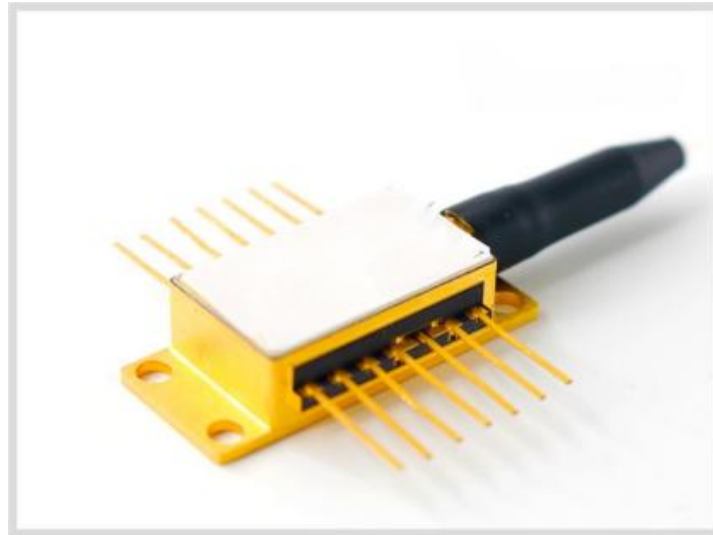




## 1385nm 20mW DFB laser diode



- **Product Description**

1385 nm distributed feedback (DFB) laser diode module is a cost-effective laser source with high coherence. The DFB laser diode chip is housed in an industry-standard hermetically sealed 14-pin butterfly package, with an integrated thermoelectric cooler (TEC) and 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-1385-20-A81-14BF-PA

