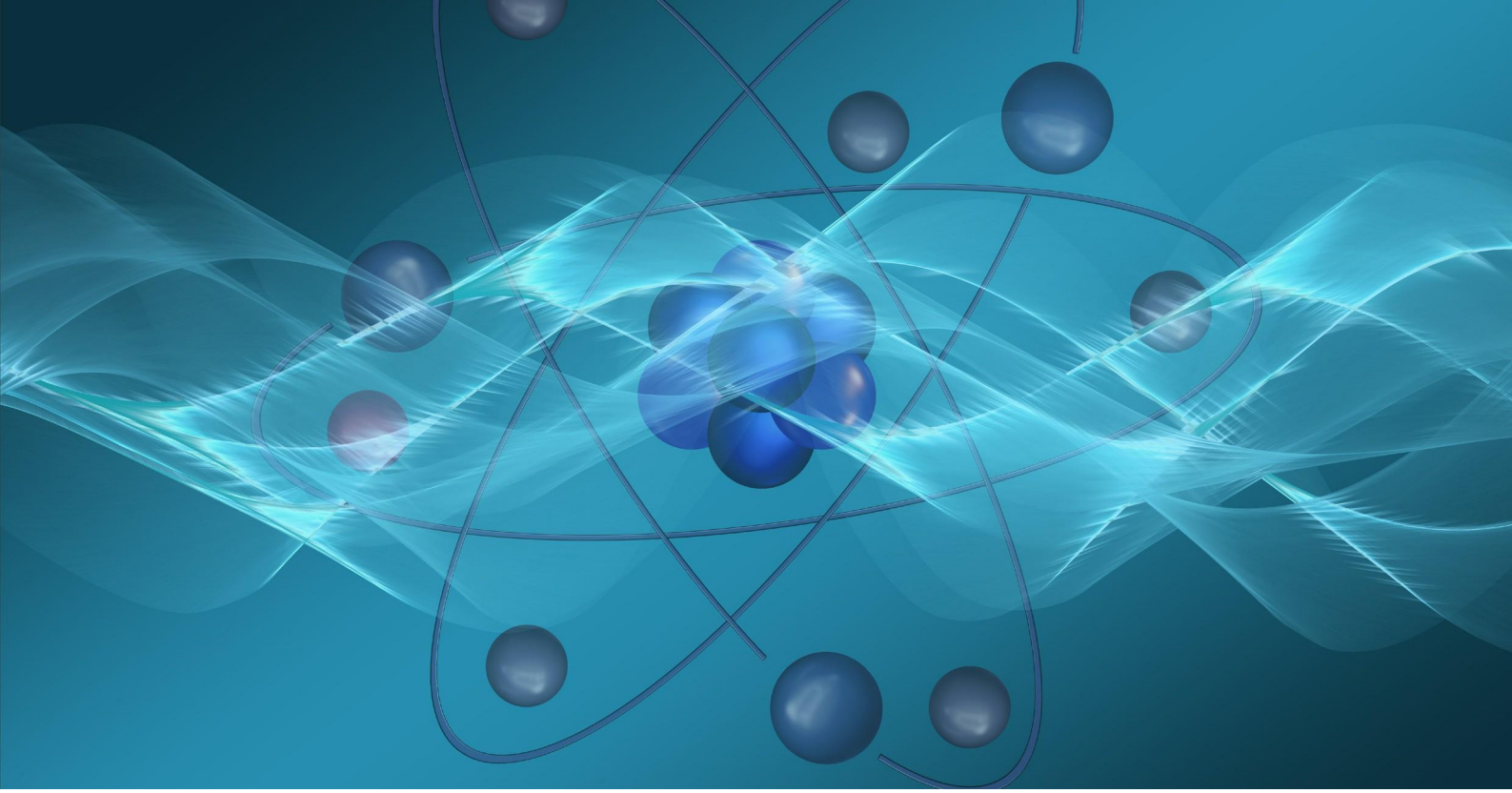
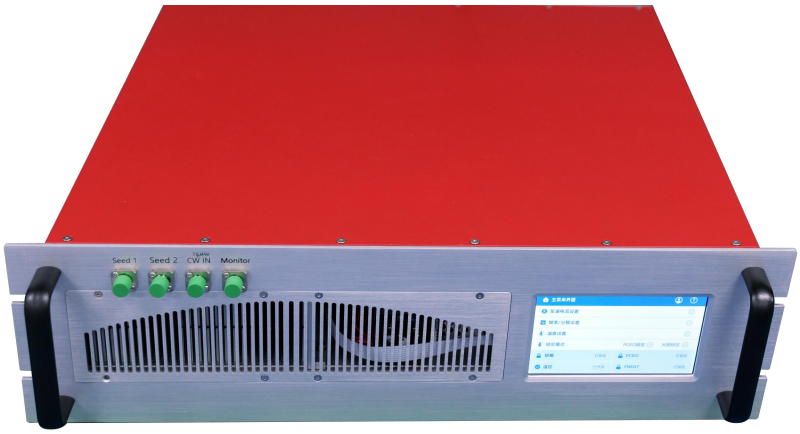


