

LBX-647

Diode based laser source

Optical characteristics *

Emission wavelength 647nm (-1/+4 nm tolerance)

Linewidth, FWHM ≤ 1.2 nm

Part number	Free space output	Fiber-coupled output	
		Single mode	Multi mode fiber
LBX-647-140-CSB-(OE)/PPA)	140 mW	98 mW	112 mW

Power stability $\pm 0.5\%$
over 8 hour, temperature within +/-3°C

Power adjustment range 0 to 100%

Control modes Automatic Power Control (APC)
Automatic Current Control (ACC)

Optical noise $\leq 0.2\%$ rms
10 Hz-20 MHz bandwidth

External modulations

Analog Modulation

Rise / fall time ≤ 150 ns

-3dB modulation bandwidth ≥ 3 MHz

Digital Modulation

Rise / fall time ≤ 2 ns

-3dB modulation bandwidth ≥ 150 MHz

Transverse singlemode free-space beam

Beam diameter (typ) at $1/e^2$,
5 cm from the beam aperture 1 mm

Beam divergence at $1/e^2$
full beam, in far field 1.3 mrad

Beam quality factor $M^2 \leq 1.25$

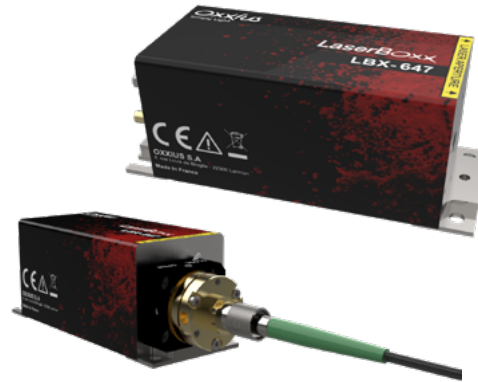
Beam circularity, in far field $\geq 90\%$

Polarization state Linear, vertical at $\pm 5^\circ$

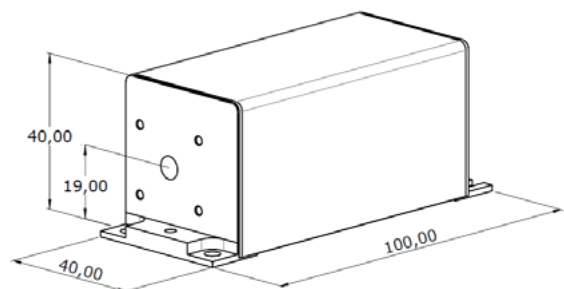
Polarization $\geq 100:1$

General specifications

	Plug and Play version	OEM version
Compliance	CE FDA 21 CFR 1040.10/1040.11	FDA 21 CFR 1040.10 / 1040.11
Operating temperature	10 to 38°C ambient air with optional heat sink	10 to 50°C baseplate
Power consumption	2 w typ. / 10 W max.	
Storage temperature	0 to 60°C	
Humidity	Up to 90%RH, non-condensing	
Supply voltage	100 to 240 VAC external power supply	5 to 12 VDC
Warm-up time	≤ 2 minutes	
Interfaces	USB ControlBoxx controller	USB, RS-232, electronic interface



Mechanical drawings



Plug and Play version provide with:

- ControlBoxx controller
- Manual shutter
- DC power supply

Available options

- OPT-SHTE-LCX Electro-mechanical shutter
- ACX-HTSK-1 Heat sink for operation in ambient air up to 38°C
- ACX-EXK Flange for improved stability
- OPT-CLUP-647 Clean-up filter

Fiber coupling options **

	ACX-FCSMUV or ACX-FCPMUV	ACX-FCMM-R50
Power stability over 8 hours and within $\pm 3k$	$\pm 2.0\%$	$\pm 2.0\%$
Fiber optical characteristics	3.5 μ m core diameter 0.11 N.A	50 μ m core diameter 0.22 N.A
Polarization extinction ratio (ACX-FCPM only)	$\geq 100:1$	n/a
Fiber output connector	FC/APC	FC/APC
Fiber length	2 m	2 m

Warranty : 12 months from shipment date

*Specifications at nominal power

** Variant are available on demand



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