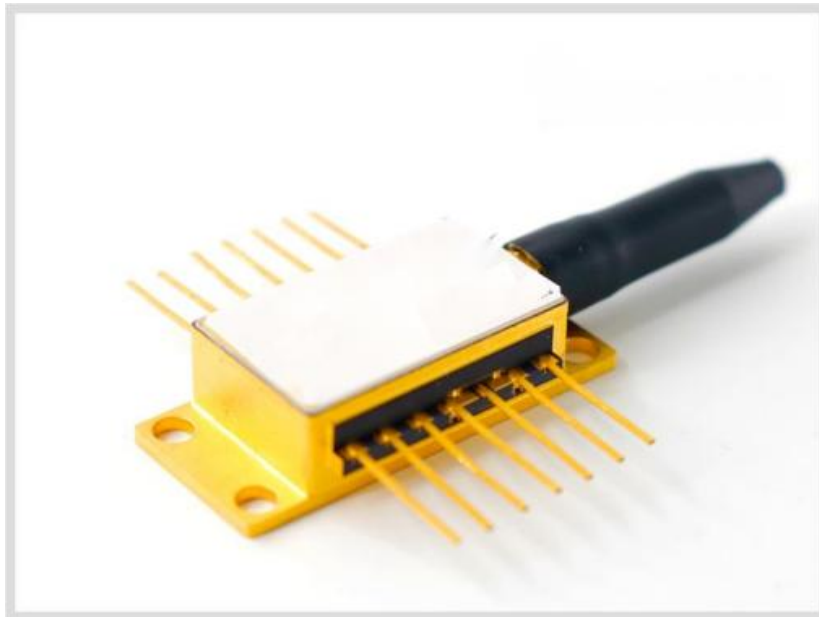


1410nm15mW DFB Laser Diode for Laser Light Source



● Product Description

1410 nm distributed feedback (DFB) laser diode module produced by idealphotonics is a cost-effective laser source with high coherence. The DFB laser diode chip adopts an industry-standard 14-pin butterfly package with a hermetic structure, and is integrated with a thermoelectric cooler (TEC) and a photodetector (PD).



- **Product features**

Narrow linewidth: < 2 MHz; industry-standard 14-pin butterfly package; excellent wavelength control and stability; mode-hop-free tuning; high reliability; customer-specific wavelengths available

- **Part Number**

MP-DFB-1410-15-A81-14BF-PA

- **Application area**

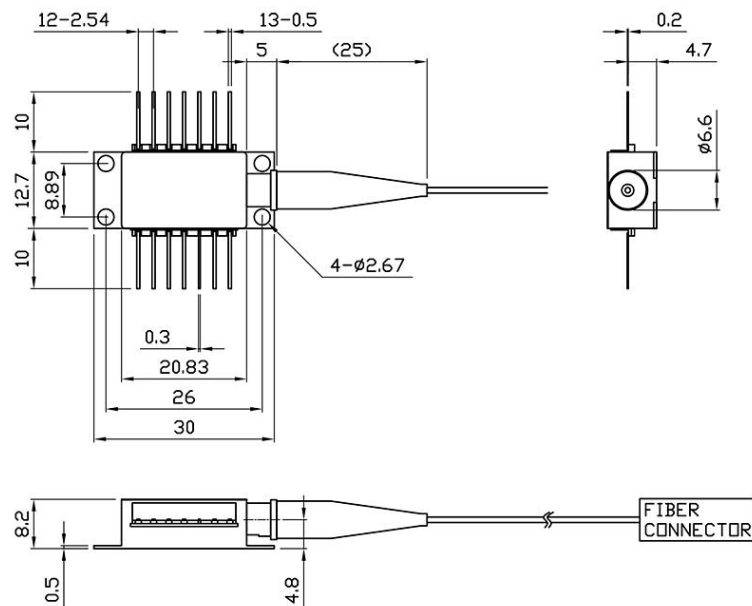
Tunable Diode Laser Absorption Spectroscopy | H₂O (gas) monitoring