High-performance Optical Frequency Comb

Precilasers' compact optical frequency comb achieves high precision, high stability,one-button fully automated optical frequency comb in the volume of a 3U standard 19" cabinet.Based on highly customized optional optical modules,it supports up to 2W optical power output,can achieve any optical frequency measurement and optical reference between 500nm-2200nm,and can be widely used in optical precision measurement,cold atomic optical clock,time frequency transfer,quantum precision measurement and other fields.



Features

- High Stability
- Wide Wavelength Range
- Small Size
- Photoelectric Integrated

Applications

- Optical Precision Measurement
- Cold Atomic Optical Clock
- Time Frequency Transfer
- Quantum Precision Measurement

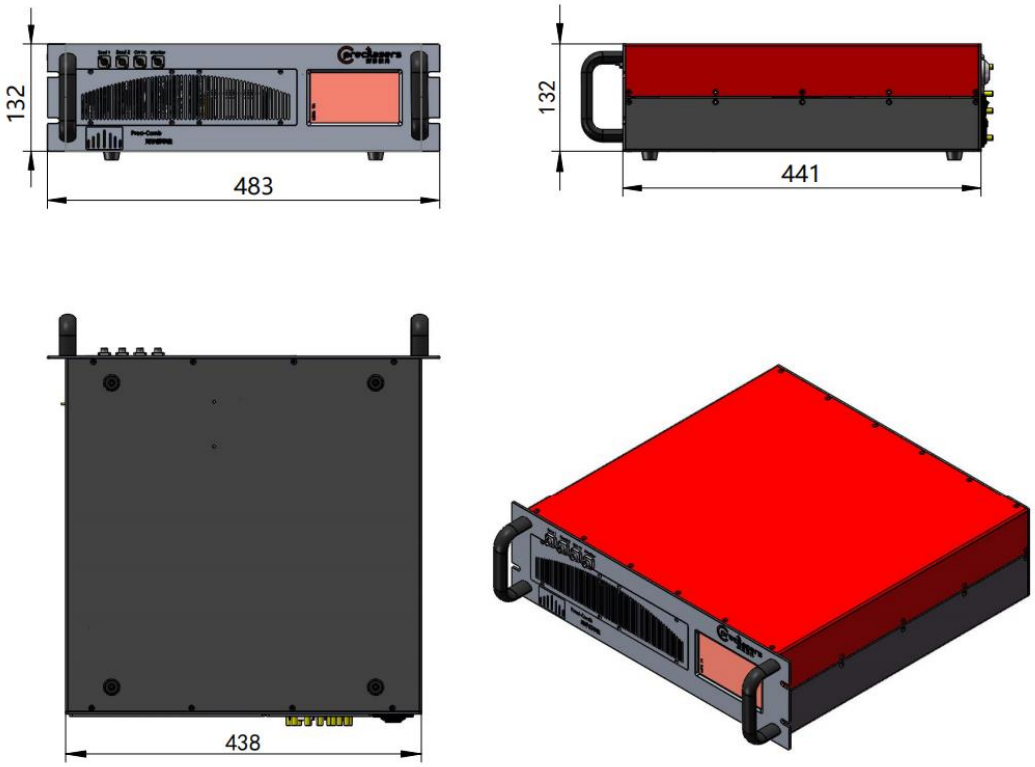
precilasers 频准激光

Specification	
Common Wavelengths	1560±10nm
Output Power	Dual channel output, power > 5mW
Selectable Repetition Frequency Range	50-250MHz
Output Mode	Single-mode polarization-maintaining fiber output, FC/APC connector
Linewidth (1) (100us integration time)	< 0.2Hz
Adjustable Range of Repetition Frequency	>1 MHz@ 250MHz Repetition frequency >500kHz@ 100MHz Repetition frequency
Repetition Rate Control Bandwidth (open loop)	> 200 kHz
Carrier Envelope Frequency Signal to Noise Ratio	> 40 dB at 100 kHz RBW
Carrier Envelope Frequency Adjustment Range	>250 MHz
Carrier Envelope Frequency Control Bandwidth (open loop)	> 60 kHz
