

Cobolt 05-01 Series

High Power | Single Frequency | CW Diode pumped lasers



Applications

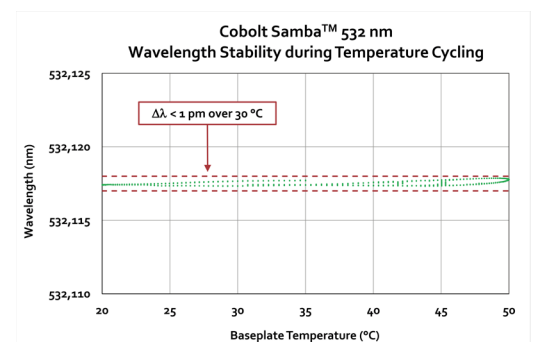
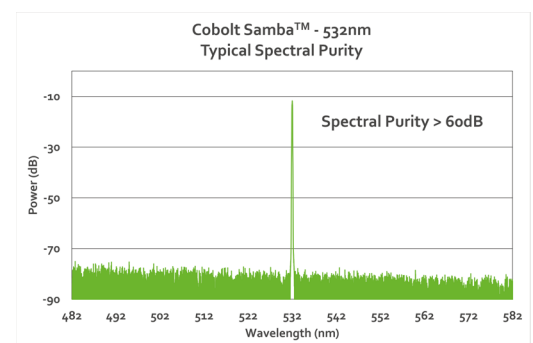
Raman Spectroscopy
Interferometry
Holography
Optical Tweezers
Super-resolution Microscopy

- CW output power up to 3 W in a perfect beam
- Extreme spectral stability
- Ultra-robust, hermetically sealed packages
- Ultra-low noise
- 355 nm, 457 nm, 491 nm, 515 nm, 532 nm, 561 nm, 640 nm, 660 nm and 1064 nm
- Up to 24 months warranty, unlimited hours

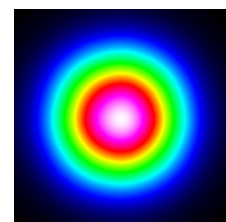
The Cobolt 05-01 Series lasers are continuous-wave diode pumped laser (DPL) devices operating at a fixed wavelength between 355 nm and 1064 nm. The lasers are built using proprietary HTCure™ manufacturing technology for ultra-robustness in a compact hermetically sealed package.

The lasers emit a very high quality laser beam with stable characteristics over a wide range of operating conditions. Single frequency operation provides a narrow spectral bandwidth and long coherence length. The lasers are designed and manufactured to ensure a high level of reliability.

The Cobolt 05-01 Series lasers are intended for stand-alone use in laboratory environments or for integration as OEM components in instruments for applications including fluorescence microscopy, flow cytometry, DNA sequencing, HCA, Raman spectroscopy, interferometry, holography and particle analysis.



Typical Beam Profile



Cobolt 05-01 Zouk™
 $M^2 < 1.1$

HÜBNER Photonics | Coherence Matters.



Cobolt 05-01 Series

Performance Specifications

	Zouk™	Twist™	Calypso™	Fandango™	Samba™	Jive™	Bolero™	Flamenco™	Rumba™
Center wavelength (nm)	354.8 ± 0.3	457.0 ± 0.3	491.5 ± 0.3	514.8 ± 0.3	532.1 ± 0.3	561.2 ± 0.3	639.6 ± 0.3	659.6 ± 0.3	1064.2 ± 0.6
Available Power Levels (mW)	10 20	100 200	200	300	500 1000 1500	200 300 500	500	100 300 500	500 1000 2000 3000
Noise, 20 Hz - 20 MHz (pk-pk)	< 2%		< 5%	< 2%	< 1%		< 7 %	< 1%	
Noise, 20 Hz - 20 MHz (rms)	< 0.2%		< 0.5%	< 0.2%	< 0.1%		< 1 %	< 0.1%	
Power stability (8 hrs ± 3°C)	< 2%								
Beam divergence (full angle, mrad)	< 0.8	< 1.2					< 1.4	< 1.5	< 1.6
Spatial mode (TEM ₀₀)	M ² < 1.1								
Beam diameter at aperture (µm)	700 ± 50								1000 ± 50
Spectral linewidth (FWHM)	< 1 MHz								
Wavelength stability (steady state)	< 1 pm over ±2°C and 8hrs								
Beam symmetry at aperture	> 0.90:1				> 0.95:1				
Beam pointing stability	< 10 µrad/°C, typical 5 µrad/°C (over 10-40°C)								
Polarization ratio (linear, vertical)	> 100:1								
Warranty (unlimited hours)	12 months		24 months	12 months	24 months		12 months	24 months	

