

# Cobolt o8-01 Series

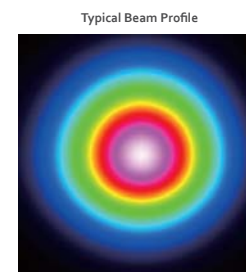
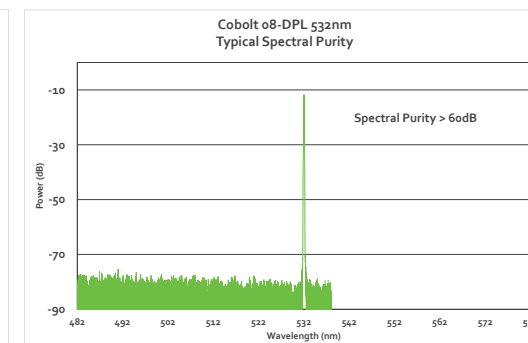
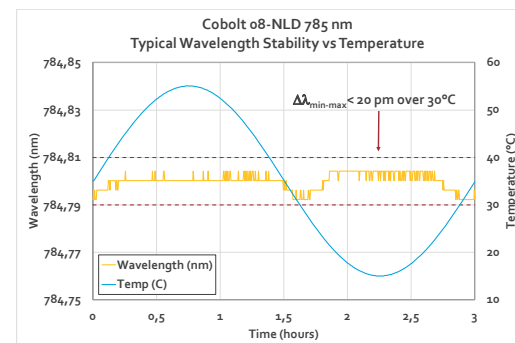
## Compact narrow linewidth lasers

- Single frequency diode pumped lasers (DPLs) and narrow linewidth diode (NLD) lasers
- Up to 500 mW continuous-wave power
- Integrated spectral filter
- Integrated isolator option, immune to optical feedback
- Ultra-robust hermetically sealed package and proven field reliability
- 405 nm, 532 nm, 561 nm and 785 nm

The Cobolt o8-01 Series is a family of narrow linewidth continuous-wave lasers, including diode pumped lasers as well as frequency stabilized diode lasers operating at fixed wavelengths between 405 nm and 785 nm with output power up to 500 mW. The lasers are designed and manufactured to ensure the highest level of reliability.

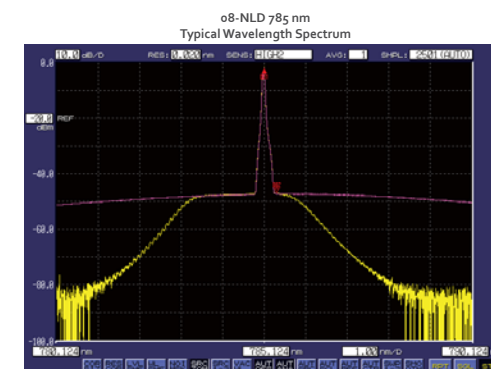
Cobolt lasers are built using proprietary HTCure™ manufacturing technology for ultra-robustness into a compact hermetically sealed package. The lasers emit a high quality laser beam with very stable characteristics and dependable performance, tailored to meet the expectations from manufacturers of high-end Raman spectroscopy instrumentation.

The Cobolt o8-01 Series is intended for stand-alone use in laboratory environments or for integration as an OEM component in instruments, including not only Raman spectroscopy, but also other applications, where a stable and narrow linewidth is crucial.



Typical Beam Profile

Cobolt o8-DPL  
 $M^2 < 1.1$



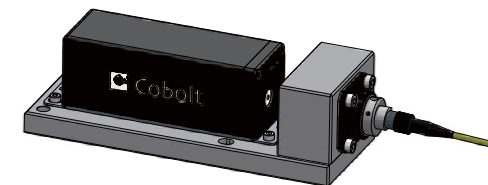
# Cobolt o8-01 Series

	405	532	561	785
	o8-NLD	o8-DPL		o8-NLD
Center Wavelength (nm)	405.0 ± 0.5	532.1 ± 0.3	561.2 ± 0.3	784.8 ± 0.5
Power (mW)	30	25	25	500
		50		
		160*	200*	
Integrated Optical Isolator	yes		no	
Optical Isolation	> 20 dB @ 25°C		n/a	
Beam divergence (full angle, mrad)	< 1.2			horizontal: < 20 vertical: < 2.5
Spectral bandwidth (FWHM)	< 20 pm	< 1 MHz		40 pm**
Spatial mode	M <sup>2</sup> < 1.3 (TEM <sub>00</sub> )	M <sup>2</sup> < 1.1 (TEM <sub>00</sub> )		Multimode
Beam symmetry	> 0.90:1	> 0.95:1		n/a
Beam diameter at aperture	700 ± 100 μm	700 ± 70 μm		horizontal: 1.4 ± 0.2 mm vertical: 1.7 ± 0.2 mm
Noise, 250 Hz - 2 MHz (rms)	< 0.2 %	< 0.25 %, (typical < 0.15 %)		typical < 0.5 %
Power stability over 8 hrs (± 3°C)	< 2 %			< 1 %
Polarization Extinction Ratio (PER)	> 100:1			
Maximum base plate temperature	50 °C			55 °C
Total system power consumption	< 12 W	< 20 W		< 15 W
Laser head dimensions	128 x 40 x 40 mm		100 x 40 x 40 mm	128 x 40 x 40 mm
Key box dimensions	82 x 56.6 x 32 mm		43.5 x 30 x 24 mm	
Communication	USB / RS-232		USB	
Power Supply Requirements	5V, 3A		5V, 5A	5V, 3A
Model number structure	wavel-o8-X1-pwr-100 *** (CDRH/CE: Key Control Box included)			
	wavel-o8-X1-pwr-200 *** (OEM: Auto-start mode)			
Warranty	12 months, unlimited hours of operation			12 mo. or 5000 hrs.

