4.6μm Low-Power benchtop DFB-QCL Mid-Infrared Quantum Cascade Laser 20mW (Benchtop Light Source)

Product Description

MP-QCL-4600-DFB-20-B low-power desktop DFB-QCL mid-infrared quantum cascade laser is a domestically leading ultra-low power QCL-DFB laser developed by Idealphotonics in the first half of 2018. It has a tunable range of over 100nm and an output power greater than 20mW, meeting the industrial needs of customers for gas sensing and other tests. Our laser features stable collimated output power and high temperature-wavelength stability, several orders of magnitude more stable than traditional

high-power quantum cascade lasers. It provides excellent test light sources for our mid-infrared testing customers.

Product features

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

Part Number

MP-QCL-4600-DFB-20-B

Application area

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

Core parameters

Wavelength	Output Power	Spectral Width
4.6um	20mW	3MHz

General Parameters

Parameters

Technical Specifications	Unit	Technical Specification		
		Min.	Typ.	Max.

Technical Specifications	Unit	Technical Specification		
		Min.	Typ.	Max.
Output Power	mW	20	-	40
Peak Operating Wavelength	um	4.5	4.6	4.7
Spectral Width (FWHM)	MHZ	-	3	-
Side Mode Suppression Ratio (SMSR)	dB	20	-	-
Output Isolation	dB	-	30	-
Wavelength Temperature Coefficient	nm/℃		0.6	
Wavelength Current Coefficient	nm/mA		0.2	
Output Power Stability (15 mins)	%	-	±0.5	±1.0
Output Power Stability (8h)	%	-	±1.0	±2.0
Output Power Adjustable Range	%	0	-	100
Power Adjustment Mode		Software Control		
TEC Stability	℃	-	±0.1	±0.2
TEC Operating Range	℃	0	30	50
Operating Voltage	VAC	100	220	240
Power Consumption	W	-	-	2
Operating Temperature	℃	0	-	55
Storage Temperature	℃	-20	-	65
Dimensions	mm	290(L)×108(W)×68(H)mm		

Technical Specifications Explanation::