Operational Environment

Power supply requirements	12 VDC, 5 A
Maximum laser head baseplate temperature	50 °C
Ambient temperature, operation	10 - 40 °C or 10 - 35 °C*
Ambient temperature, storage	-10 -> +60 °C
Humidity	0-90% RH non-condensing
Ambient Air pressure	950-1050 mbar
Laser head heat sink thermal impedance at 40°C ambient	0.2 K/W or 0.18 K/W *
Maximum heat dissipation of Laser Head	< 63 W, typical 30W

* For Bolero™, thermal impedance specified at maximum ambient temperature.



Cobolt 05-01 Series laser on a heat sink for fiber coupling (FIC-04)

Model Number

WWWW-05-01-PPPP-CCC

Wavelength ↑ Power ↑ Configuration:

500 = Gen 5b Controller, RS-232, CE / CDRH
 600 = Gen 5b Controller, RS-232, OEM
 700 = Gen 5b Controller, USB, CE / CDRH
 800 = Gen 5b Controller, USB, OEM
 xxx = OEM customization

Communication Interface

Communication	USB or RS-232
Standard Baudrate	115200



This device contains components that may be sensitive to Electrostatic Discharge (ESD). ESD protection can be achieved with proper electrical grounding.



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)
355	50
457	499
491	499
515	499
561	499
660	499



Avoid eye or skin exposure to direct or scattered radiation.
 Class 4 Laser Product
 Classified per IEC 60825-1:2014

