9.06um low power benchtop DFB-QCL mid-infrared quantum cascade laser 20mW (TDLAS integrated control module)

Product Description

QCL9060-9.06um low-power benchtop DFB-QCL mid-infrared quantum cascade laser is a domestically advanced ultra-low-power QCL DFB laser developed by Idealphotonics in the first half of 2018. The tunable range exceeds 100nm, and the output power is greater than 20mw to meet the industrial needs of customers testing gas sensors. Our laser collimated output has stable output power and high temperature and wavelength

stability, which is several orders of magnitude higher than the stability of traditional high-power quantum cascade lasers. It provides an excellent test light source for our mid-infrared test customers.

Product features

Low power consumption, high power、 Narrow line width、 Compact structure、 Intelligent software control、 Built-in FPGA

Part Number

MP-QCL-9060-DFB-20-T

Application area

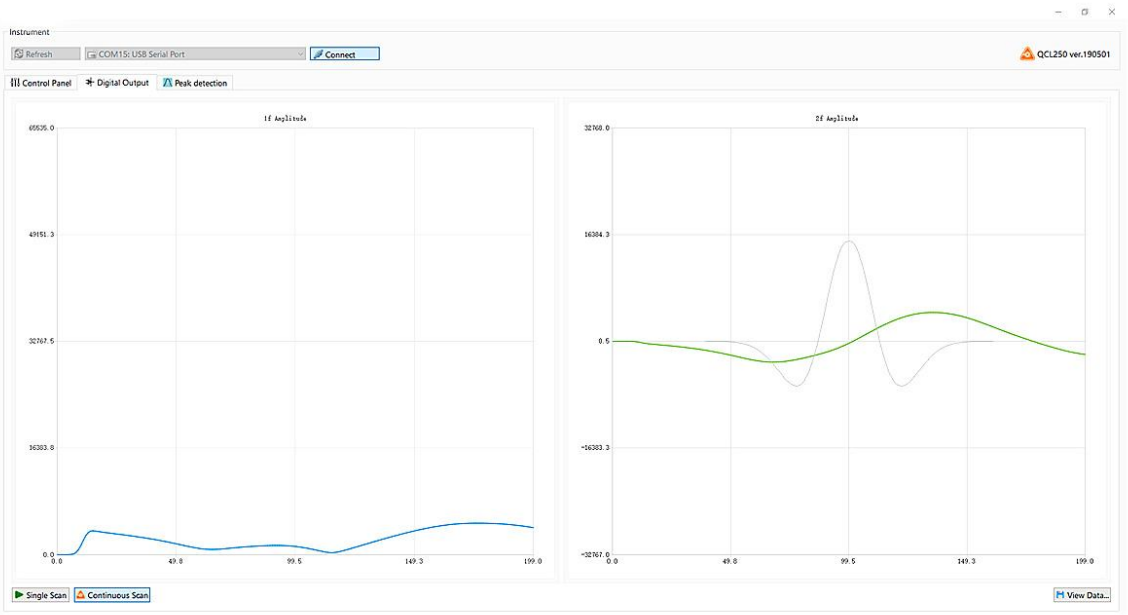
TDLAS NH3 high-precision trace analysis、 Mid-infrared test light source、 Mid-infrared device analysis