Accuracy	< 2 x 10-16 (t >100 s)*, < 2 x 10-14 (t >1000s)Δ *Locked to an optical frequency reference, ΔLocked to RF frequency reference
Stability	<5e-16@1s (2) , <2e-18@1000s (2) <5e-13@1s (3)
Pulse Width	< 50fs
Optical Frequency Range	> 30nm
CEO Adjustment Range	>Repetition Frequency
Fceo Signal-to-noise Ratio	> 40dB@300kHz RBW
Frequency Fluctuations After Locking the RF Reference (4)	< ±0.1mHz
Frequency Fluctuation After Locking to Optical Frequency Reference (4)	< ±0.1Hz
Fceo Frequency Fluctuation After Frequency Lock (4)	< ± 0.2Hz
Reference Source	10 MHz reference frequency, power level +7 dBm or built-in atomic clock.
Other Parameters	
Chassis Size	441mm*439mm*132cm
Weight	<40kg
Power Supply	100-240V, AC, 50/60Hz
Power Consumption	<300W
Cooling Method	Air Cooling
Options	
Spread Spectrum Module	OptionsA: Single-point output at any wavelength within the range of 500 nm-2100 nm, power >0.5mW, spectrum width 2-3nm; OptionsB: 1000-2100 nm continuous spectrum output, power>50mW; OptionsC: 500-2100 nm continuous spectrum output, power>100mW.
Power Amplifier Module	Wavelength1.5um，Output Power>5W

(1) After locking to the ultra-stable laser, the resolution bandwidth of the spectrum analyzer is limited.
(2) Phase locked to the optical frequency reference
(3) Phase locked to RF reference (limited by limit counter)
(4) Adopting Π-type counter without dead time, gate 1s, non-average mode

