# 3291nm Low Power Benchtop ICL-DFB Tunable Continuous Wave Laser (Benchtop Light Source) 5mW

## Product Description

The MP-ICL-3291-DFB-5-B laser is a tunable continuous wave laser developed by IdealPhotonics. It features narrow linewidth, high power, and low power consumption, making it ideal for gas sensing applications, especially for the detection of hydrocarbons and other related gases. The benchtop ICL-DFB laser module integrates a driver and temperature control module, and it can be controlled via software to adjust the laser's temperature and operating current, ensuring stable performance and accurate measurement values. Additionally, an FPGA is included within the module to facilitate the processing of gas concentration measurements.

## Product features

Continuous Wave (CW)、 Single-mode Spectrum、 Tunable Light Source、 Low Power Consumption、 High-quality Beam、 Narrow Linewidth、 Intelligent Software Control、 Compact Structure and Size

## Part Number

MP-ICL-3291-DFB-5-B

## Application area

TDLAS Gas Measurement System Setup、Mid-Infrared System Light Source、Mid-Infrared Device Analysis

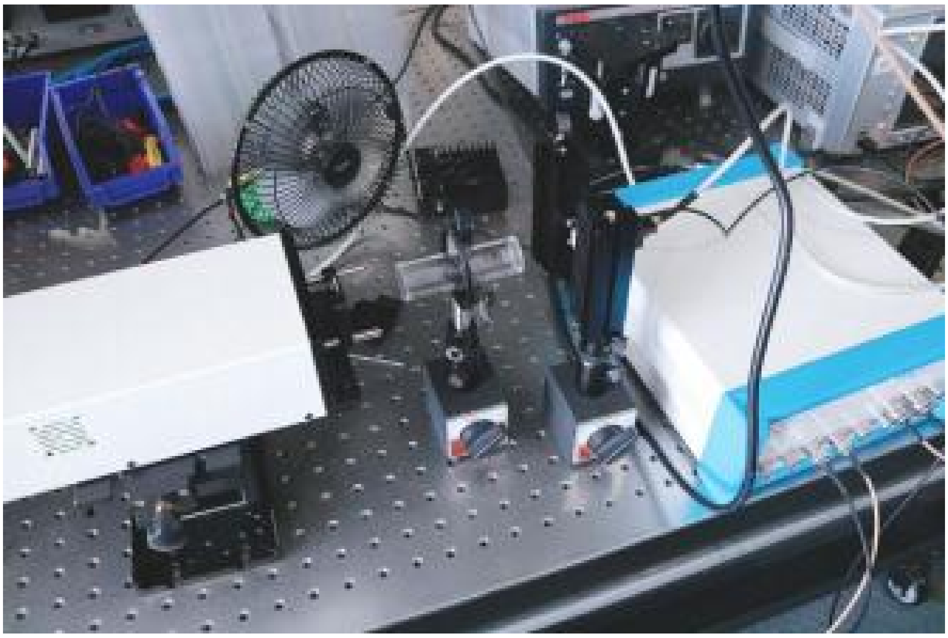
## Core parameters

| Wavelength | Output Power | Spectral Width |
| --- | --- | --- |
| 3.291um | 5mW | 3MHz |

