

4.56um 高功率台式 DFB-QCL 量子级联激光器光源 150mW (TDLAS 综合控制模块)



描述

4.56um 高功率台式 DFB-QCL 量子级联激光器是上海筱晓光子开发的可调谐连续光激光器，波长调谐范围可达 30nm，准直输出功率高达 180mW，能够满足气体传感分析测试、中红外测试光源等条件。台式 DFB-QCL 激光器模块内部集成了数字激光驱动、可调增益放大器、1f/2f 数字锁相放大器、模拟输出温控单元，并可通过软件控制调谐激光器的温度和工作电流。我们的激光器准直输出功率稳定，波长稳定性好，是中红外高功率优秀测试光源。

产品型号

TDLAS-MIR-QCL-W4560-1-DFB-150

核心参数

中心波长	输出功率
4.56um	150mw



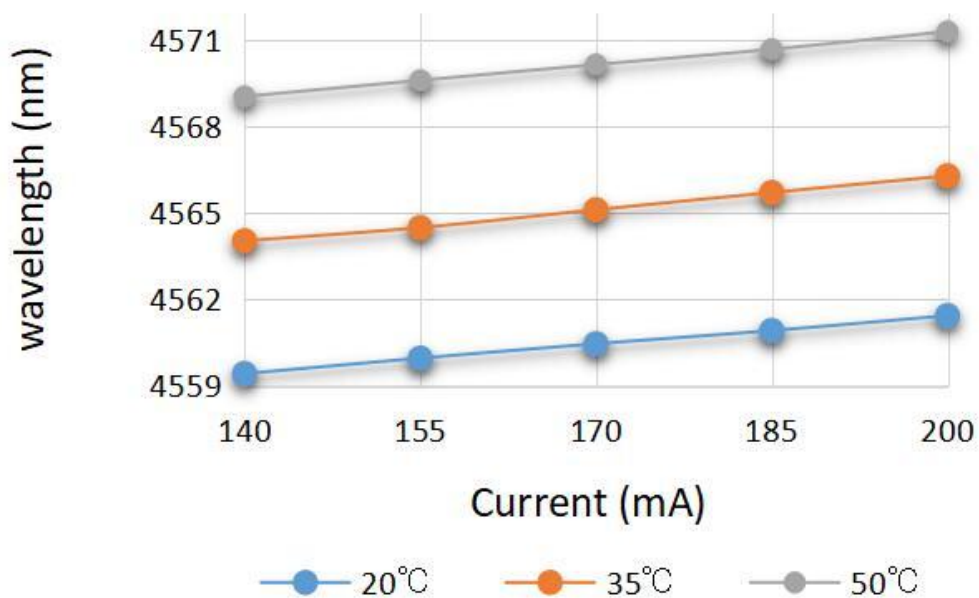
