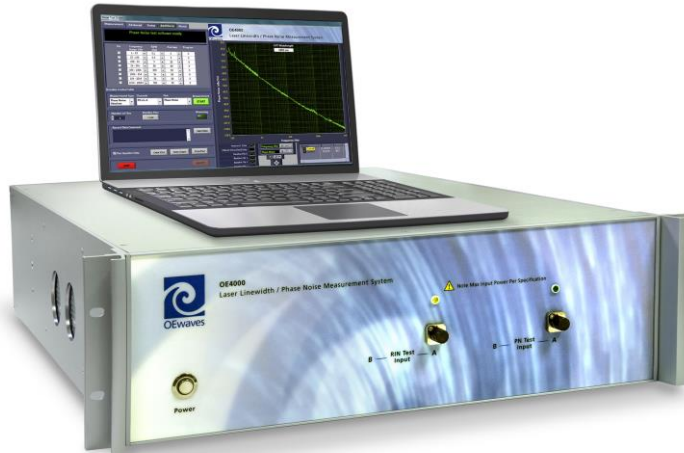
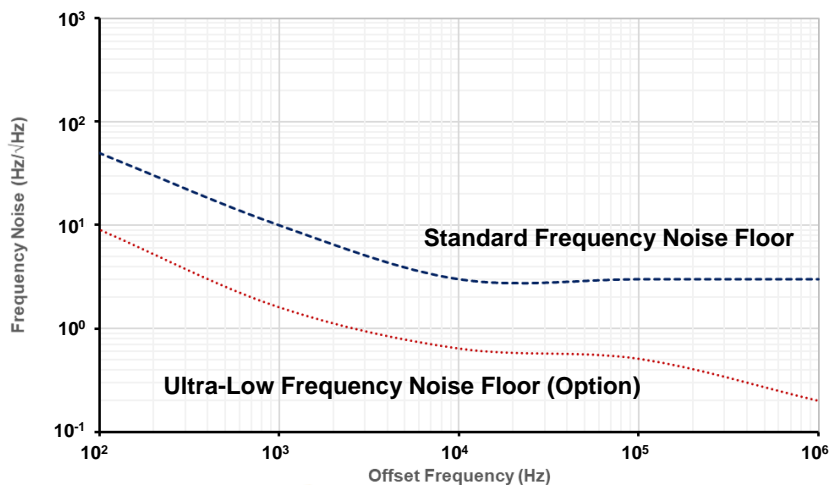


Using a homodyne methodology, HI-Q™ Optical Test Measurement System (TMS) offers a fully automated measurement of ultra-low phase noise CW laser sources.



HI-Q™ Optical TMS is capable of rapidly measuring laser phase noise and estimating its FWHM linewidth down to < 3 Hz without complex setup or reference lasers normally required to make such a narrow linewidth measurement.

This homodyne based system is unique in wideband measurement without requiring another low noise reference laser source. The complete system operates with ease, speed and precision via a simple graphic user interface on a dedicated PC. No additional test equipment required. The unmatched ultra-low phase/frequency noise analyzer is scalable to various input wavelength bands and is available with low relative intensity noise (RIN) measurement option.



## FEATURES

- Ultra-Low Phase/Frequency Noise Measurement
- Fast Real-Time Measurement
- Instantaneous and Extended FWHM Linewidth Analysis
- No Low Noise Reference Source Required
- User Friendly Interface
- Simple PC-based Operation
- 3U x 19" Rack System
- Customizable Configurations, Upgrades, and Options

## OPTIONAL CONFIGURATION

- Multiple Input Wavelength Bands within 630 nm – 2200 nm
- Ultra-Low Noise Floor
- RIN Measurements
- Extended Offset Frequency Range up to 2 GHz
- Extended Input Power Range
- Remote Operation
- Performance Level and Frequency
- Range Options and Upgrades

# HI-Q™ OPTICAL TEST MEASUREMENT SYSTEM

OE4000



## SPECIFICATIONS

1530 – 1565 nm

Frequency Noise Offset	10 Hz	100 Hz	1 kHz	1MHz
<ul style="list-style-type: none"> <li>Standard Noise Floor*</li> </ul>	250 Hz / $\sqrt{\text{Hz}}$	50 Hz / $\sqrt{\text{Hz}}$	10 Hz / $\sqrt{\text{Hz}}$	3 Hz / $\sqrt{\text{Hz}}$
<ul style="list-style-type: none"> <li>Ultra Low Noise Floor Option**</li> </ul>	50 Hz / $\sqrt{\text{Hz}}$	10 Hz / $\sqrt{\text{Hz}}$	2 Hz / $\sqrt{\text{Hz}}$	0.2 Hz / $\sqrt{\text{Hz}}$
* Requires a laser with RIN below -100 dBc / Hz @ 10Hz, -130 dBc / Hz @ 1 kHz and -140 dBc / Hz @ 1 MHz				
** Requires a laser with RIN below -100 dBc / Hz @ 10Hz, -130 dBc / Hz @ 1 kHz and -150 dBc / Hz @ 1 MHz				
Lorentzian Linewidth Sensitivity	<10 Hz; <10 $\mu\text{S}$ (Standard Noise Floor) <0.5 Hz; <10 $\mu\text{S}$ (Ultra Low Noise Floor Option)			
Dynamic Range	60 dB			
Phase Noise Floor	$-140 \pm 2 \text{ dBc / Hz} > 1 \text{ MHz}$			
FWHM Linewidth Estimated Range	Standard Noise Floor: 1 kHz to 10 MHz (<10 ms) Ultra Low Noise Floor Option: 3 Hz – 30 kHz (< 10 ms)			
Optical Input Power Range	+5 to +15 dBm (PM-FC/APC)			
Offset Frequency Range	10 Hz – 1 MHz			
Measurement Types	Frequency Noise / Homodyne Phase RIN <sup>†</sup> Option (Noise Floor: $-158 \pm 2 \text{ dB / Hz} > 1 \text{ MHz}$ )			
Data Storage and I/O	HDD / USB Port			
Resolution Bandwidth	0.1 Hz – 200 kHz			
Operating Temperature Range	15°C to 35°C			
Power	110 / 120 or 220 / 240 V <sub>ac</sub> ; 50 / 60Hz			
Size	3U x 19: Rack Mount			

## OPTIONS

Low or High Input Power Range	Up to 15 dB within -10 to +20 dBm
Wavelength Ranges Available	740 – 935 / 965 – 1065 / 1000 – 1100 / 1260 – 1360 / 1530 – 1625 / 1950 – 2150 (nm) (Consult factory for multi-wavelength range options and custom wavelength ranges)
Extended offset Frequency Range	Frequency / Phase Noise Down to 1 Hz or up to 2 GHz
RIN Measurement <sup>†</sup>	Relative Intensity Noise up to 40 GHz; Size may increase

**Note:** These specifications are subject to change without notice due to OEwaves ongoing development cycle. Patents Pending.

<sup>†</sup> Unless otherwise specified, RIN frequency measurement range is the same as the default or extended range chosen for the phase noise measurement.

Noise floors are specified at system max input power.



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RIDE THE WAVE OF INNOVATION

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