Core parameters

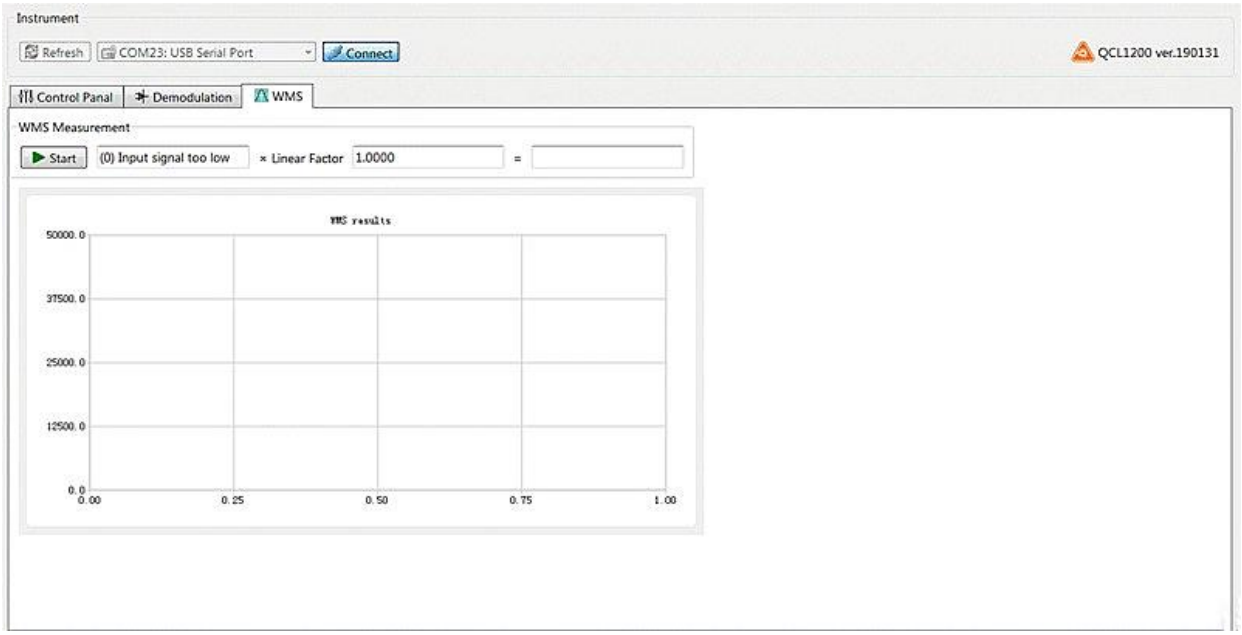
Wavelength	Output Power	Spectral Width
9.06um	20mW	3MHz

- **General Parameters**

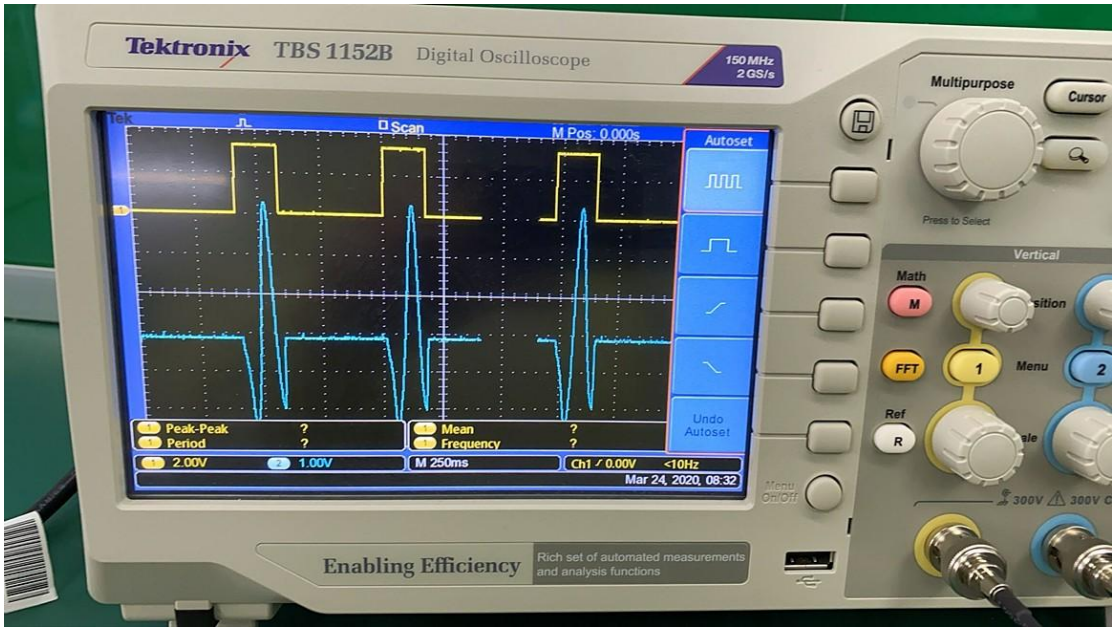
2F signal acquisition interface



Algorithm calibration interface



Modulation signal linearity test (oscilloscope voltage signal effect diagram)



Parameters

Parameter	Unit	Indicators		
		Min.	Typical value	Max.
Output power 1	mW	20	-	40
Peak operating wavelength 2	um	9	9.06	9.16
Spectral width (FWHM)	MHZ	-	3	-
Output side mode suppression ratio (SMSR)	dB	20	-	-
Output isolation 3		-	30	-
Wavelength temperature coefficient	Mrad		0.6	
Wavelength current coefficient	mm		0.2	