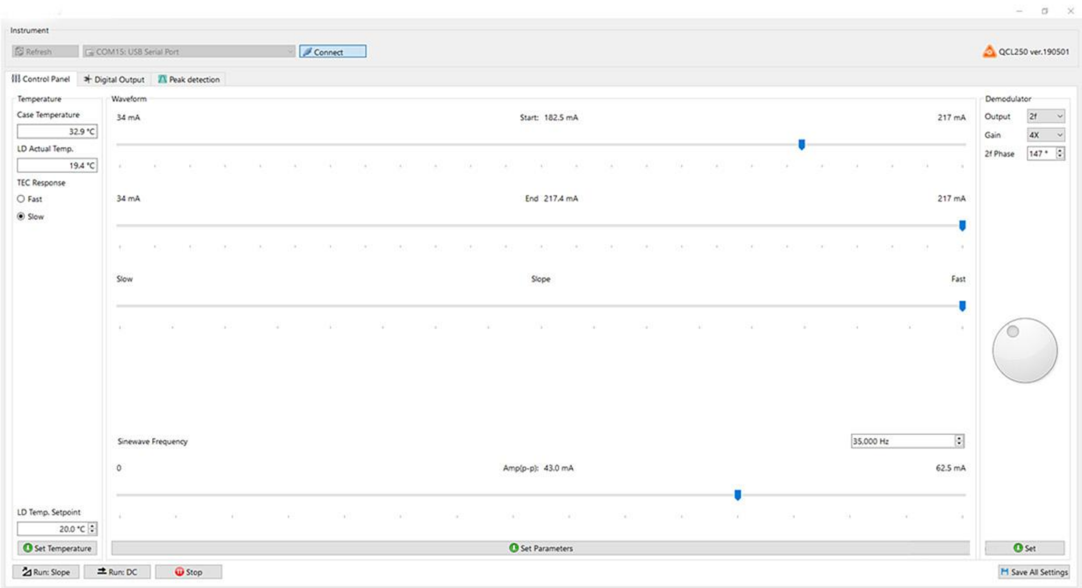
## General Parameters

| Parameters | Unit | Specifications | | |
|---|---|---|---|---|
| | | Min. | Typ. | Max. |
| Laser Output Power | mW | 0.5 | 5 | 8 |
| Peak Operating Wavelength | nm | | 3291 | |
| Spectral Width FWHM | MHz | | 3 | |
| Side Mode Suppression Ratio SMSR | dB | | 20 | 30 |
| Wavelength Tuning Range | nm-1 | 6 | 10 | 25 |
| Wavelength Temperature Coefficient | nm/°C | | 0.32 | |
| Wavelength Current Coefficient | nm/mA | | 0.06 | |
| Output Power Stability for 8h | % | | ±1 | ±4 |
| Adjustable Output Power Range | % | 0 | | 100 |
| Operating Current | mA | 40 | 80 | 140 |
| Threshold Current | mA | 25 | 40 | 80 |
| Operating Voltage | V | 7 | 9 | 12 |
| Chip Operating Temperature | °C | -20 | 10 | 40 |
| Storage Temperature | °C | 15 | 20 | 65 |
| Specifications and Dimensions | mm | 340(L)×240(W)×100(H) | | |

