

# Cobolt 04-01 Series

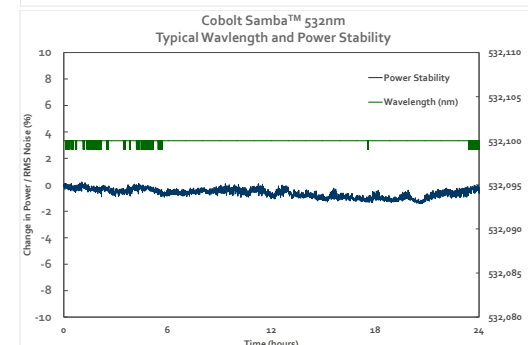
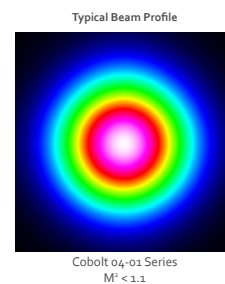
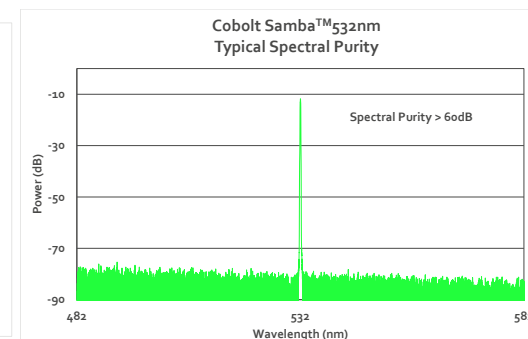
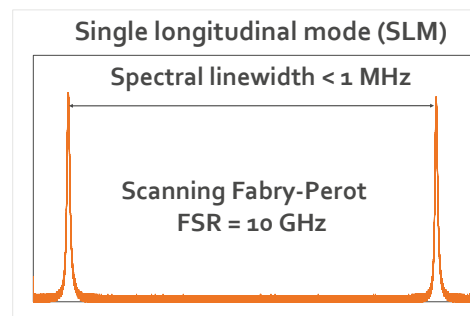
## Powerful single frequency CW diode pumped lasers

- CW power up to 400 mW in a perfect beam
- Ultra-robust, hermetically sealed packages
- True fiber pigtailed option
- Low noise, <math><0.25\%</math> rms
- 457 nm, 473 nm, 491 nm, 515 nm, 532 nm, 561 nm, 594 nm, 660 nm, and 1064 nm
- 24 months warranty, unlimited hours

The Cobolt 04-01 Series lasers are continuous-wave diode-pumped laser (DPL) devices operating at a fixed wavelength between 457 nm and 1064 nm. The lasers are built using proprietary HTCure™ manufacturing technology for ultra-robustness in a compact hermetically sealed package which has been 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.

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 04-01 Series lasers are intended for stand-alone use in laboratory environments or for integration as an OEM component in instruments for applications including fluorescence microscopy, flow cytometry, DNA sequencing, HCA, Raman spectroscopy, interferometry, holography and particle analysis.