尺寸图



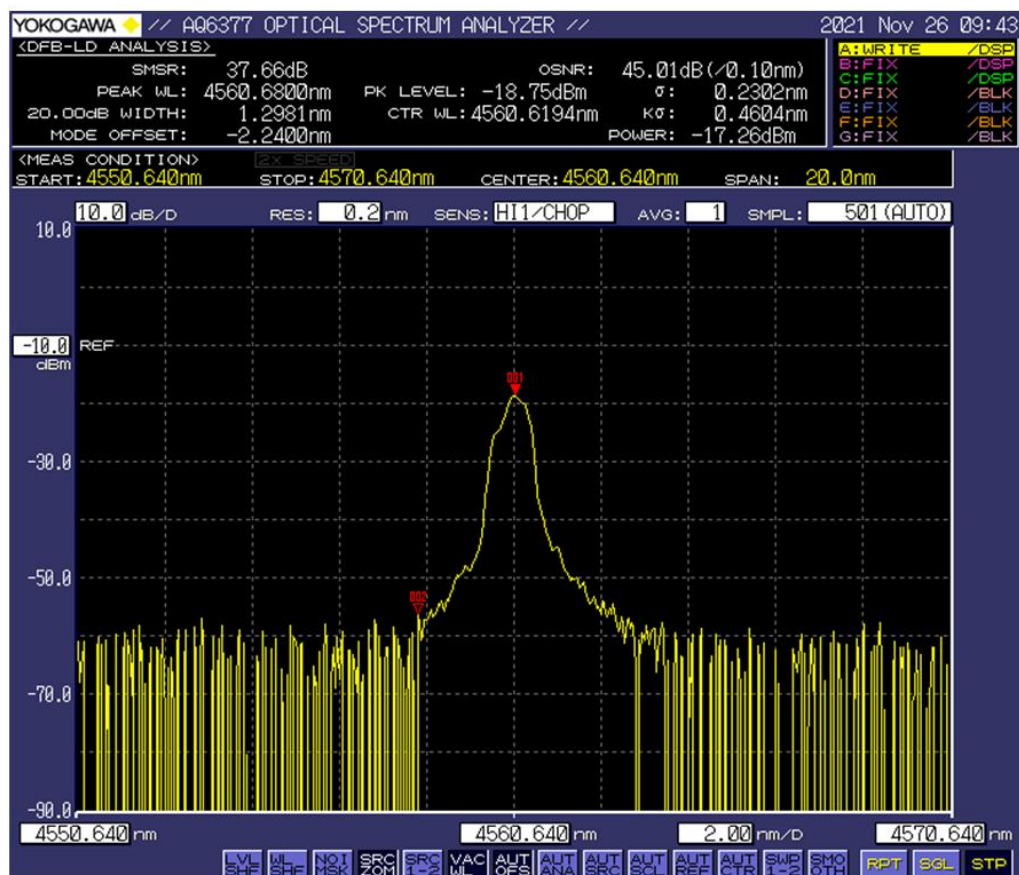
特性曲线

调谐特性

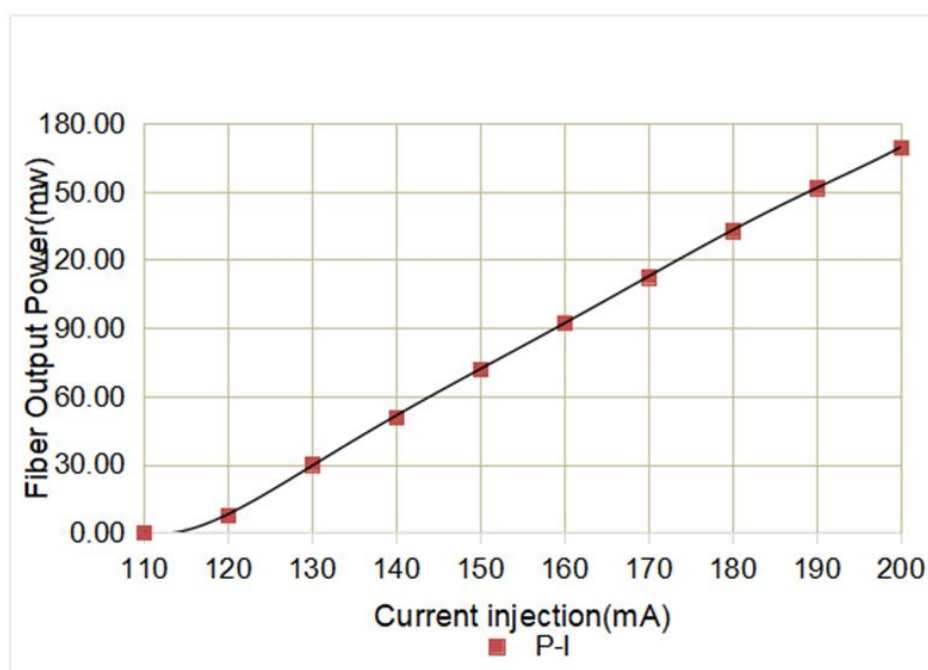
Tuning Characteristics



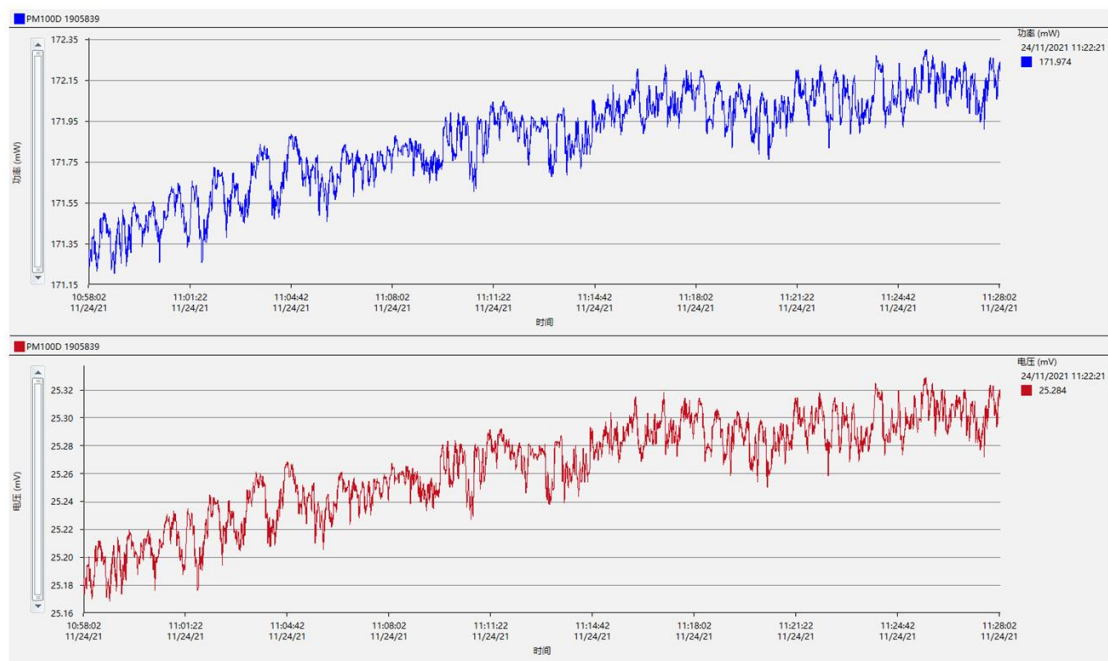
