

Cobolt Skyra™

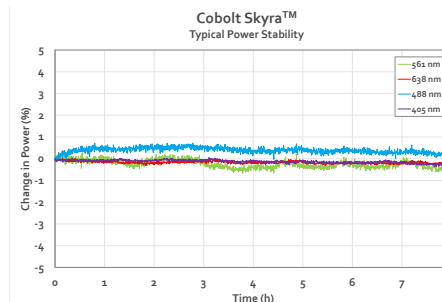
Compact, Plug & Play, Multi-Line Laser

- Combine up to 4 laser lines, permanently aligned in a single device
- 405 nm, 445 nm, 473 nm, 488 nm, 515 nm, 532 nm, 553 nm, 561 nm, 633 nm, 638 nm, 647 nm and 660 nm
- Independent control of each line with direct intensity modulation capability
- Up to 100 mW of optical power per laser line
- Compact, robust package with integrated electronics
- User friendly graphical software interface

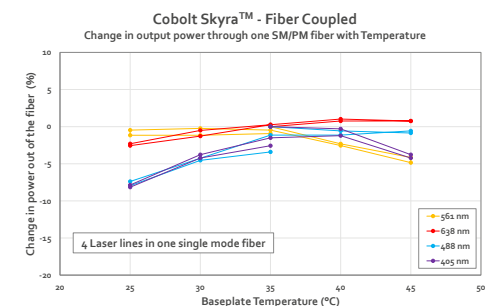
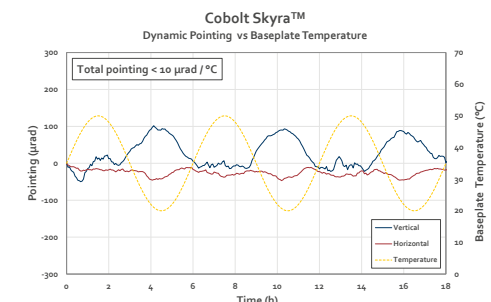
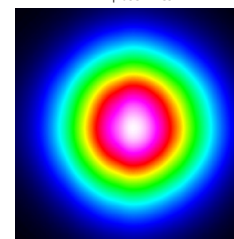
Cobolt Skyra™ is an extremely compact, permanently aligned, plug & play, multi-line laser with up to 4 laser lines and control electronics integrated into one single, temperature-controlled package, small enough to fit in the palm of your hand!

The laser is built using Cobolt's proprietary HTCure™ manufacturing technology for robustness in a compact, hermetically sealed package. HTCure™ results in an ultra-stable, permanent alignment of optical elements, with very precise and stable overlap of the combined output beams.

The Cobolt Skyra™ is intended for stand-alone use in laboratory environments or for integration as OEM components in instruments for applications including fluorescence microscopy and flow cytometry.



Cobolt Skyra™ - Combined Beam
All 4 laser lines



Cobolt Skyra™

Available Wavelengths and Power levels

Options & Accessories

- Laser head heat sink HS-05
- Control box with key-switch (CDRH)
- Integrated fiber coupling 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)
405	120
445	120
473	120
488	80
515	100
532	200
553	100
561	150
633	100
638	120
647	120
660	120

	532 nm	553 nm	561 nm	405 nm	445 nm	473 nm	488 nm	515 nm	633 nm	638 nm	647 nm	660 nm
	Cobolt DPL			Cobolt MLD								
Center Wavelength (nm)*	532.1 ± 0.3	552.8 ± 0.3	561.2 ± 0.3	405 ± 5	445 ± 5	473 ± 5	488 ± 5	515 ± 5	633 ± 5	638 ± 5	647 ± 5	660 ± 5
Power (mW)	50 100	50	50	50 100	50	50	50	50	50	50	50	50

* One DPL laser line at 532nm, 553nm or 561nm can be combined with any 3 of the MLD wavelengths. The wavelength difference between each line must be at least 15 nm.

Optical Specifications

Beam diameter at aperture	700 ± 100 µm
Beam symmetry	> 0.85 : 1
Beam divergence, full angle	< 1.8 mrad
Spatial mode (TEM ₀₀)	M ₂ < 1.25
Polarization extinction ratio	> 100:1, vertical
Noise 250 Hz - 2 MHz (rms)	< 0.3 %
Power stability over 8 hrs	< 3 %
Beam position accuracy	< 0.5 mm
Beam angle accuracy	< 5 mrad
Ambient temperature & pointing - 20-50 °C	< 10 µrad / °C
Beam position overlap at exit	< 50 µm
Beam-to-beam angle deviation	< 250 µrad