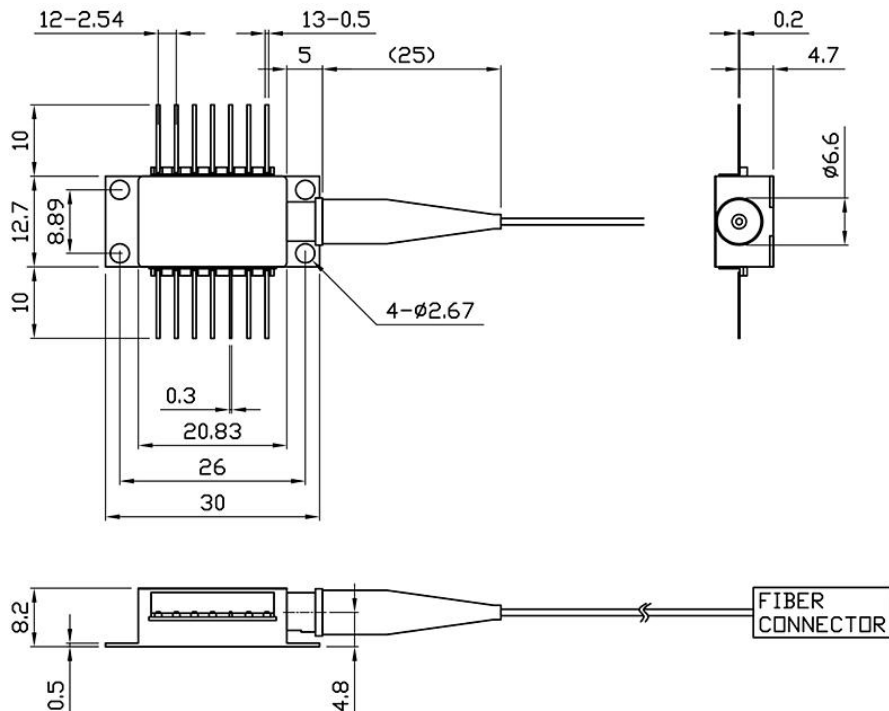
## ● Application area

Tunable Diode Laser Absorption Spectroscopy | H<sub>2</sub>O (gas) monitoring

## ● Core parameters

Central Wavelength	Output Power
1385nm	20mW

## ● Dimension Drawing



## ● General Parameters

### Detailed Parameters

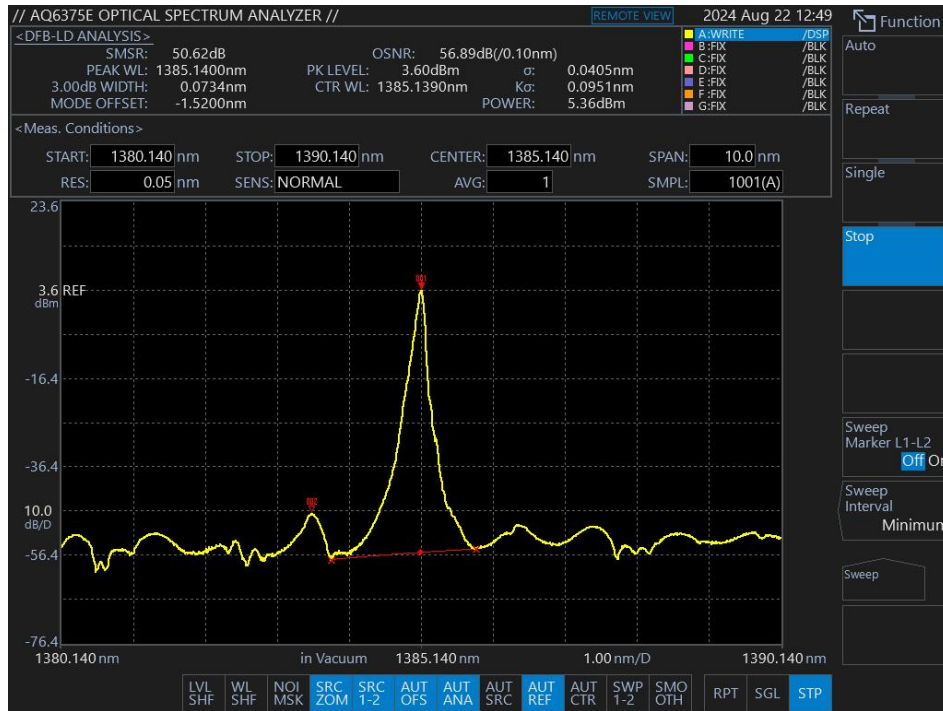
### Specification Table

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

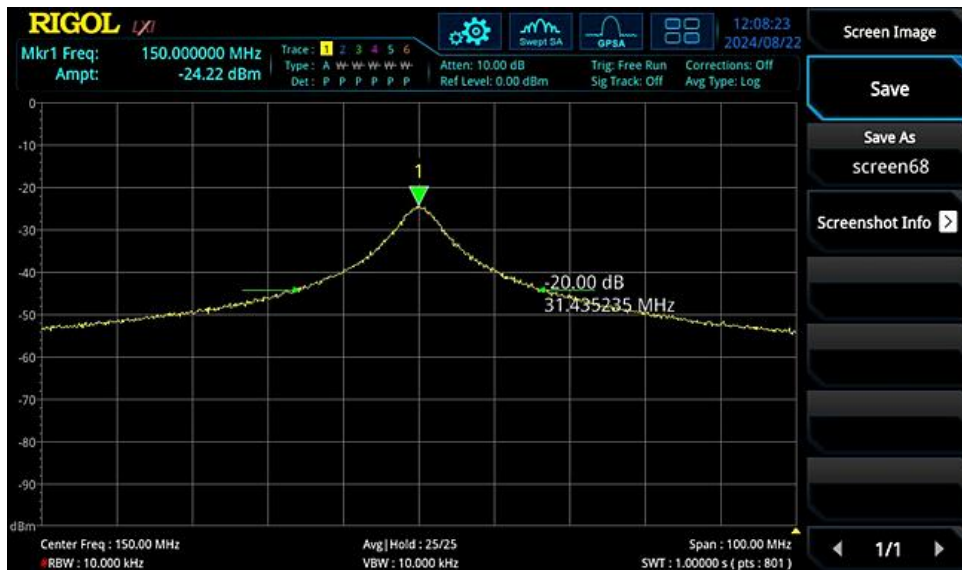
Parameter	Symbol	Min.	Typ.	Max.	Unit
Center Wavelength	$\lambda$	1384.5	1385	1385.5	nm
Side-Mode Suppression Ratio	SMSR	30	40	—	dB
Threshold Current	Ith	—	20	30	mA
Operating Current	Iop	—	75	100	mA
Chip Output Power	Pf	—	20	35	mW
Quantum Efficiency	$\eta$	0.08	0.12	—	mW/mA
Current Tuning Coefficient	$\Delta\lambda/\Delta I$	—	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 $\Omega$
Thermistor Temperature Coefficient	—	—	-4.4	—	%/°C