Output power stability (15 minutes) 4	nm/K		±0.5	±1.0
Output power stability (8 hours) 4	nm/A		±1.0	±2.0
Output power adjustable range	%	0	-	100
Output power adjustment mode		Soft control		
TEC stability	℃	-	±0.1	±0.2
TEC operating range	℃	0	30	50
Operating voltage	VAC	100	220	240
Electrical power consumption 5	W	-	-	2
Operating temperature	℃	0	-	55
Storage temperature	℃	-20	-	65
Specifications and dimensions	mm	290(L)×108(W)×68(H) benchtop		

Technical Specifications:

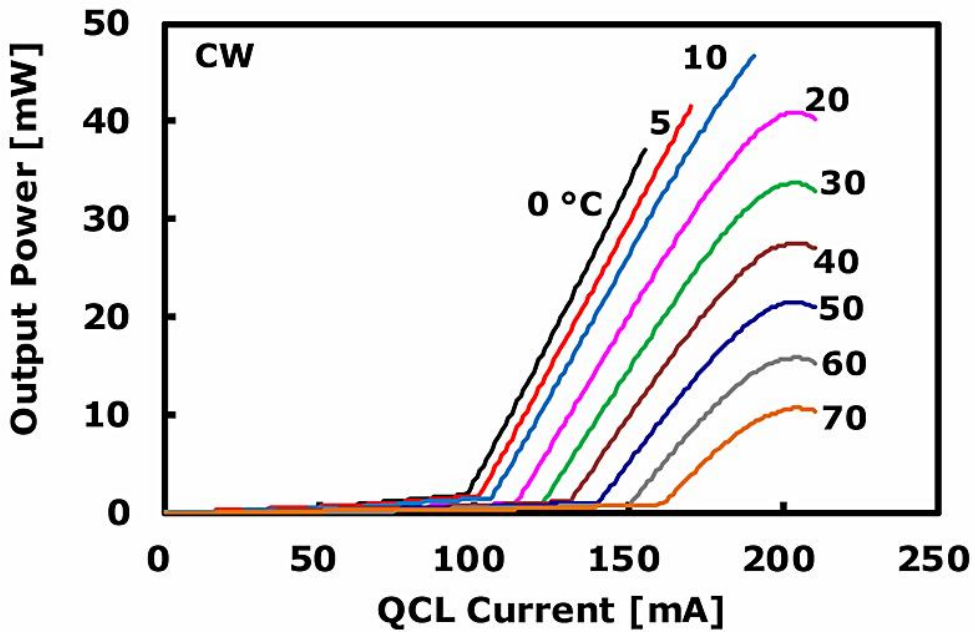
1.Output power is selectable.

2.Peak operating wavelength is selectable.

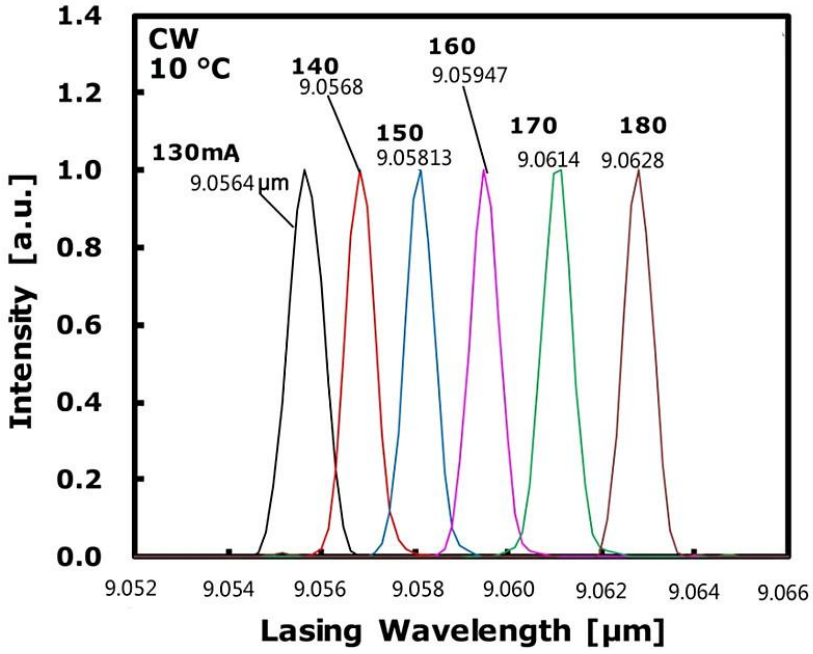
3.Output power stability test conditions are at 25°C, after a 30-minute warm-up.