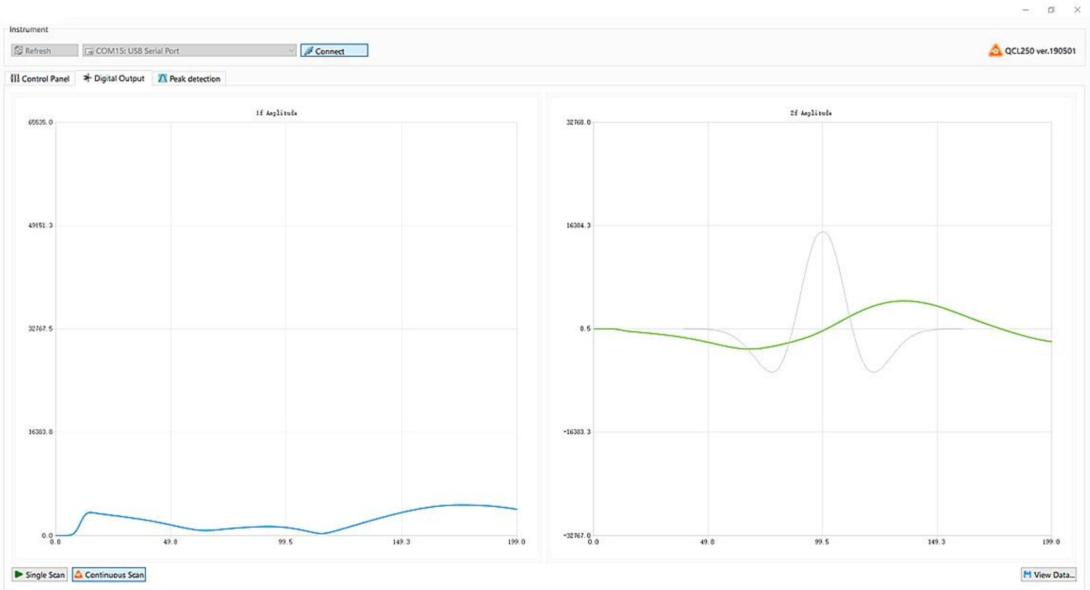
# System setup diagram



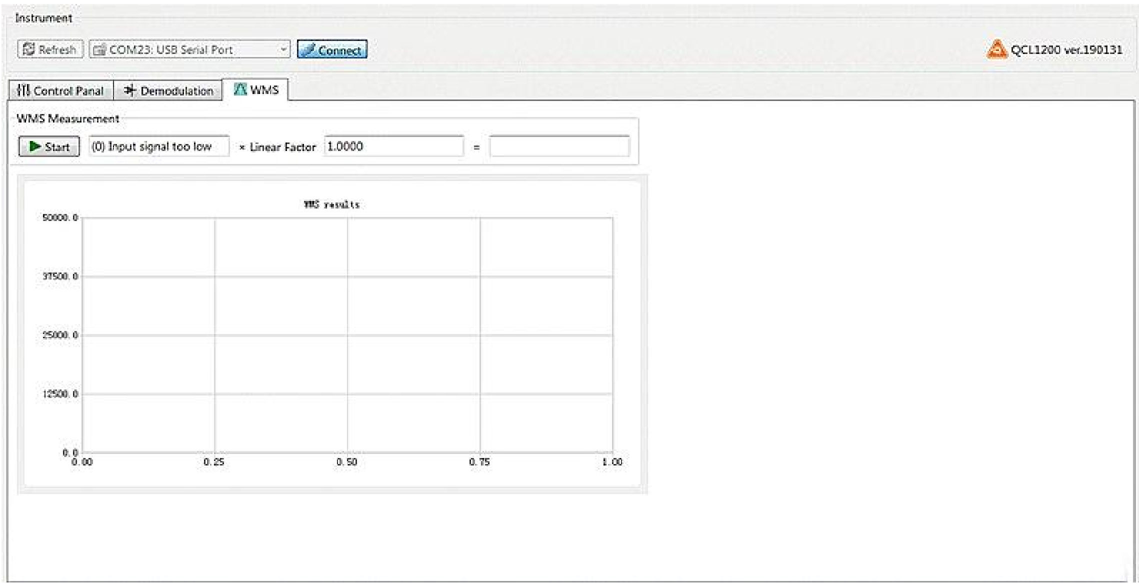
# Software control



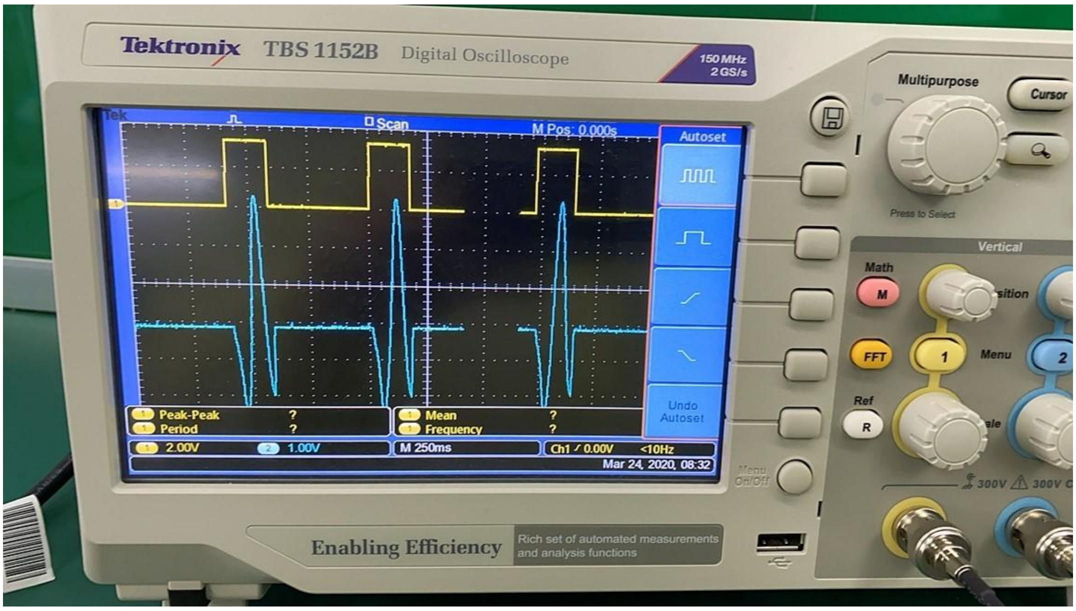
# 2F signal acquisition interface



