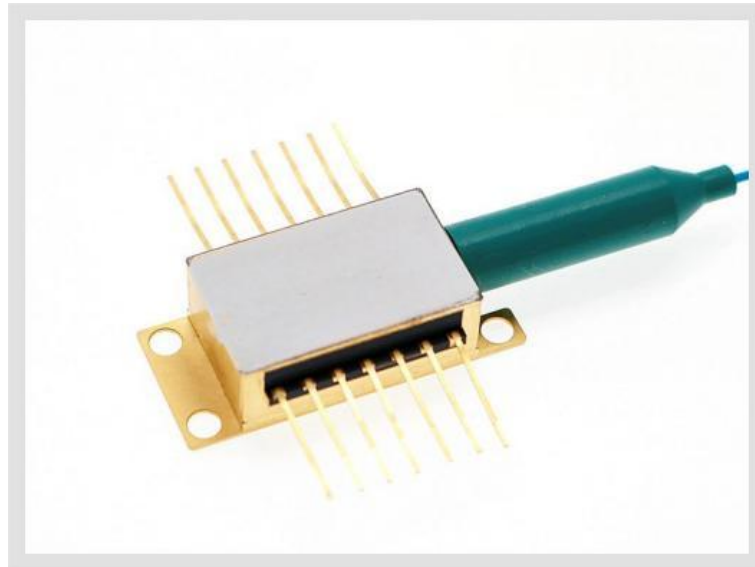


## 450nm 20mW PM FP Laser Diode



- **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-PA

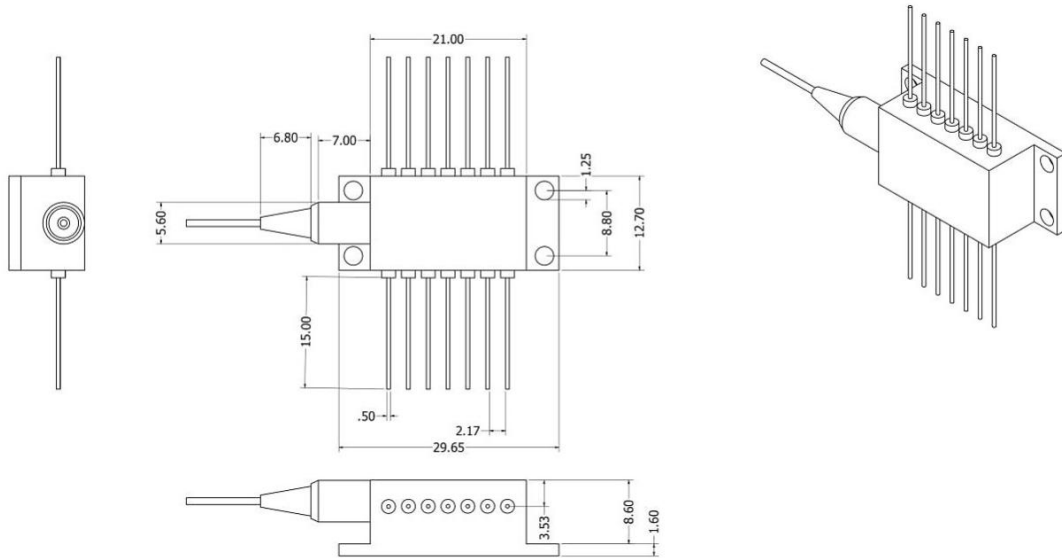
## ● Application area

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

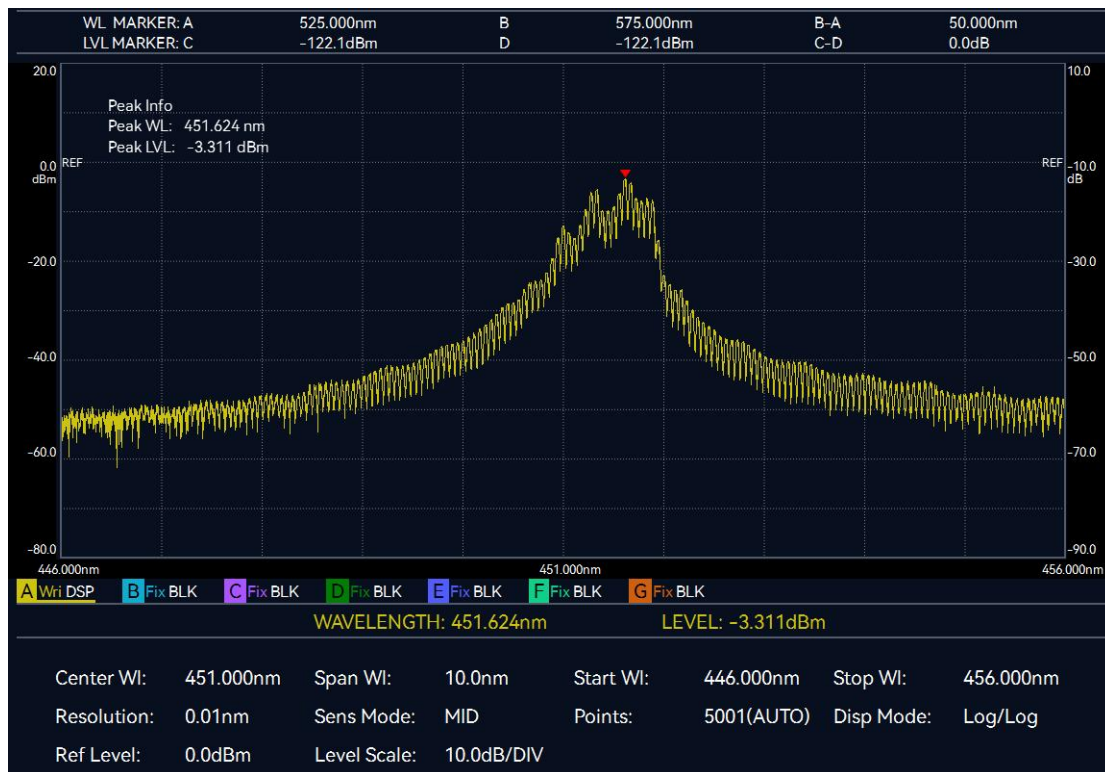
Electrical/Optical Properties (Substrate Temperature = 25°C, CW Bias unless otherwise noted)

Parameters	symbol	Minimum	Typical values	Maximum	unit
Center wavelength	$\lambda$	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

