

LBX-638

Laser Diode

Optical characteristics *

Emission wavelength	638 nm (-6/+4 nm)	
Linewidth	≤1.2 nm	
Output power	Free space	Fiber coupled
	100 mW	70 mW
	150 mW	105 mW
	180 mW	120 mW
Control mode(s)	Automatic Power Control (APC) Automatic Current Control (ACC)	
Power stability over 8 hours and within ±3k	±0.5%	
Power adjustment range	0 - 100%	
Optical noise %RMS, 10Hz - 20 MHz bandwidth	≤0.2%	

— Transverse singlemode free-space beam

Beam waist diameter (typ)
at 1/e², 50mm from output aperture

0.9 mm

Beam divergence
at 1/e², full angle, in far field

≤ 1.3 mrad

Beam quality factor (M²)

≤ 1.25

Beam circularity,
in far field

≥ 90%

Polarization extinction ratio (typ)

50:1
(not specified for LBX-638-180)

Polarization state

linear, vertical at +/-5°
(not specified for LBX-638-180)

— Modulation functions

Digital Modulation

Max modulation frequency

150 MHz

Rise/fall time, 10%-90%

≤ 2 ns

Analog Modulation

Bandwidth

3dB cut-off frequency, ACC mode

≥ 3 MHz

Rise/fall time, 10%-90%

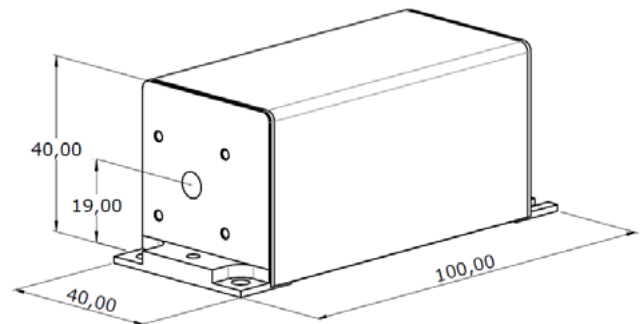
≤ 150 ns

Fiber coupling option

	SM and PM Fiber	MM Fiber (50 μm, 0.22 NA)
Coupling Efficiency	≥ 70%	≥ 80%
Polarization Ratio (PMF only)	100 : 1	n/a
Fiber Output Connector	FC-APC FC/PC, FCP8 on demand	FC-APC
Power stability over 8 hours and within ±3k	±2%	±2%
Fiber length	2.0 m	2.0 m



Mechanical drawings



— Plug and Play version provided with :

- ControlBoxx
- Power supply

Options

- Electro-mechanical shutter
- Heat sink
- Clean-up filter

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 - 38°C ambient air with optional heat sink	10 - 50°C baseplate
Power consumption	≤ 25 W	≤ 10 W
Storage temperature	0 to 60°C	
Supply voltage	100 to 240 VAC external power supply	5 to 12 VDC
Warm-up time	≤ 2 minutes	
Interfaces	USB, RS-232, dedicated electronic interface	

Warranty : 12 months from shipment date

*Specifications at nominal power

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