4.Maximum power consumption refers to the overall power consumption under extreme operating conditions.

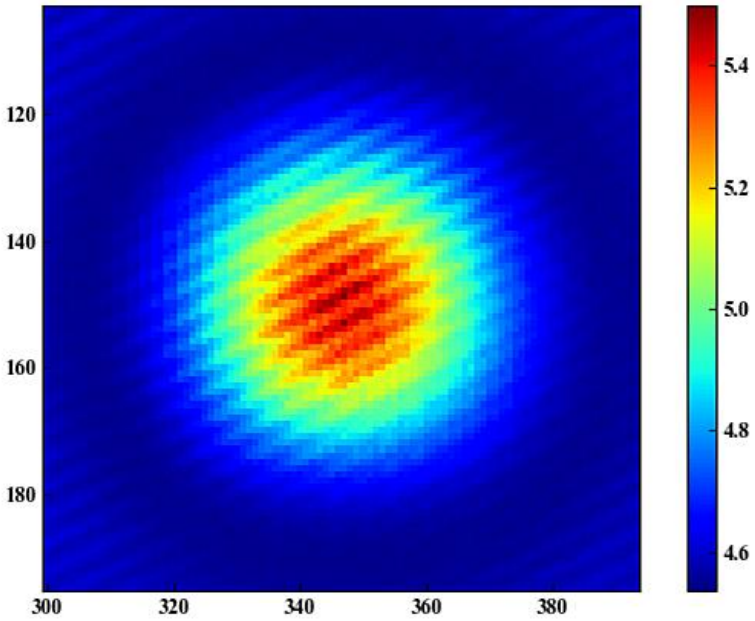
QCL laser characteristic curve (taking 9.06um typical wavelength as an example) Output power characteristic curve

