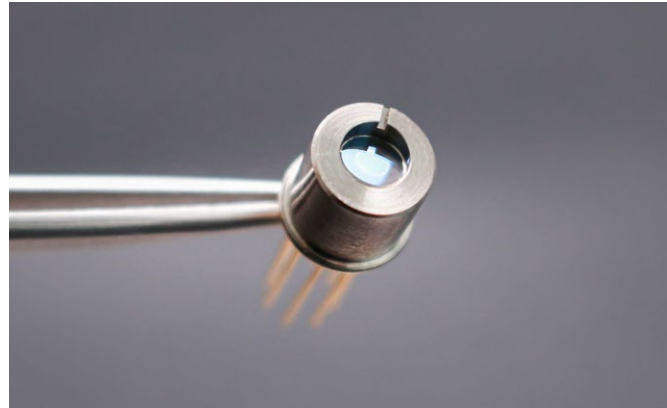


1680nm DFB Laser diode for C₂H₆ Sensing (TO39 Package)



Description:

The PL-DFB-1680-A-A81 1680nm 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
- Industry Standard 14 pin Butterfly package
- Mode-Hop free tuning
- Excellent reliability
- Customer specific wavelengths available

Application:

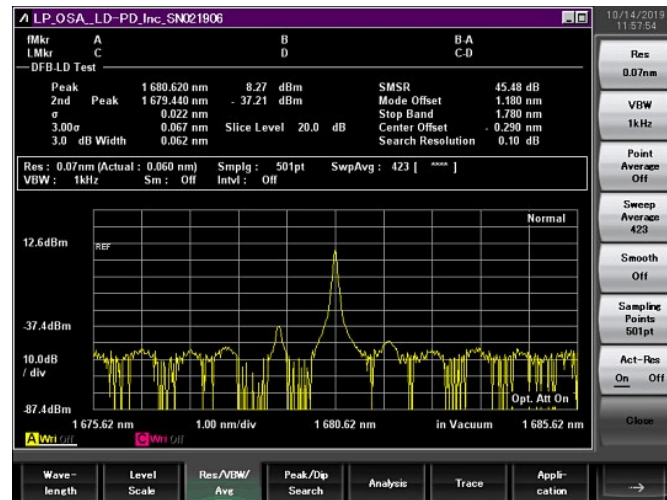
- Tunable diode laser absorption spectroscopy
- C₂H₆ Monitoring

Laser Specifications:

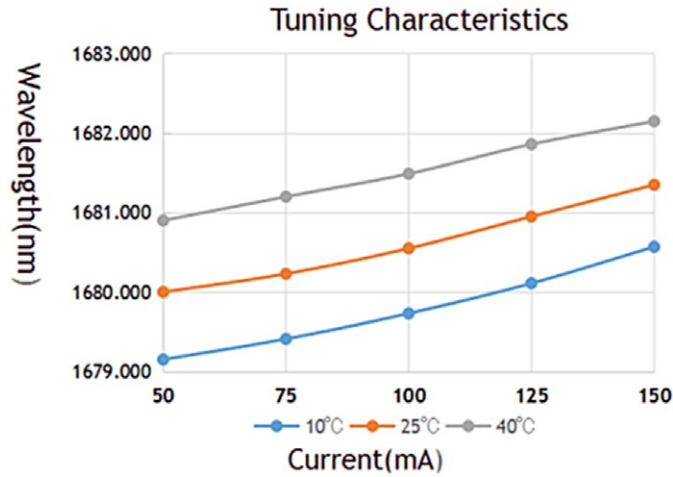
Electrical/Optical Characteristics (Tsub=25°C, CW bias unless stated otherwise)

Parameter	Symbol	Min	Typ	Max	Unit
Centre Wavelength	λ	1679	1680	1681	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	10	15	30	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	RT	9.5	10	10.5	K Ω
Thermistor Temp. Coefficient			-4.4		%/°C