# Spectrum Diagram

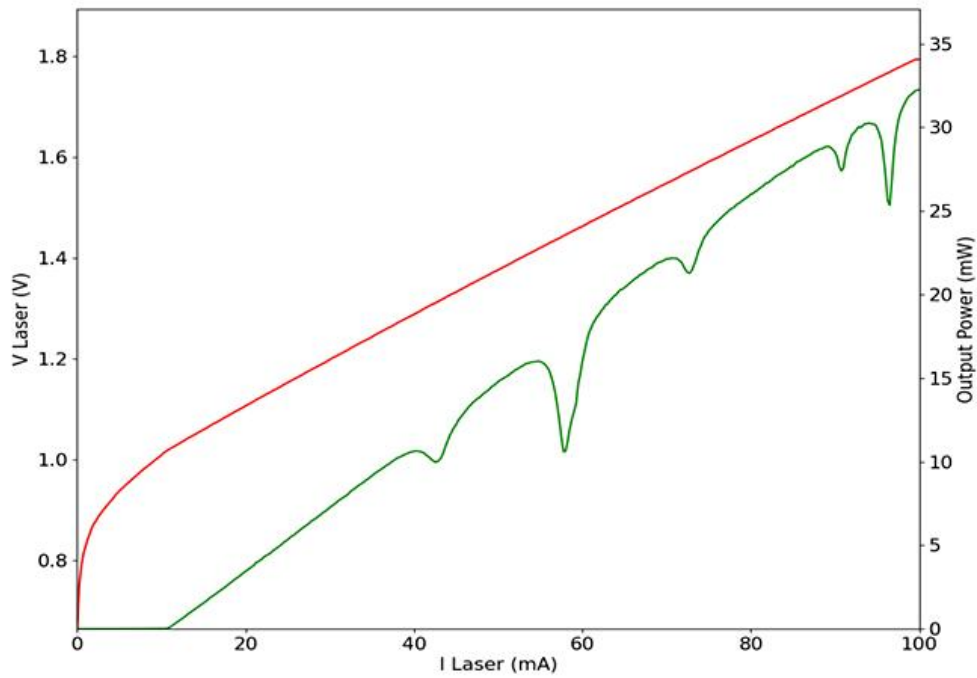


# DFB Laser Linewidth Test Results(CW, 1.572 MHz@25deg, 50mA)

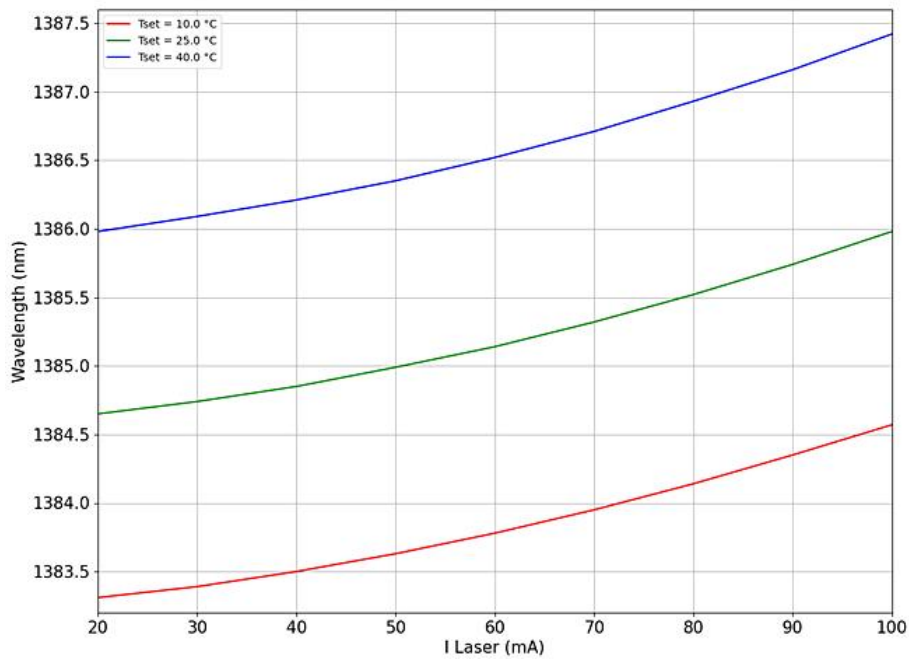




## L-I Curve

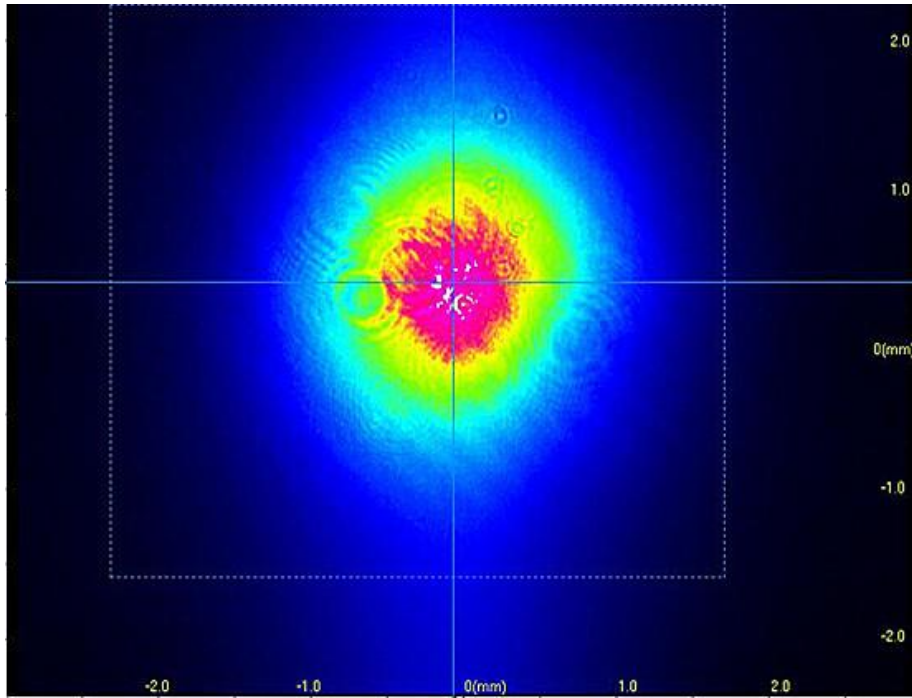


## Tuning Characteristics

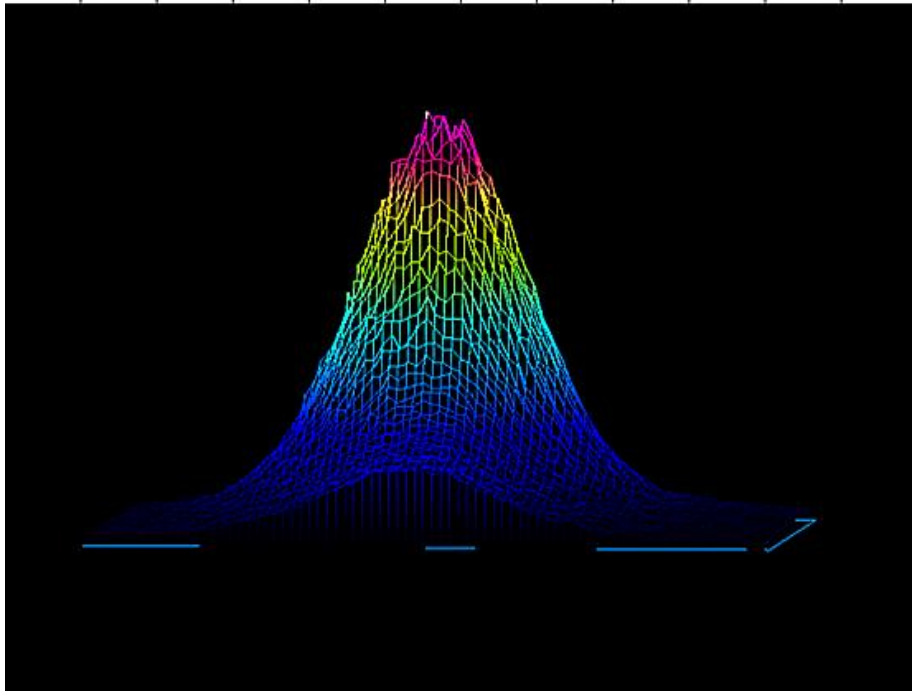




## Beam Quality

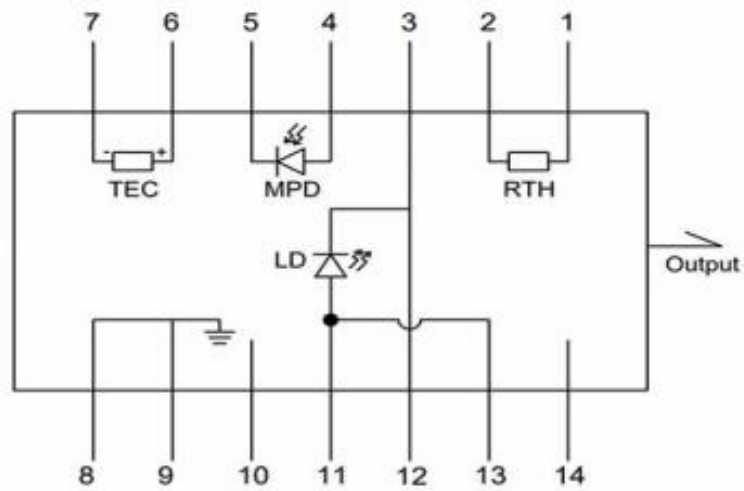


2D



3D

## 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	75	100
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	—	—	1.2
Reverse Voltage (LD)	V	—	—	2.0
Reverse Voltage (PD)	V	—	—	20

## Ordering Information:

MP-DFB-□□□□-☆-A8▽-XX

\*\*□□□□: Wavelength

1341: 1341nm

1385: 1385nm

1392: 1392nm

1512: 1512nm



**1567: 1567nm**

**\*\*\*\*\***

**1653.7: 1653.7nm**

**☆ : Output Power**

**A: 50mW**

**B: 80mW**

**▽: 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**