



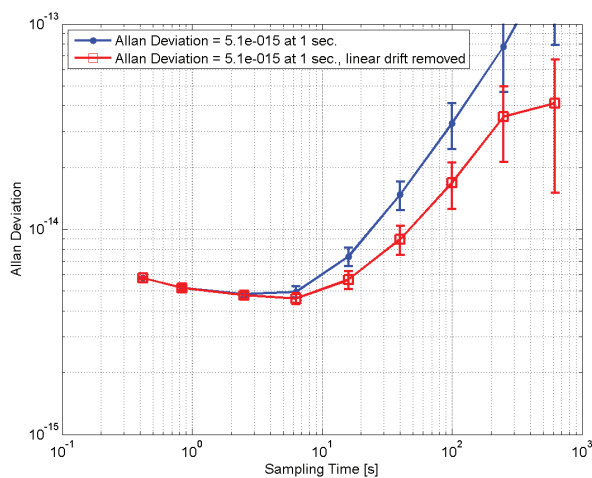
THIS TURNKEY 3HZ LINEWIDTH STABILIZED LASER

offers excellent stability in a convenient rackmount box. We've integrated a high-finesse Fabry-Perot cavity, a temperature-controlled vacuum housing, vacuum pump, optics, input laser, and control electronics into a **4U high rackmount box**, while maintaining the frequency stability for which our products are known. With a frequency noise linear spectral density of **1Hz/ $\sqrt{\text{Hz}}$** , this system is suitable for applications such as microwave

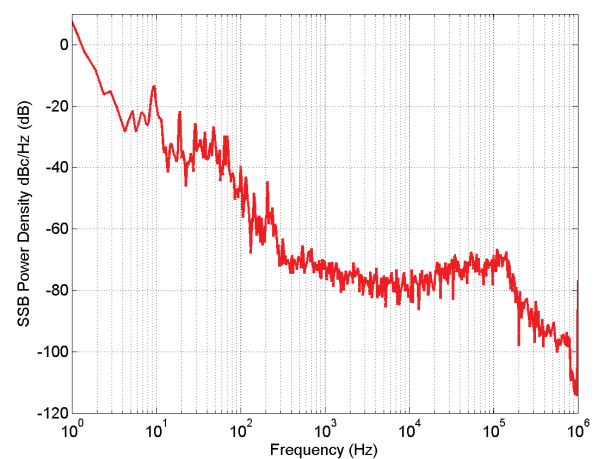
generation and laser radar. Once the laser has been tuned to be coincident with the cavity frequency, a **push-button lock function** engages the loop filter to stabilize the laser. An **intuitive, integrated touch screen front panel** allows control and monitoring of all system parameters, with analog outputs for cavity power, error signal, and ramp sync signal.

Everything about this integrated frequency stabilized laser has been designed to deliver the best performance in the most convenient way, from the low power consumption to the onboard display. We put all of our experience into each system so that you can spend your time on your experiments, not your equipment.

OUR SYSTEMS GIVE YOU THE FREQUENCY YOU NEED — GUARANTEED.



The Allan Deviation of a single laser from a heterodyne beat.



The phase noise linear spectral density of the laser.

Hz-Level Rack Mounted Laser System

SLS-INT-1550-200-3

SPECIFICATIONS

PRODUCT NOTES

- Fully integrated 3-Hz stabilized laser system in 4U rack-mount box
- Turn-key, front panel touchscreen interface with laptop GUI alternative
- System delivered aligned and under vacuum—fully operational within hours
- Auto relock technology monitors the system and quickly scans and relocks the laser after disturbances

TOUCHSCREEN CONTROLS AND INDICATORS

- Laser current and temperature (set and actual)
- Cavity temperature
- Vacuum pressure
- Vacuum housing temperature
- Loop filter proportional gain and time constant

PERFORMANCE

Wavelength range	Telecommunications C-band (1530 – 1565 nm) chosen at time of ordering
Output power	10 mW
Cavity Free Spectral Range	6 GHz
Allan Deviation 1 s no drift removal	<9e-15
Phase noise 10 Hz offset	<-20 dBc/Hz
Phase noise 10 kHz offset	<-53 dBc/Hz
Daily laser drift	< 40 kHz for operating temperature range
Daily frequency variation linear drift removed	<1 kHz
Operating temperature range	18-25 °C

ANALOG OUTPUTS

- PDH error signal
- Transmitted power from the cavity
- Reflected power from the cavity
- Ramp sync signal

ELECTRONICS

Operating voltage	110/115/230 VAC
Power consumption	< 25 W
AC Power	50-60 Hz
Cooling requirements	None
Optional battery backup for ion pump	3-Day Lifetime

OPTIONS

- Frequency tuning of locked laser +/-400 MHz (for details or more range, please call us)
- Cavity reconditioning to tune the resonance to be within 300 MHz of an absolute frequency

MECHANICAL & OPTICS

Output connector	FC/APC, PM-1550
Dimensions	19" rack mountable housing, 4U high (45 x 18 x 38 cm)
System Weight	< 40 kg
Vibration Isolation	Included