



Hertz Level Linewidth Ultra-stable Laser System

Based on high-finesse mirrors, ULE cavities and vacuum systems, Precilasers can provide high-finesse FP cavities with extremely low thermal noise and achieve ultra-stable laser systems with a linewidth of 5Hz-200Hz.

Features

- High Precision
- Portable
- Vibration Insensitive

Applications

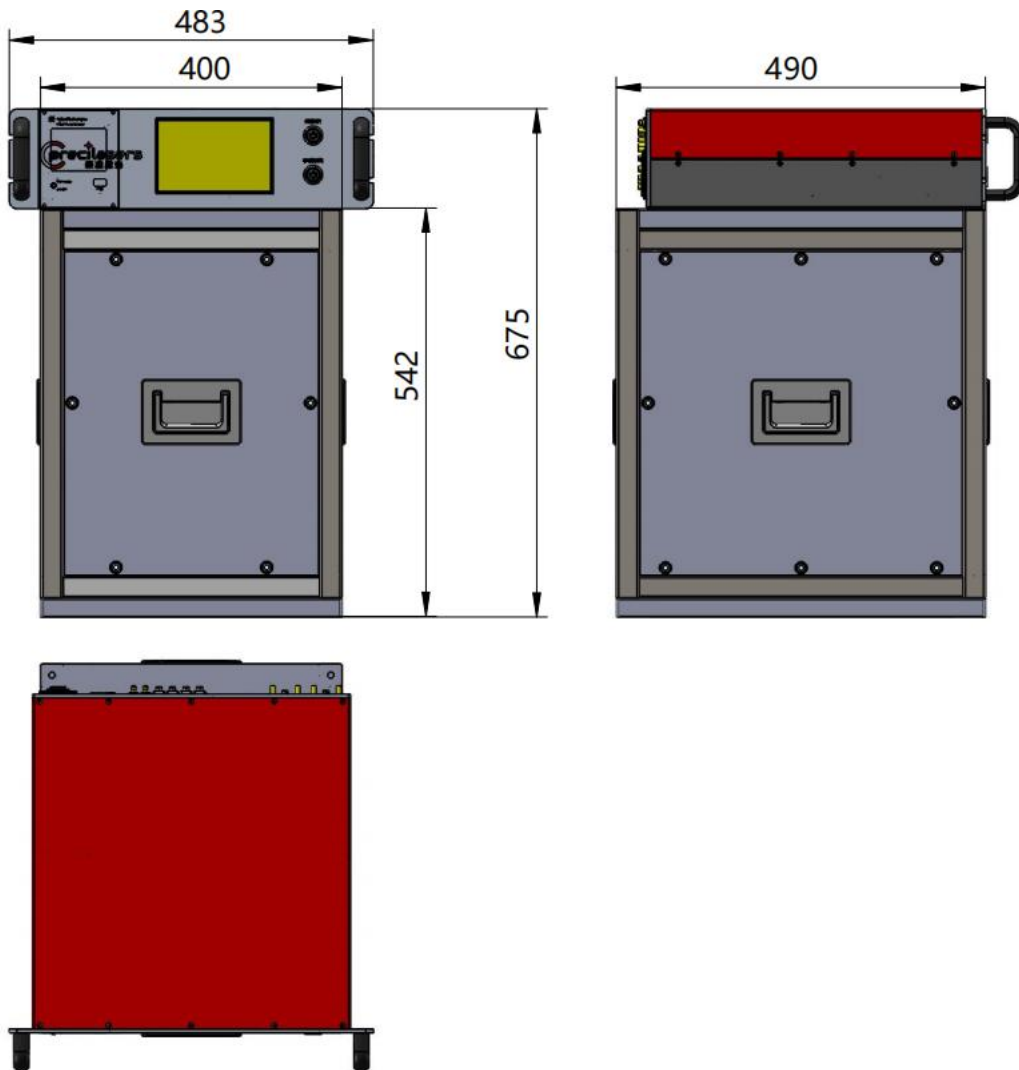
- Optical Precision Measurement
- Quantum Computing
- Quantum Precision Measurement



