10.56um high power benchtop DFB-QCL mid-infrared quantum cascade laser 50mW (TDLAS integrated control module)

Product Description

The high-power benchtop DFB-QCL mid-infrared quantum cascade laser is a mid-infrared test laser developed by Idealphotonics in the first half of 2019. The low loss of the atmospheric window is conducive to the test research of space optical communications. Our benchtop light source has high power and does not require ITAR review, making it an excellent choice for commercial mid-infrared test light sources. The tunable range exceeds 100nm, and the output power is greater than 10mw to meet the industrial needs of customer

testing. Our laser has a built-in Znse collimated output, 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.

• Product features

High power、 Compact structure、 Intelligent software control、 Built-in FPGA

• Part Number

MP-QCL-1056-DFB-50-T

• Application area

Gas Detection | Medical Respiratory Analysis | Industrial Processes | National Defense Security | Astronomical Observation

• Core parameters

Wavelength	Output Power	Spectral Width
10.56um	50mW	3MHz

• General Parameters

Parameter

parameter	Unit	Technology indication		
		Min.	Typical	Max.
Output power(1)	mW	10	50	80
Peak operating wavelength(2)	um	10.55	10.56	10.57
Fiber width (FWHM)	MHZ	-	3	-
Output side mode suppression ratio(SMSR)	dB	30	-	-
M2 factor			＜1.2	
Output light divergence angle	Mrad		＜2	
Full beam waist diameter(5)	mm		＜4	
Output isolation(3)	dB	-	30	-
Wavelength temperature coefficient	nm/K		1.00	
Wavelength current coefficient	nm/A		57.1	
Output power stability(15min)(4)	%	-	±0.5	±1.0
Output power stability(8h)(4)	%	-	±1.0	±2.0
Output power adjustable range	%	0	-	100
Output power adjustment mode		Software control		
TEC stability	℃	-	±0.1	±0.2

TEC operating range	℃	0	30	50
Operating voltage	VAC	100	220	240
Electrical power consumption(5)	W	-	-	5
Operating temperature	℃	0	-	90
Storage temperature	℃	-40	-	85
Specifications and dimension	mm	343(L)×193(W)×180(H) benchtop		

Technical Specifications:

1. Output power is optional;

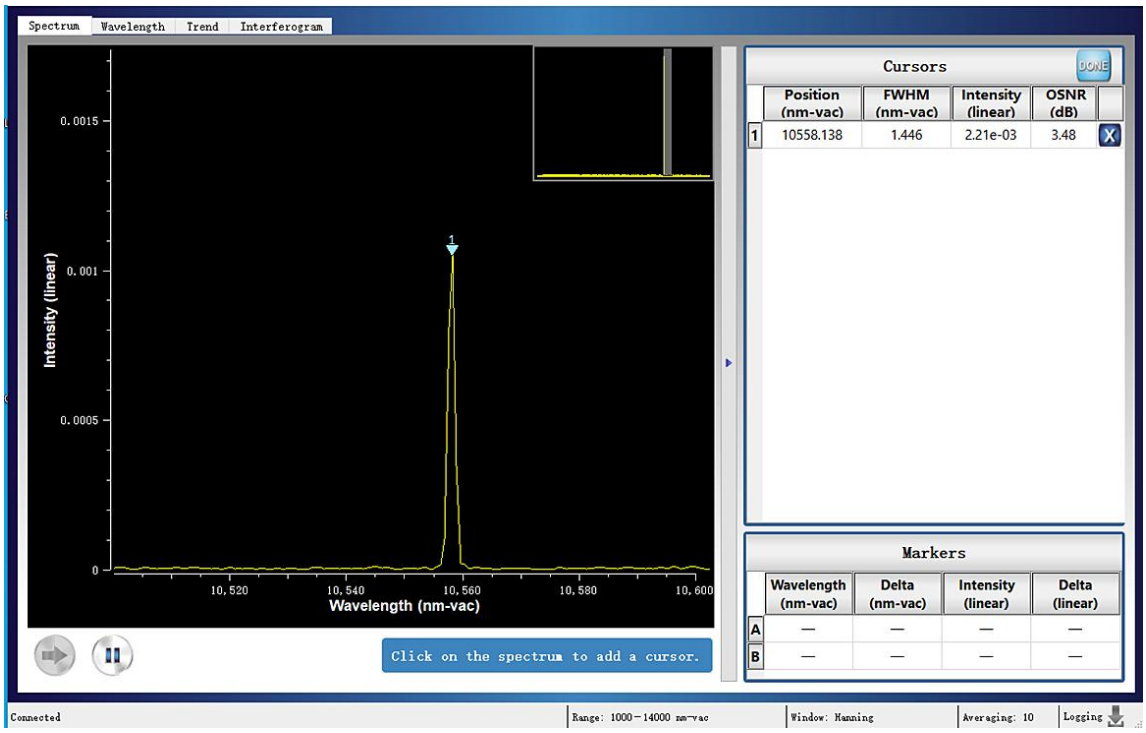
2. Peak operating wavelength can be specified;