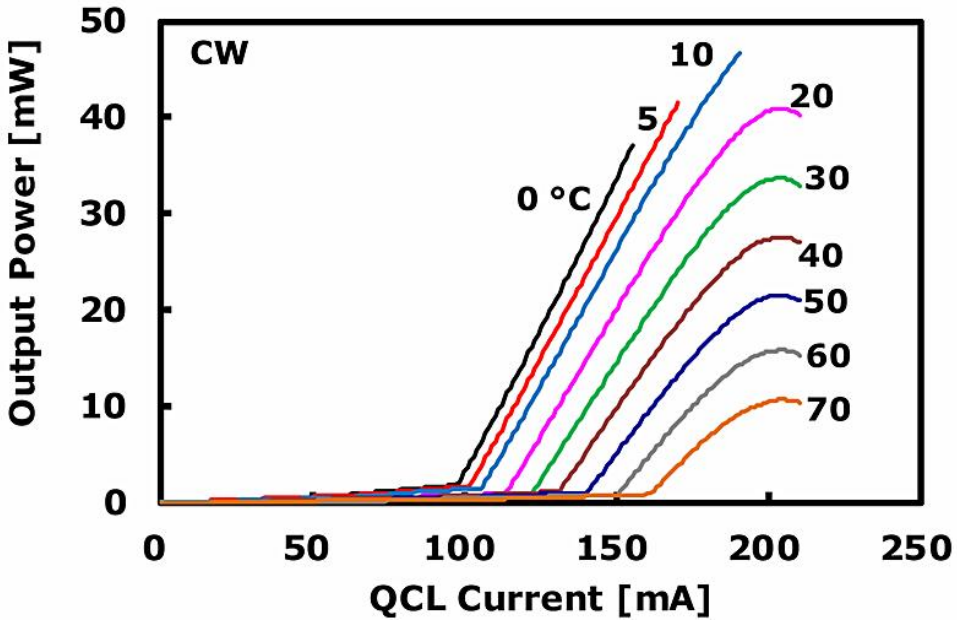
1.Output Power Selectable

2.Peak Operating Wavelength Selectable

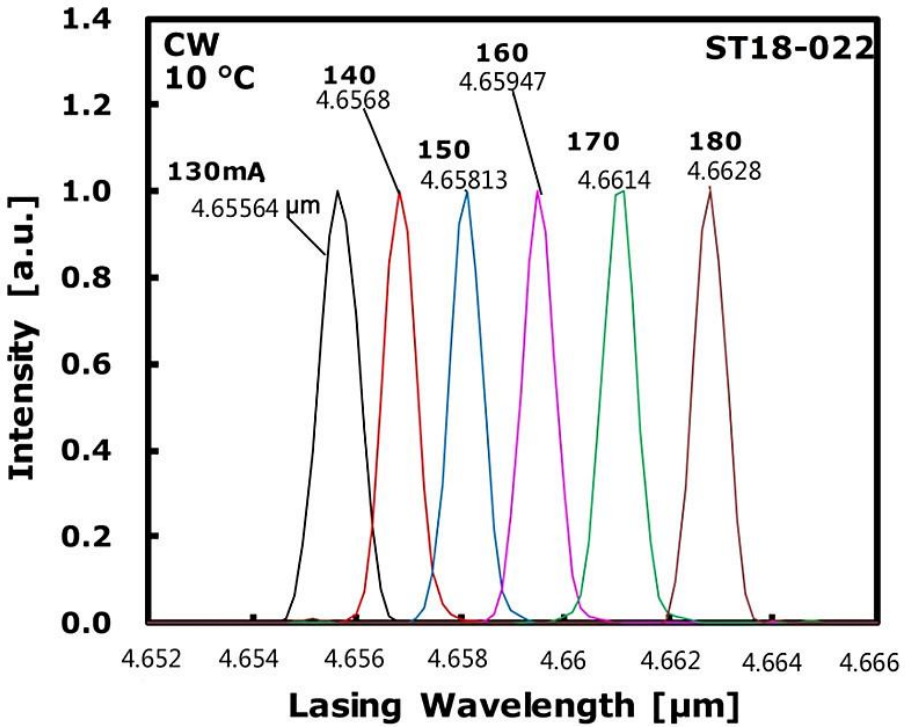
3.Output Power Stability: Stability testing is conducted at 25°C with a 30-minute warm-up after powering on.

4.Maximum Power Consumption: Refers to the total power consumption under extreme operating conditions.

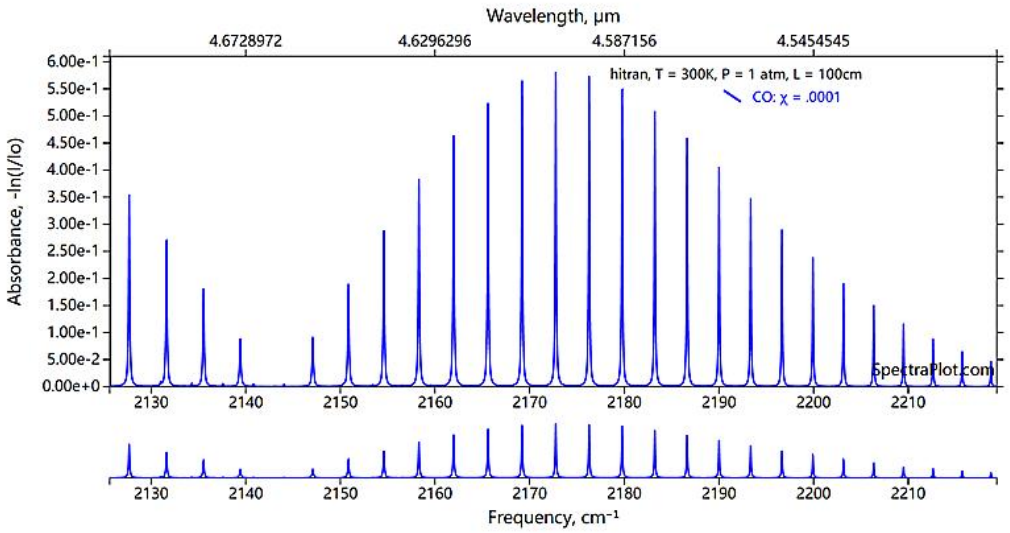
QCL laser characteristic curve (4.6um typical wavelength as an example) output power characteristic curve



