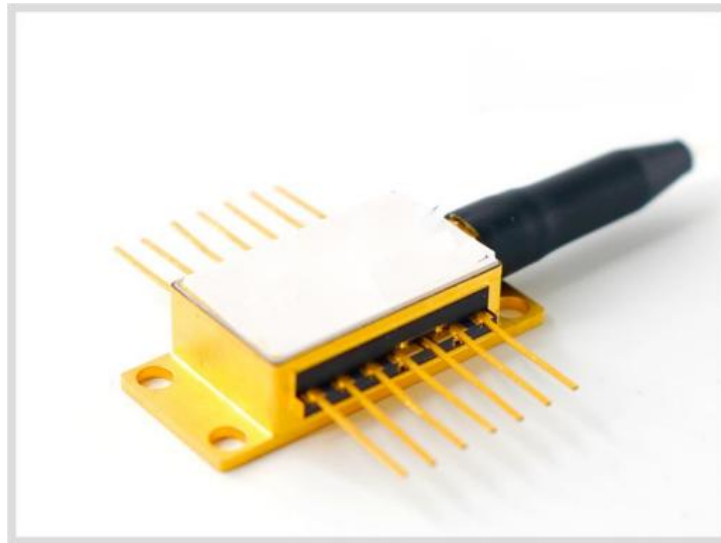


1602nm 50mW PM DFB Narrow Linewidth

Laser Diode



● Product Description

Distributed feedback (DFB) lasers from idealphotonics feature ultra-low relative intensity noise (RIN), ultra-narrow linewidth and high output optical power. They are widely used in automotive lidar, fiber optic sensing systems and high-precision measurement applications. We can provide customized services and corresponding technical support according to customer requirements.



● Product features

Linewidth: 70 kHz-100 kHz; Optical Power: 180 mW; Relative Intensity Noise

(RIN): -163 dB/Hz @ 100 kHz

● Part Number

MP-DFB-1602-50-A81-14BF-PA-C1

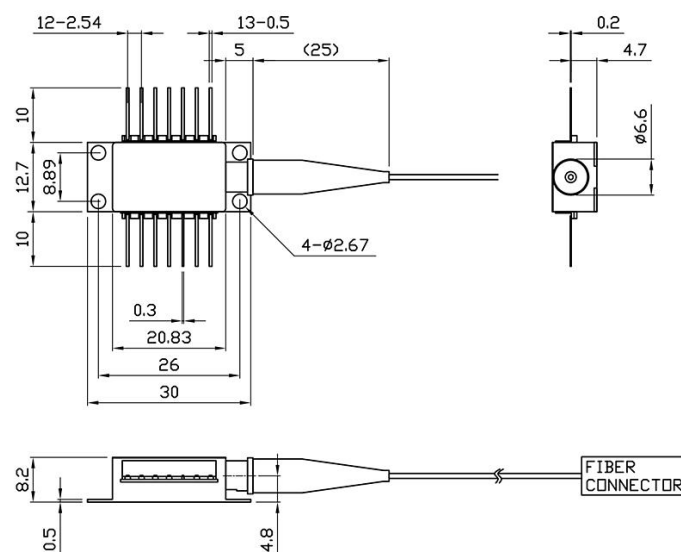
● Application area

Tunable Diode Laser Absorption Spectroscopy | H₂O (gas) monitoring

● Core parameters

Central Wavelength	Output Power
1602nm	50mW

● Dimension Drawing



● General Parameters

Detailed Parameters

Specification Table

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

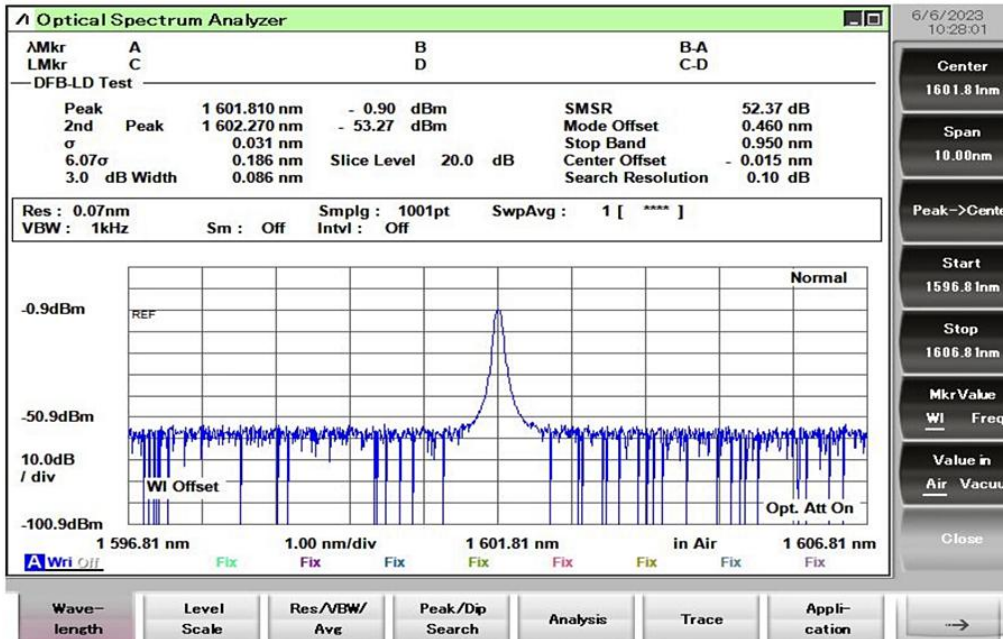
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Output Power	Po	50	70	—	mW	Continuous Wave (CW)
Center Wavelength	λ_c	1601.5	1602	1602.5	nm	T = 25 °C
Spectral Linewidth (FWHM)	$\Delta\nu_L$	—	200	300	kHz	Lorentzian linewidth
Side Mode Suppression Ratio	SMSR	40	—	—	dB	CW, at output power Po
Polarization Extinction Ratio	PER	20	—	—	dB	For PM devices, along slow axis
Relative Intensity Noise	RIN	—	-163	-155	dB/Hz	—
Optical Isolation	ISO	40	—	—	dB	—
TEC Set Temperature	TTEC	15	—	40	°C	—
Threshold Current	Ith	—	15	30	mA	At TEC set temperature