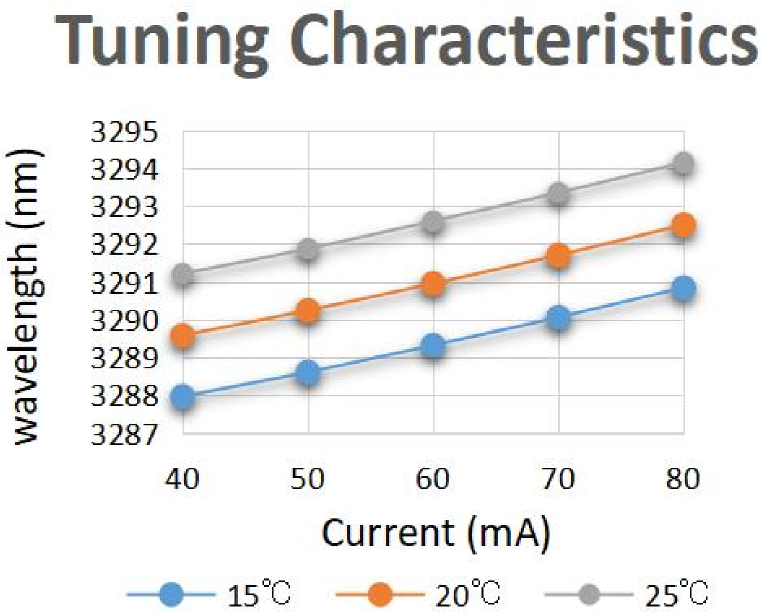

# Algorithm calibration interface



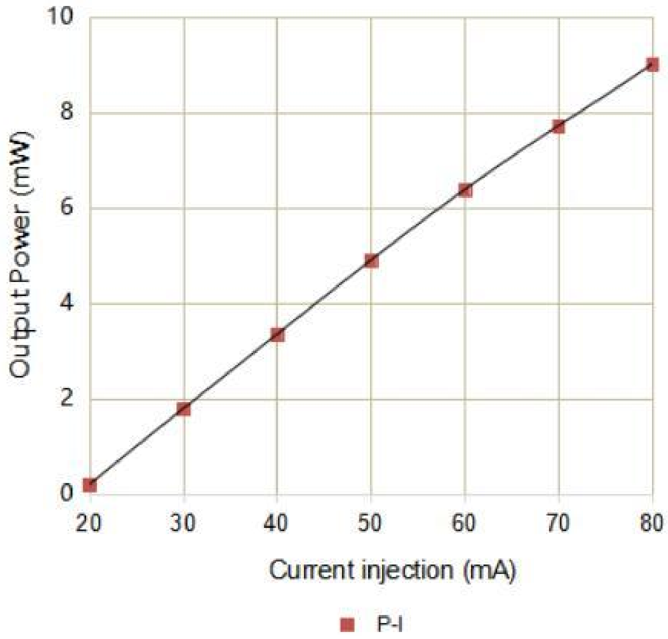
## Modulation signal linearity test (oscilloscope voltage signal effect diagram)



