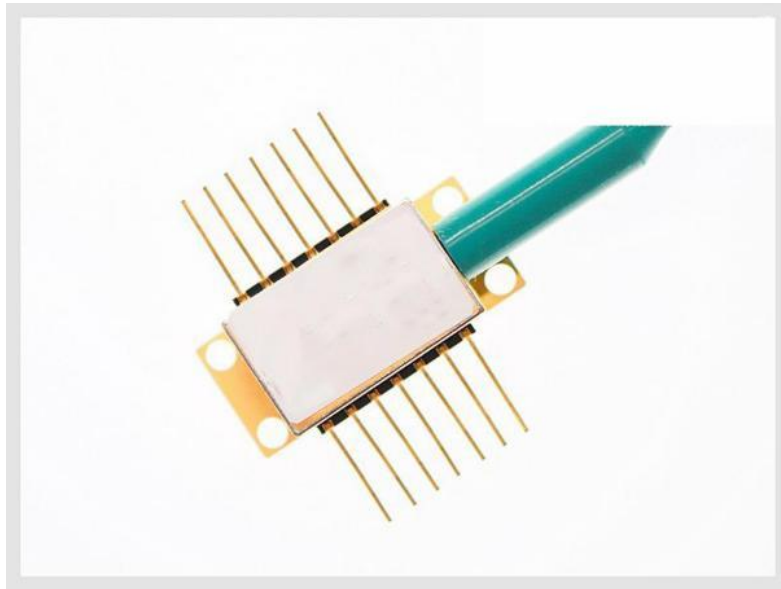




1742nm 15mW DFB Laser Diode for HCl Gas Monitoring



● Product Description

The 1742nm DFB laser diode module is a cost-effective, high-coherence laser source. The DFB laser chip is packaged in an industry-standard hermetic 14-pin butterfly package, with integrated internal 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; customizable wavelength available on request

- **Part Number**

MP-DFB-1742-15-A81-14BF-SA

- **Application area**

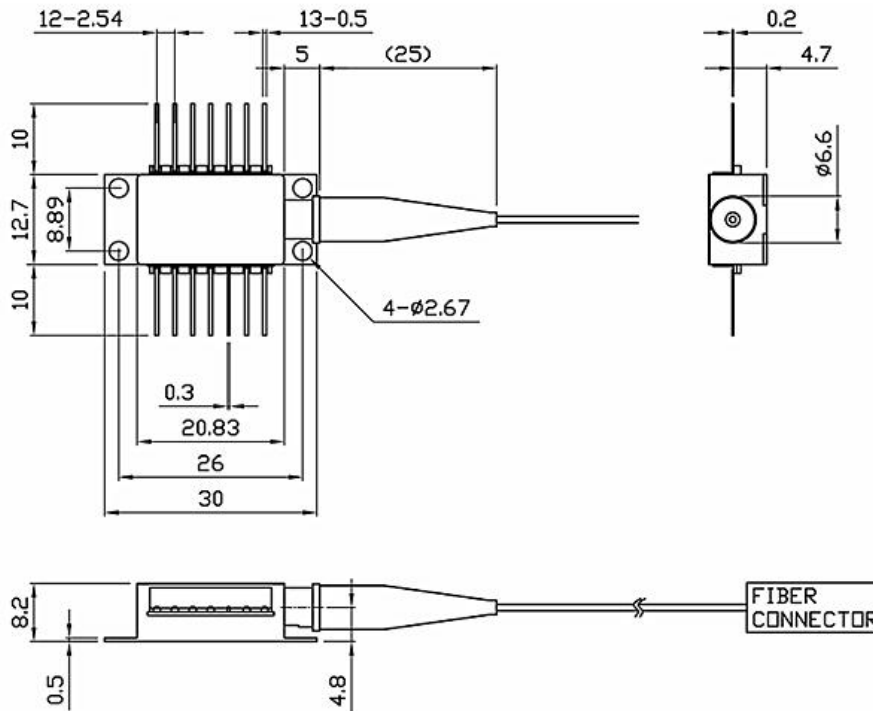
Tunable Diode Laser Absorption Spectroscopy (TDLAS) | Hydrogen Chloride (HCl) Monitoring