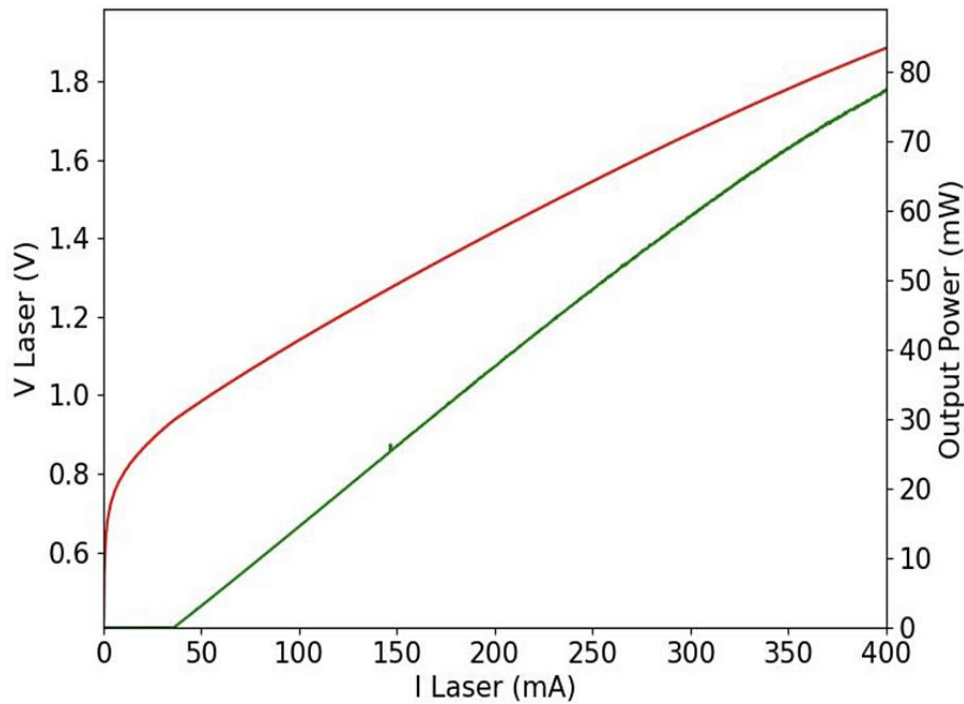
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
						TTEC
LD Operating Current	I_b	—	—	400	mA	CW, at output power P_o
LD Forward Voltage	V_f	—	1.5	1.8	V	CW, at output power P_o
Photodetector Bias Voltage	V_R	4.75	5	5.25	V	Cathode to anode
Photodetector Current	I_{mc}	—	—	2	mA	At output power P_o
Photodetector Dark Current	I_{md}	—	—	1	nA	At bias voltage V_R = 5 V
Operating Temperature	T_o	-40	25	80	°C	—
Storage Temperature	T_s	-40	—	80	°C	—