一,光谱图



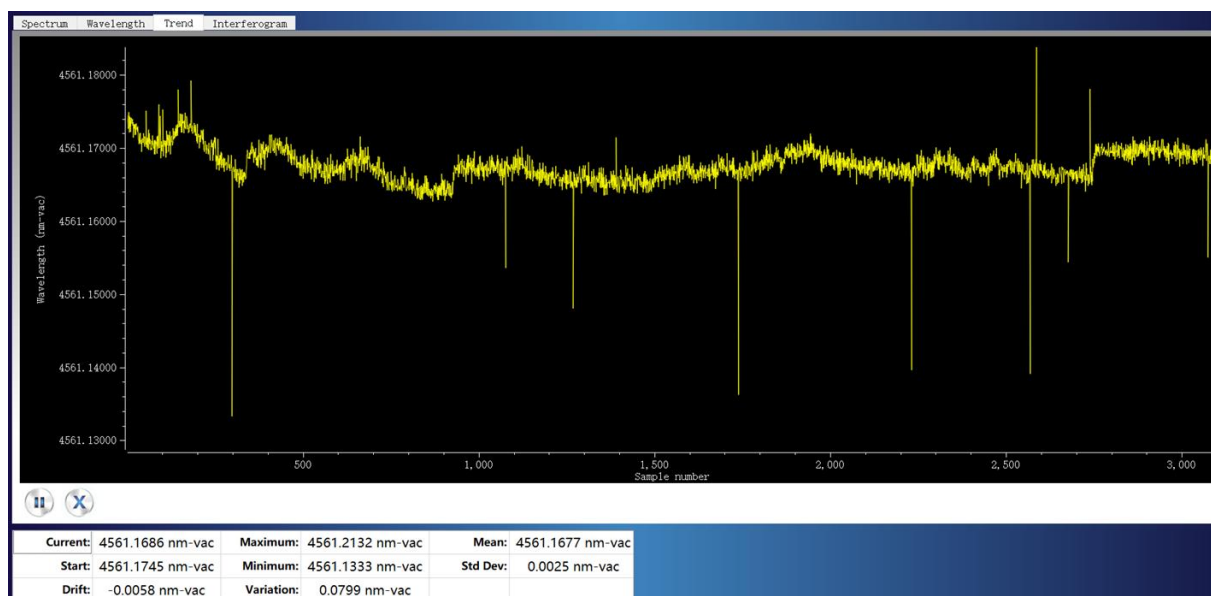
二,功率曲线



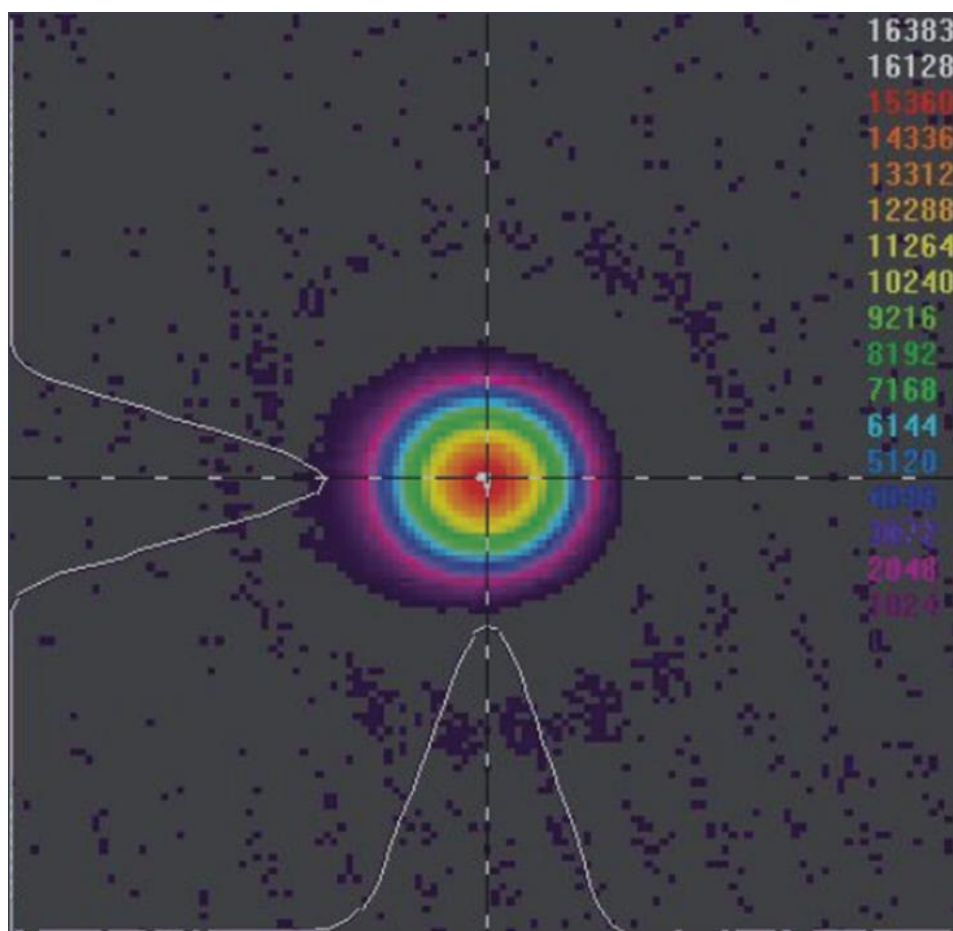
三.功率稳定性



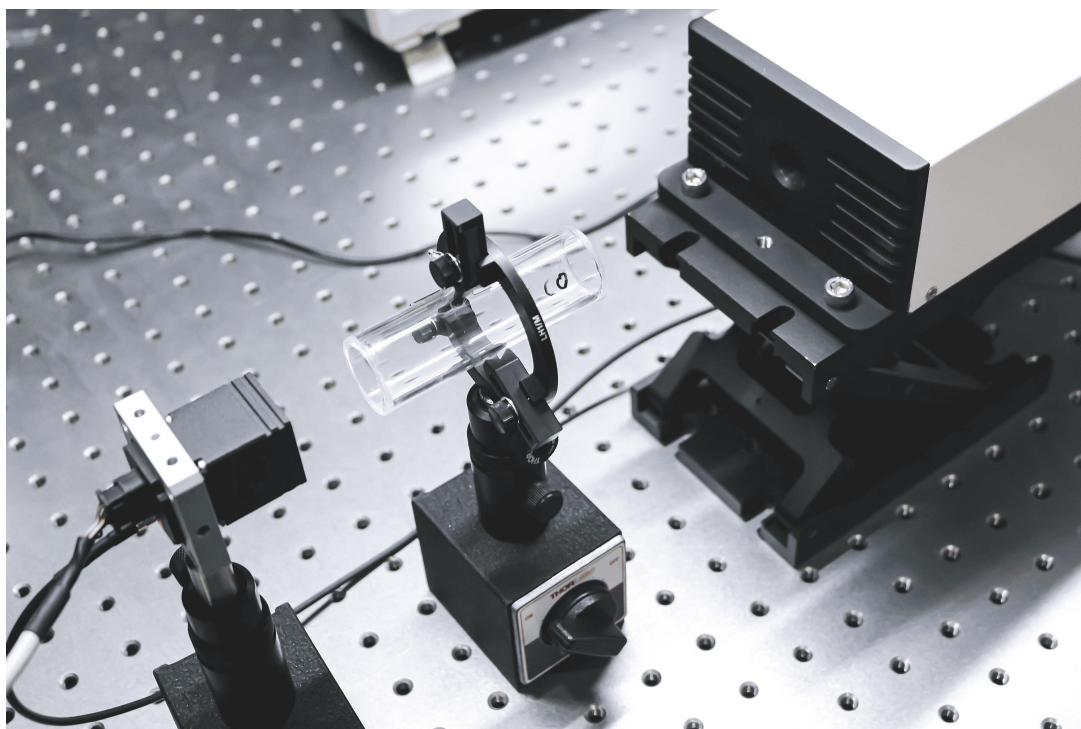
四.波长稳定性



五.光斑

