

3291nm Low Power Benchtop ICL-DFB Tunable Continuous Wave Laser (TDLAS Integrated Control Module) 5mW



● Product Description

The MP-ICL-3291-DFB-5-T laser is a tunable continuous wave laser developed by IdealPhotonics. It features narrow linewidth, high power, and low power consumption, making it ideal for gas sensing applications, especially for the detection of hydrocarbons and other related gases. The benchtop ICL-DFB laser module integrates a driver and temperature control module, and it can be controlled via software to adjust the laser's temperature and operating current, ensuring stable performance and

accurate measurement values. Additionally, an FPGA is included within the module to facilitate the processing of gas concentration measurements.

● Product features

Continuous Wave (CW)、 Single-mode Spectrum、 Tunable Light Source、
Low Power Consumption、 High-quality Beam、 Narrow Linewidth、
Intelligent Software Control、 Compact Structure and Size

● Part Number

MP-ICL-3291-DFB-5-T

● Application area

TDLAS Gas Measurement System Setup、 Mid-Infrared System Light Source、
Mid-Infrared Device Analysis

● Core parameters

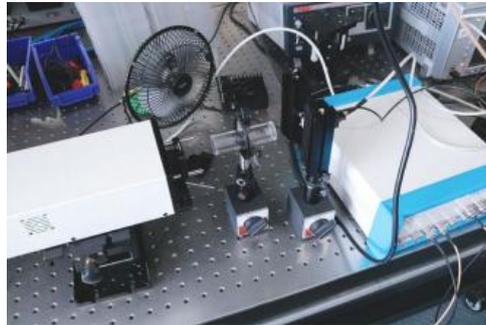
Wavelength	Output Power	Spectral Width
3.291um	5mW	3MHz



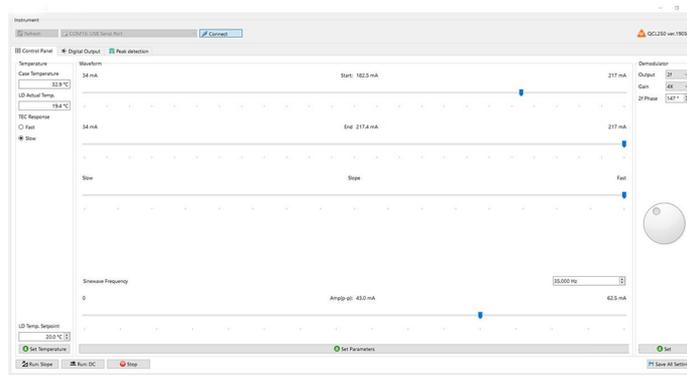
● General Parameters

Parameters	Unit	Specifications		
		Min.	Typ.	Max.
Laser Output Power	mW	0.5	5	8
Peak Operating Wavelength	nm		3291	
Spectral Width FWHM	MHz		3	
Side Mode Suppression Ratio SMSR	dB		20	30
Wavelength Tuning Range	nm-1	6	10	25
Wavelength Temperature Coefficient	nm/°C		0.32	
Wavelength Current Coefficient	nm/mA		0.06	
Output Power Stability for 8h	%		±1	±4
Adjustable Output Power Range	%	0		100
Operating Current	mA	40	80	140
Threshold Current	mA	25	40	80
Operating Voltage	V	7	9	12
Chip Operating Temperature	°C	-20	10	40
Storage Temperature	°C	15	20	65
Specifications and Dimensions	mm	340(L) × 240(W) × 100(H)		

