

Cobolt Odin™ Series



Compact, tunable Mid-IR OPOs

- Wavelength selectability 2-5 μm ;
standard 3264 nm, 3431 nm, and 4330 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	3431 nm	4330 nm
Spectral Bandwidth	< 1.5 nm		< 2.8 nm
Wavelength Tuning Range**	±25 nm		± 20 nm
Average Power	> 80 mW		> 60 mW

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

** Tunable by temperature, no moving parts

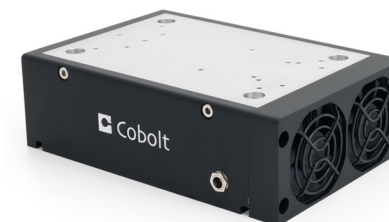
Repetition Rate***	> 10 kHz	> 7 kHz
Pulse Energy	> 7 µJ	> 10 µJ
Pulse Width	3-5 ns	
Pulse-to-Pulse Jitter	< 1 µs	
Long-term stability (8hrs ± 3°C)	< 3 %	
Beam Divergence	< 8 mrad	
Beam symmetry at aperture	> 0.90:1	
Total system power consumption	< 63 W, typical < 30W	
Operating temperature	10-40 °C	
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 x 70 x 45 4.9 x 2.8 x 1.8	
Controller dimensions [mm] [inches]	190 x 72 x 28 7.5 x 2.8 x 1.1	
Communication	USB or RS-232	
Warranty	12 months	

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

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

Options & Accessories

- Customized controller cable
- Laser head heatsink (HS-04)



Heat sink with fans



This device is sensitive to Electrostatic Discharge (ESD). Always handle diode lasers with extreme care to prevent electrostatic discharge, the primary cause of unexpected diode failure.



WARNING VISIBLE AND INVISIBLE LASER RADIATION!

Avoid exposure to beam.
Class 3B Laser Product
Classified per IEC 60825-1:2014



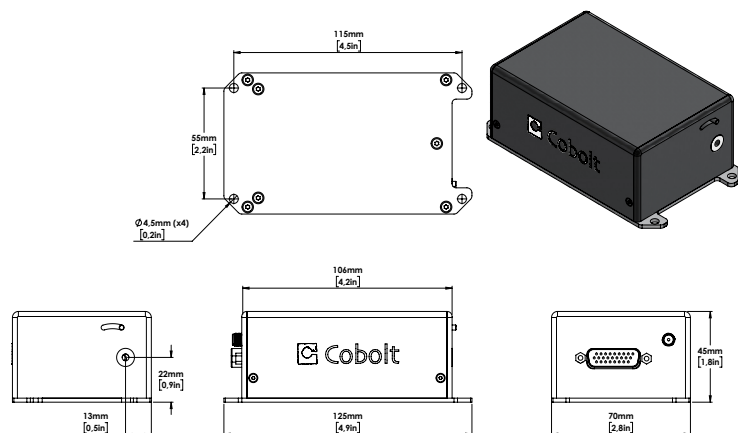
Wvl (nm)	Max.Pwr (mW)	Max Pulse (µJ) / (ns)
3264	150	15 / 1-5
3431	150	15 / 1-5
4330	150	15 / 1-5



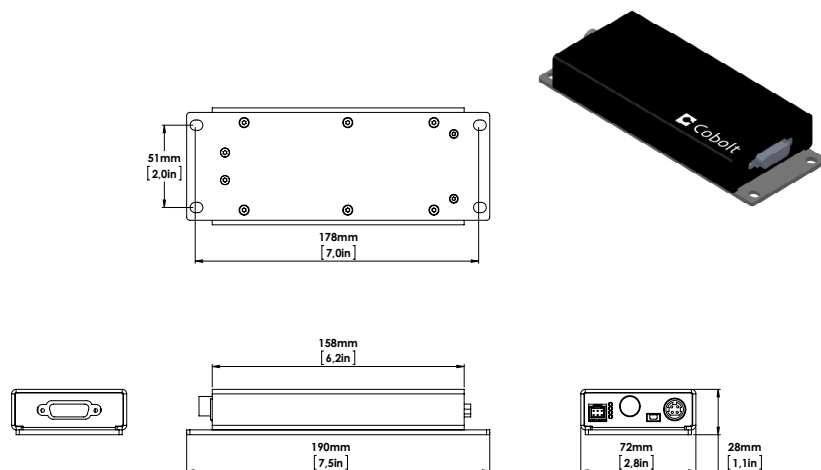
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Mechanical Specifications

Laser Head



Controller dimensions



Electrical Interface

Interfaces	Connector	Function
Input power	Kycon KPJX-45, 4-pin	Power supply to Controller
Laser Head to Controller	HD-sub 26-pin, male	Connection to Laser Head
Controller to Laser Head	HD-sub 26-pin, female	Connection to Controller
Data port	USB-type mini B	Control and monitoring via control commands
Remote interlock & Analog signals	Molex 90130-3206	Analog input 5 – 12 V => Laser ON Analog input < 2.7 V => Laser OFF
Warm-up time		3 min

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