- **Core parameters**

Central Wavelength	Output Power
1410nm	15mW



● Dimension Drawing



● General Parameters

Detailed Parameters

Specification Table

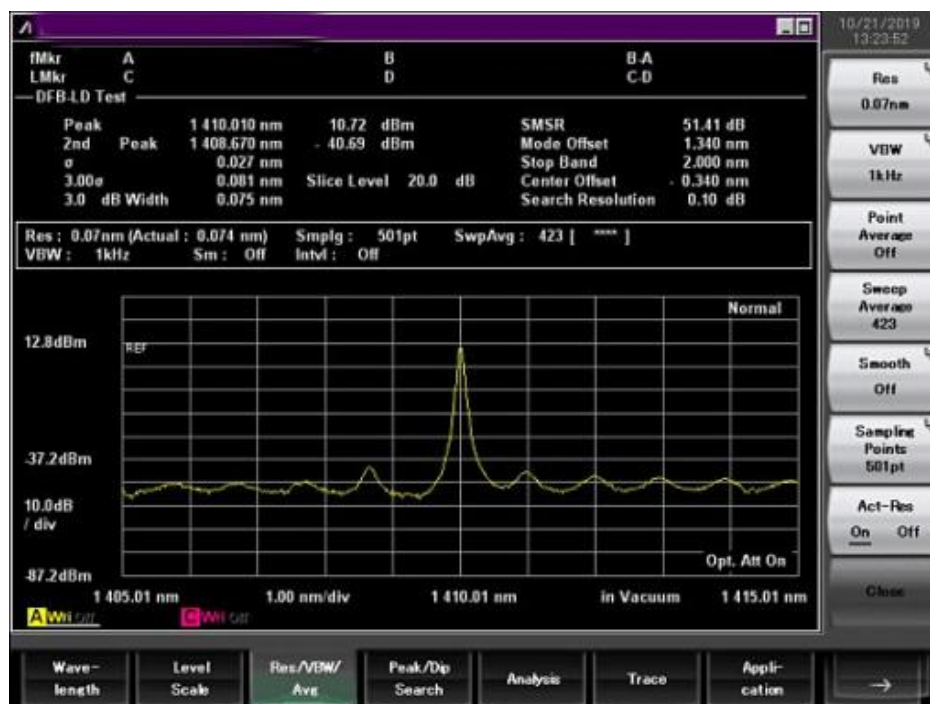
Electrical / Optical Characteristics (Tsub = 25 °C, CW bias, unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength	λ	1409.5	1410	1410.5	nm
Side-Mode Suppression Ratio	SMSR	30	40	—	dB
Threshold Current	I _{th}	—	20	30	mA
Operating Current	I _{op}	—	80	120	mA



Chip Output Power	Pf	10	15	30	mW
Quantum Efficiency	η	0.08	0.12	—	mW/mA
Current Tuning Coefficient	$\Delta\lambda/\Delta I$	—	0.015	—	nm/mA
Temperature Tuning Coefficient	$\Delta\lambda/\Delta T$	—	0.12	—	nm/K
Forward Voltage	Vf	—	1.3	2	V
Thermistor Resistance	RT	9.5	10	10.5	k Ω
Thermistor Temperature Coefficient	—	—	-4.4	—	%/°C