- **Core parameters**

Central Wavelength	Output Power
1742nm	15mW



● Dimension Drawing



● General Parameters

Detailed Parameters

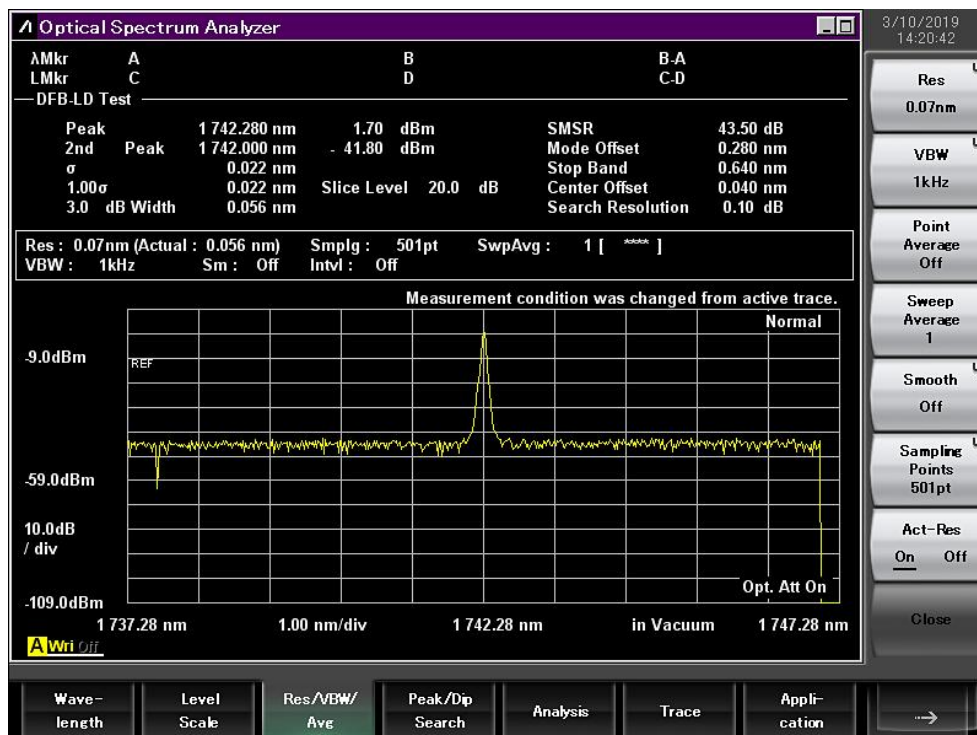
Technical Specifications

Parameter	Symbol	Min.	Typical	Max.	Unit
Central Wavelength	λ	1741	1742	1743	nm
Side Mode Suppression Ratio (SMSR)	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