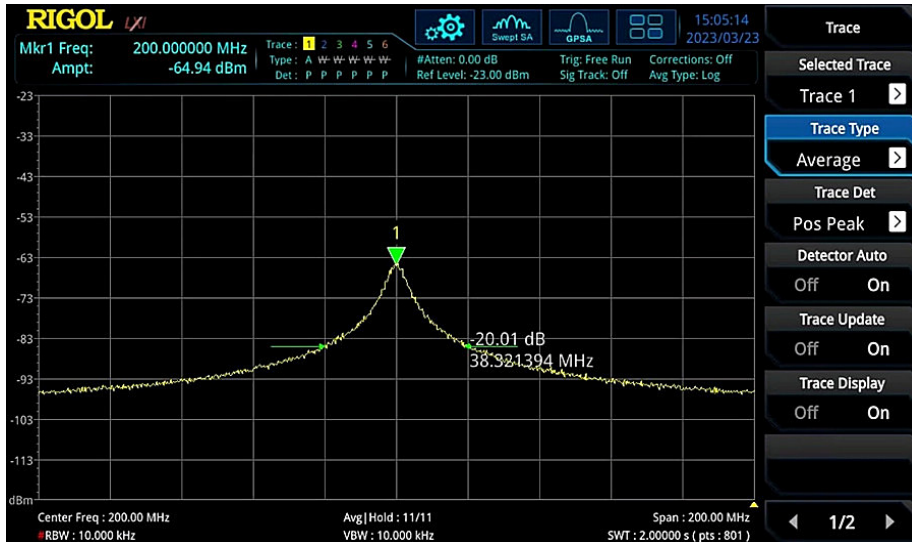
Spectrum:



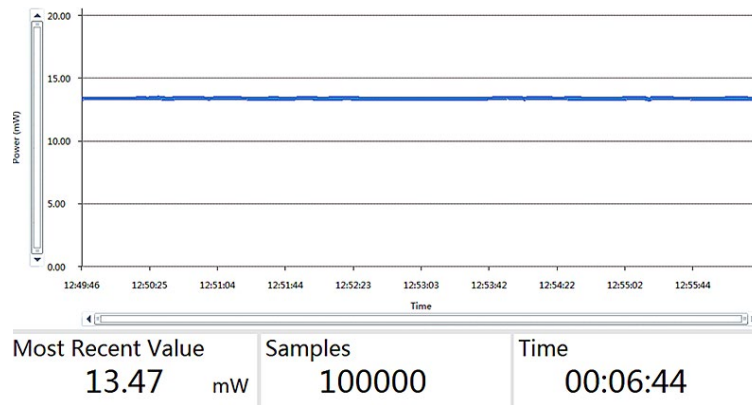
Tuning Characteristics:



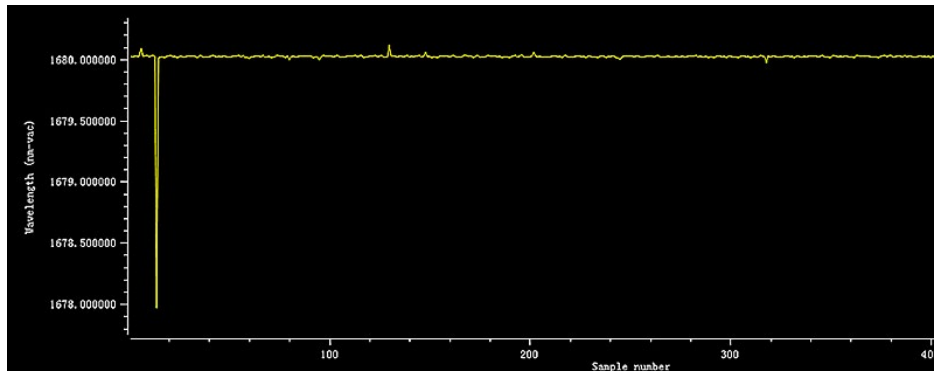
DFB Linewidth Testing Result:



Power Stability:

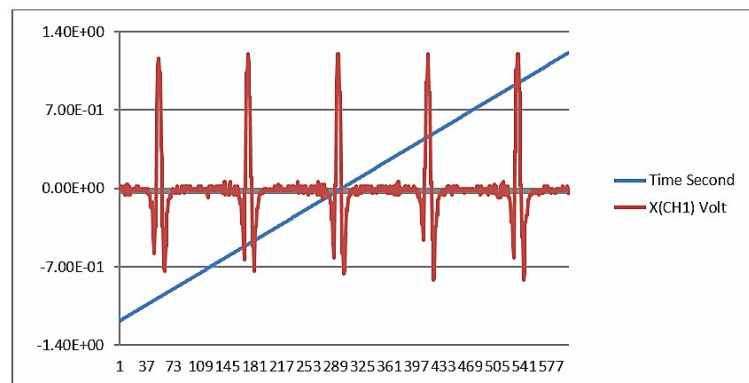


Wavelength Stability:

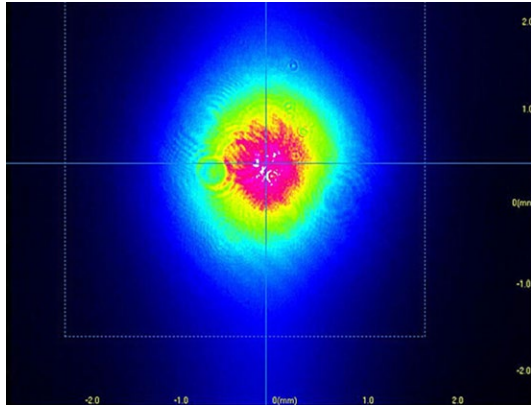


2F Signal testing Condition(200pm C2H6,20m optical path,25°C,1atm):