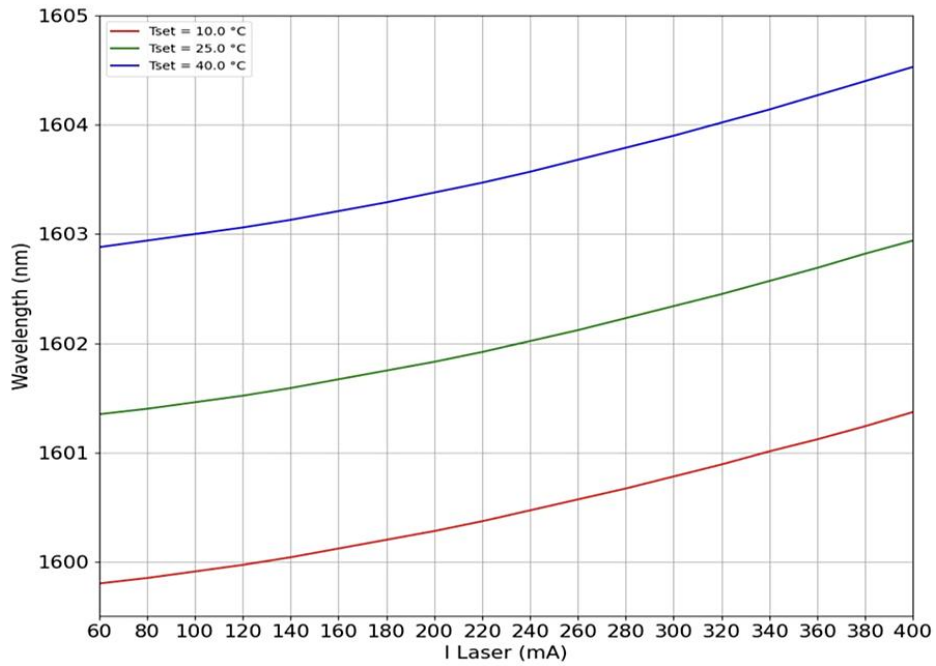
Spectrum Diagram



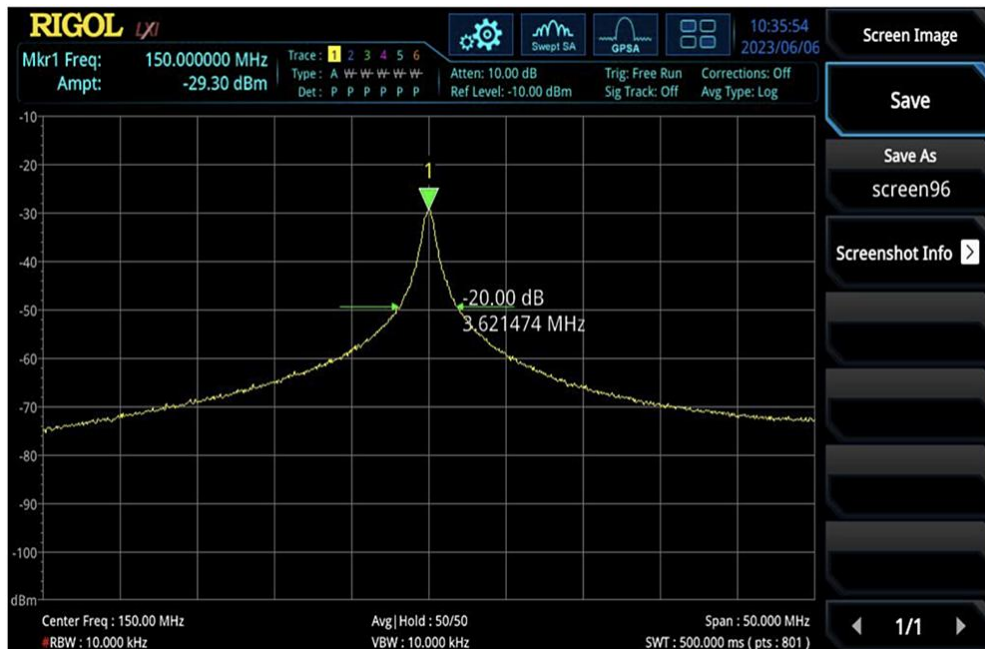
L-I Curve



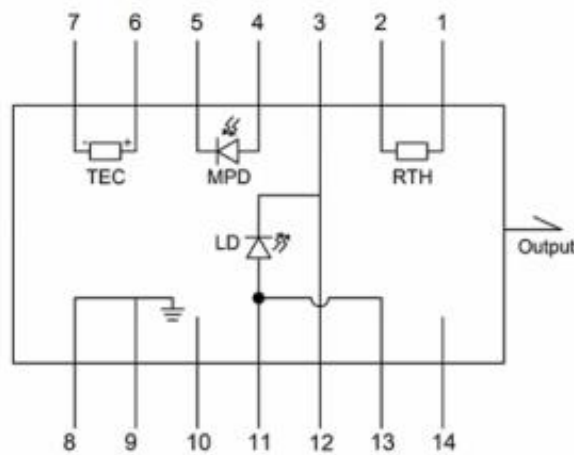
Tuning Characteristic



Linewidth Test Result



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



Ordering Information:

MP-DFB-□□□□-☆-A8▽-14BF-XX-C1

**□□□□: Wavelength

1550: 1550nm

1602: 1602nm

△ :Narrow linewidth

50: 50KHz

100: 100KHz

200: 200KHz

☆ : Output Power

50: 50mW

100: 100mW

180: 100mW

▽ : 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

NL: Narrow Linewidth@200KHZ