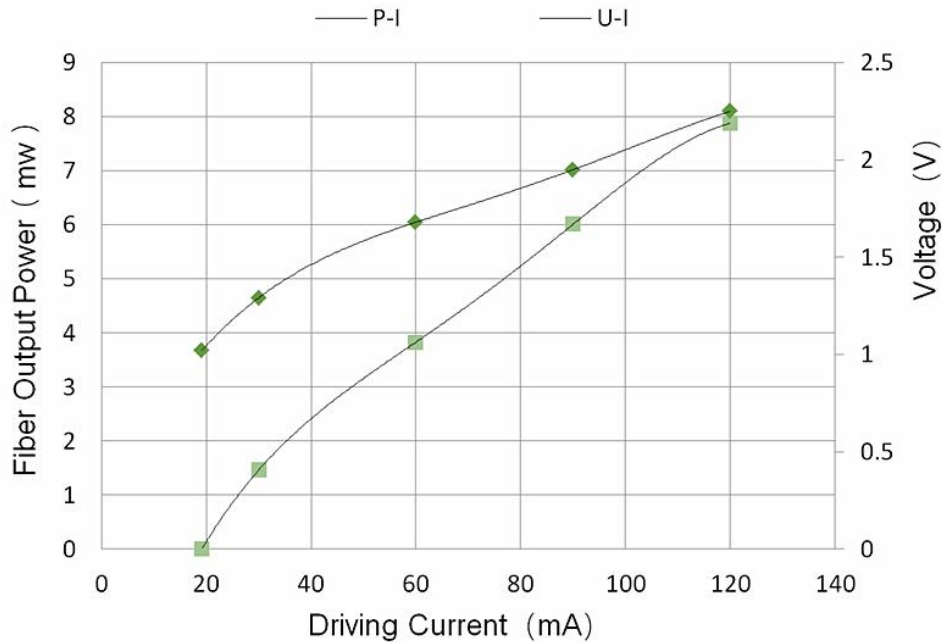


Parameter	Symbol	Min.	Typical	Max.	Unit
Current Tuning Coefficient	$\Delta\lambda/\Delta I$	-	0.015	-	nm/mA
Temperature Tuning Coefficient	$\Delta\lambda/\Delta T$	-	0.12	-	nm/K
Forward Voltage	Vf	-	1.3	2	V
Thermistor Resistance	RT	9.5	10	10.5	k Ω
Thermistor Temperature Coefficient	-	-	-4.4	-	%/ $^{\circ}$ C
Fiber Connector	-	FC/APC			