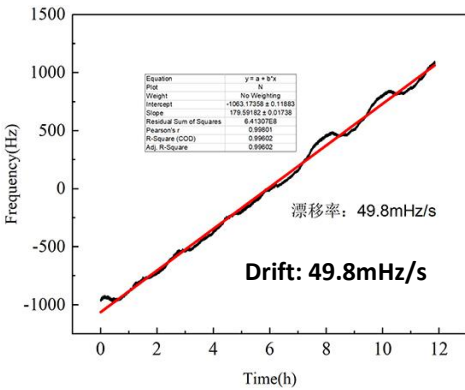
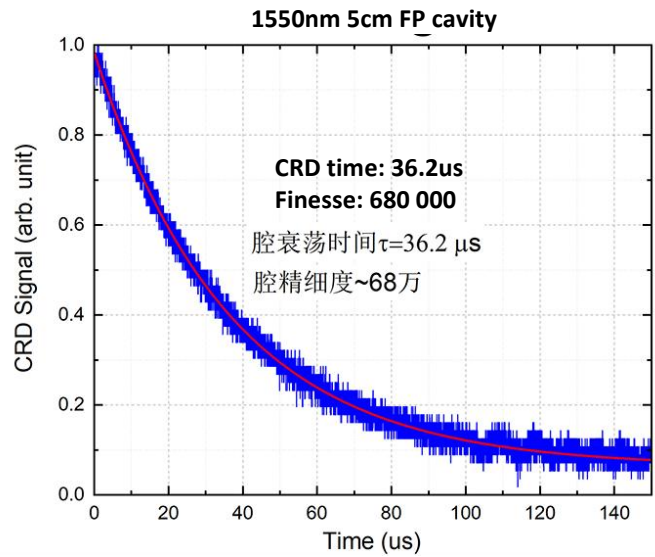
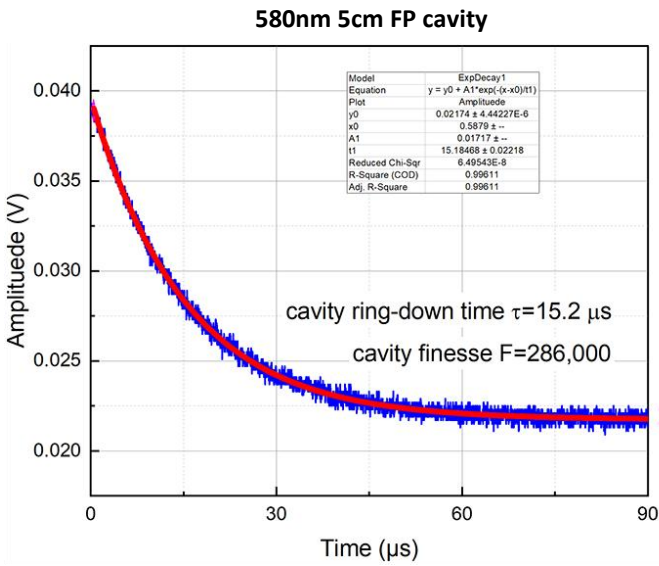
Optical Specification				
Partnumber	Preci-USL-0.5Hz	Preci-USL-2Hz	Preci-USL-5Hz	Preci-USL-10Hz
Optional Wavelength	400-1800nm			
Typical Wavelength	509nm, 578nm, 1542nm, 1762nm			
Linewidth	<0.5Hz	<2Hz	<5Hz	<10Hz
Stability	<1×10 ⁻¹⁵	<3×10 ⁻¹⁵	<5×10 ⁻¹⁵	<1×10 ⁻¹⁴
Active Vibration Isolator	Included	Included	Optional	Optional
Cavity Length	125±3mm	50±3mm		
Free Spectral Range	1.2GHz	3GHz		
Finesse	1000, 10000, 200000			
Drift ⁽¹⁾	<150mHz/s			
Vacuum	1×10 ⁻⁷ mbar			
Temperature Control Stability	<2mk, 3hrs, rms			
FP Cavity Mirrors Specification	ULE material, flat concave cavity, concave mirror curvature radius 500mm/1000mm/2000mm optional			
Vacuum Chamber Thermal Time Constant	>20hrs			
Vacuum Windows Tilt Angle	~4°			
Environment and Power Supply				
Temperature	20±7°C			
Ambient Temperature Sensitivity	<3mK/°C			
Power Supply	100V-240V, AC, 50/60Hz			
Options				
Zero Expansion Temperature Test	Provide zero expansion temperature test curve			
Axis	Two high-precision cavity mirrors can be installed vertically			
Vibration Isolation	Active Vibration Isolation Table			

(1) The zero expansion point needs to be tested and the temperature control point is set near the zero expansion point

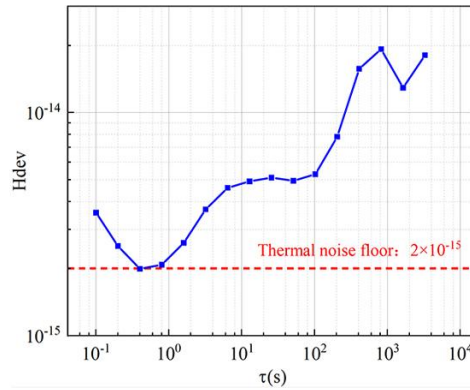
❖ Product Dimensions



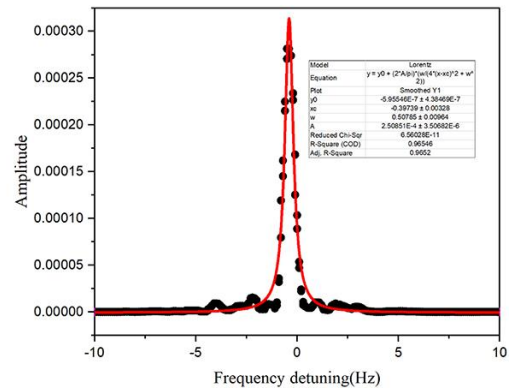
❖ Performance (typical value)



Frequency Drift Test



Frequency Stability Test



Linewidth Test




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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