3. Output power stability test condition is 25 degrees, after 30 minutes of preheating;

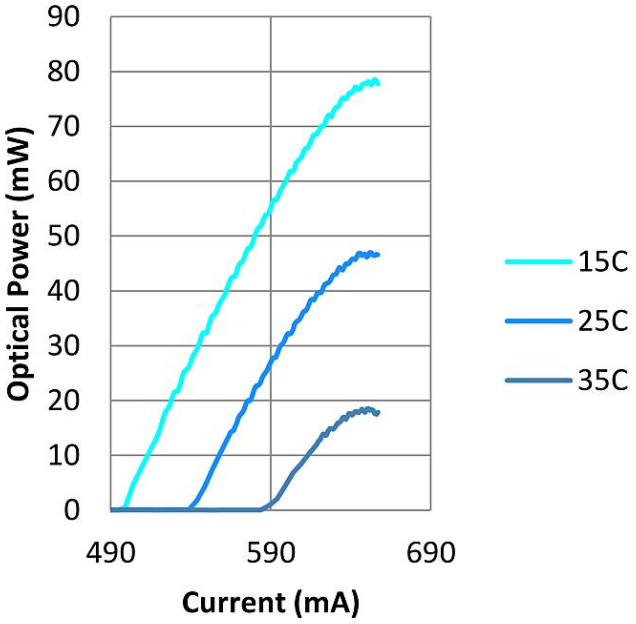
4. Maximum power consumption refers to the overall power consumption under extreme working conditions.

5. I = 0.80 A, V = 8.7 V, T= 15 ℃,Measured at $1/e^2$

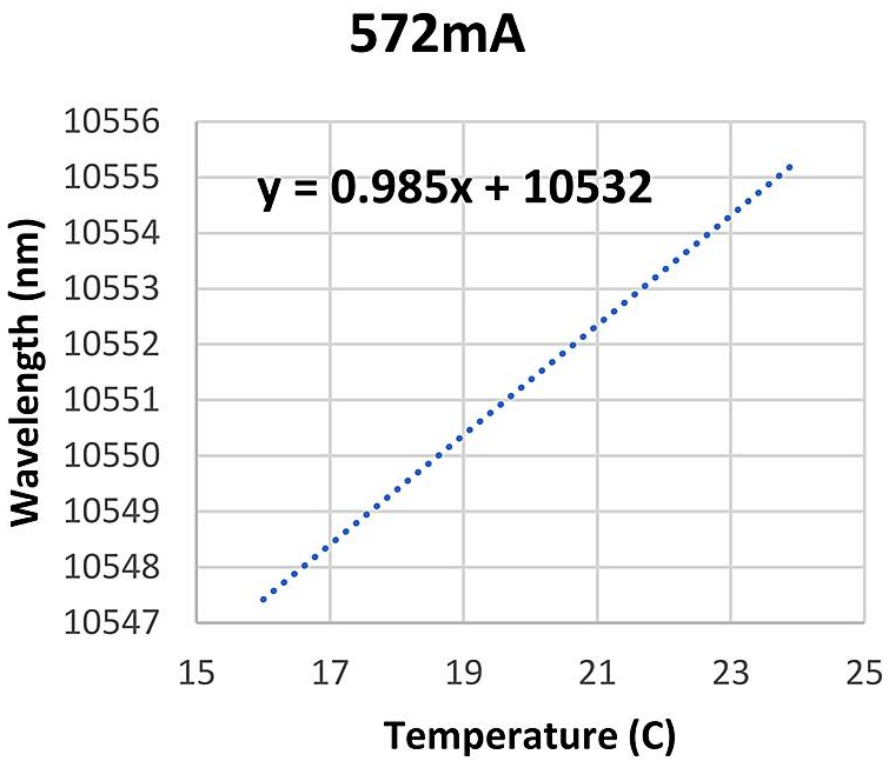
Laser spectrum (continuous)