\* 160 mW is the maximum available power with the optical isolator, 200 mW available without isolator. All lower power levels are available with and without the optional isolator.  
 \*\* Typical Value  
 \*\*\* Model Nr. wavel-o8-01 without Isolator or wavel-o8-11 with Isolator

## Options & Accessories

- Mount for external fiber coupling
- Laser head heatsink
- Keybox for CDRH operation



Mount for external fiber coupling



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)
405	300
532	300
561	300



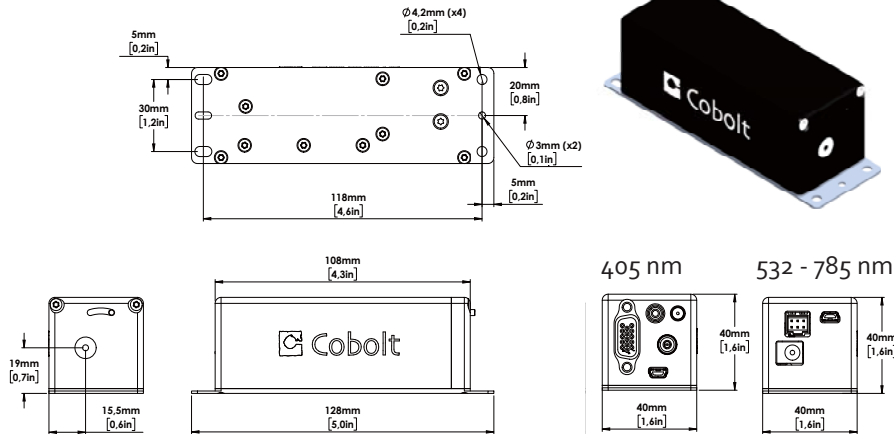
WARNING INVISIBLE LASER RADIATION  
 Avoid eye or skin exposure to direct or scattered radiation  
 Class 4 Laser Product  
 Classified per IEC 60825-1:2014

Wvl (nm)	Max.Pwr (mW)
785	2000



## Cobolt o8-01 Series Mechanical Specifications

### Laser Head with Isolator



### Electrical Interface

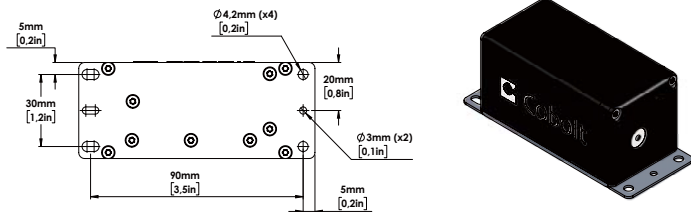
#### 405 nm

Interface	Location	Connector
Input power	Laser Head	DC plug 2.5 mm / 5.5 mm
Remote interlock	Laser Head	2.5 mm audio
Data port	Laser Head	USB-type mini B
Key control Box	Laser Head	VGA D-SUB 15-pin
<i>Not Used</i>	Laser Head	SMA
Laser Head	Key box	VGA D-SUB 15-pin
ON/OFF Modulation	Keybox	3.5 mm audio
<i>Not Used</i>	Keybox	BNC
RS-232	Keybox	D-SUB 9-pin

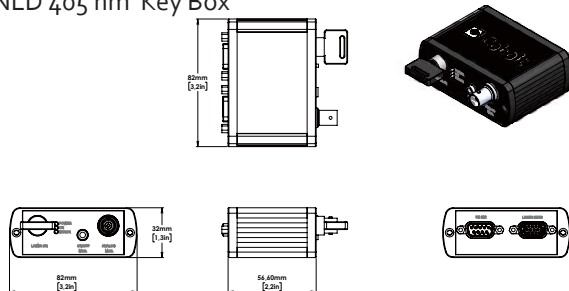
#### 532 - 785 nm

Interface	Location	Connector
Input power	Laser Head	DC plug 2.5 mm / 5.5 mm
Remote interlock	Laser Head	OEM : Molex pin 1 & 2
Data port	Laser Head	USB-type mini B
Key control Box	Laser Head	Molex 6-pin male
Laser Head	Key box	Molex 6-pin male
Remote Interlock	Key box	CDRH : 3.5 mm audio

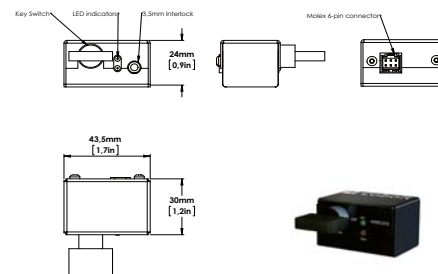
### Laser Head without Isolator



### o8-NLD 405 nm Key Box



### 532 - 785 nm Key Box



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