

DISTRIBUTED FEEDBACK SINGLE FREQUENCY FIBER LASER

LOW-LINEWIDTH, LOW-NOISE, NO MODE-HOPPING, WAVELENGTH TUNABLE, LINEAR-POLARIZATION

Single-frequency fiber laser has the greatest advantage of high-purity single-frequency laser outputting with narrow-linewidth.

Single-frequency fiber laser offered by Precilasers uses the technology of distributed feedback to generate linearly polarized single frequency laser in an all-fiber structure. The single-frequency operation is stable and efficient by adopting unique side frequency suppression technology. A special assembly structure is also used to isolate the impact of external environmental vibration and temperature changes, thereby effectively improving the long-term stability on frequency and narrowing the linewidth. Also in this way, the laser mode will never be hopped. At present, the average output power is greater than 10 mW, 40 mW and 10 mW at the band of 1 μm , 1.5 μm and 2 μm , respectively. The output wavelength is flexible and the linewidth is always less than 20 kHz. The wavelength thermal tuning range is as high as 0.8 nm and the fast frequency tuning range can reach 3-5 GHz. The laser also has good power stability (RMS<0.5% @3 hrs) and excellent beam quality ($M2 < 1.05$). Therefore, the single frequency fiber laser offered by Precilasers is the best choice for cold atom physics, high power laser system, sensing and lidar applications.

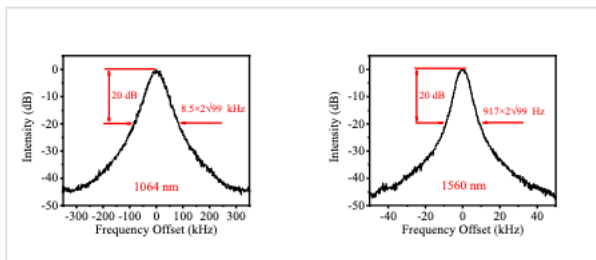
Distributed Feedback Fiber Laser:

Features:

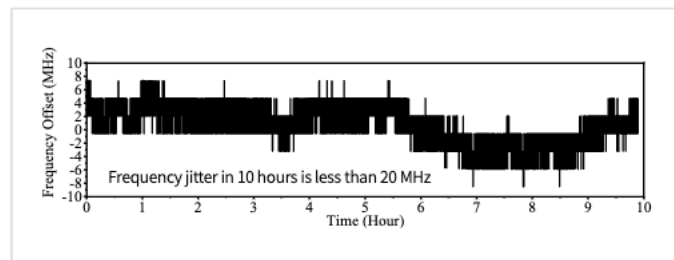
- Excellent shock resistance and high and low temperature resistance
- Low Linewidth (<20 kHz), <3KHz is optional
- Never mode hopping, large tuning range without mode hopping
- Narrow linewidth (<20 kHz), <3 kHz is optional

Applications:

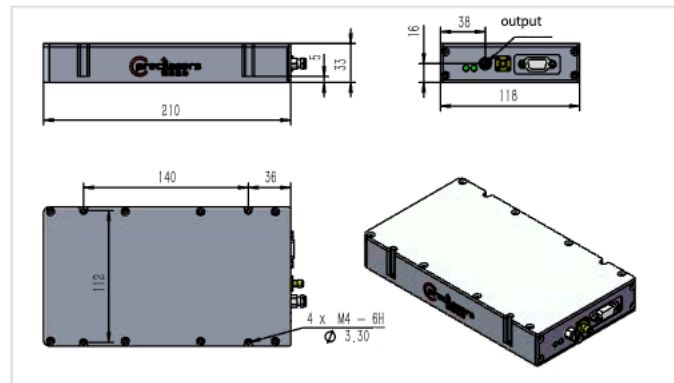
- Cold Atom Physics
- Precision measurement
- Spectral Beam Combining
- Coherent Communication



Linewidth measured by the method of Delayed self-heterodyne



Wavelength Stability



Size for fiber DFB laser

► Yb doped Single Frequency Fiber laser

Ultra-narrow linewidth, low noise, no mode hopping, tunable, linear polarization

Model	FL-SF-1XXX-S
Central Wavelength ¹ , nm	1018-1064-1156
Linewidth, kHz	<15 <3
Output Power, mW	>10
Thermal Wavelength Tuning Range, nm	0.7
Fast Frequency Tuning Range (Option), GHz	>3
Fast Frequency Tuning Bandwidth (Option), kHz	>5
Optical S/N, dB	>50
Polarization, dB	Linear, PER>20
RMS Power Stability	<0.5% @3hrs
Beam Quality	TEM ₀₀ , M ² <1.1
Peak of RIN, dBc/Hz	<-110
Output Connector	FC/APC
Dimensions, mm ³	210×118×33
Power Supply	12V DC/1A
Power Consumption, W	<12

1: Wavelength can be customized

► Er doped Single Frequency Fiber Laser

Ultra-narrow linewidth, low noise, no mode hopping, tunable, linear polarization

Model	FL-SF-15XX-S
Central Wavelength ¹ , nm	1530-1560-1596
Linewidth, kHz	<2 <1
Output Power, mW	>40 (1530-1580 nm) >10 (1580-1596 nm)
Thermal Wavelength Tuning Range, nm	1
Fast Frequency Tuning Range (Option), GHz	>3
Fast Frequency Tuning Bandwidth (Option), kHz	>5
Optical S/N, dB	>50
Polarization, dB	Linear, PER>20
RMS Power Stability	<0.5% @3hrs
Beam Quality	TEM ₀₀ , M ² <1.1
Peak of RIN, dBc/Hz	<-110
Output Connector	FC/APC
Dimensions, mm ³	210×118×33
Power Supply	12V DC/1A
Power Consumption, W	<12

1: Wavelength can be customized

► Tm doped Single Frequency Fiber Laser

Ultra-narrow linewidth, low noise, no mode hopping, tunable, linear polarization

Model	FL-SF-XXXX-S
Central Wavelength ¹ , nm	1730-2051
Linewidth, kHz	<15
Output Power, mW	>10
Thermal Wavelength Tuning Range, nm	1
Fast Frequency Tuning Range (Option), GHz	>3
Fast Frequency Tuning Bandwidth (Option), kHz	>5
Optical S/N, dB	>50
Polarization, dB	Linear, PER>20
RMS Power Stability	<0.5 % @3hrs
Beam Quality	TEM ₀₀ , M ² <1.1
Peak of RIN, dBc/Hz	< -120 from 1kHz-10MHz
Output Connector	FC/APC
Dimensions, mm ³	483×480×66
Power Supply	12V DC/1A
Power Consumption, W	<50

1: Wavelength can be customized

