

# LBX-638

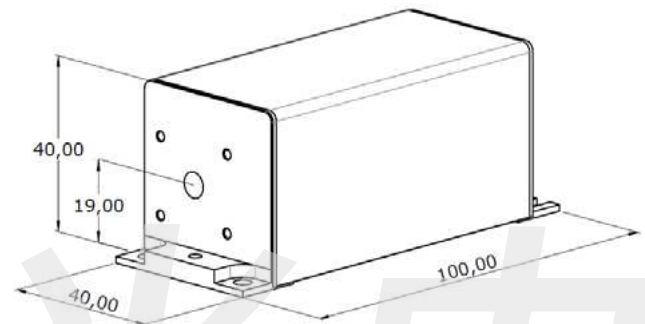
Laser Diode

## Optical characteristics \*

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



## Mechanical drawings



## — Transverse singlemode free-space beam

**Beam waist diameter (typ)**  
at 1/e<sup>2</sup>, 50mm from output aperture

0.9 mm

**Beam divergence**  
at 1/e<sup>2</sup>, full angle, in far field

≤ 1.3 mrad

**Beam quality factor (M<sup>2</sup>)**

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

## — 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                  |
|------------------------------|---|------------------------------|
| <b>Compliance</b>            | CE<br>FDA 21 CFR 1040.10/1040.11              | FDA 21 CFR 1040.10 / 1040.11 |
| <b>Operating temperature</b> | 10 - 38°C ambient air with optional heat sink | 10 - 50°C baseplate          |
| <b>Power consumption</b>     | ≤ 25 W  | ≤ 10 W                       |
| <b>Storage temperature</b>   | 0 to 60°C                                     |                              |
| <b>Supply voltage</b>        | 100 to 240 VAC<br>external power supply       | 5 to 12 VDC                  |
| <b>Warm-up time</b>          | ≤ 2 minutes                                   |                              |
| <b>Interfaces</b>            | USB, RS-232, dedicated electronic interface   |                              |

Warranty : 12 months from shipment date

\*Specifications at nominal power



## CONTACT US

Oxxius S.A  
4 rue Louis de Broglie

Phone : +33 296 48 70 28  
sales@oxxius.com

F-22300 Lannion, France, www.oxxius.com @auniontech.com