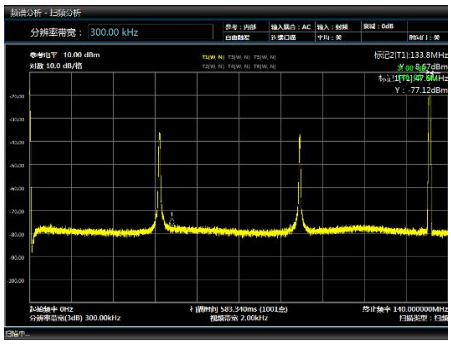
precilasers 频准激光

❖ Product Dimensions

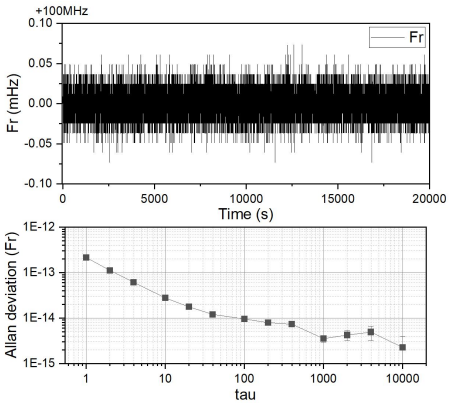


Chassis Dimensions - Air Cooling

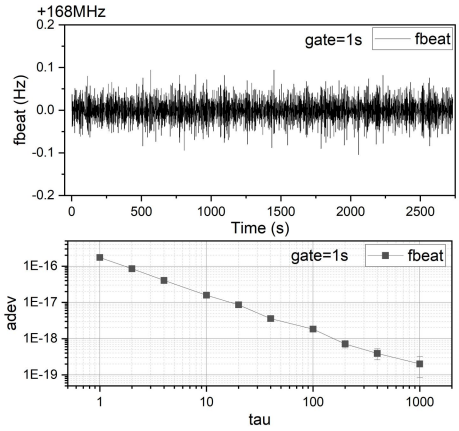
❖ Performance (typical value)



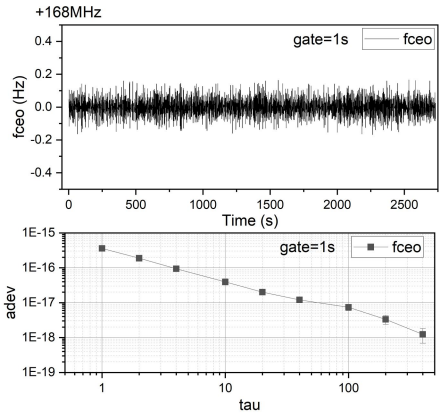
f_{CEO} signal-to-noise ratio 45dB @300kHz RBW



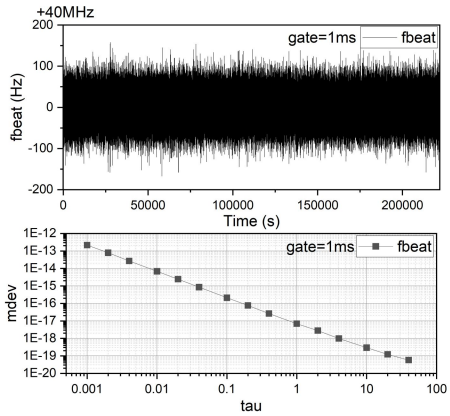
Frequency fluctuation after RF locking <±0.07mHz* Stability: 2E-13@1s*



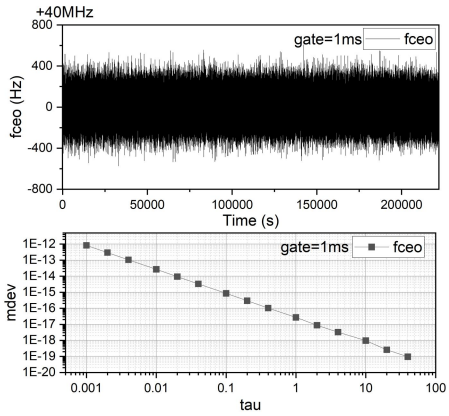
After optical frequency locking, Fbeat fluctuation <±0.15Hz* Stability: 1.8E-16@1s*



After locking, Fceo frequency fluctuation <±0.4Hz* Stability: 5.6E-16@1s*



Frequency fluctuation after RF lock <±150Hz@1ms** Stability: 6.9E-18@1s**



ifter optical frequency locking, Fbeat fluctuation <±500Hz@1ms** Stability: 2.7E-17@1s**

* A counter with no dead time, gate 1s, and non-averaging mode is used to calculate the Allen deviation.
** Use a counter with no dead time, gate 1ms, average mode, and calculate the corrected Allen deviation.

Shanghai Precilasers Technology Co., Ltd.
Floor 2, Building 2, No. 1918, Xupan Road, Jiading District, Shanghai
021-59160265

www.precilasers.com info@precilasers.com

⚠ Laser Hazard

Visible or invisible laser radiation, avoid eye or skin exposure to direct, reflected or filtered radiation.

CLASS 4 Laser Products