

HI-Q[®] Laser Phase Lock System

The system provides the user with the ability to phase lock two independent lasers that operate at a frequency difference as large as 50 GHz. The two lasers may both be free-running or one serving as a reference for stabilizing the other.



HI-Q[®] Laser Phase Lock System is capable of automatically and rapidly phase locking two lasers together with a simple setup. The Locker outputs the locking voltage for feedback to the source laser's frequency tuning port such as the piezo tuning port of an OEwaves OE4030 Hi-Q[®] sub-Hertz laser.

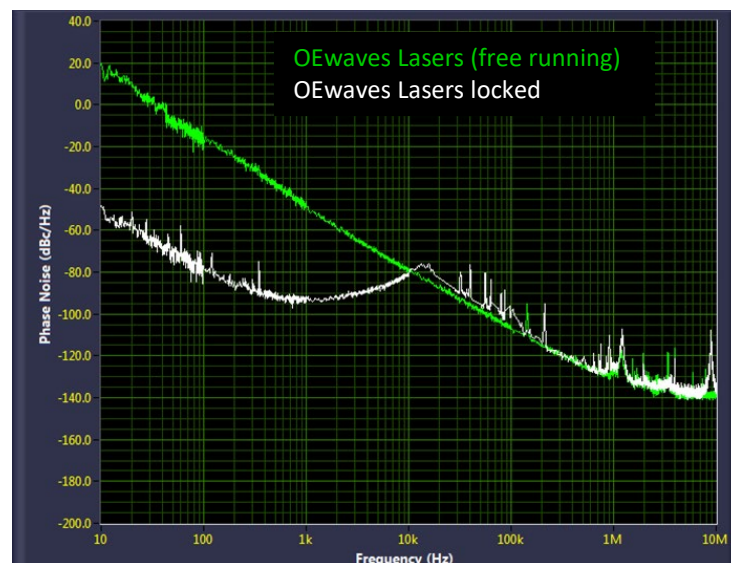
This product supports frequency stabilization applications such as generation of a stabilized beat signal with two lasers, or side-locking of a slave laser to a reference laser. The PLL control circuit has an internal RF reference or with a user provided external reference. The system operates with ease, speed, and precision via a GUI (Graphic User Interface) that can be installed on any PC. It is scalable to various frequencies and input wavelength bands and is available with multiple frequency range options. This system replaces conventional complex schemes for locking two lasers and is ideal for many applications in research and manufacturing environments.

FEATURES

- Wide Frequency Lock Range
- Large Dynamic Range
- RF and Optical Monitor Outputs
- Simple to Use Front Panel or GUI Software Interface
- Front Panel Lock Status Indicator
- Internal or External Reference
- Built-in 100 MHz Reference

APPLICATIONS

- Quantum Technology
- Photonic Local Oscillators (LOs)
- Metrology and Sensing
- Stabilized VCOs (Voltage Controlled Oscillators)



HI-Q® LASER PHASE LOCK SYSTEM SPECIFICATIONS

OE5000

LASER LOCK BOX SPECIFICATIONS

Laser Locked Frequency Offset Range	5 – 20 GHz 5 – 50 GHz (optional)	Optional range to 50 GHz available
Input Laser Wavelength Range	1300 – 1600 nm	Other band options available
Laser Input Connectors	FC/APC PM	
Laser Input Power Range	0.3 to 3 mW	
Loop Filter Bandwidth	247 KHz	Tuned for 20 GHz operation
DC Input Power	10V, 0.5A	External power supply required
RF Connector Types	SMA	Ref in/out, Tune, RF monitor
External Reference Input Frequency Range	10 to 800 MHz	
Dimensions L x W x H	25 x 27 x 10 cm	



OTHER OPTIONS (Upon Request)

Increased Locked Frequency Offset Range	Up to 110 GHz	Custom ranges upon request
Input Wavelength	1064, 1310nm	Custom wavelengths upon request

Note: These specifications are subject to change without notice due to OEwaves ongoing development cycles. Unless otherwise noted, all specification in this document are to be treated as “typical.” is covered by one or more of the following U.S. patents: 6,389,197; 6,488,861; 6,795,481; 6,798,947; 6,879,752; 7,248,763; 7,356,214; 7,440,651; 7,801,189; 7,929,589; 8,094,359; 8,102,597; 8,289,616; 8,311,376; 8,442,088. Other patents pending..



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