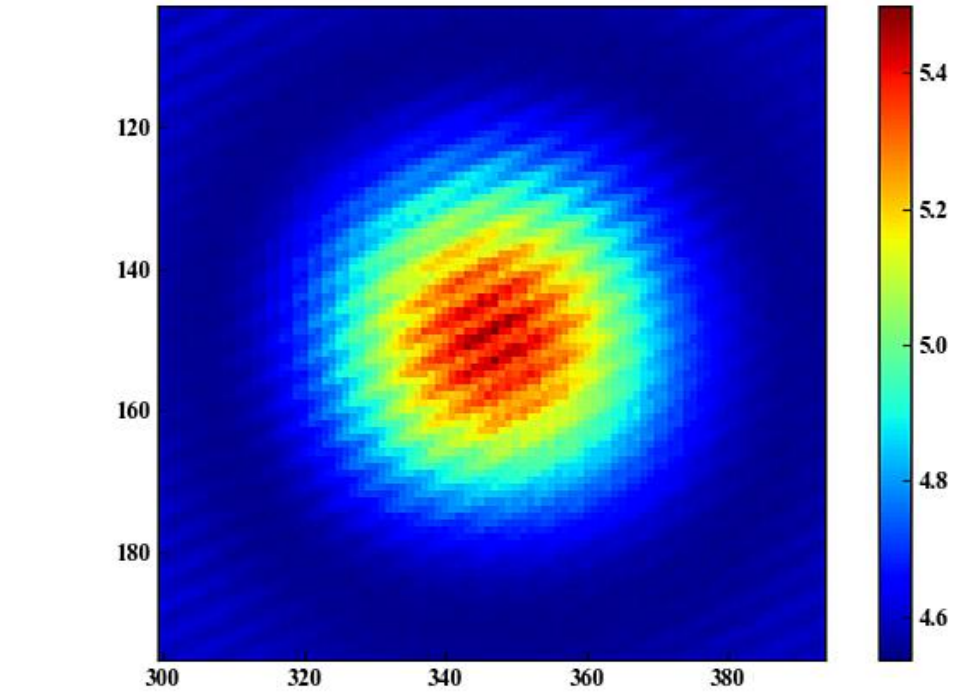
Laser spectrum (continuous) of the laser operating at 10°C.