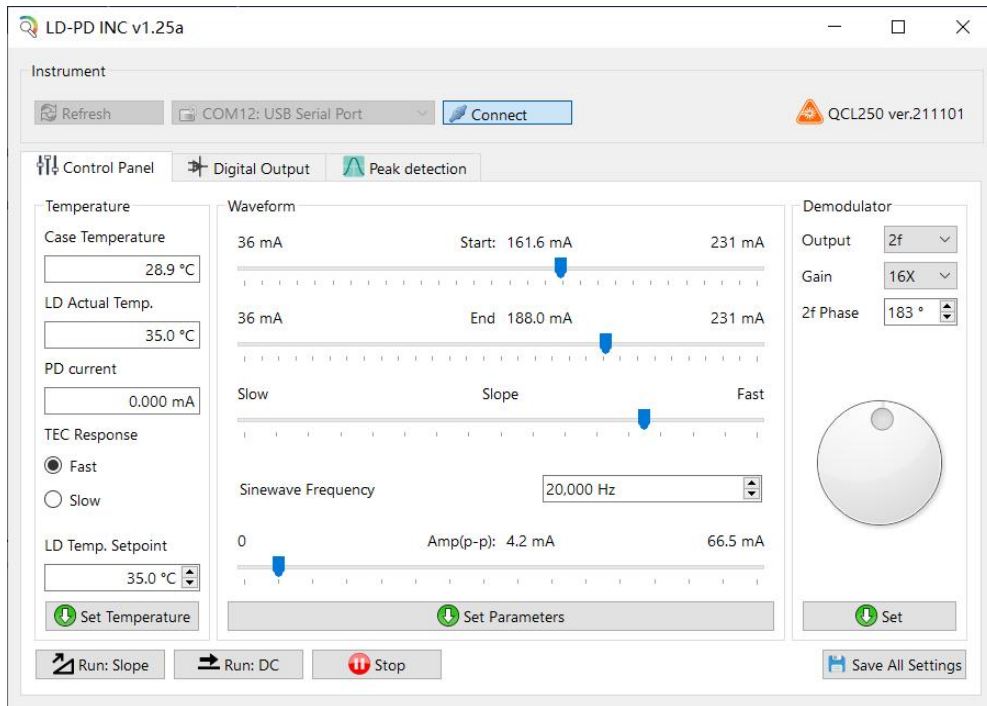


六、TDLAS 气体分析

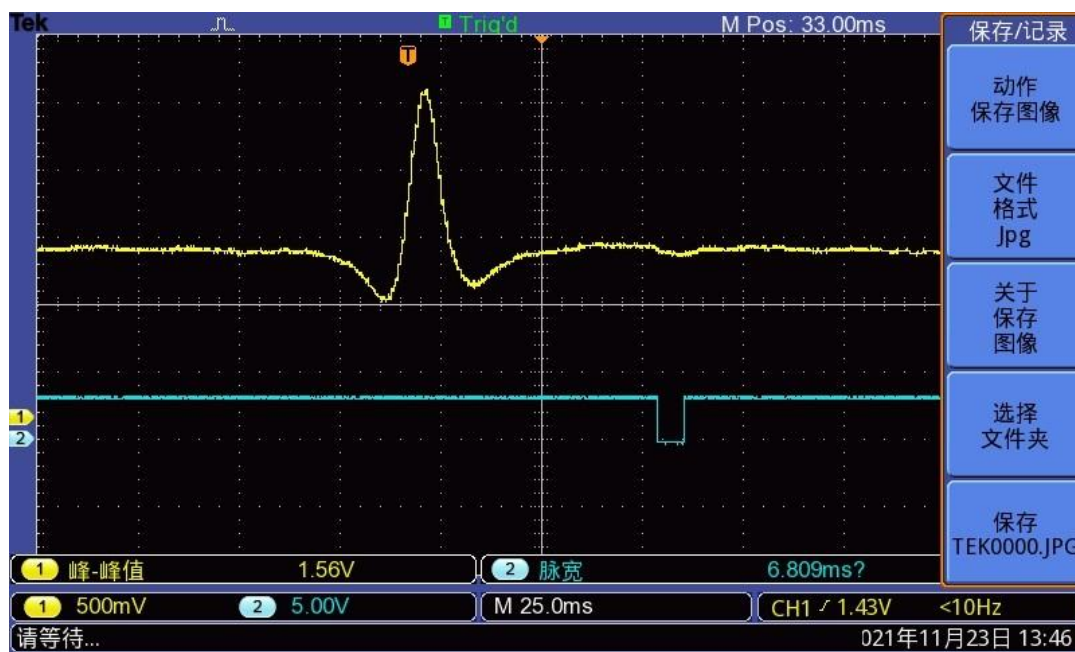


激光准直输出，通过 10cm 直通气体吸收池，然后打到 MCT 探测器上，探测到的信号接入 PREAMP 前置放大端，再经过锁相放大器调制解调，通过 DACOUT 模拟输出端输出二次谐波信号。