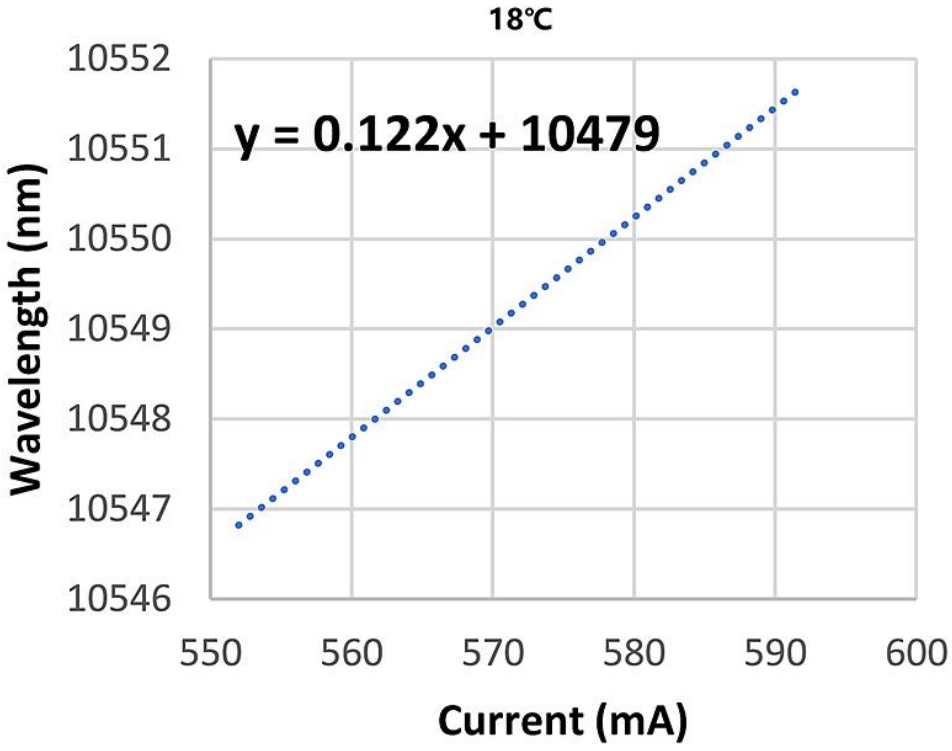
QCL laser characteristic curve (taking 10.56um typical wavelength as an example)Output power characteristic curve



