

## 9.06um low power bench top DFB-QCL mid-infrared quantum cascade laser 20mW (benchtop light source)



- **Product Description**

QCL9060-9.06um Low Power Benchtop DFB-QCL Mid-Infrared Quantum Cascade Laser is an industry-leading ultra-low power QCL-DFB laser developed by Idealphotonics in the first half of 2018. With a tunable range of over 100nm and an output power greater than 20mW, it meets the industrial

demands of customers in gas sensing and other applications. Our laser features collimated output with stable power, high temperature and wavelength stability, which is significantly superior to traditional high-power quantum cascade lasers in terms of stability. It provides an excellent test light source for our mid-infrared testing customers.

- **Product features**

Low power, high power, Narrow linewidth, Compact structure, Software intelligent control, Built-in FPGA

- **Part Number**

MP-QCL-9060-DFB-20-B

- **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

### Parameters

Parameter	Unit	Specs		
		Min.	Typ.	Max.
Output power	mW	20	-	40
Peak operating wavelength	um	9.0	9.06	9.16
Spectral width (FWHM)	MHZ	-	3	-
Side-mode suppression ratio (SMSR)	dB	20	-	-
Output isolation	dB	-	30	-
Wavelength temperature coefficient	nm/°C		0.6	
Wavelength current coefficient	nm/mA		0.2	
Output power stability (15 minutes)	%	-	±0.5	±1.0
Output power stability (8 hours)	%	-	±1.0	±2.0
Output power adjustable range	%	0	-	100

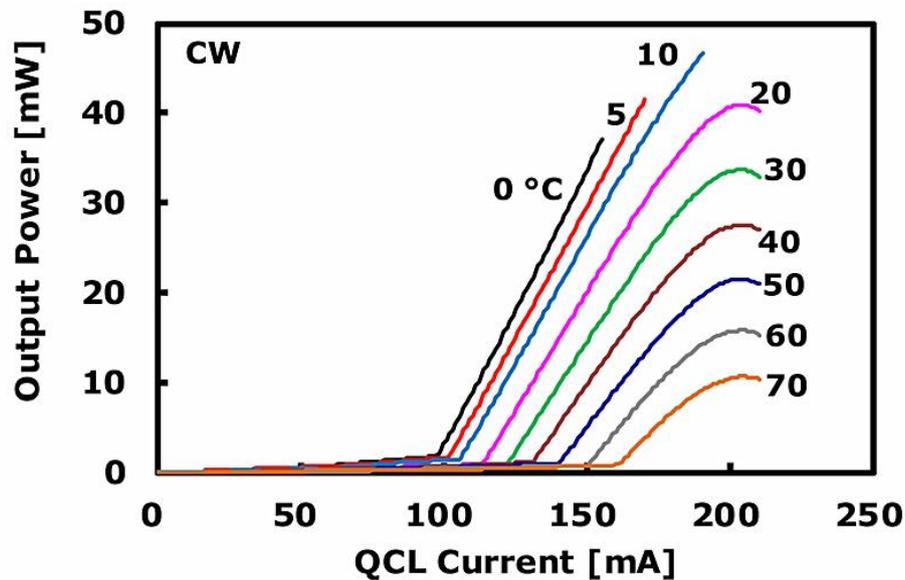
Output power adjustment mode		Software control		
TEC stability	°C	-	±0.1	±0.2
TEC working range	°C	0	30	50
Operating voltage	VAC	100	220	240
Power consumption	W	-	-	2
Operating temperature	°C	0	-	55
Storage temperature	°C	-20	-	65
Dimensions	mm	290(L) × 108(W) × 68(H)mm benchtop		

## Technical Specifications:

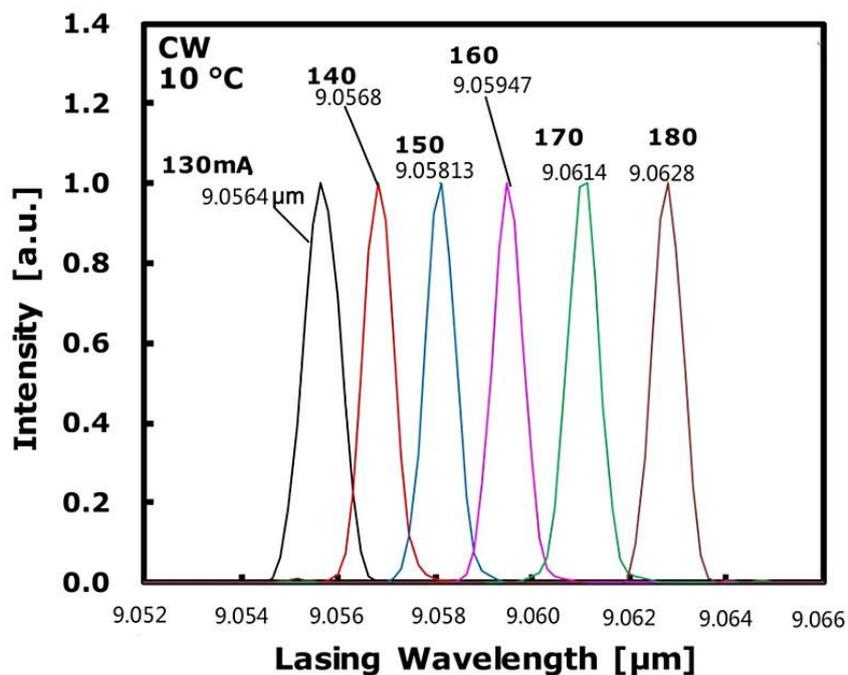
1. Output power is selectable.
2. Peak operating wavelength is selectable.
3. Output power stability test conditions are at 25°C, after a 30-minute warm-up.
4. Maximum power consumption refers to the overall power consumption under extreme operating conditions.



