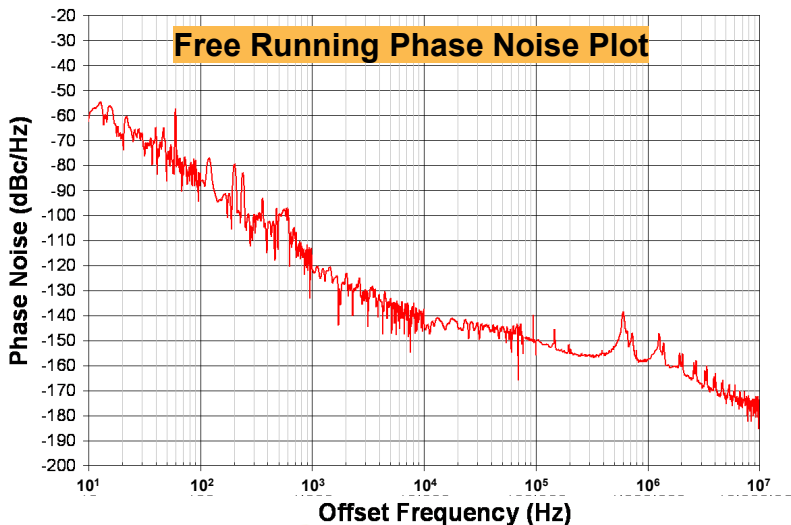


HI-Q® Compact Opto-Electronic Oscillator (Compact OEO) offers extremely low phase noise, low vibration and acceleration sensitivity.



The unique design of the HI-Q® Compact OEO is based on the photonic generation of spectrally pure signals at RF and millimeter wave frequencies that enable OEwaves' signal sources to scale to higher frequencies with little to no penalty in phase noise performance.

The high performance of the COEO allows for clean and precise phase noise measurement, manifold enhancement of military radar system visibility, stable clocking and increased channel capacity of communications systems by an order of magnitude. Compact OEO facilitates high capacity and high frequency future wireless communication systems. This level of performance enables manufacturers to retrofit current systems as well as architect capabilities to address new markets.



## FEATURES

- Low Phase Noise/Jitter
- Low Spurious Content
- Frequency Scalability
- EMI Tolerant
- High Stability
- Low Vibration / Acceleration Sensitivity

## APPLICATIONS

- Radar Systems
- Stable Clocking
- Communication
- Tele/Satellite Communication
- Wireless Networks
- Analog to Digital Conversion

HI-Q® Compact OEO offers phase noise performance better than -138 dBc/Hz at 10 kHz offset from the carrier

# HI-Q® COMPACT OPTO-ELECTRONIC OSCILLATOR (COMPACT OEO)

OE3700

## SPECIFICATIONS

Fixed Output Frequency	8 – 12 GHz	Consult factory for frequencies > 12 GHz
Accuracy	50 kHz	Free running
Repeatability	2 kHz	Free running
RF Output Power	+10 dBm	Consult factory for other levels
SSB Phase Noise	-45 dBc/Hz @ 10 Hz -83 dBc/Hz @ 100 Hz -115 dBc/Hz @ 1 kHz -138 dBc/Hz @ 10 kHz -140 dBc/Hz @ 100 kHz -153 dBc/Hz @ 1 MHz -168 dBc/Hz @ 10 MHz	Consult factory for higher performance
Timing Jitter – RMS	8 fs (100 Hz to 100 MHz)	Consult factory for jitter < 8 fs
Harmonics	-40 dBc	
Spurious ( $f_{\text{offset}} < 100$ Hz)	-60 dBc	
Spurious ( $100 \text{ Hz} < f_{\text{offset}} < 1$ kHz)	-80 dBc	
Spurious ( $f_{\text{offset}} > 1$ kHz)	-85 dBc	
Short Term Stability	$2 \times 10^{-10}$ @ 1 s	Constant case temperature
Thermal Stability	< 1 ppm/°C	
Vibration / Acceleration Sensitivity	$5 \times 10^{-11}$ /g	
Operating Temperature Range	15°C to 50°C	
Power Consumption	28 W	@ 25°C
Package Size	110 in <sup>3</sup>	Consult factory for other options
Package Weight	5.5 lb	
Input / Output Connector	DC/Control: 26-Pin DB RF In (Ref): SMA (F) RF Out: SMA (F)	Consult factory for other options

## OPTIONS

Optical Output - Power	-3 dBm	
PLL – Loop Bandwidth	10 – 200 Hz	
Reference Input Frequency	10 MHz or 100 MHz	Consult factory for other options

**Note:** These specifications are subject to change without notice due to OEwaves ongoing development cycles. This product line is covered by one or more of the following U.S. patents: 5,204,640; 5,723,856; 5,777,778; 5,929,430; 6,594,061; 6,762,869; 7,173,749. Other patents pending.

**ITAR Restricted:** This product is designated as a defense article under Category XI(c) of the USML and is subject to ITAR licensing requirements.



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