# Cobolt 04-01 Series

	Twist™	Blues™	Calypso™	Fandango™	Samba™	Jive™	Mambo™	Flamenco™	Rumba™
Wavelength (nm)	457.0 ± 0.3	473.0 ± 0.3	491.5 ± 0.3	514.4 ± 0.3	532.1 ± 0.3	561.2 ± 0.3	593.6 ± 0.3	659.6 ± 0.3	1064.2 ± 0.6
Available Power Levels (mW)	25 50	25 50	25 50 75 100	25 50 100 150	25 50 100 150 200 300 400	25 50 100 150 200	25 50 100	100	400
Noise, 20 Hz - 20 MHz (pk-pk)	< 2% , typical < 1.5%		< 3%	< 2% , typical < 1.5%			< 3%	< 1 %	
Noise, 20 Hz - 20 MHz (rms)	< 0.25% , typical < 0.15%		< 0.3%	< 0.25% , typical < 0.15%			< 0.3%	< 0.1%	
Long-term power stability (8 hrs ± 3°C)	< 2%		< 3%	< 2%			< 3%	< 2%	
Beam divergence (full angle, mrad)	< 1.2						< 1.3	< 1.5	< 1.6
Spatial mode (TEM <sub>00</sub> )					M <sup>2</sup> < 1.1		M <sup>2</sup> < 1.2		
Beam diameter at aperture (µm)					700 ± 50		1000 ± 50		
Spectral linewidth (FWHM)	< 1 MHz								
Wavelength stability (after warm-up)	2 pm over ± 2 °C and 8 hrs								
Beam symmetry at aperture	> 0.95 : 1								
Beam pointing stability (over 10-40°C)	< 10 µrad / °C , typical 5 µrad / °C								
Polarization ratio (linear, vertical)	> 100:1								
Total system power consumption	< 35 W, typical < 15 W								
Operating temperature	10-40°C								
Maximum laser head baseplate temp.	50 °C								
Heat sink thermal resistance <small>Recommended</small>	0.6 K/W or 0.4 K/W *							0.4 K/W	
Laser head dimensions [mm]	102 x 60 x 40								
[inches]	4.0 x 2.4 x 1.6								
Controller dimensions [mm]	190 x 72 x 28								
[inches]	7.6 x 2.9 x 1.1								
Communication	RS-232 or USB								
Model number structure				CDRH/CE (key-switch for on/off)			OEM (auto-start mode)		
	RS-232 Controller			wavel-04-xy-pwr-500			wavel-04-xy-pwr-600		
	USB Controller			wavel-04-xy-pwr-700			wavel-04-xy-pwr-800		
Warranty	24 months								

\* For Calypso™ 100mW, Samba™ 300mW and 400mW, Jive™ 200mW, and Mambo™ 100mW

## Options & Accessories

- Customized controller cable
- Permanent SM/PM fiber pigtailed\*
- Modulated DPSSL with Integrated AOM \*
- Mount for external fiber coupling
- Two lasers in one with Dual Line Combiner
- Integrated optical isolator \*
- Laser head heatsink

\* Not available for all wavelength and power combinations, see [www.cobolt.se](http://www.cobolt.se) for more information



Fiber Pigtailed Option



Integrated AOM Option



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 LASER RADIATION**  
Avoid Exposure to beam  
Class 3B Laser Product  
Classified per IEC 60825-1:2014



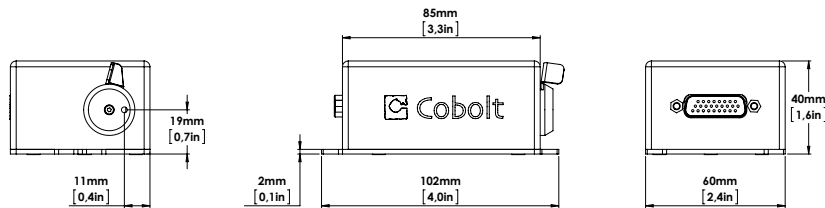
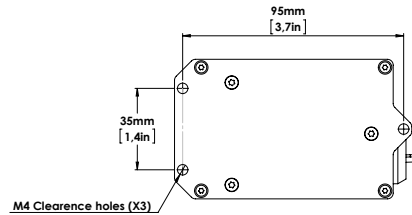
Wvl (nm)	Max.Pwr (mW)
457	400
473	400
491	400
515	400
532	450
561	400
594	400
660	400
1064	450



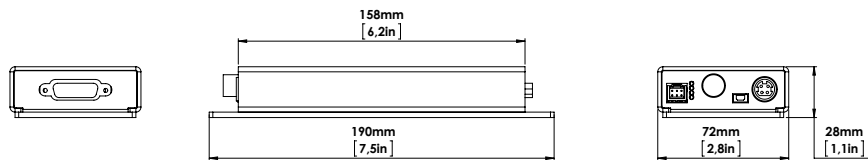
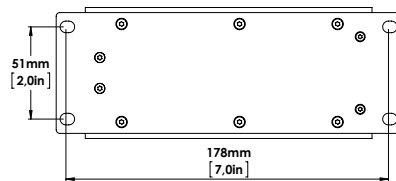
## Cobolt 04-01 Series

### Mechanical Specifications

Cobolt 04-01 Laser head dimensions



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		2 min

### Cobolt Head Office

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### Find local sales representatives at [www.cobolt.se/contact-us](http://www.cobolt.se/contact-us)

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