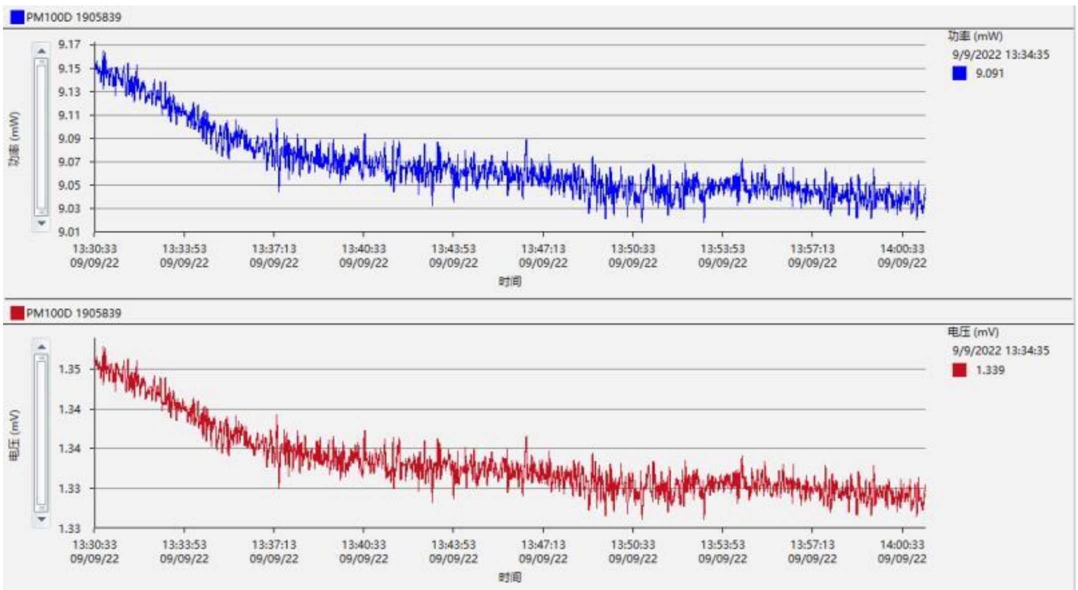

## Wavelength temperature current curve



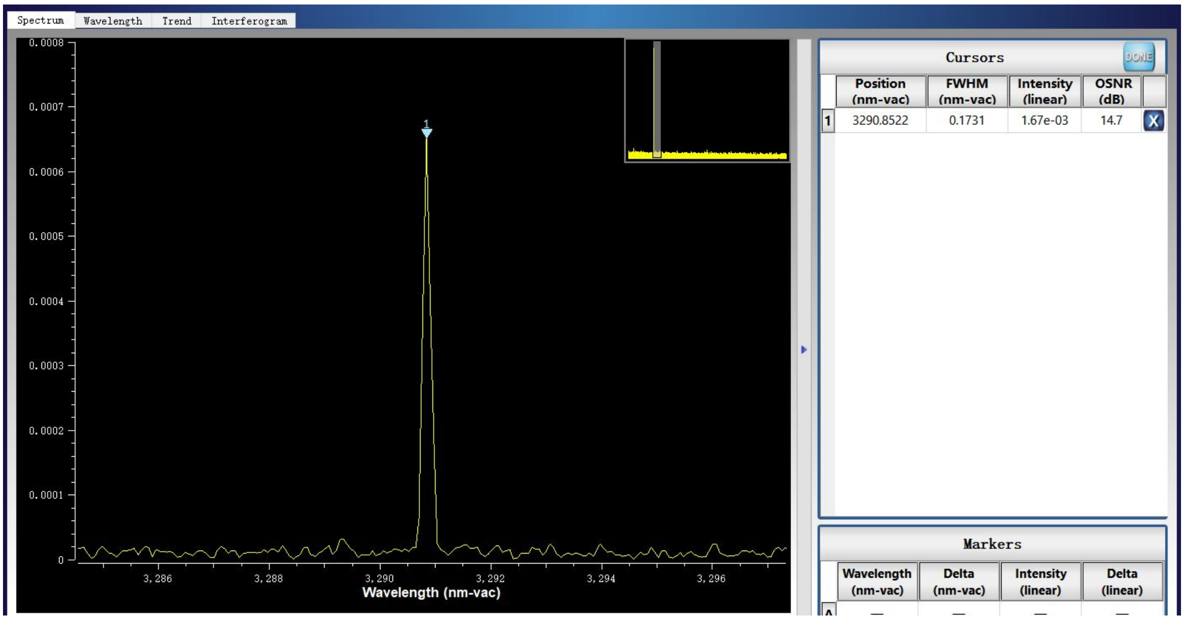
## Power curve (15°C)