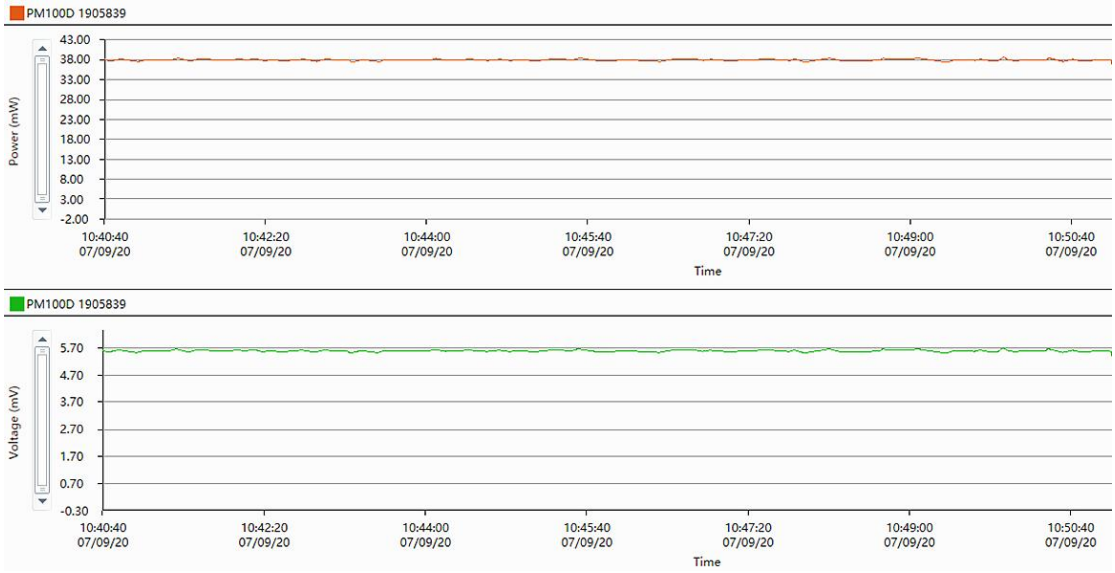
Wavelength temperature curve



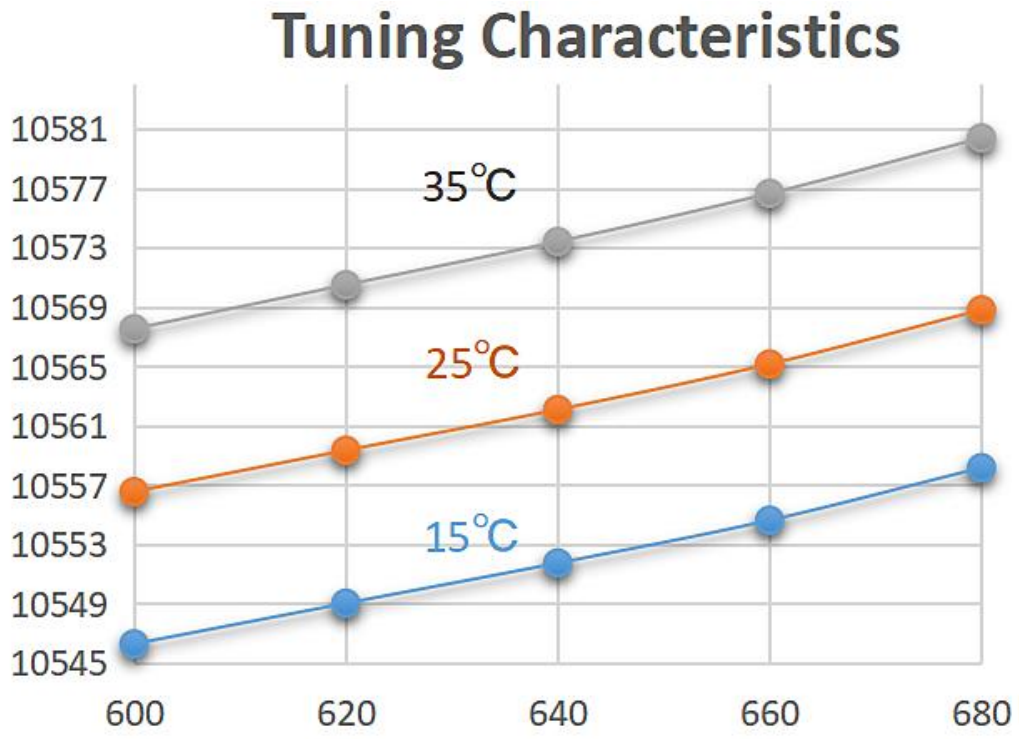
Wavelength current curve



10.55um laser power stability test curve

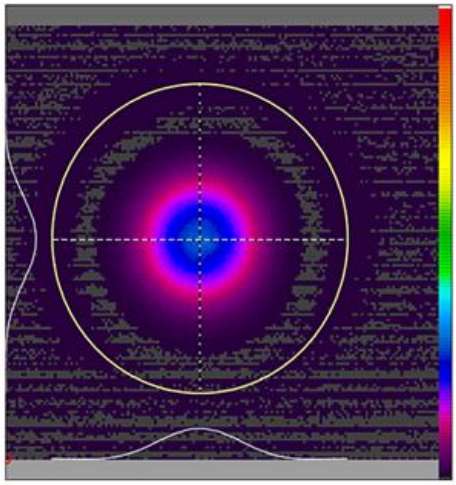


10.55um Tuning curve

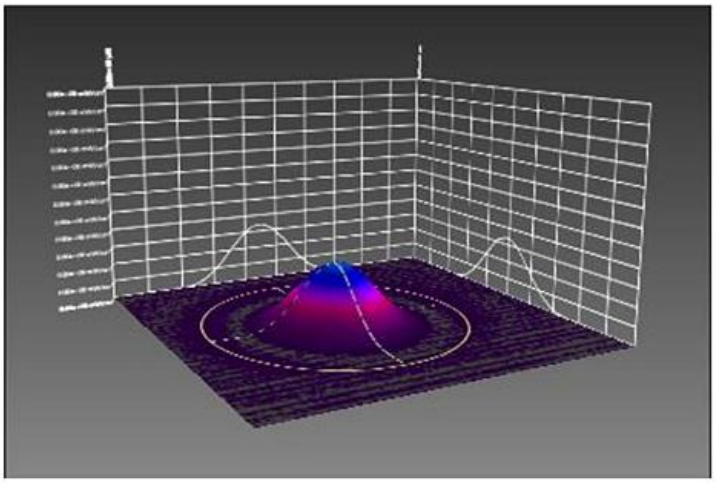


Spot analysis

2D Beam Profile at 50mm



3D Beam Profile at 50mm



Ordering Information

MP-QCL- W□□□□ -☆-△-XX

W□□□□ : Wavelength

5260: 5260nm

7400: 7400nm

9000: 9000nm

105600: 105600nm

☆: collimated output

1: with

0: without

△: laser type

FP: QCL-FP

DFB: QCL-DFB

XX: output power

001=1mw

010=10mw

400=400mw

1000=10000mw