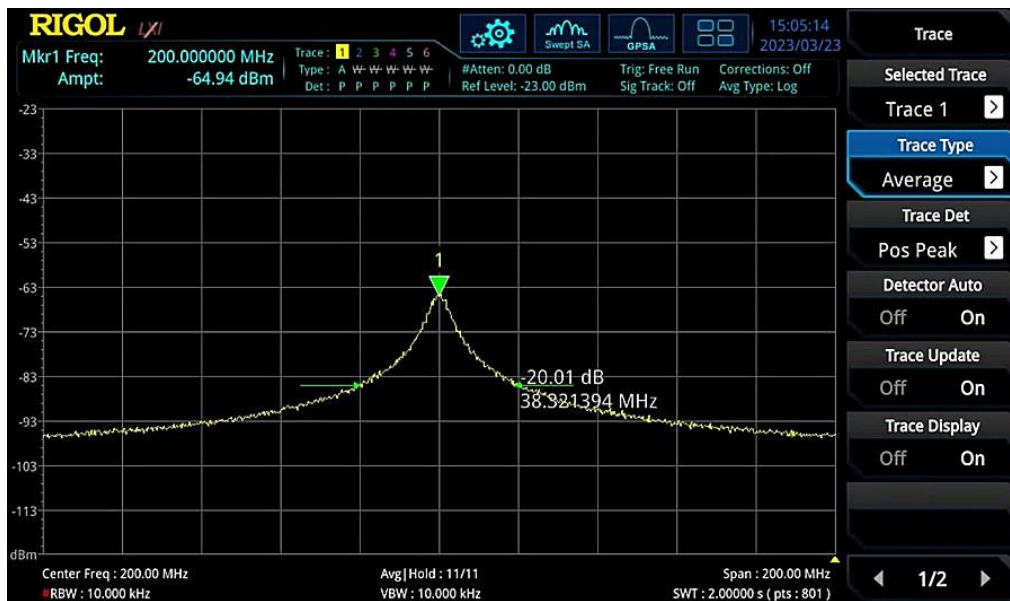
Spectrum



L-I Curve

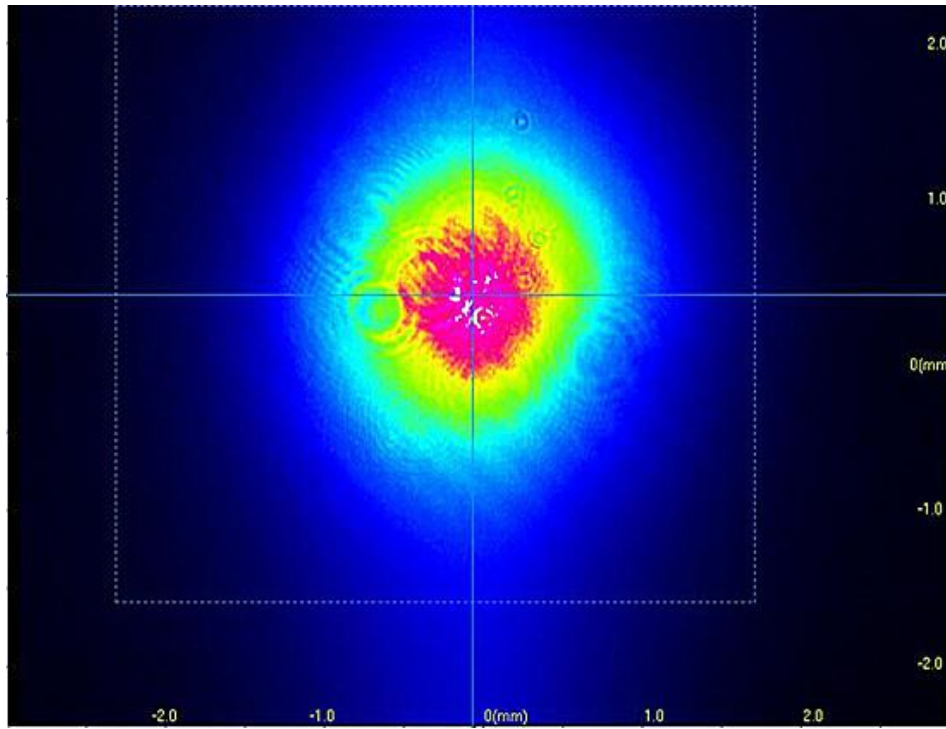


DFB Linewidth Test Results

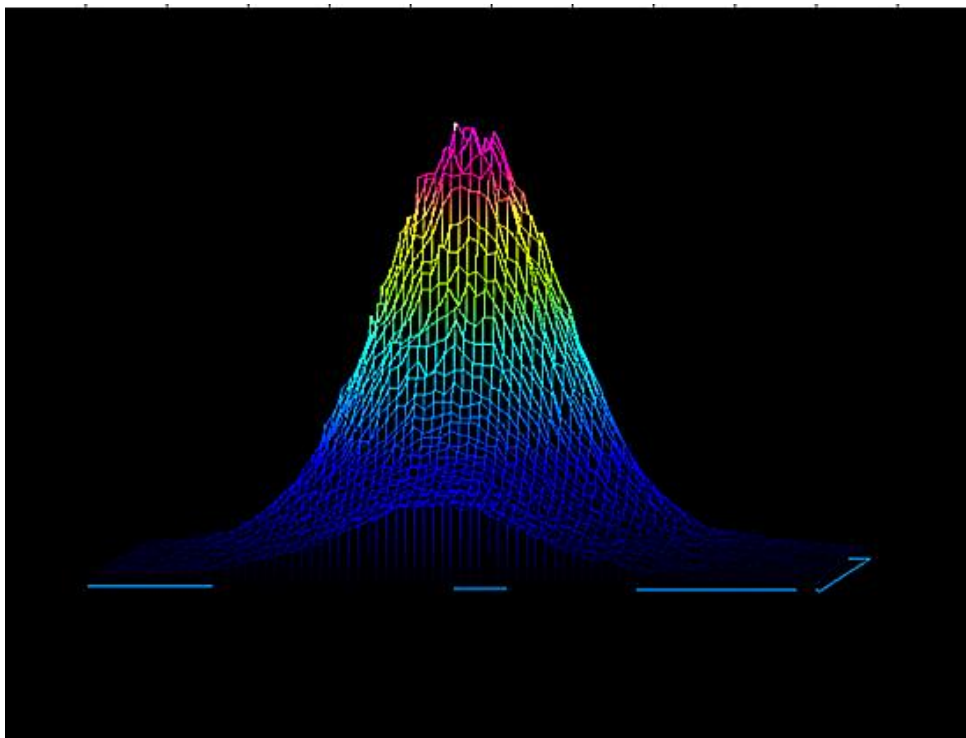




Wavelength Stability

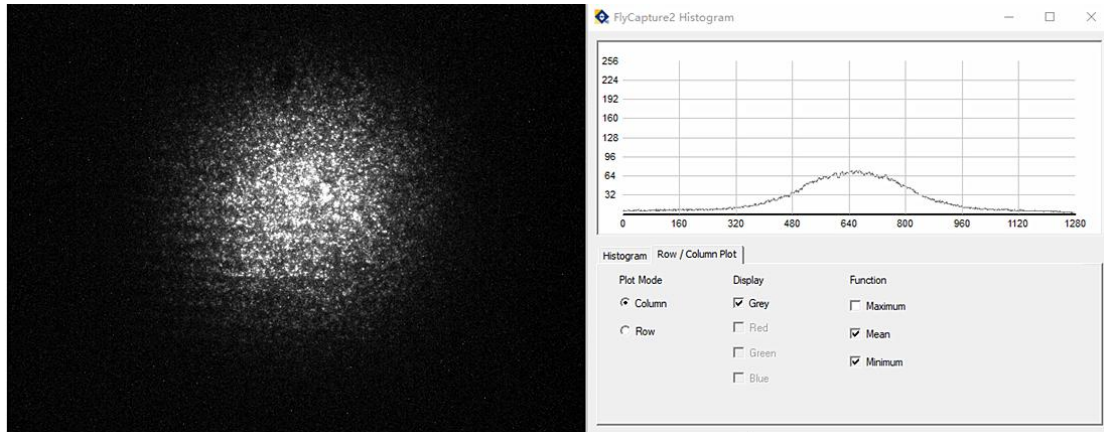


2D

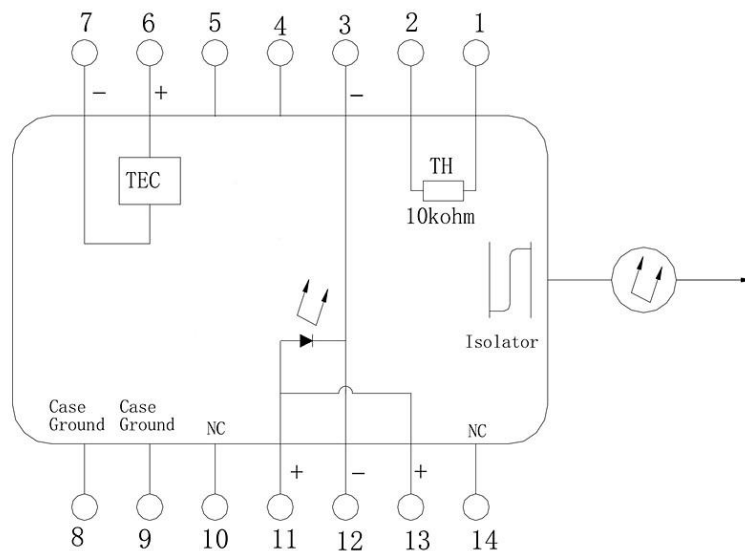


3D

Camera Analysis



Pin Definition



PIN#	Definition	PIN#	Definition
1	Thermistor	8	Case Ground
2	Thermistor	9	Case Ground
3	Laser Cathode(-)	10	NC



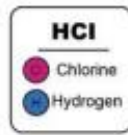
4	NC	11	Laser Anode(+)
5	NC	12	Laser Cathode(-)
6	TEC(+)	13	Laser Anode(+)
7	TEC(-)	14	NC

Absolute Maximum Ratings