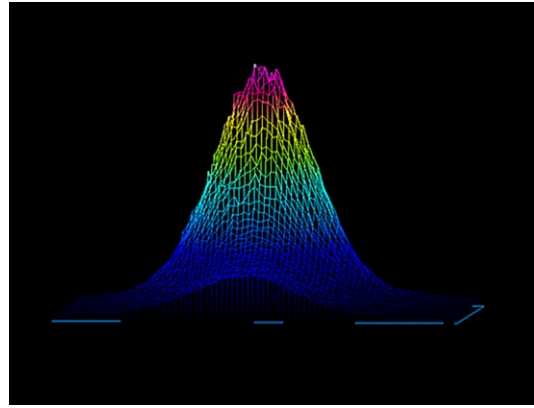
The screenshot shows the TDLAS Analysis System v1.0 software interface. It includes a Communication Port section with a 'Connect' button. The Settings tab is active, showing parameters for the TEC Module (System Temperature: 37.1 °C, LD Actual Temperature: 49.8 °C, LD Temperature Setpoint: 49.8 °C), Laser Driver (Currents: 15.9mA, 1.8mA; Start: 31.3 mA, End: 49.2 mA; Amp(p-p): 10.9 mA), and Lock-in Amplifier (Mode: 2f, Gain: 4X, 2f Phase: 31°). A 'Frequency' of 20,000 Hz is also set.



Beam Quality:

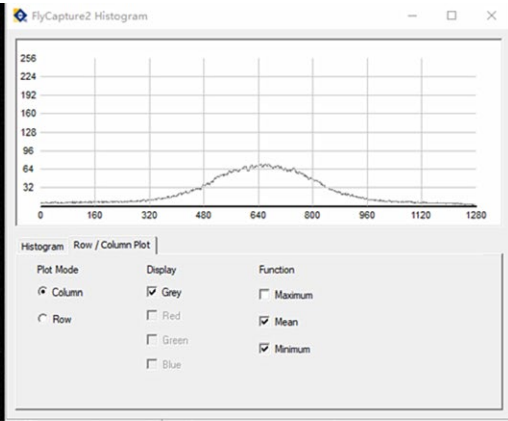
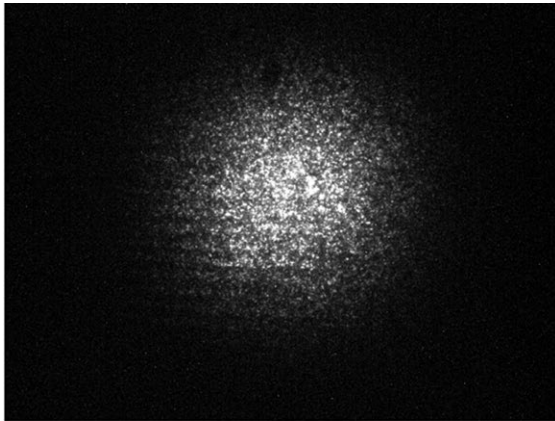


2D

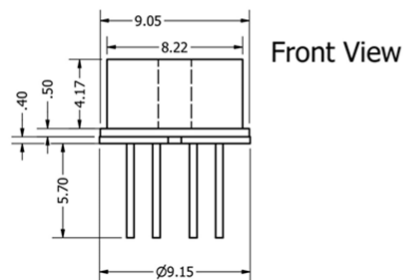


3D

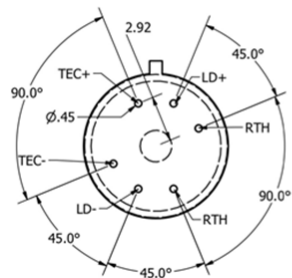
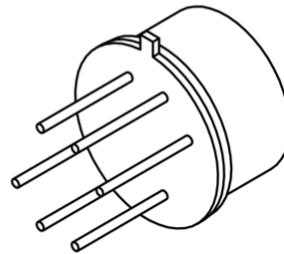
Camera Analysis:



Dimensions and Pin definitions:



Front View



Bottom View

Absolute Maximum Ratings:

Item	Unit	Min	Typ	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

Ordering Info:

PL-DFB-□□□□-☆-A8▽-TO39

□□□□: Wavelength

1530: 1530nm

1680: 1680nm

1653.7: 1653.7nm

☆ : Output Power

A: 10mW

B: 20mW

▽ : Wavelength Tolerance

1: ±1nm

2: ±2nm