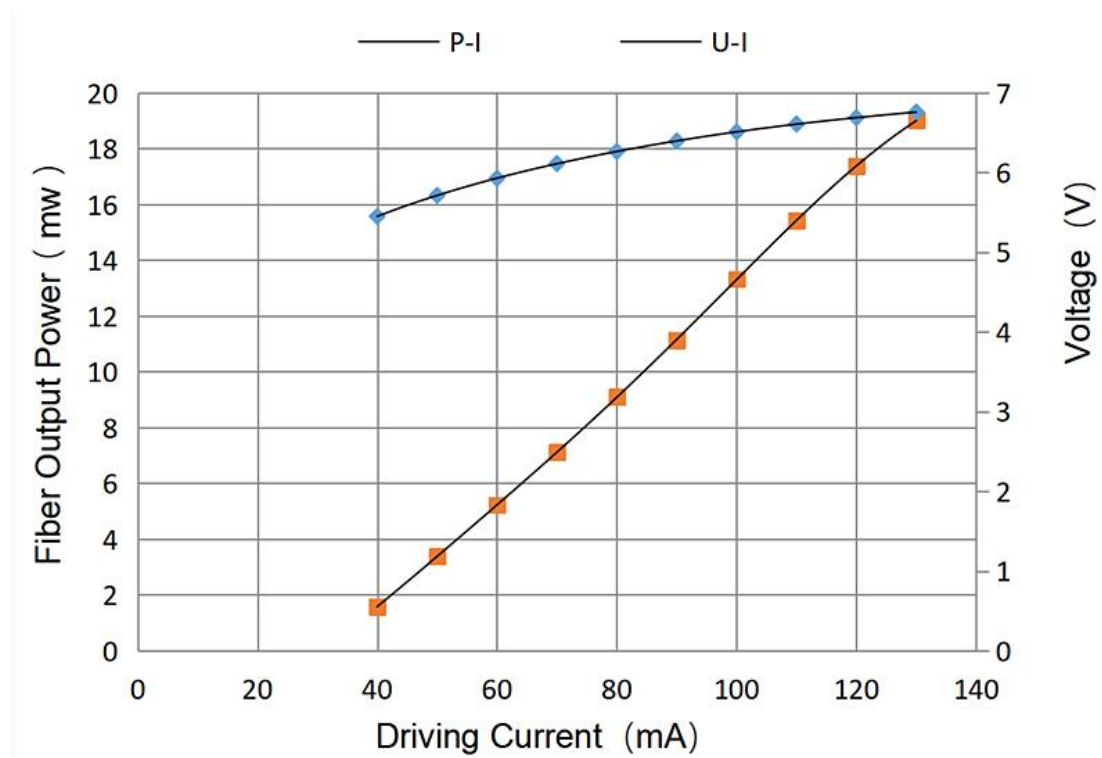


Matting ratio (polarization version)	PER	17	20		dB
Coupled fiber type	PM Fiber				
Forward voltage	Vf		6	8	V
Thermistor resistance value	RT	9.5	10	10.5	KΩ
Thermistor temperature coefficient			-4.4		%/°C
connectors	FC/APC				