Spectrum Diagram

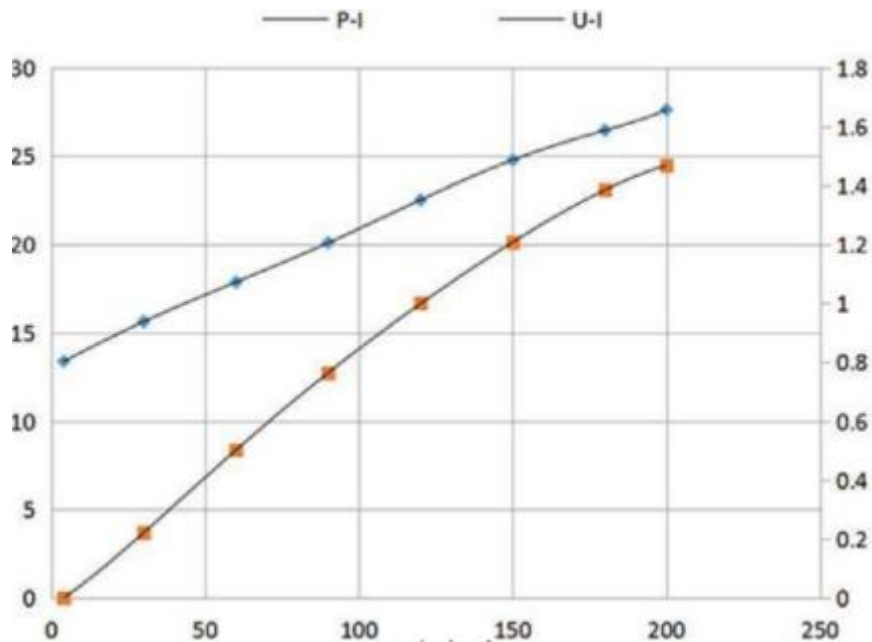




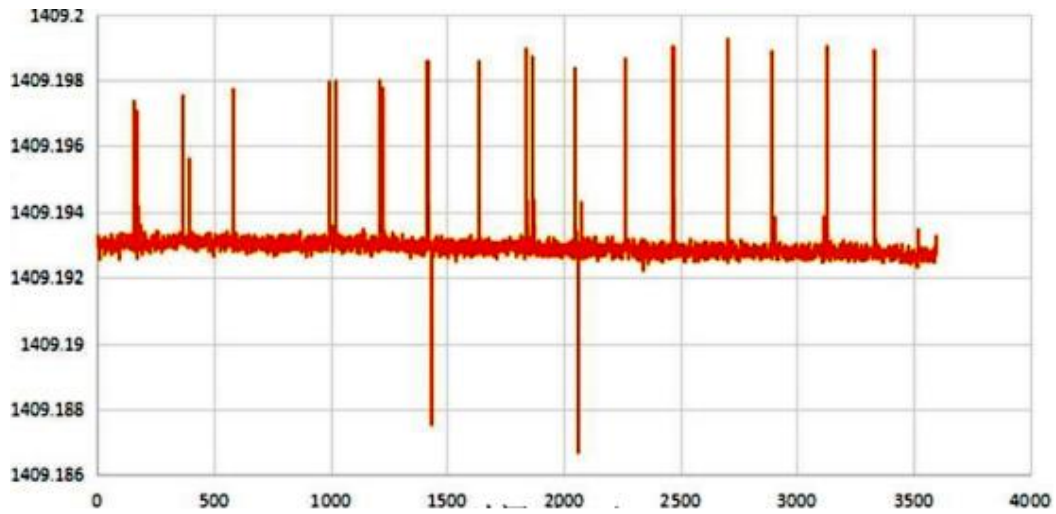
DFB Laser Linewidth Test Results



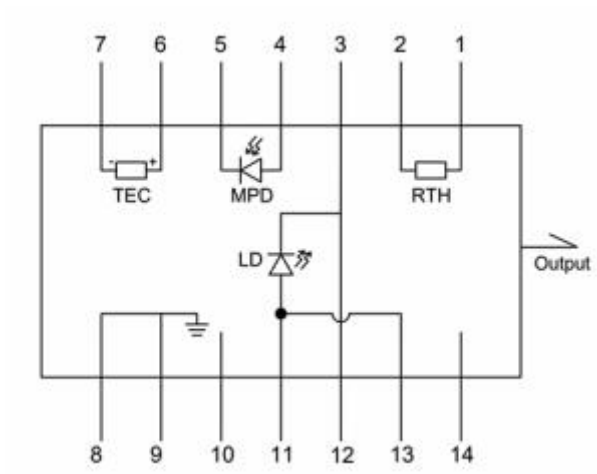
L-I Curve



Wavelength Stability



Pin Definition:



Pin #	Definition	Pin #	Definition
1	Thermistor	8	Case Ground
2	Thermistor	9	Case Ground



3	LD(-)	10	NC
4	Detector (+)	11	LD(+)
5	Detector (-)	12	LD(-), RF
6	TEC (+)	13	LD(+)
7	TEC (-)	14	NC

Absolute Maximum Ratings:

Parameter	Unit	Min.	Typ.	Max.
Case Temperature	°C	-5	25	70
Chip Temperature	°C	10	25	40
Operating Current	mA	0	100	150
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	—	—	1.2
Reverse Voltage (LD)	V	—	—	2
Reverse Voltage (PD)	V	—	—	20



Ordering Information:

MP-DFB-□□□□-☆-A8▽-XX

**□□□□: Wavelength

1512: 1512nm *****

1653.7: 1653.7nm

1410: 1410nm

☆ : Output Power

A: 10mW

B: 20mW

▽: Wavelength Tolerance

1: ±1nm

2: ±2nm

XX: Fiber and Connector Type

SA=SMF-28E+ FC/APC

SP=SMF-28E+ FC/PC

PP=PM Fiber+ FC/PC

PA=PM Fiber+ FC/APC