Operation Environment Specifications

Power supply requirements	12 VDC, 6.67 A
Power consumption, total system	60 W
Maximum baseplate temperature	50 °C
Ambient temperature, operation	10 - 40 °C
Storage temperature	- 10 °C to +60 °C
Laser Head heat sink thermal impedance at 40 °C ambient	< 0.17 K/W
Warm-up time from complete "off"	< 3 min
Communication protocol	USB or RS 232
Warranty	12 months

Modulation Specifications

	MLD	DPL
Digital modulation		
Bandwidth	DC - 5 MHz	DC-5 kHz
Extinction ratio	> 10 000 000 : 1 (> 70 dB)	> 50 dB
Rise/fall time	< 60 ns	< 60 µs
Analog modulation		
Bandwidth	DC - 500 kHz	DC-5 kHz
Extinction ratio	> 10 000 000 : 1 (> 70 dB)	> 50 dB
Rise/fall time	< 1 µs	< 100 µs
Internal modulation		
Bandwidth	500 Hz	500 Hz

Model Number

ML-AAA-BBB-CCC-DDD-XXX-YYY-ZZZ-QQQ-WWW

Wavelength Laser 1 - 4

Power Laser 1 - 4

Configuration:

100 = USB, CE / CDRH Compliant

200 = USB, OEM

300 = RS-232, CE / CDRH Compliant

400 = RS-232, OEM

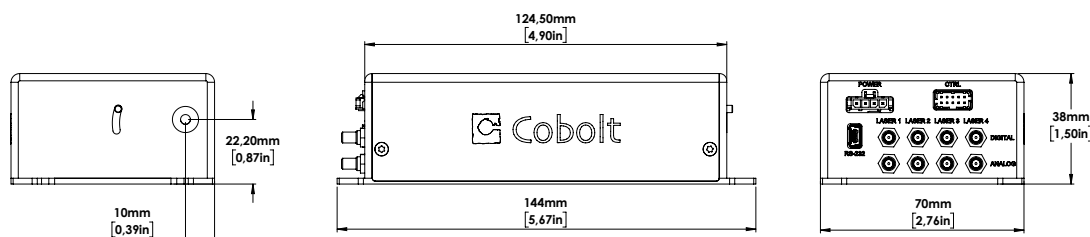
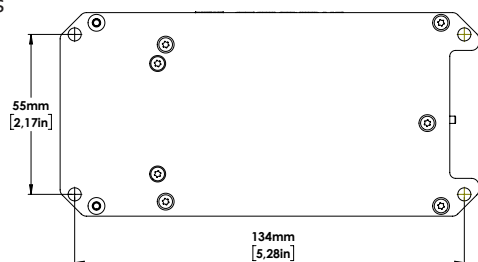
xxx = OEM customization

ML = Free beam multiline laser
 MF = Fiber coupled option

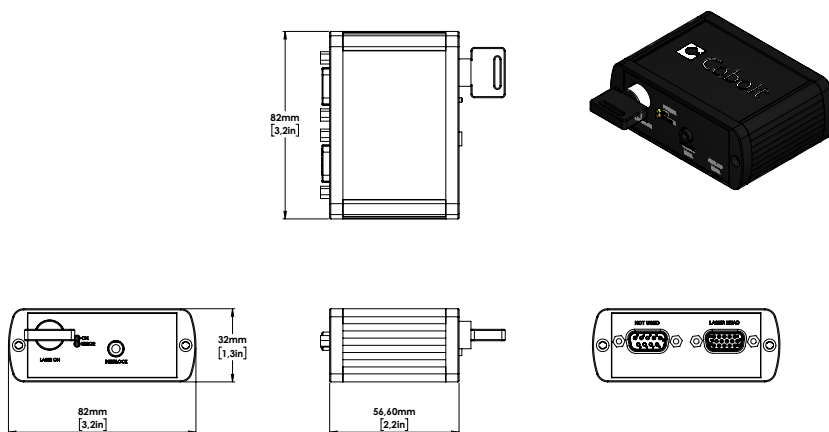
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Mechanical Specifications

Laser head dimensions



Key control box dimensions



Electrical Interface

Interface	Location	Connector Type
Input power	Laser Head	4 pin Molex (43650-0421)
Remote interlock connector	Laser Head	CTRL (10 pin Molex) pin 1 and 2 (OEM Only)
Data port	Laser Head	USB-type mini B (USB and RS-232 communication)
Key control Box connector	Laser Head	10 pin Molex (87832-1020)
Digital modulation	Laser Head	SMB male (1-4)
Analog modulation	Laser Head	SMB male (1-4)
Laser Head connector	Key control box	VGA D-SUB 15-pin male
Remote Interlock connector	Key control box	CDRH : 3.5 mm audio female

Mechanical Interface

Laser head dimensions	144 x 70 x 38 mm
Key control box dimensions	82 x 56 x 32 mm
Fixation holes, Laser head	Ø = 4 x 4.2 mm, 134 mm x 55 mm
Weight	< 0.6 kg

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