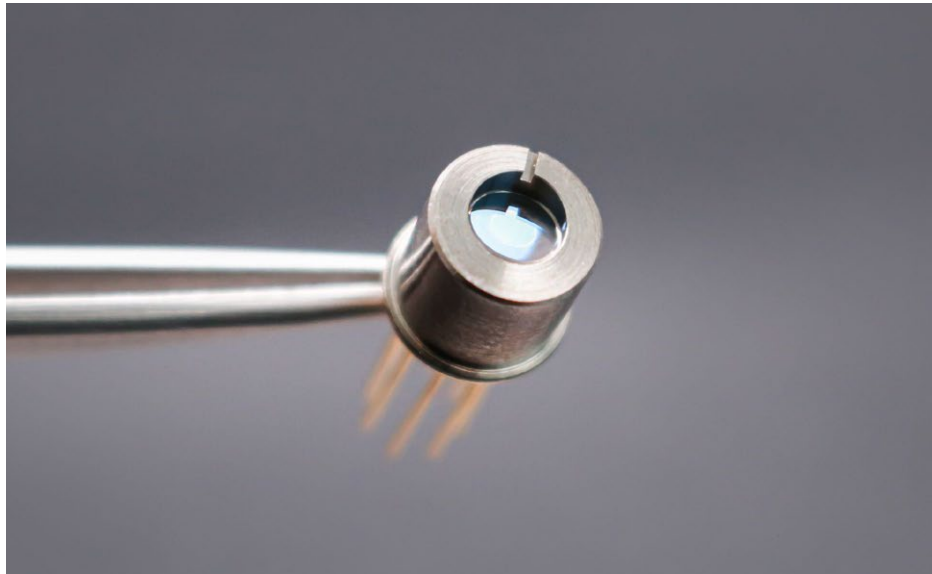


2004nm DFB Laser diode for CO₂ Gas monitoring (TO39 Package)



Description:

The PL-DFB-2004-A-A81 2004nm DFB laser diode module made by LD-PD is a cost effective, highly coherent laser source. The DFB laser diode chip is packaged in an industry standard hermetically sealed TO39 package with TEC and PD Built in.

Features:

- Narrow Linewidth < 2MHz
- Excellent wavelength control and stability
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

Application:

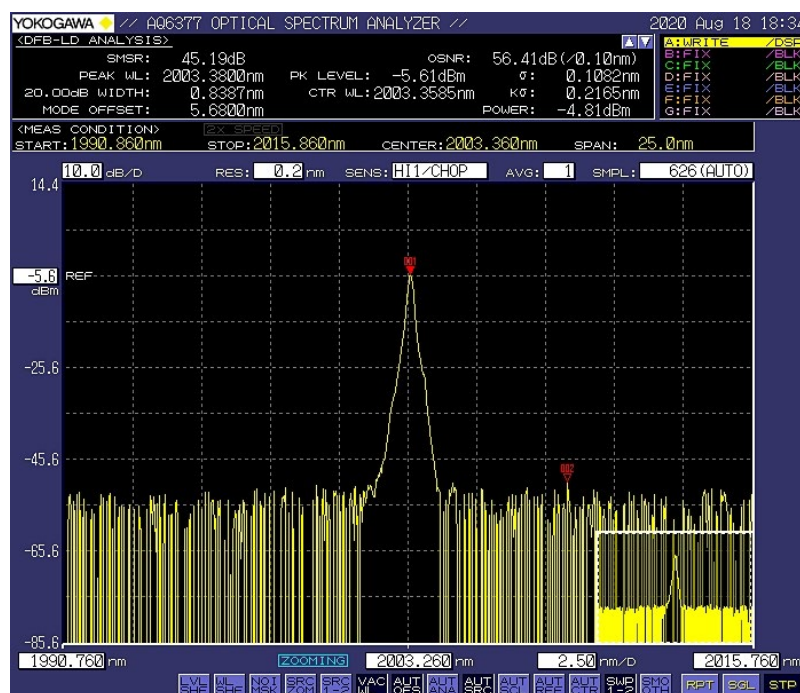
- Tunable diode laser absorption spectroscopy
- CO₂ Monitoring