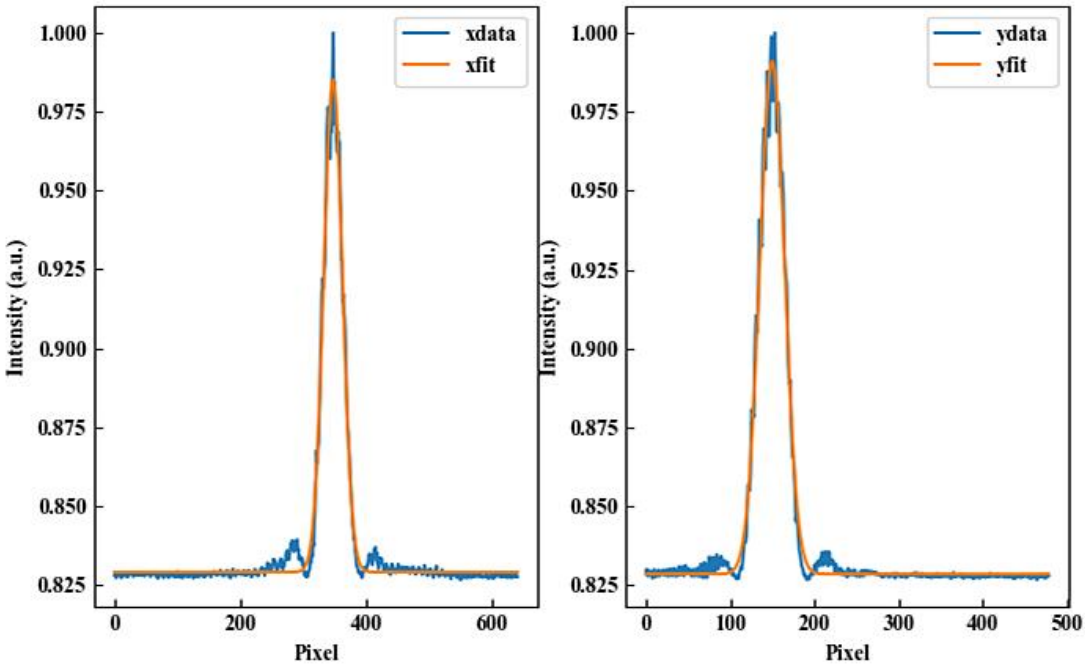


Laser spectrum (CW) laser working at 10°C



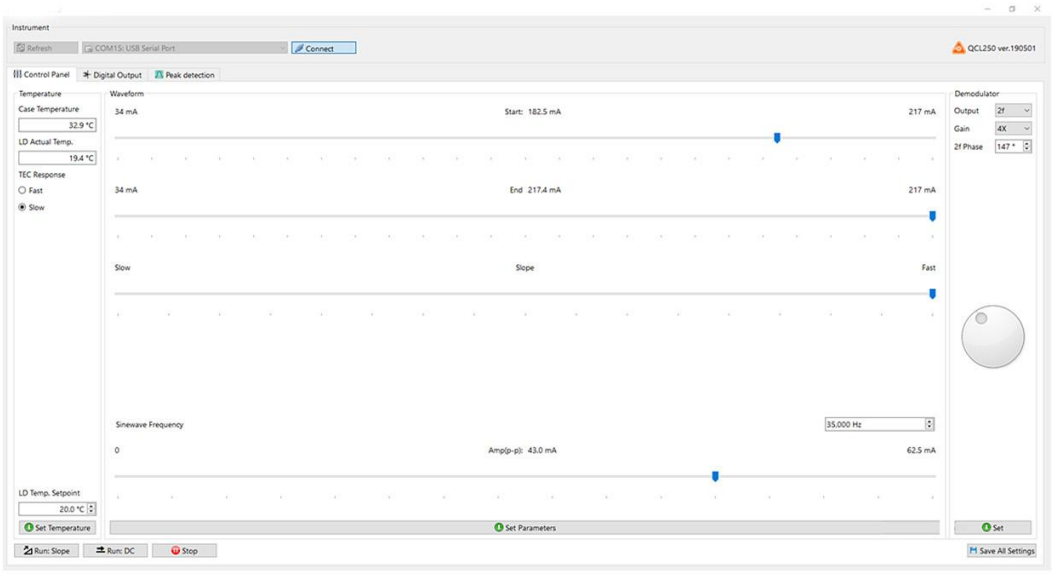
Quantum Cascade Laser Output Spot



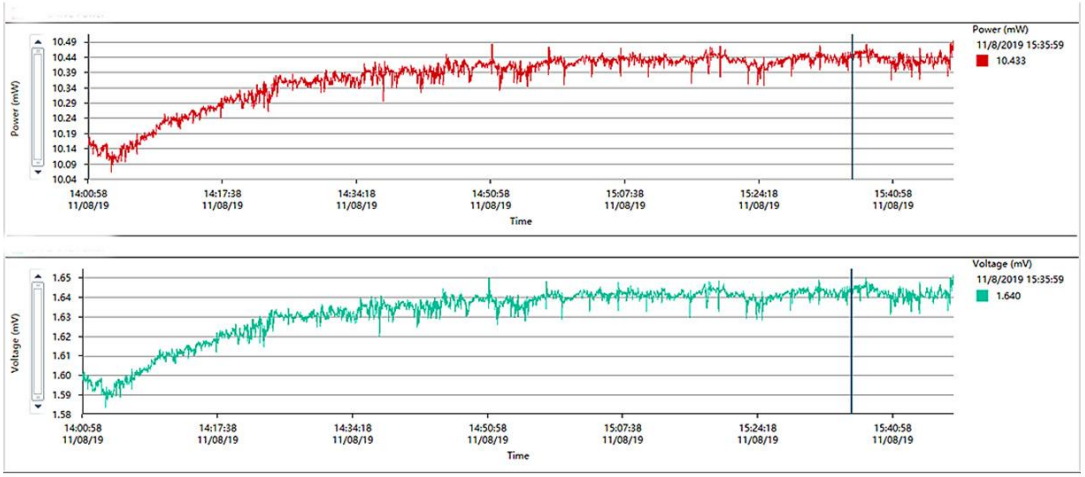


Test Camera Pixel size = 5 μm, Gaussian fit spot diameter = 320 μm

Control Software



QCL Laser Power Stability Test Curve



Ordering info

MP-QCL- W□□□□ -☆-△-XX

W□□□□: Wavelength

5260: 5260nm

7400: 7400nm

9060: 9060nm

10530: 10530nm

☆: Collimated Output

1: With

0: Without

△: Laser Type

FP: QCL-FP

DFB: QCL-DFB

XX: Output power

001=1mw

010=10mw

020=20mw

100=100mw

1000=1000mw