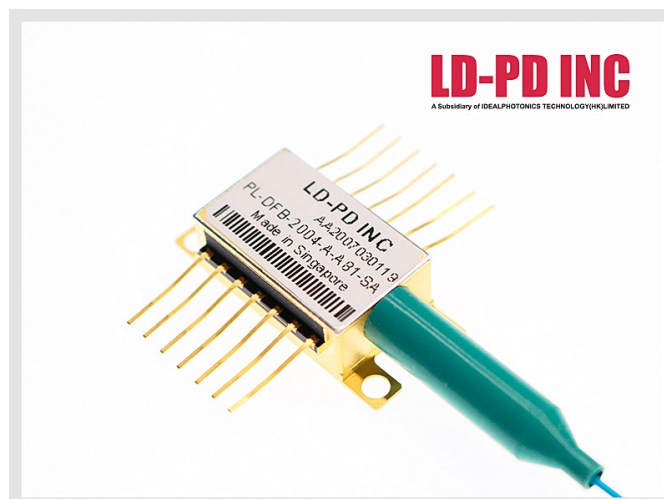


2004nm DFB Laser diode for CO₂ Gas monitoring



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 14 pin butterfly package with TEC and PD Built in. Good SMSR and High Optical power output.

Features:

- Narrow Linewidth < 2MHz
- Excellent wavelength control and stability
- Industry Standard 14 pin Butterfly package
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

Application:

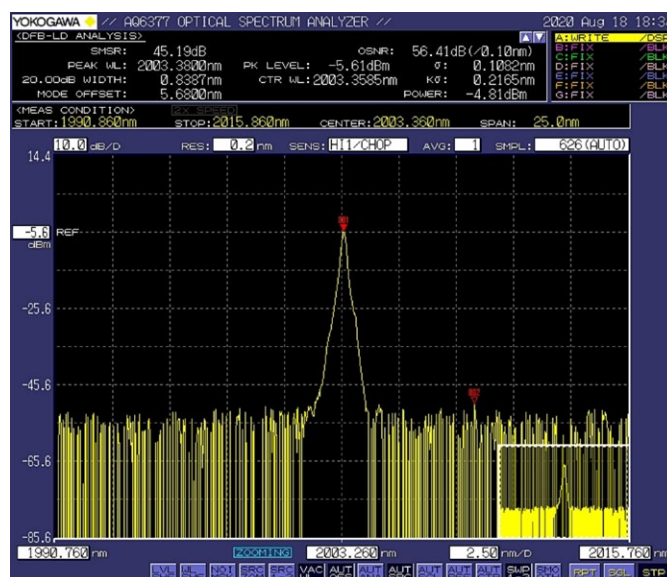
- Tunable diode laser absorption spectroscopy
- CO₂ Monitoring

Electrical/Optical Characteristics:

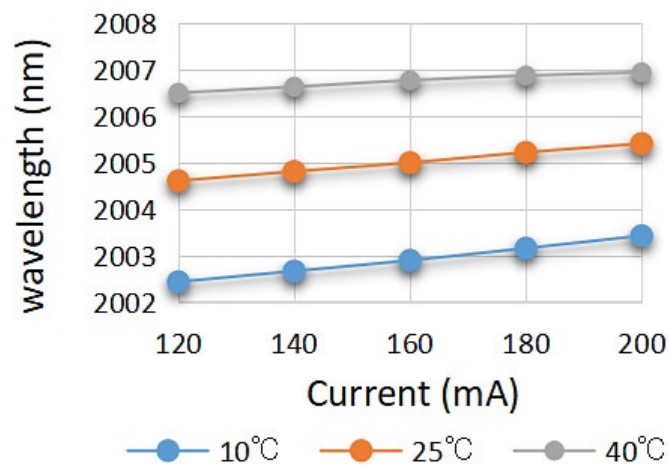
Tsub=25°C, CW bias unless stated otherwise

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}		180	200	mA
Chip output Power	P _f	2	3	8	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
Connector	FC/APC				

