

Cobolt Odin™ Series



Compact, tunable Mid-IR OPOs

- Wavelength selectability 2-5 μm ;
standard 3264 nm & 3431 nm
- Tunable up to 50 nm
- 80 mW average output power
- 7-10 kHz pulse repetition rate
- 3 - 5 ns pulse width

The Cobolt Odin™ Series is an ultra-compact and industrial-grade mid-IR source based on a fully contained temperature tunable Optical Parametric Oscillator (OPO) with integrated pump laser. Periodically poled nonlinear optical crystals are used for efficient and spectrally flexible generation of mid-IR emission. The lasers are manufactured using Cobolt's proprietary HTCure™ technology and packaged in a compact and sealed laser head, offering a size, robustness and reliability never before achieved for this kind of laser source.

The Cobolt Odin™ Series lasers provide up to 80 mW average output power at a centre wavelength freely selectable over the range of 2-5 μm through tailoring of the nonlinear crystal. The lasers can be tuned in wavelength over tens of nanometers via temperature adjustments. The emission is generated in nanosecond pulses (< 5 ns) at high pulse repetition rate (10 kHz) and very low pulse-to-pulse jitter.

The combination of compact format, high level of robustness, spectral flexibility and low power consumption makes the Cobolt Odin™ Series lasers ideal light sources for a large variety of industrial and scientific applications related to molecular spectroscopy. In particular they are suitable for integration into analytical instrumentation for fast, accurate and sensitive gas detection used in environmental monitoring applications as well as for control and limitation of pollution emissions in petrochemical, automotive and energy production industries.

Cobolt Odin™ Series Specifications

Center Wavelength*	3264 nm or 3431 nm	
Spectral Bandwidth	< 1.5 nm	
Wavelength Tuning Range**	±25 nm	
Average Power	> 80 mW	
Long-term stability (8hrs ± 3°C)	< 3 %	
Repetition Rate***	> 10 kHz	> 7 kHz
Pulse Energy	> 7 μJ	> 10 μJ
Pulse Width	3-5 ns	
Pulse-to-Pulse Jitter	< 1 μs	
Beam Divergence	< 8 mrad	
Beam symmetry at aperture	> 0.90:1	
Total system power consumption	< 63 W, typical < 30W	
Operating temperature	10-40 °C	
Maximum laser head baseplate temp.	50 °C	
Recommended heat sink thermal resistance	0.2 K/W	
Operating modes	Constant current Constant power Burst Constant Repetition Rate (OEM Only)	
Output trigger signal	Pulse trigger output via SMA	
Laser head dimensions [mm] [inches]	125 × 70 × 45 4.9 × 2.8 × 1.8	
Controller dimensions [mm] [inches]	190 × 72 × 28 7.5 × 2.8 × 1.1	
Communication	USB or RS-232	
Model number structure	CDRH/CE (key-switch for on/off)	OEM (auto-start mode)
RS-232 Controller	wavel-05-71-pwr-500	wavel-05-71-pwr-600
USB Controller	wavel-05-71-pwr-700	wavel-05-71-pwr-800
Warranty	12 months	

* Other center wavelengths in the span 2-5μm are available upon special request

** Tunable by temperature, no moving parts

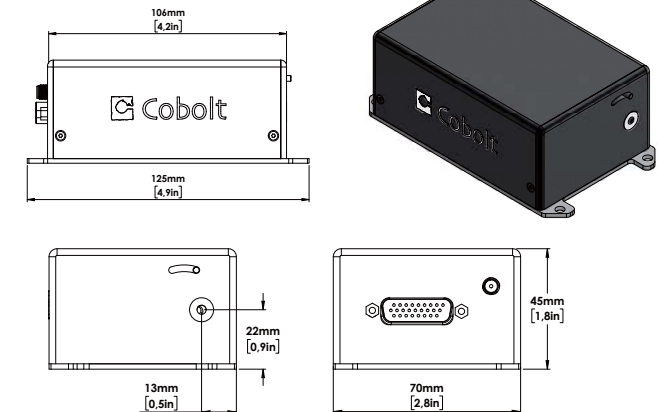
***The repetition rate can be chosen at the time of purchase in combination with any available wavelength.



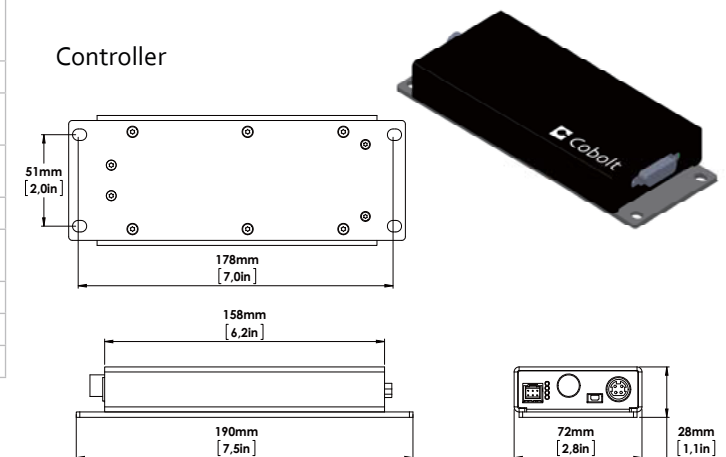
HTCure™ is a Cobolt proprietary technology for manufacturing of ultra-robust and reliable laser sources, allowing Cobolt to offer market leading warranty terms. Lasers built using HTCure™ Technology have shown to withstand 60G mechanical shocks in operation as well as extreme storage temperature shocks (-30 to >100 degC) without any sign of degraded performance.



Laser Head



Controller



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