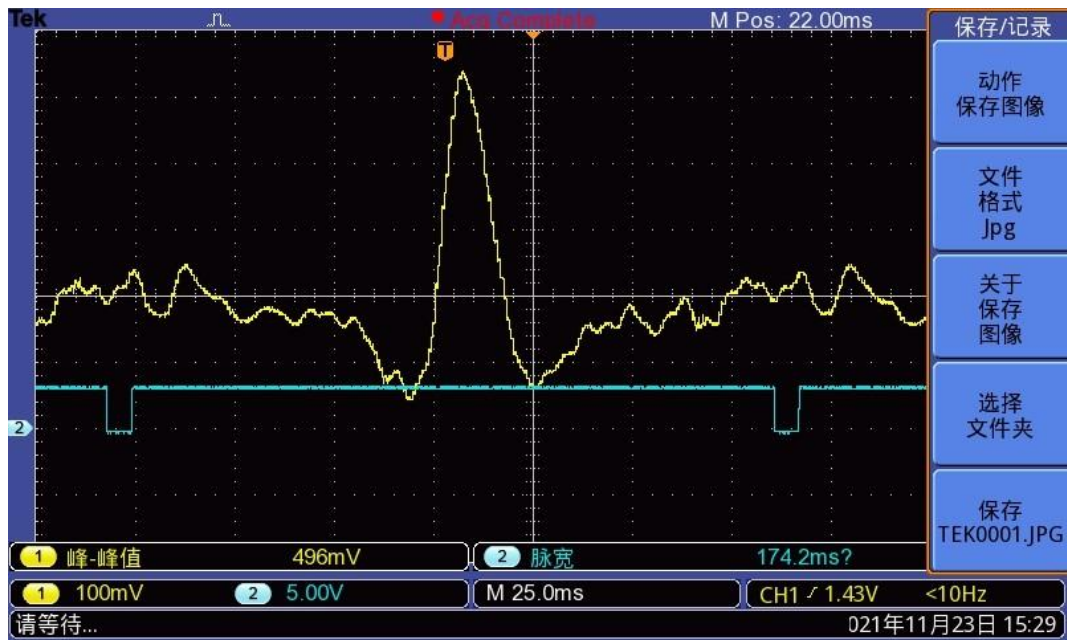
软件参数设置



二次谐波波形图：



10%浓度 CO

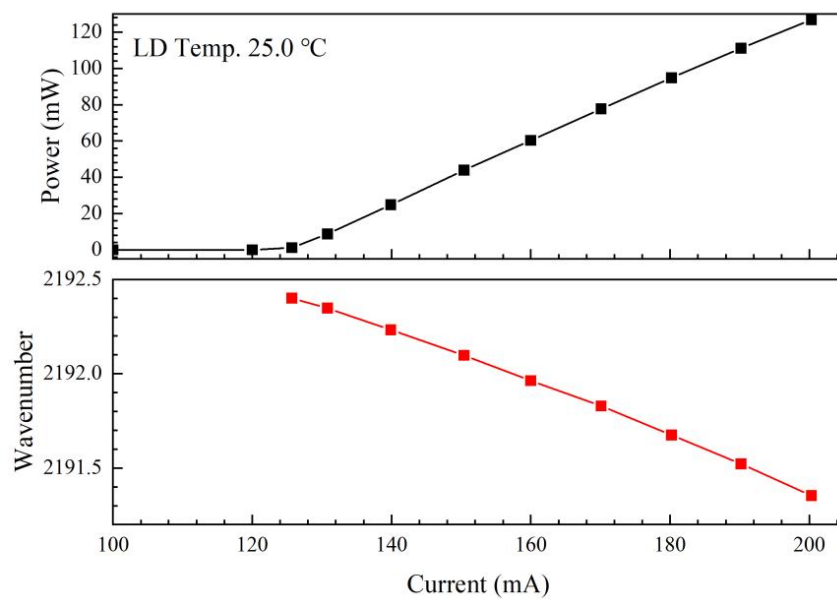


200ppm 浓度 CO

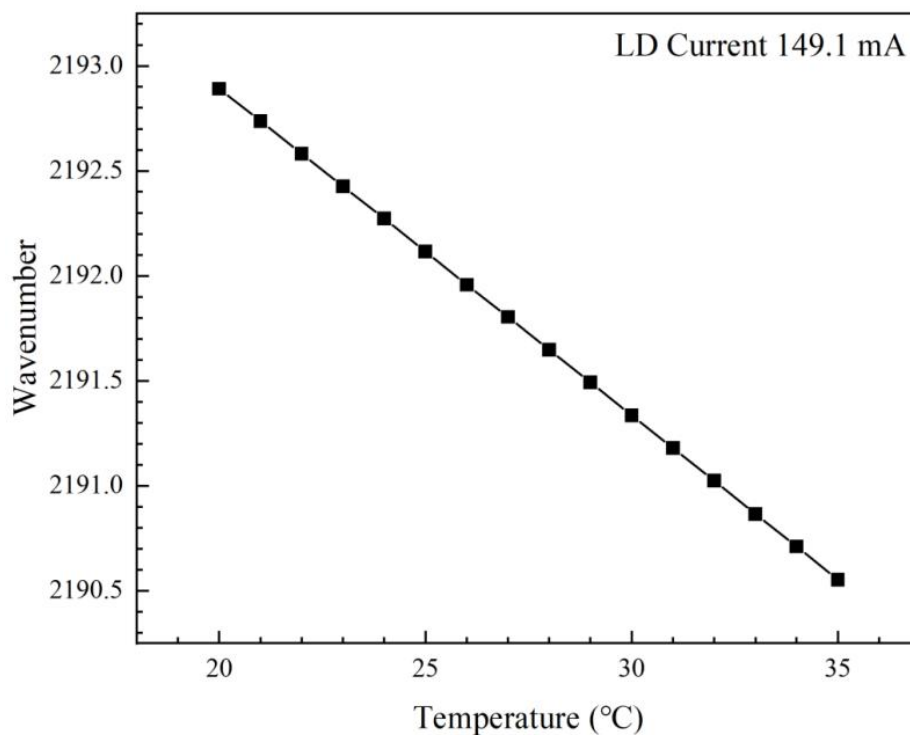
4.56um 低功耗 QCL 测试报告 2023/04/26

1. 激光输出测试

1.1. Output Power & Wavelength vs. Current