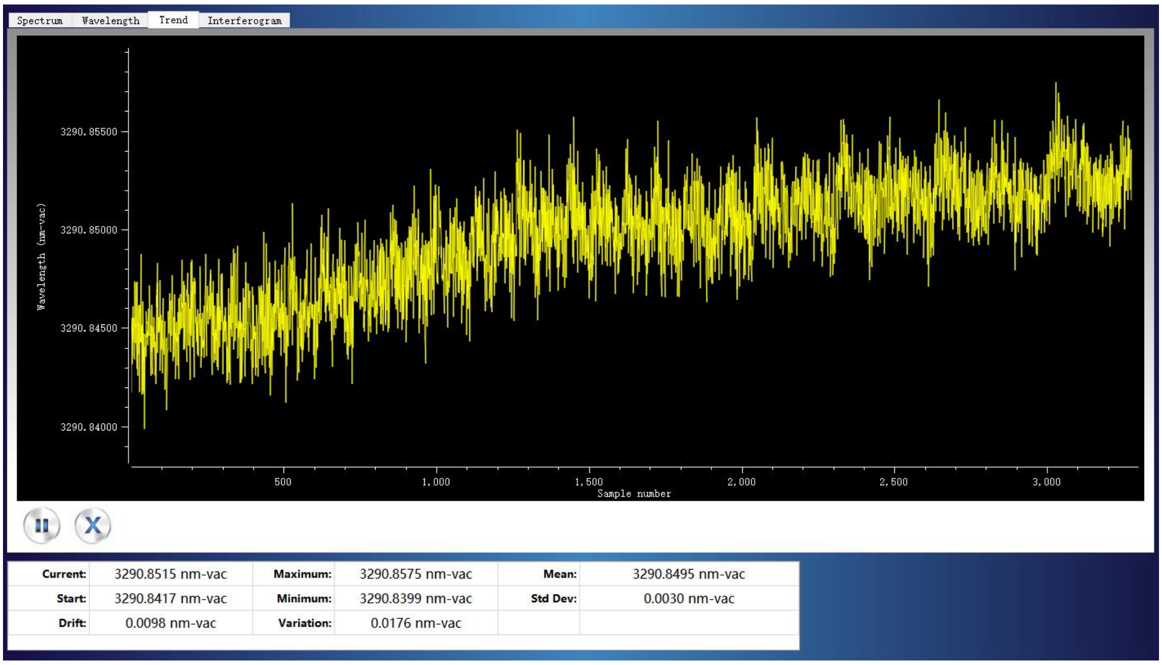


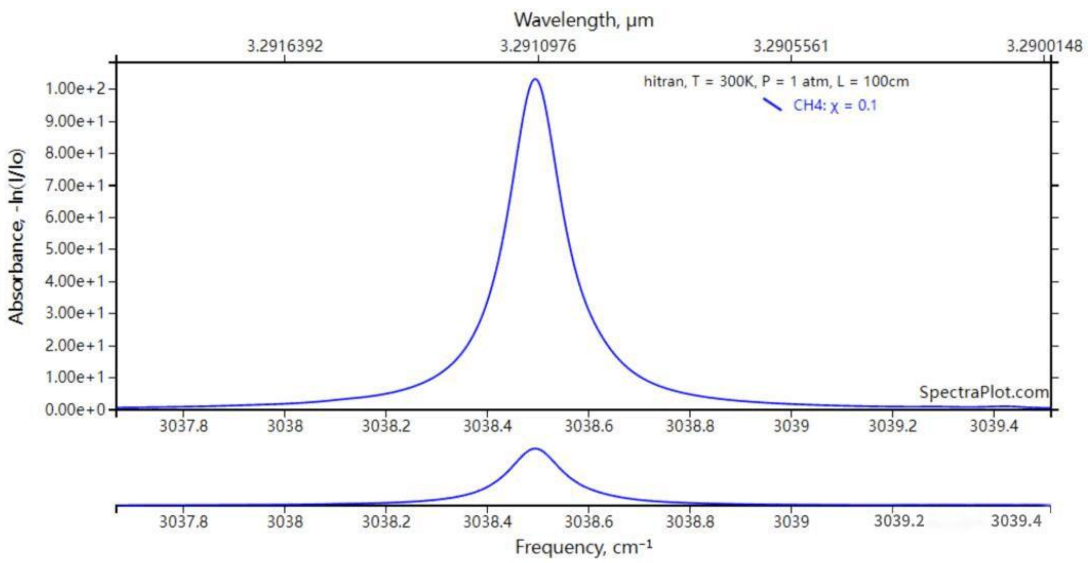

## Power stability (15°C, 80mA)

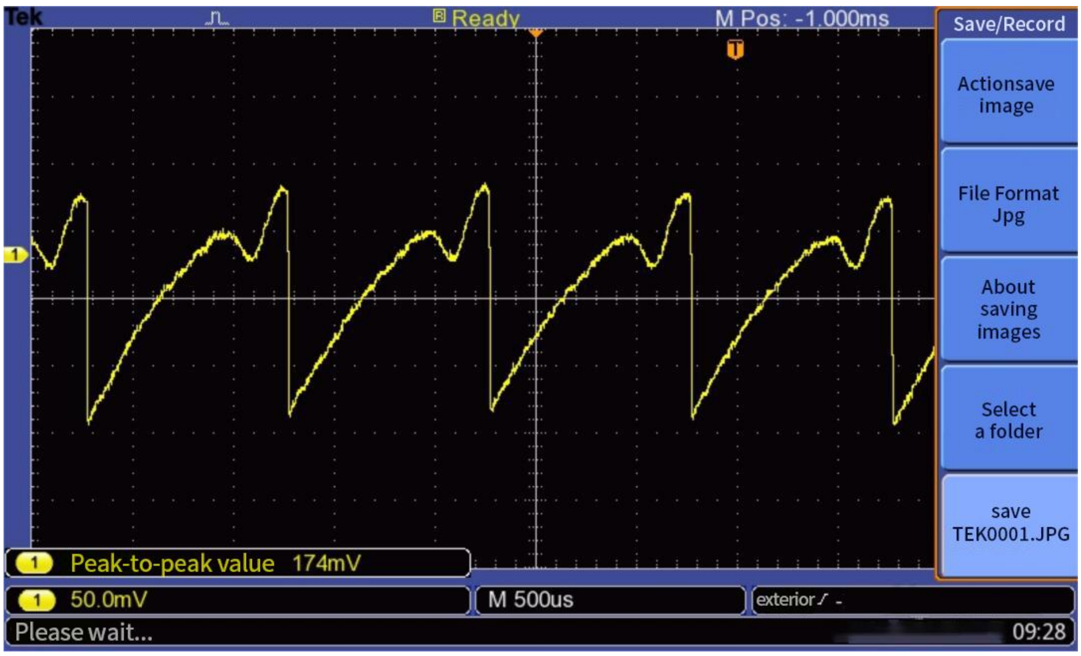


# Spectral graph




Wavelength, μm
3.2916392
3.2910976
3.2905561
3.2900148
hitran, T = 300K, P = 1 atm, L = 100cm
CH4: χ = 0.1
Absorbance, -ln(I/Io)
1.00e+2
9.00e+1
8.00e+1
7.00e+1
6.00e+1
5.00e+1
4.00e+1
3.00e+1
2.00e+1
1.00e+1
0.00e+0
SpectraPlot.com
3037.8
3038
3038.2
3038.4
3038.6
3038.8
3039
3039.2
3039.4
Frequency, cm⁻¹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Save/Record
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File Format Jpg
About saving images
Select a folder
save TEK0001.JPG
Peak-to-peak value 174mV
50.0mV
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09:28