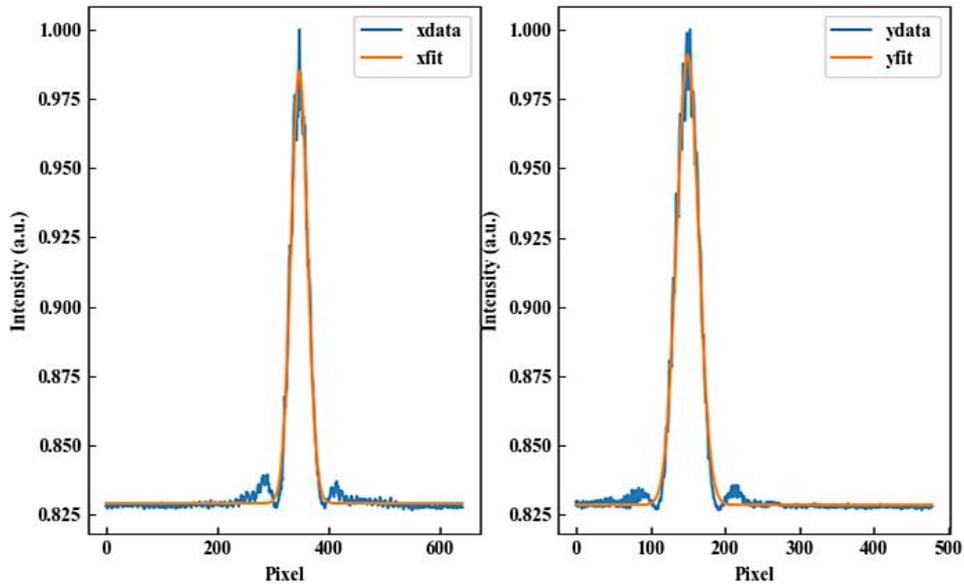
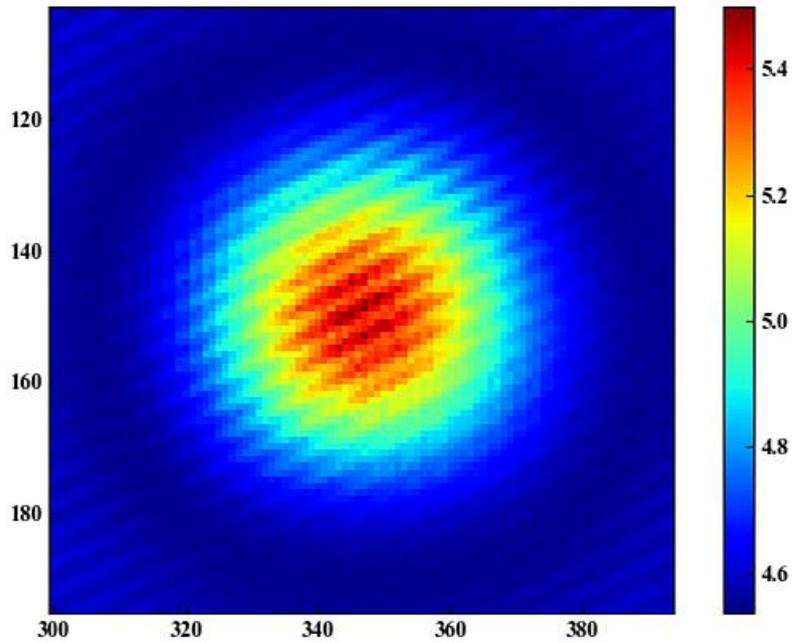
## QCL Laser Characteristic Curve (Example with 4.6um Typ. ) Output Power Characteristic Curve