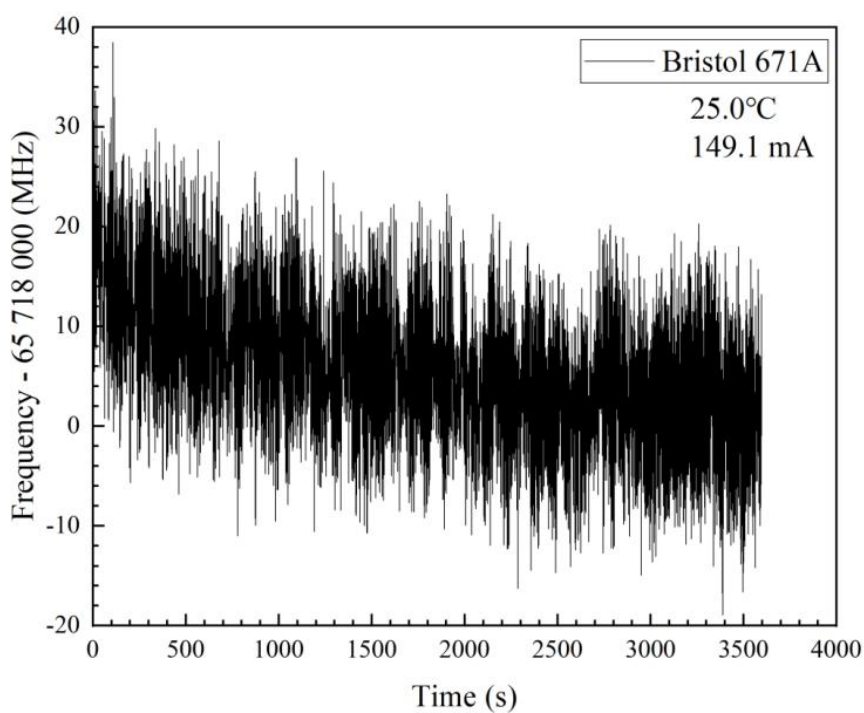


1.2. Wavelength vs Temperature



Frequency Stability

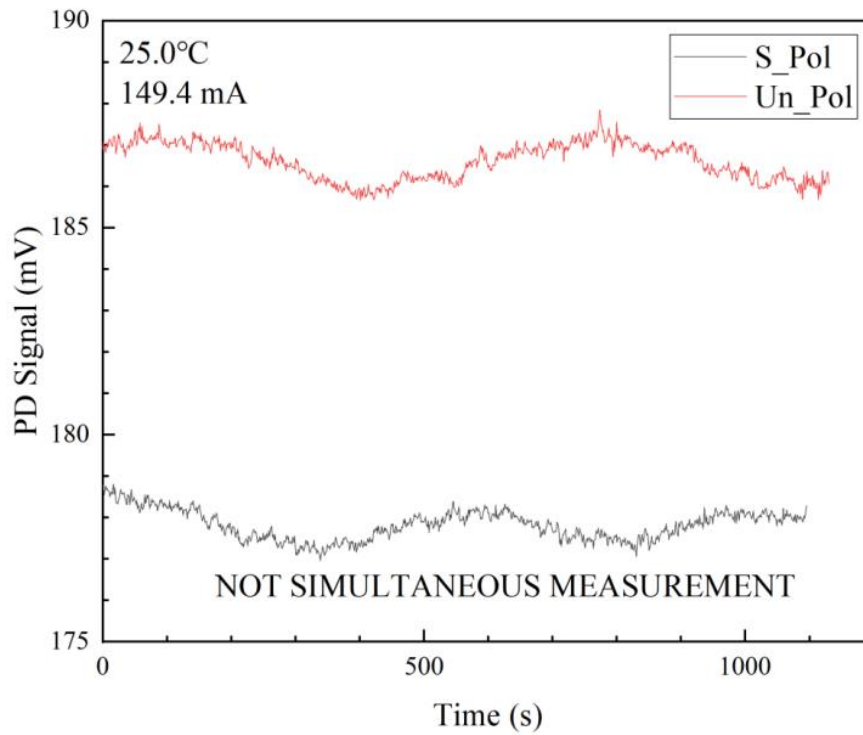
1h measurement after 30 mins Warm-up



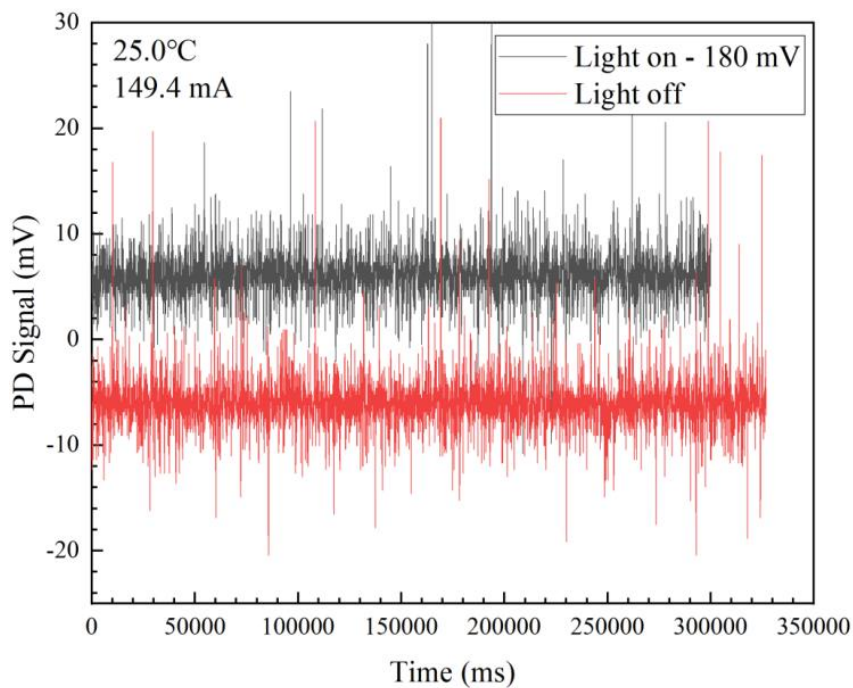
Power stability

Measured after 10 dB attenuation by a photodiode.

