

Narrow linewidth laser (671nm-710nm)

Based on a narrow-line-width fiber DFB laser, low-noise fiber amplifier and efficient and frequency module, PreciLasers can provide a high-power 671-710nm laser. Extensive applications in the quantum simulation of lithium atoms and other fields.

Features

- narrow linewidth
- tunable
- linear polarization
- long-life

Applications

- Quantum simulation



Optical parameters					
Part Number	FL-SF-XXX-Y-CW ⁽¹⁾				
wavelength coverage	670-710nm				
Commonly used wavelength	670.90nm, 679nm, 689nm, 698nm, 707nm				
Output power	> 0.2W	> 1W	> 2W	> 5W	> 8W
Operation Mode	Continuous				
Tuning range (temperature)	> 0.3nm, Continuous no die				
Output mode	Single Mode Polarization Maintaining Fiber				
Line width ⁽²⁾ (100us integration time)	< 10kHz		< 20kHz		
Polarized extinction ratio	> 20dB				
Power Stability (3-hour RMS)	< 0.75%				
Beam quality	M ² < 1.1				
PZT tuning range	> 3GHz				
PZT tuning bandwidth	> 5kHz				
Cooling method	air cooling		Water cooling		

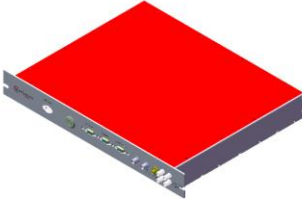
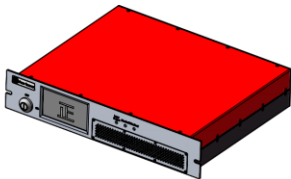
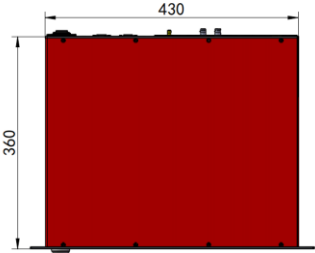
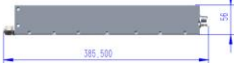
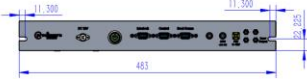
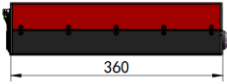
(1) XXX represents the integer part of wavelength in nm, Y for Output power in W, for example, 671nm laser of 2W, Part Number FL-SF-671-2-CW.

(2) Fiber optic delay from the exo-differential beat frequency method measurement

Option	
AOM option	AOM and VCO drives were added between the seed and the amplifier to achieve a 500kHz tuning bandwidth with ± 5 MHz tuning range

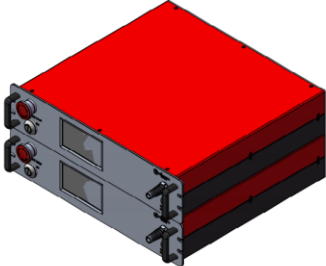
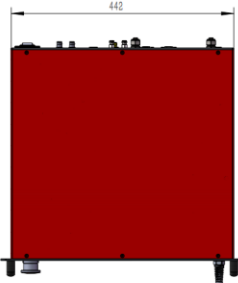
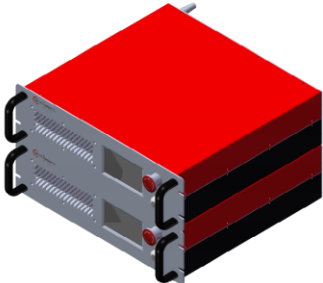
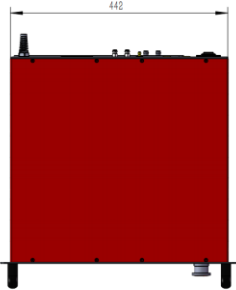
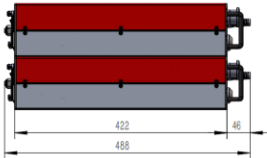
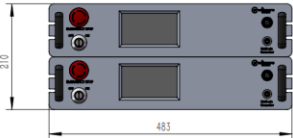
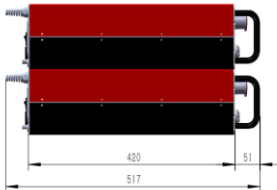
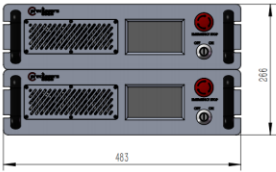
Other parameters	
Working temperature	15-25°C
Supply electricity	100V-240V, AC , 50/60Hz