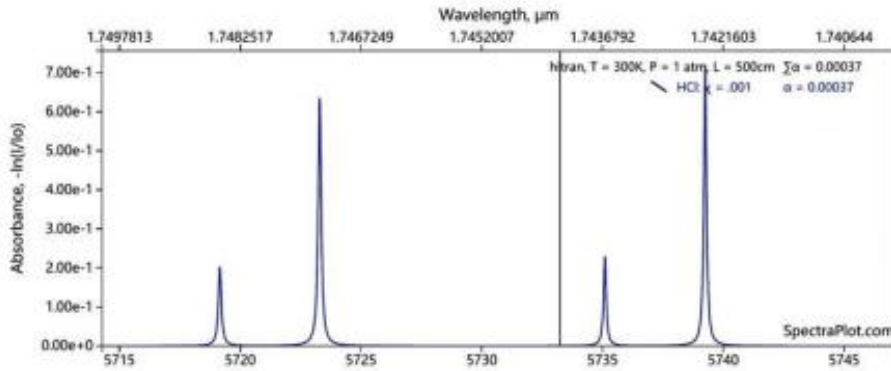
Item	Unit	Min.	Typical	Max.
Case Temperature	° C	-5	25	70
Chip Temperature	° C	+10	25	40
Operating Current	mA	0	100	120
Forward Voltage	V	0.8	1.2	1.8
TEC Current	A	-	-	1.2
Reverse Voltage (LD)	V	-	-	2.0
Reverse Voltage (PD)	V	-	-	20



HCl



TDLAS: 1742nm



Purchase information

MP-DFB-□□□□-☆-A8▽-14BF-XX

□□□□: Wavelength

1341:1341nm

1368:1368nm

1392:1392nm

1512:1512nm

1567:1567nm

1742: 1742nm

☆ : Output Power

A: 7mW



B: 20mW

C: 50mW

▽: Wavelength Tolerance

1: $\pm 1\text{nm}$

2: $\pm 2\text{nm}$

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