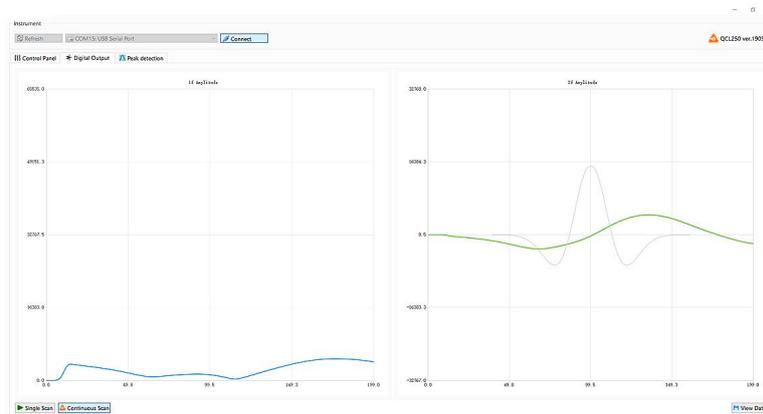
System setup diagram



Software control

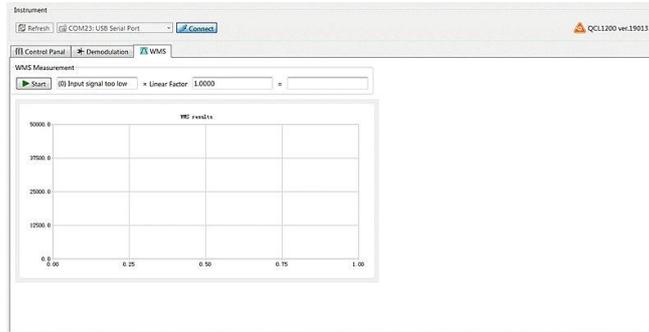


2F signal acquisition interface

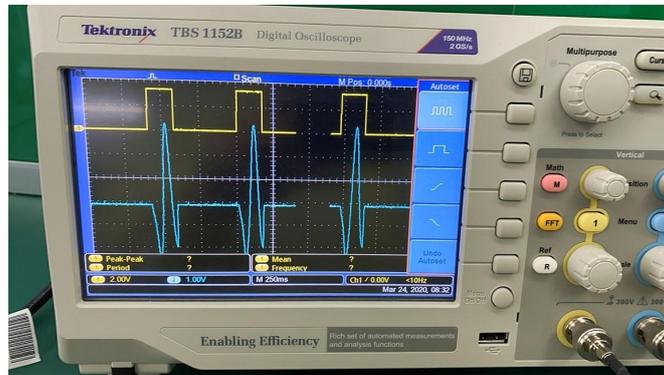




Algorithm calibration interface

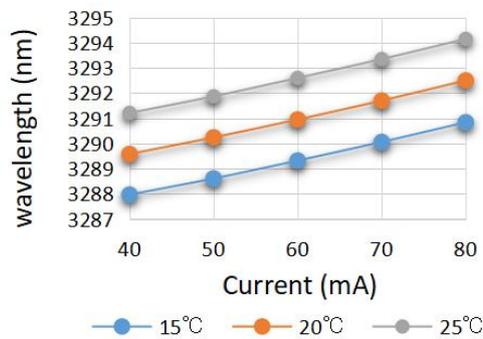


Modulation signal linearity test (oscilloscope voltage signal effect diagram)

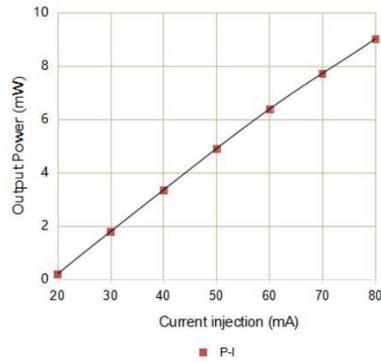


Wavelength temperature current curve

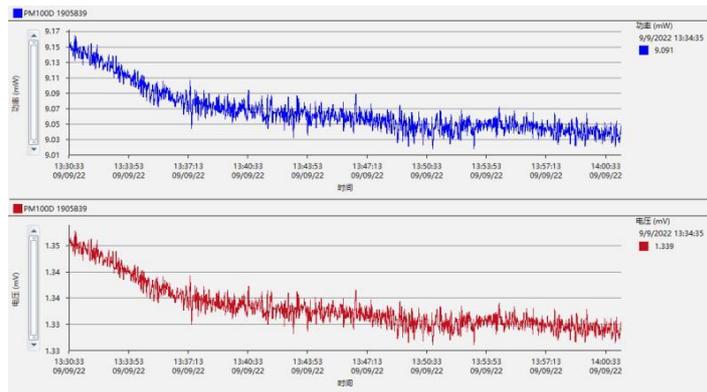
Tuning Characteristics



Power curve (15°C)



Power stability (15°C, 80mA)



Spectral graph

