Cobolt
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Cobolt Tor™ Series

High performance Q-switched lasers

- High performance Q-switched lasers at 532 nm and 1064 nm
- Up to 1.0 W average output power
- > 7 kHz pulse repetition rate
- 3-5 ns pulse width
- Up to 150 µJ nominal pulse energy

The Cobolt Tor™ Series lasers are high performance Q-switched diode pumped lasers. The sophisticated cavity design of these lasers provides a unique combination of high pulse repetition rates, short pulse lengths and exceptional pulse-to-pulse stability in a high quality TEMoo beam.

The lasers are manufactured using Cobolt's proprietary HTCure™ technology and packaged into a sealed laser head, offering an outstanding level of robustness and reliability and making these lasers highly suitable for OEM integration into demanding environments.

The lasers are equipped with a pulse-count feedback loop to ensure minimum drift in output power and repetition rate, and also provide a pulse-trigger output signal for convenient synchronisation of detection systems.

The combination of compact format, high level of robustness, high average power and pulse energy performance make the Cobolt Tor™ Series lasers are ideal light sources for a large variety of industrial and scientific applications, including LIBS, micro-dissection, MALDI-TOF, range-finding, Raman-LIDAR and micro-machining.

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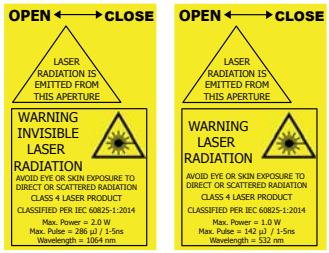
Cobolt Tor™ Series Specifications

Wavelength (nm)[1]	1064.2 ± 0.6	532.1 ± 0.3
Average Power	> 1.0 W	> 0.4 W
Pulse Energy	> 150 µJ	> 60 µJ
Peak Power[2]	> 30 kW	> 12 kW
Pulse Width	3 - 5 ns	
Repetition Rate	> 7 kHz	
Pulse-to-Pulse Jitter	< 1 µs	
Long-term stability (8 hrs ± 3°C)	< 3 %	
Spatial mode (TEM_{00})	M^2 < 1.3	
Beam symmetry at aperture	> 0.90:1	> 0.85:1
Polarization ratio (linear, vertical)	> 100:1	
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 Burst Constant Repitition 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	
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	

* Actual parameters can be tailored for specific applications. Contact Cobolt for more information.

1. The wavelength is specified in air.
2. Assuming a top hat profile, peak power (kW) = pulse energy (µJ) ÷ pulse duration (ns).

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.



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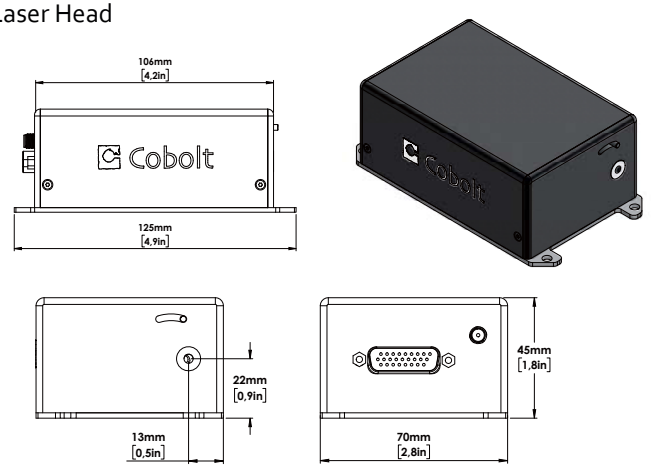
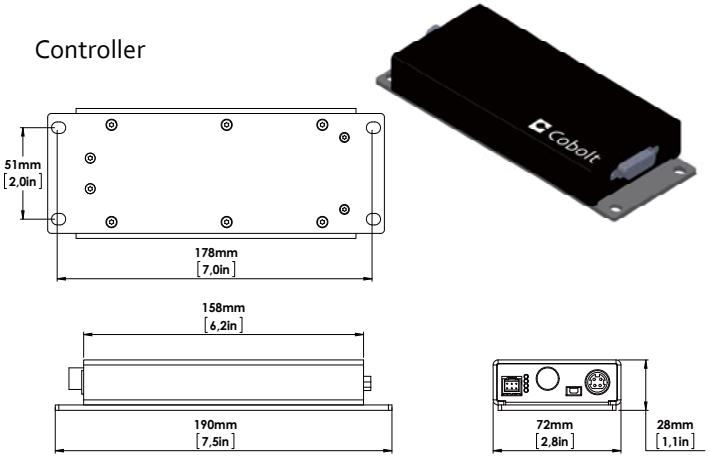
Laser Head



Controller



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