Laser Specifications:

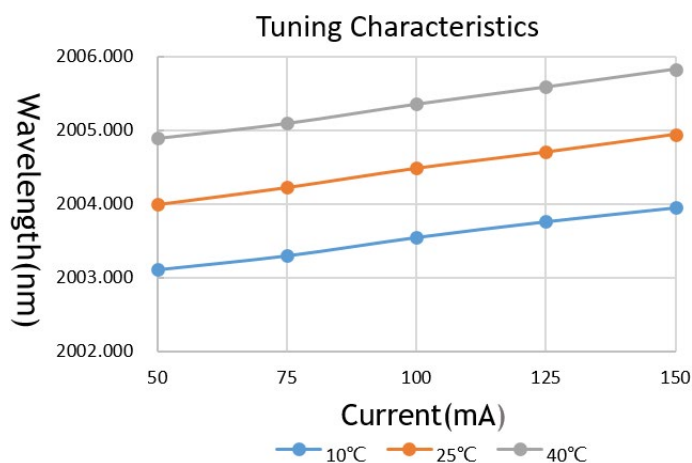
Electrical/Optical Characteristics (Tsub=25°C, CW bias unless stated otherwise)

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	λ	2003	2004	2005	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	P _f	2	3	5	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	V _f		1.3	2	V
Thermistor Resistance	R _T	9.5	10	10.5	K Ω
Thermistor Temp. Coefficient			-4.4		%/°C

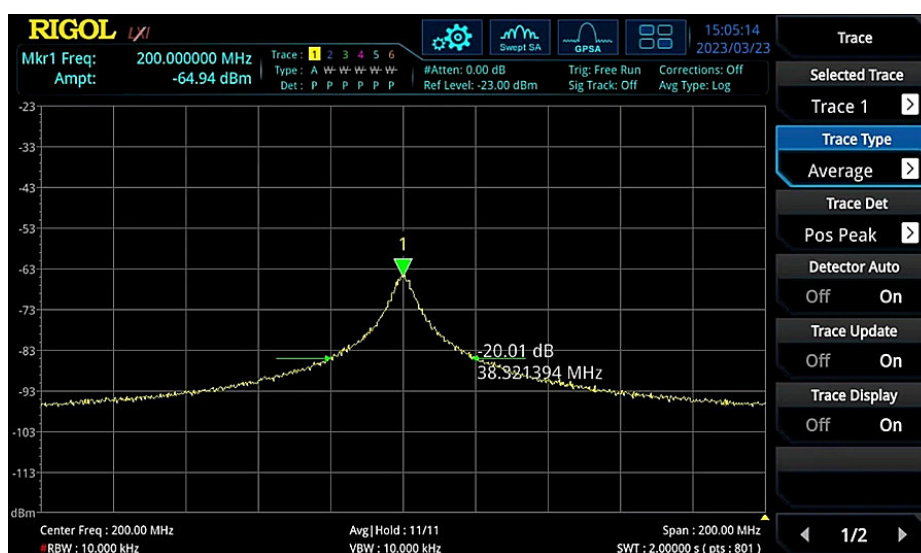
Spectrum:



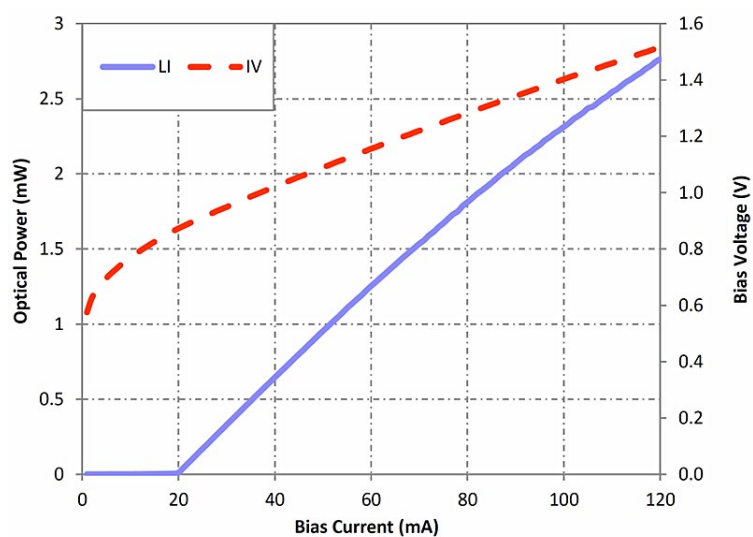
Tuning Characteristics:



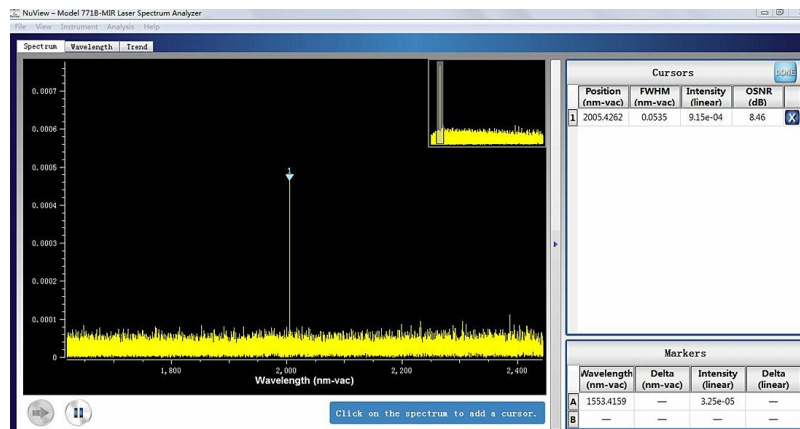
DFB Linewidth Testing Result:



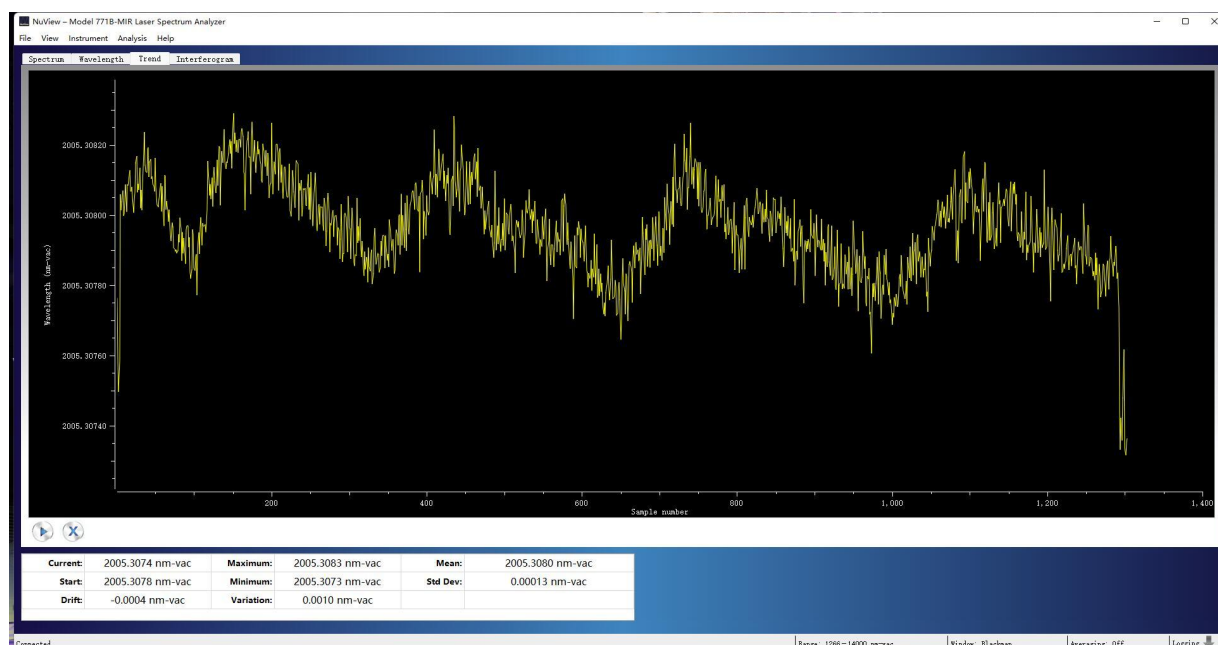
L-I Curve:



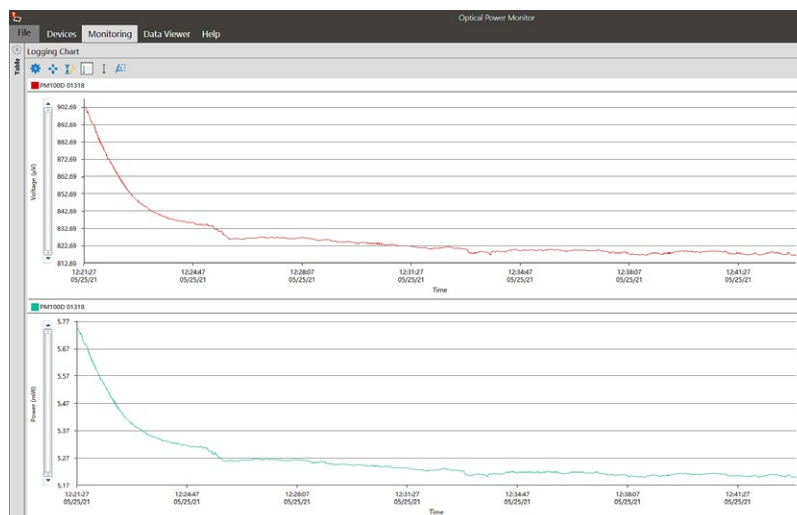
Central Wavelength:



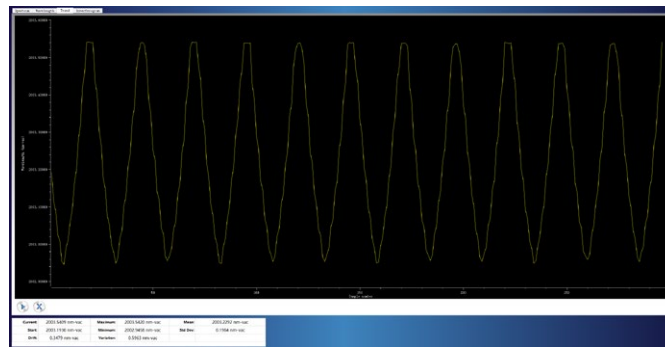
Wavelength Stability:



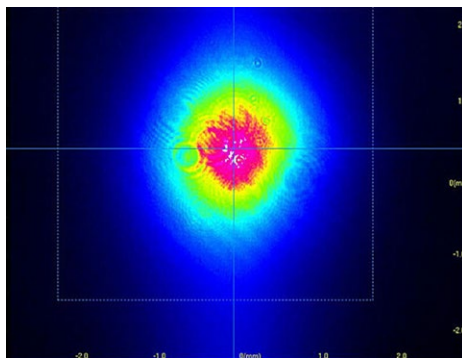
Power Stability:



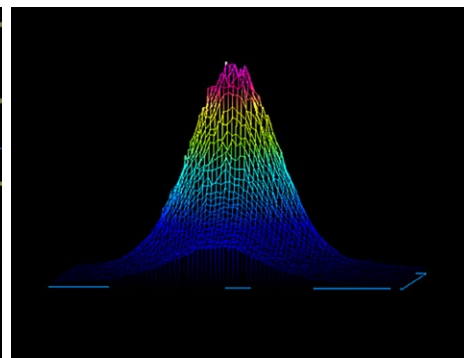
Mode hope tuning Range:



Beam Quality:

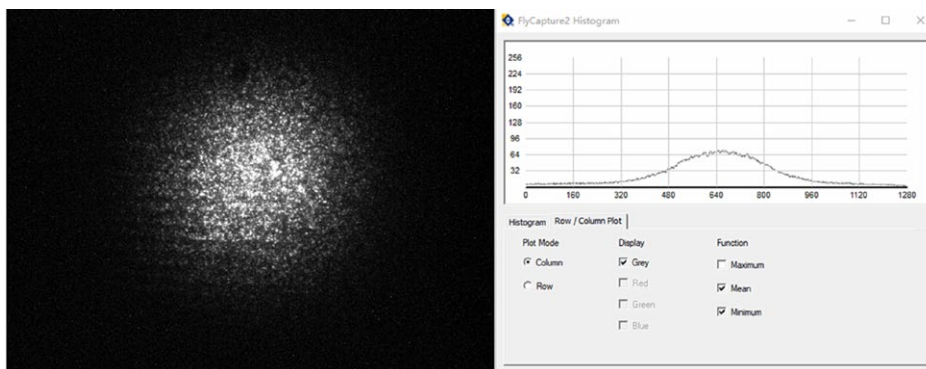


2D

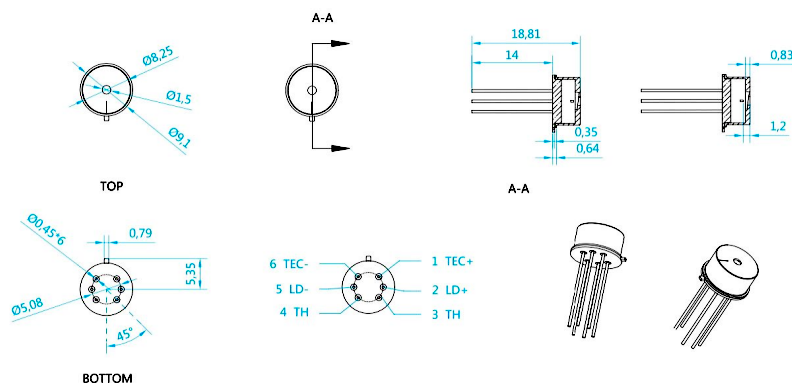


3D

Camera Analysis:



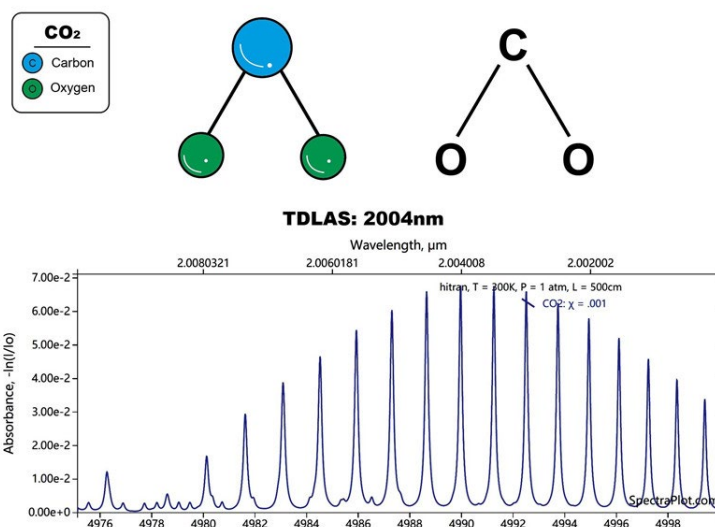
Dimensions and Pin definitions:



Absolute Maximum Ratings:

Item	Unit	Min	Typ	Max
Case Temperature	$^{\circ}\text{C}$	-5	25	70
Chip Temperature	$^{\circ}\text{C}$	+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

CO₂:



Ordering Info:

PL-DFB-□□□□-☆-A8▽-TO39

□□□□: Wavelength

1530: 1530nm

1600.8: 1600.8nm

2004: 2004nm

☆ : Output Power

A: 2mW

B: 5mW

▽: Wavelength Tolerance

1: $\pm 1\text{nm}$ 2: $\pm 2\text{nm}$