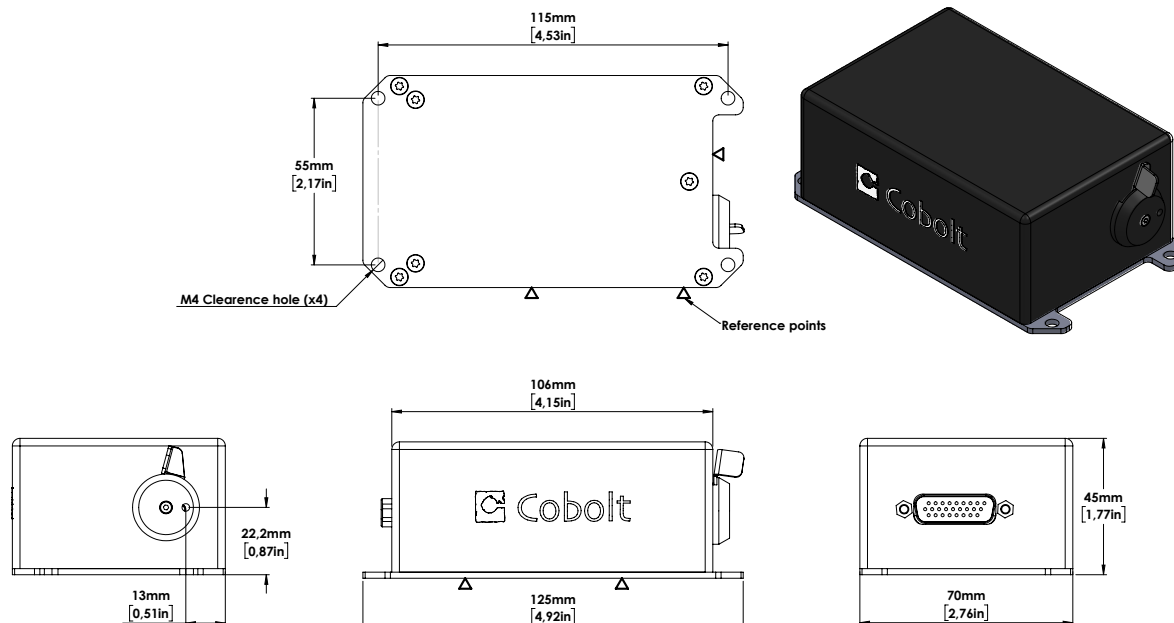


Wvl (nm)	Max.Pwr (mW)
532	3000
561	1000
640	1500
660	1000
1064	4000

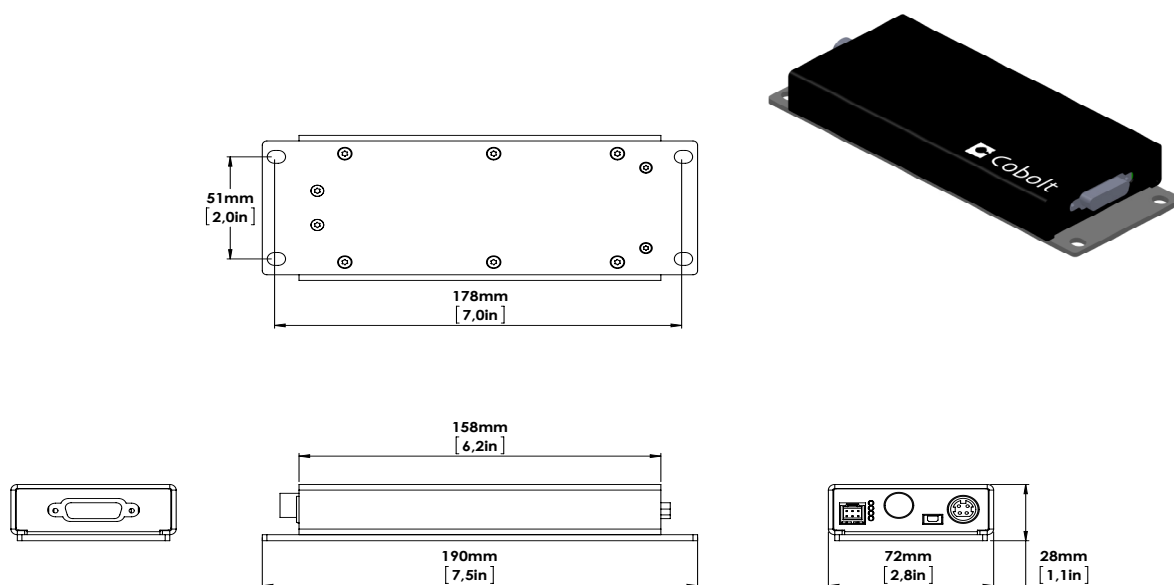
Cobolt 05-01 Series

Mechanical Specifications

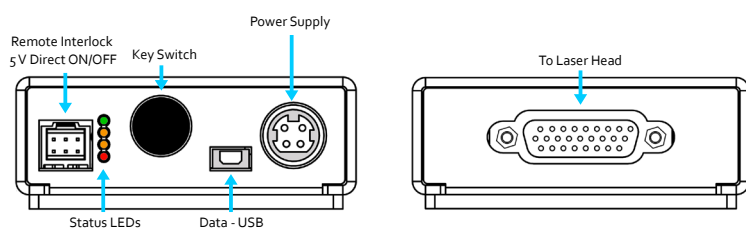
Laser head



Controller



Electrical Interfaces



Molex 6 pin - Controller I/O

Pin	Function
1	Remote interlock
2	0V – Ground
3	Direct On/Off (+5V Input)
4	--
5	LED 1 (LASER ON)
6	LED 2 (ERROR)

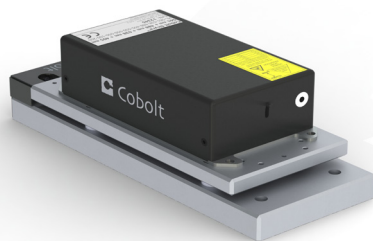
Cobolt 05-01 Series

Options and Accessories

- Laser head heatsink with fans HS-04
- TEC Plate for active baseplate temperature control
- Laser head heatsink with fans for fiber coupling FIC-04



Heatsink with fans HS-04



TEC-Plate for active baseplate temperature control



Heat sink with fans for fiber coupling FIC-04

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