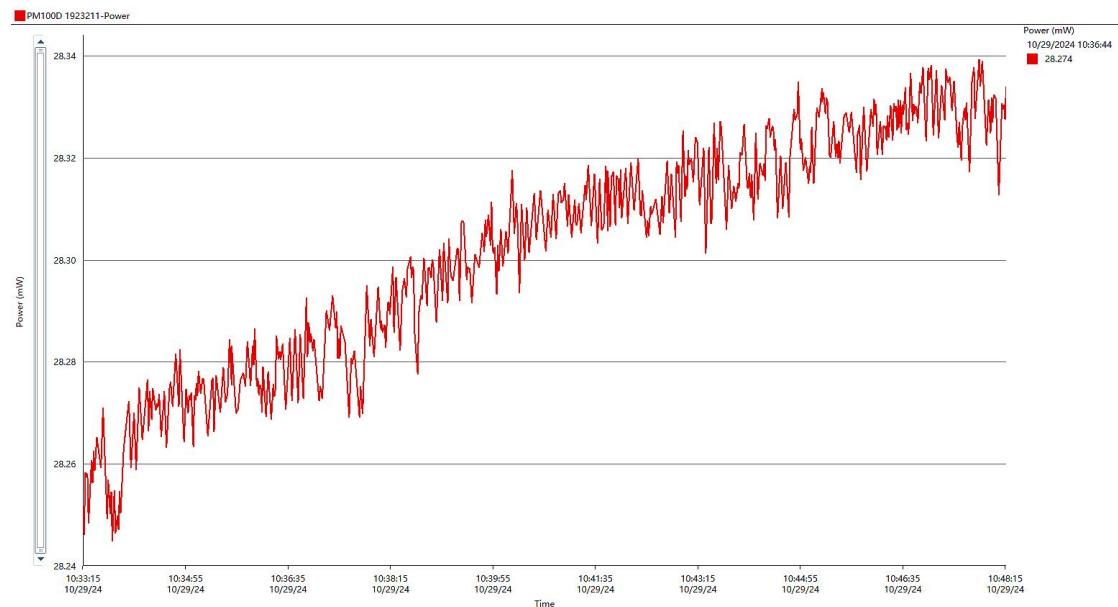
## Spectrum



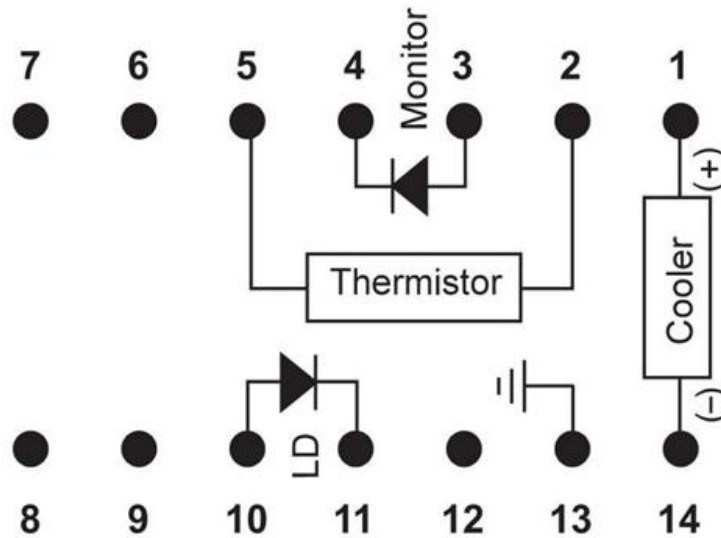
## Optical Power - Current Curve



## 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

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**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**