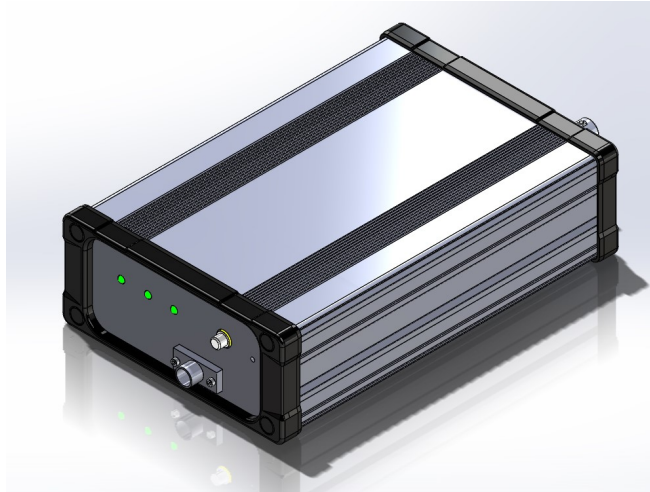


## Clarity PFR Precision Frequency Laser Module

A compact highly stable laser source with an unparalleled value proposition



### *Applications*

- Test and Measurement
- Calibration
- Research

### *Features*

- Highly Configurable
  - Multiple wavelengths and output powers available
- Primary Frequency Standard
  - NIST traceable molecular reference
- Low Cost
  - Uses reliable telecommunications lasers
- Compact Module or OEM Board-Level
  - Custom firmware available.

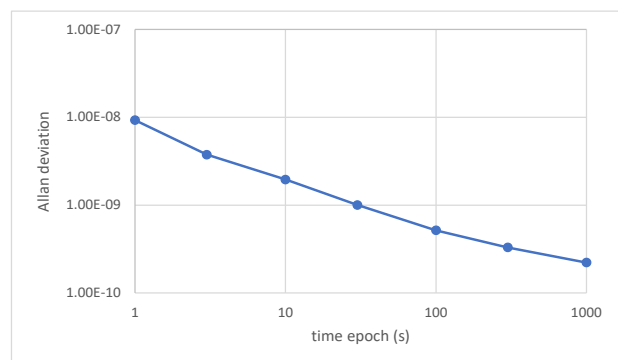
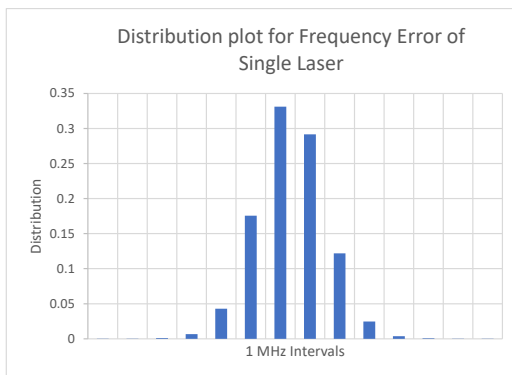
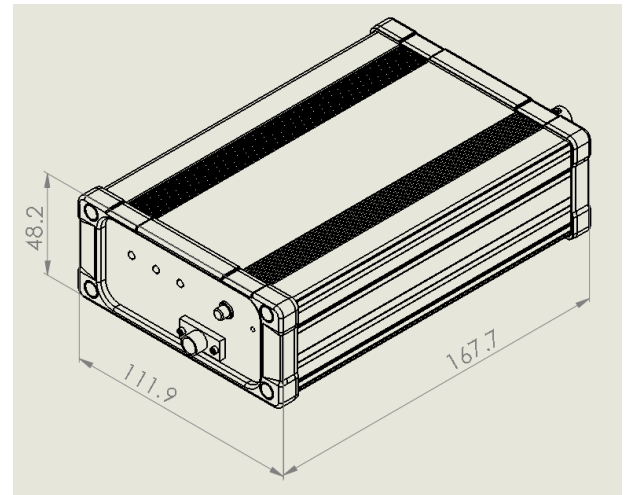
Specification	Performance	Notes
Wavelength	C Band, ITU Grid	Other wavelengths available. Consult factory.
Output Power <sup>1</sup>	8 mW, 16mW	Typical
Wavelength Accuracy	±0.1ppm	NIST traceable
Laser linewidth <sup>2</sup>	< 5 MHz	1MHz available, with restrictions
Stability <sup>3</sup>	<10 MHz	2MHz rms typical
Allan Deviation	1e-9	100 second time epoch
Side mode suppression	-35dB	
Optical isolation	60dB	
Relative Intensity Noise	-140dB	
Fiber type	SM	PM Panda Available
Fiber interface	FCAPC	
External Communication	USB	RS232 header on board
Size	112 X168 X48	mm
Power	+12V at 1Amp maximum	
Temperature Range	-5 to +50 °C operating -40 to +80 °C storage	

1. Output power up to 100mW available
2. Self-Heterodyne method with 35km delay
3. Measured beat frequency of two lasers with 1-second gate on the frequency counter.

Ordering Information:

**CLM-PFR-1550-SM10**

Describes Clarity Laser Module Precision Frequency Reference locked to 1550nm. 10mW laser diode option (~8mW output) with single mode fiber.



Wavelength/Frequency Stability Plots. Beat frequency of two stabilized lasers measured with frequency counter (1 second gate), 40-hour duration.

- Distribution plot shows distribution over 1 MHz intervals. Approx 62% of samples within +/- 1 MHz; approx. 92% within +/- 2 MHz. Standard deviation for laser is 1.1MHz.
- Allan deviation shows < 1e-9 for  $\tau = 100$  seconds interval.