❖ case size



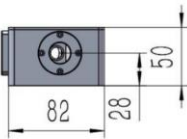
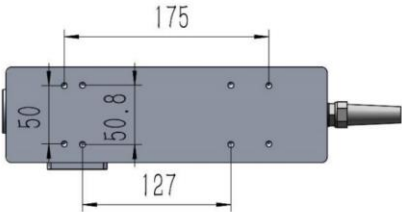
DFB seed laser-air cooled

DFB seed laser-water cooled



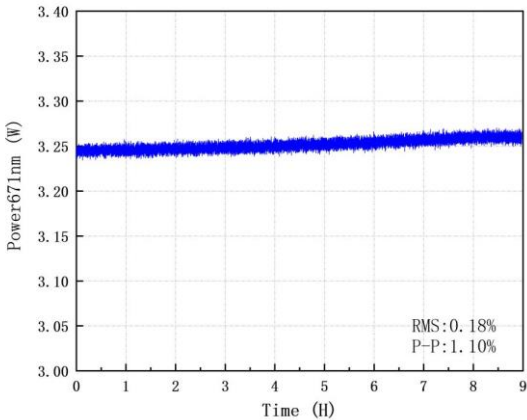
Case-air cooling

Case-Water Cold

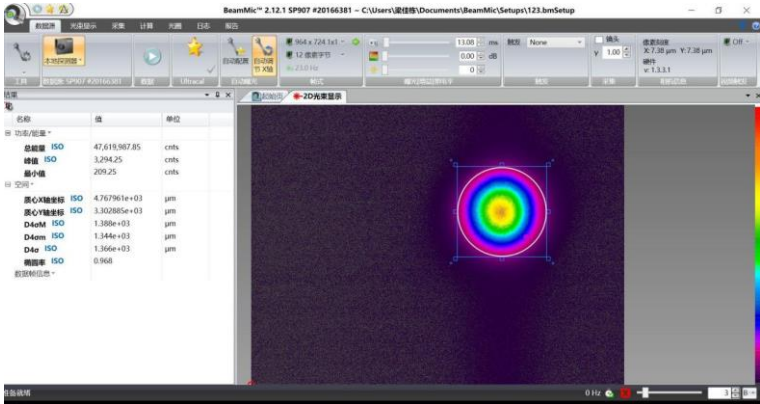


Laser head size

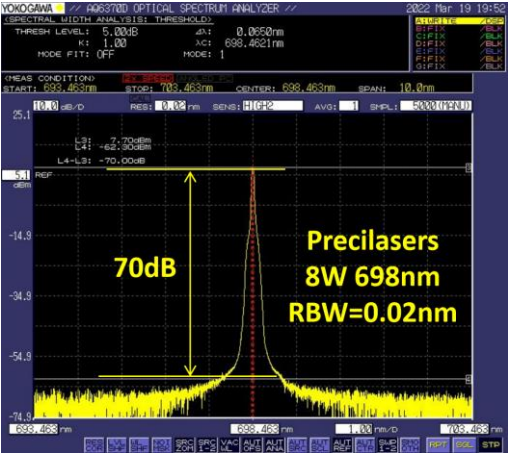
❖ Performance indicator test (typical value)



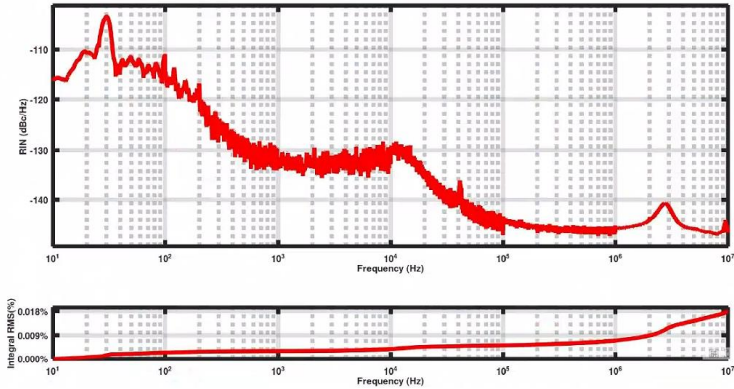
Power stability test



Light spot test chart, $M^2 < 1.1$, with an ellipticity of 0.96



Spectral SNR test



8W 698nm intensity noise



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⚠ Laser Hazard

Visible or invisible laser radiation, avoid eye or skin exposure to direct, reflected or filtered radiation.
CLASS 4 Laser Products