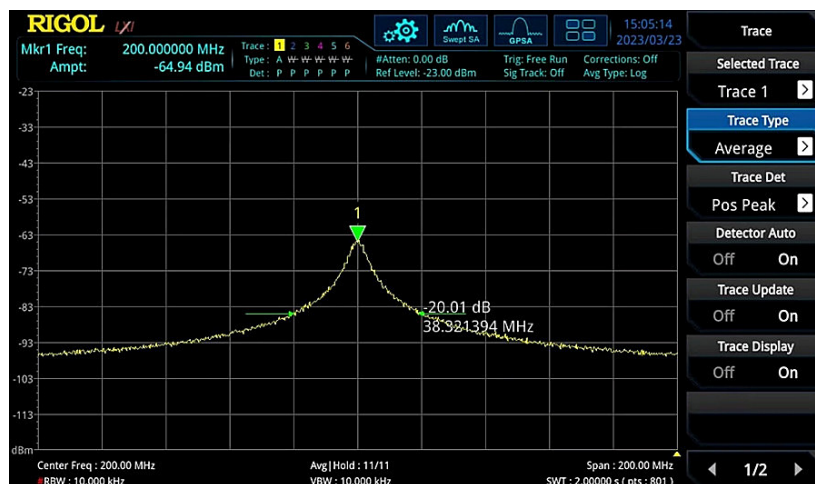
Spectrum:



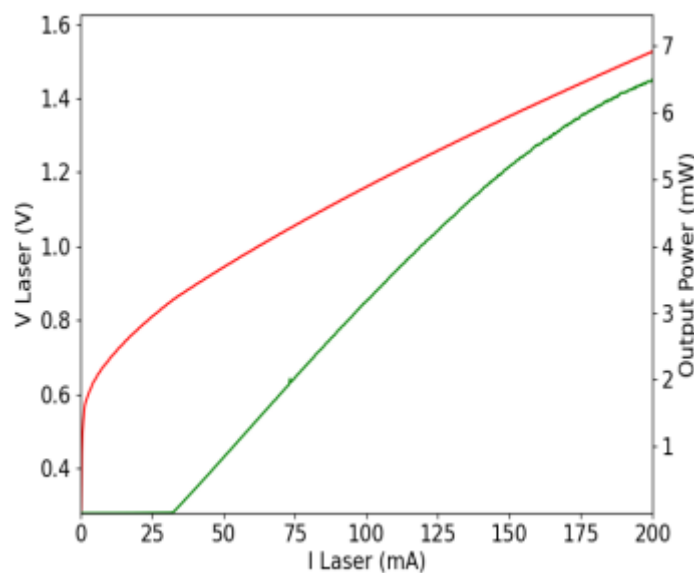
Tuning Characteristics:



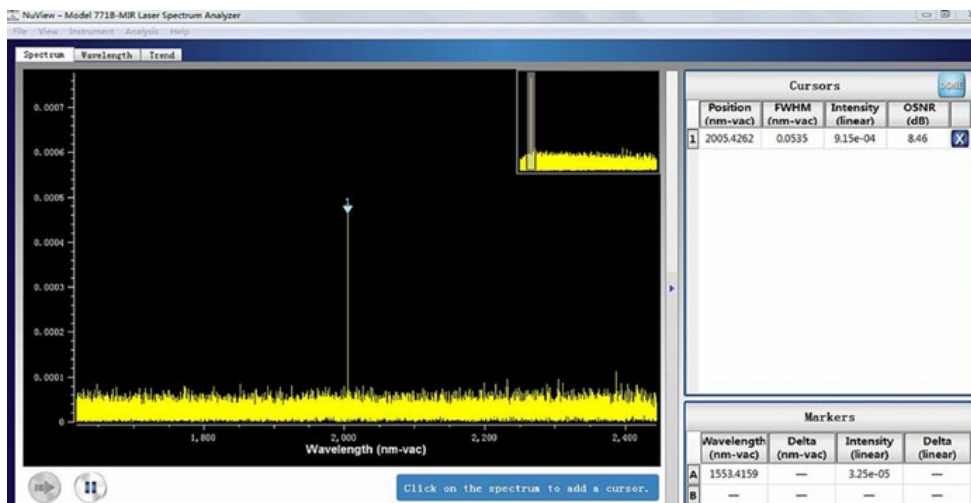
DFB Linewidth Testing Result:



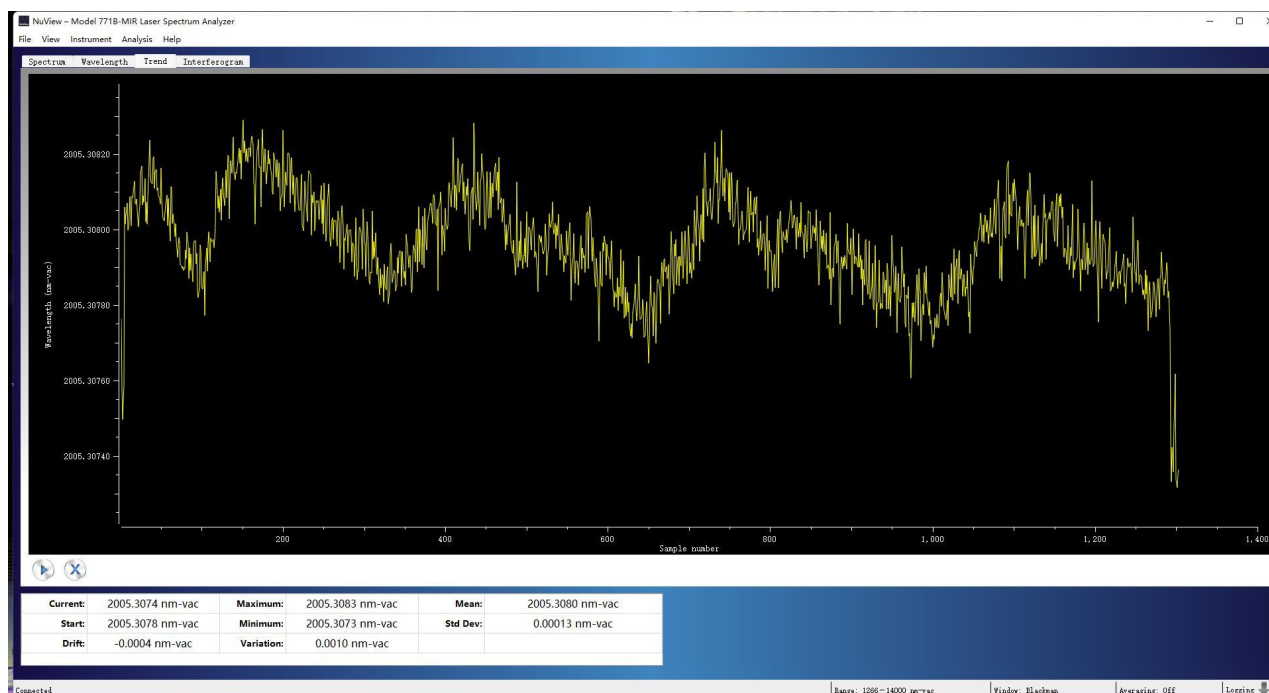
L-I Curve:



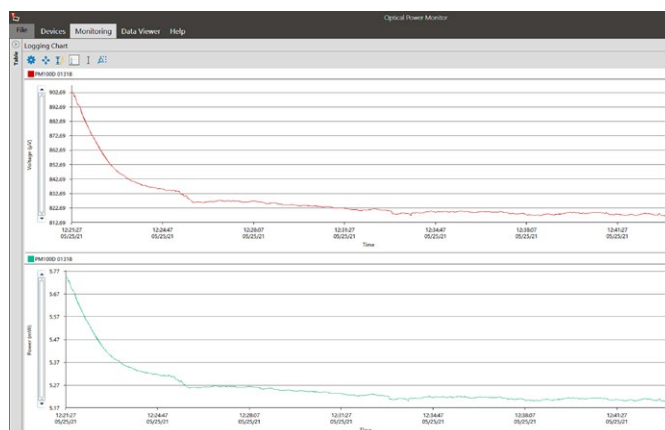
Central Wavelength:



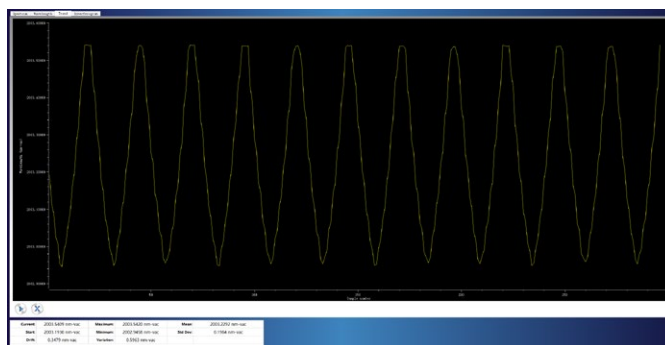
Wavelength Stability:



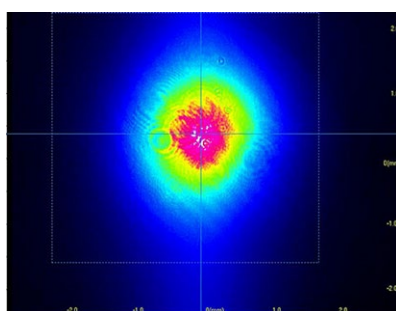
Power Stability:



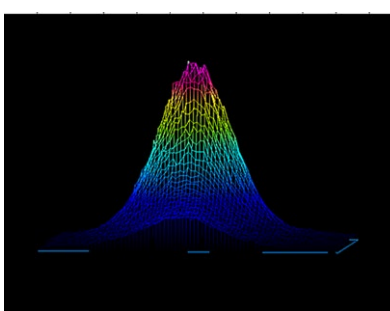
Mode hope tuning Range:



Beam Quality:

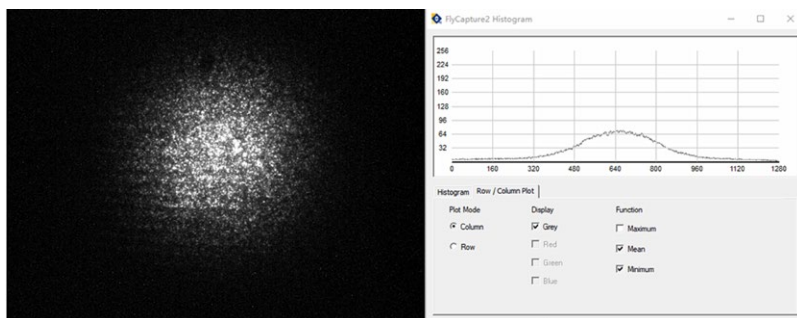


2D



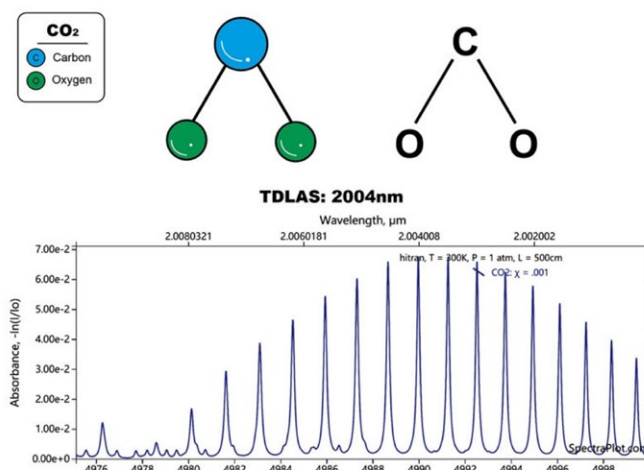
3D

Camera Analysis:



PIN#	Function	PIN#	Function
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

Item	Unit	Min	Typ	Max
Case Temperature	°C	-5	25	70
Chip Temperature	°C	+10	25	40
Operating Current	mA	0	180	200
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▽-XX

□□□□: Wavelength

1512:1512nm

1653.7: 1653.7nm

2004: 2004nm

☆ : Output Power

A: 2mW

B: 5mW

▽ : 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