## Laser Spectrum (Continuous) for a Laser Operating at 10°C



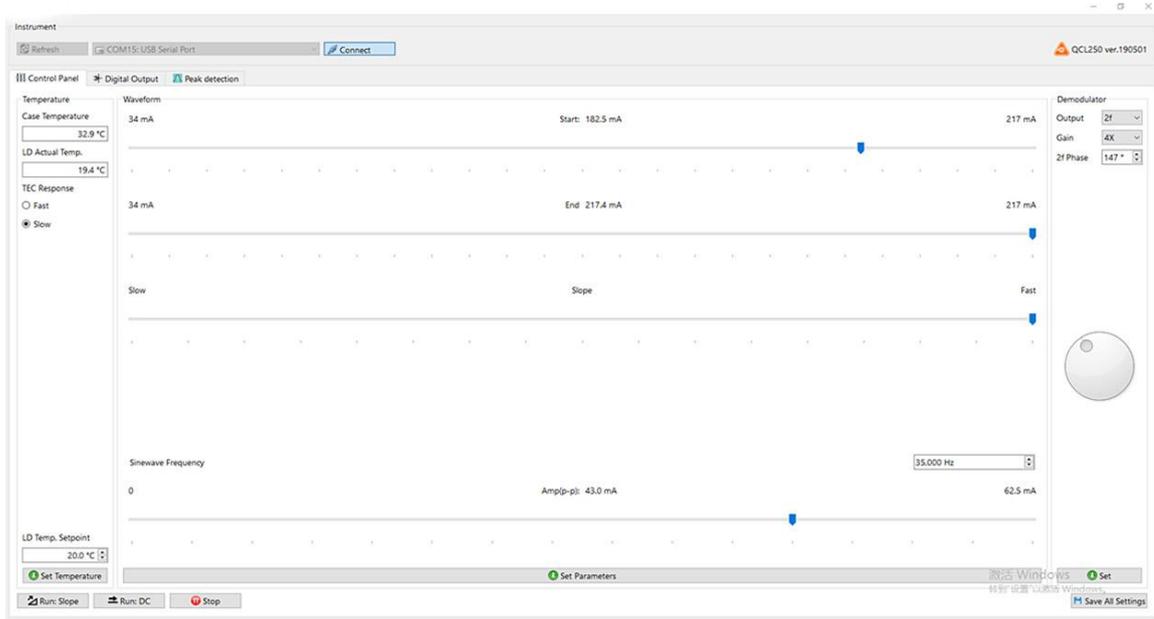
## Quantum Cascade Laser Output Spot



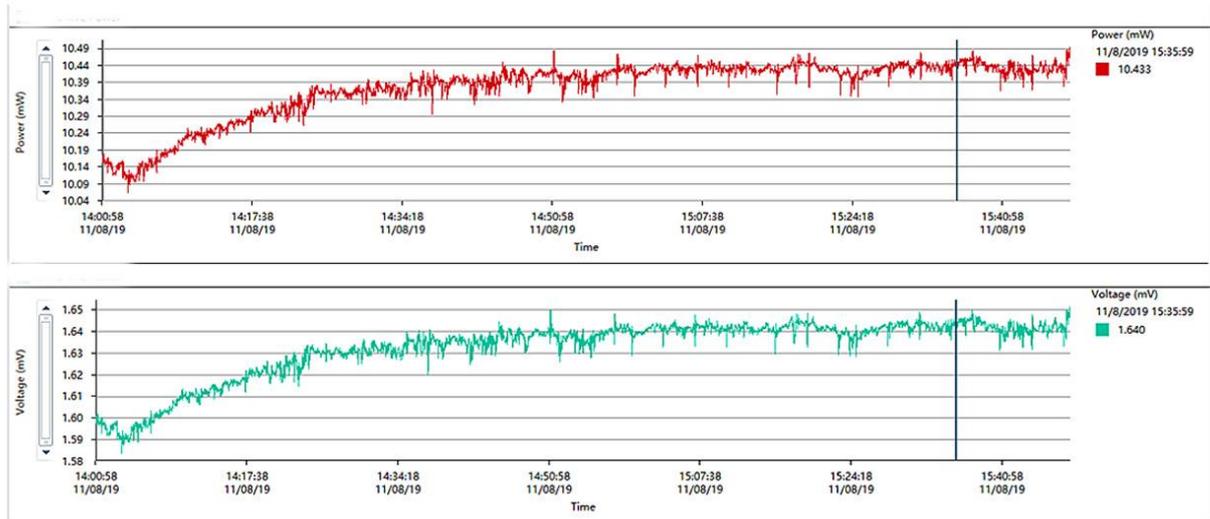
Test Camera Pixel size = 5  $\mu\text{m}$ , Gaussian fit spot diameter = 320  $\mu\text{m}$



## 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