S_pol measured after a silicon PBS

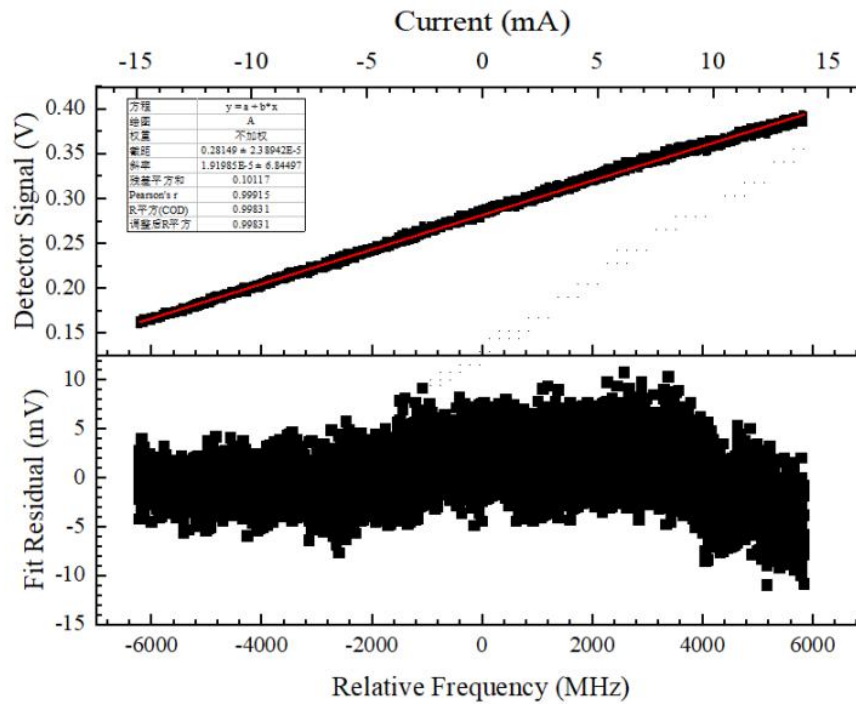


Short term power stability (5 mins)



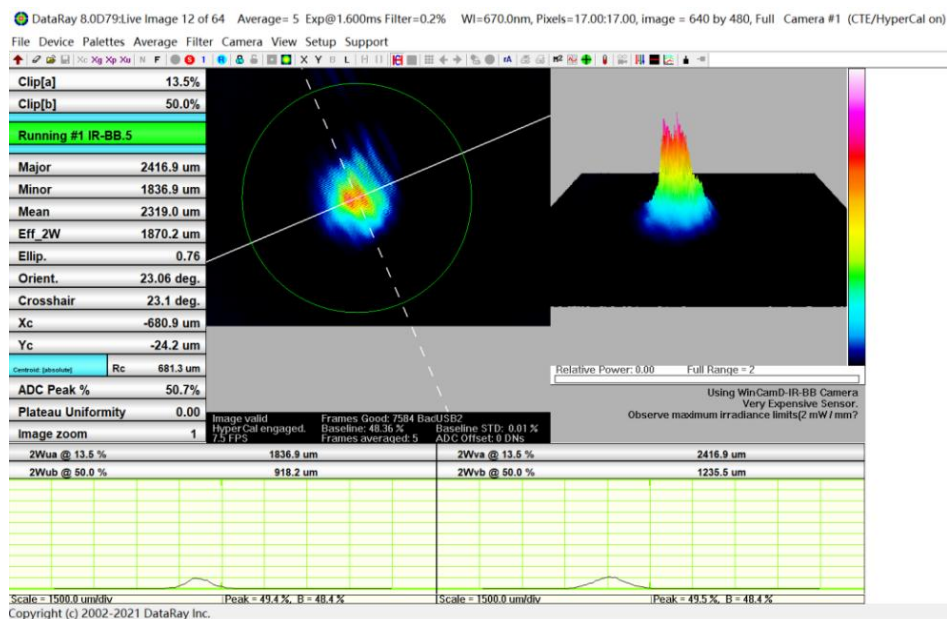
Power/Current linearity

Nonlinearities may come from interference inside the Laser diode.

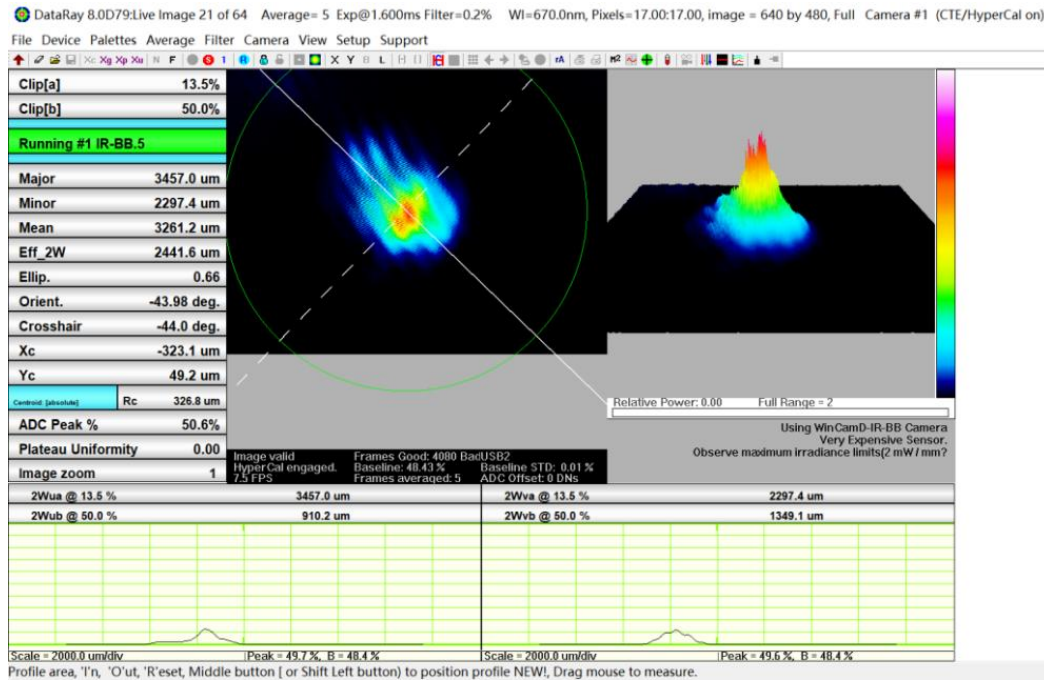


Beam quality

600 mm



1000 mm



Modulation Character