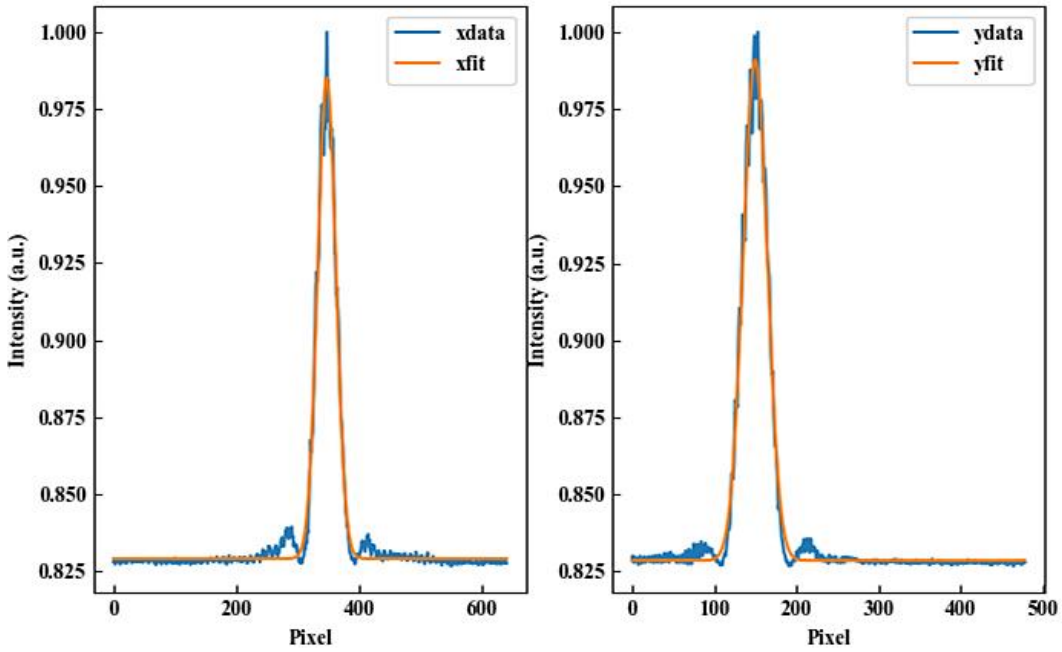


Absorption spectrum simulation curve:



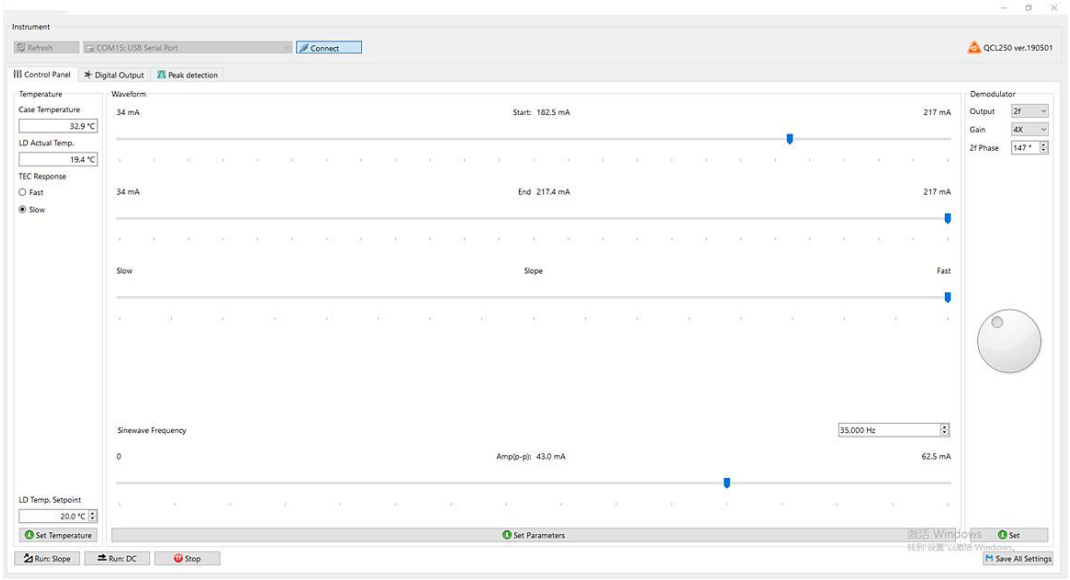
Quantum cascade laser output beam spot



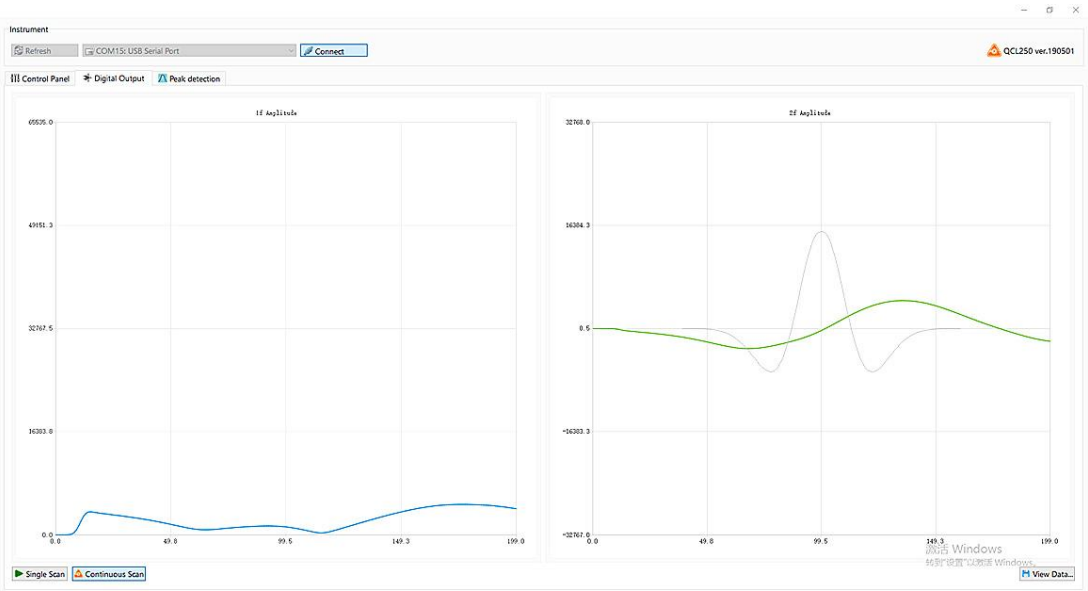


Test Camera Pixel size = 5 μm, Gaussian fit spot diameter = 320 μm

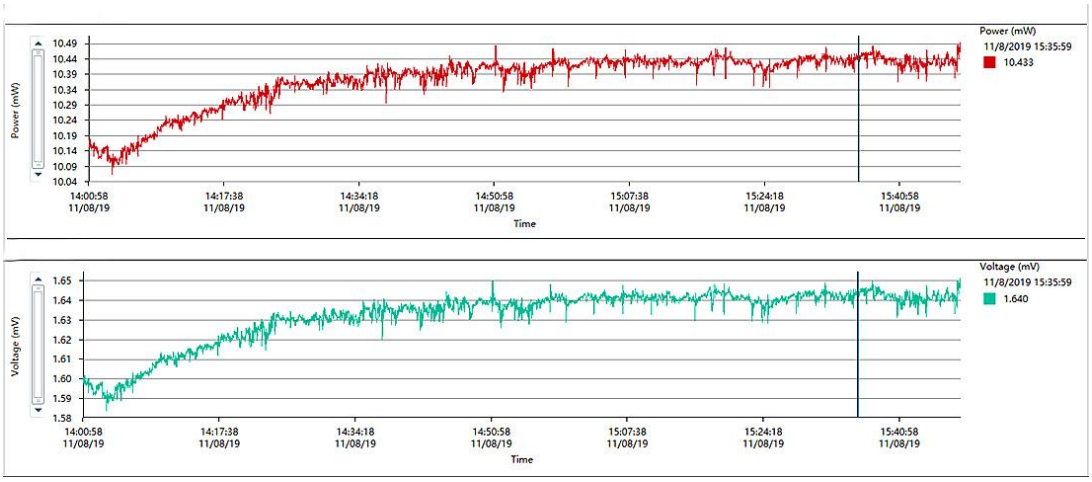
Control software



2F Signal Acquisition Interface



QCL laser power stability test curve



Ordering Info

MP-QCL- W□□□□ -☆-△-XX

W□□□□： Wavelength

4600: 4600nm

5260: 5260nm

7400: 7400nm

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