monocrom
LASER DIODE DEVICES

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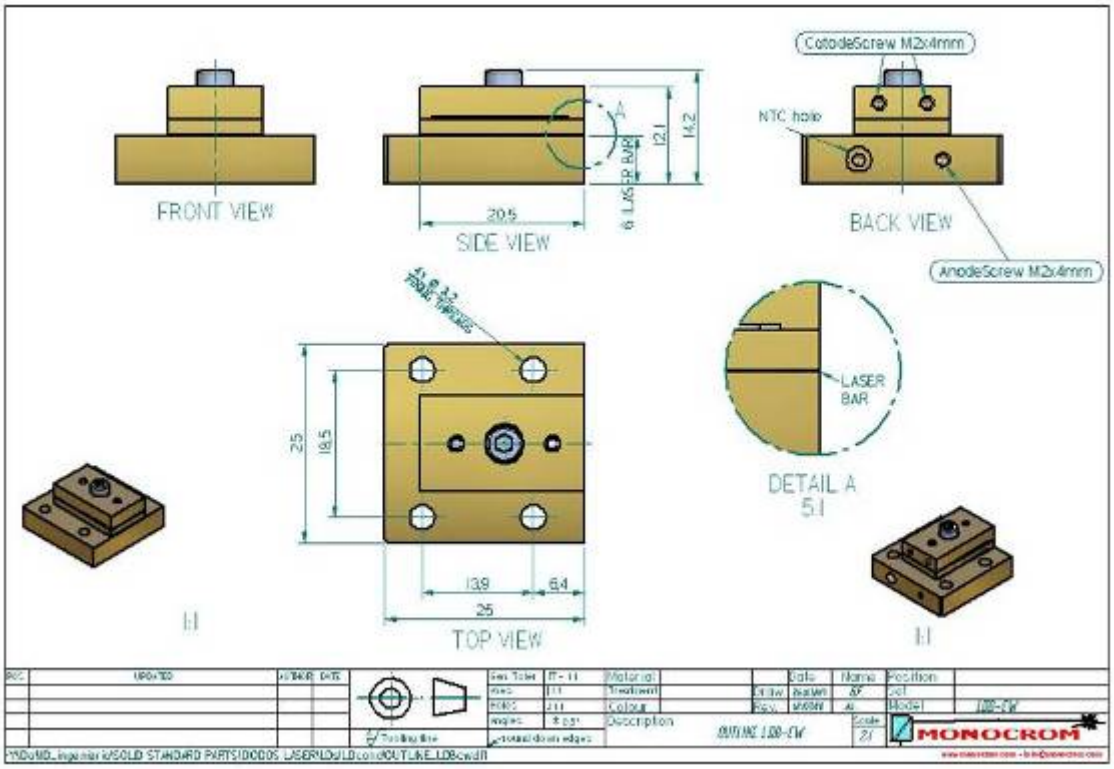
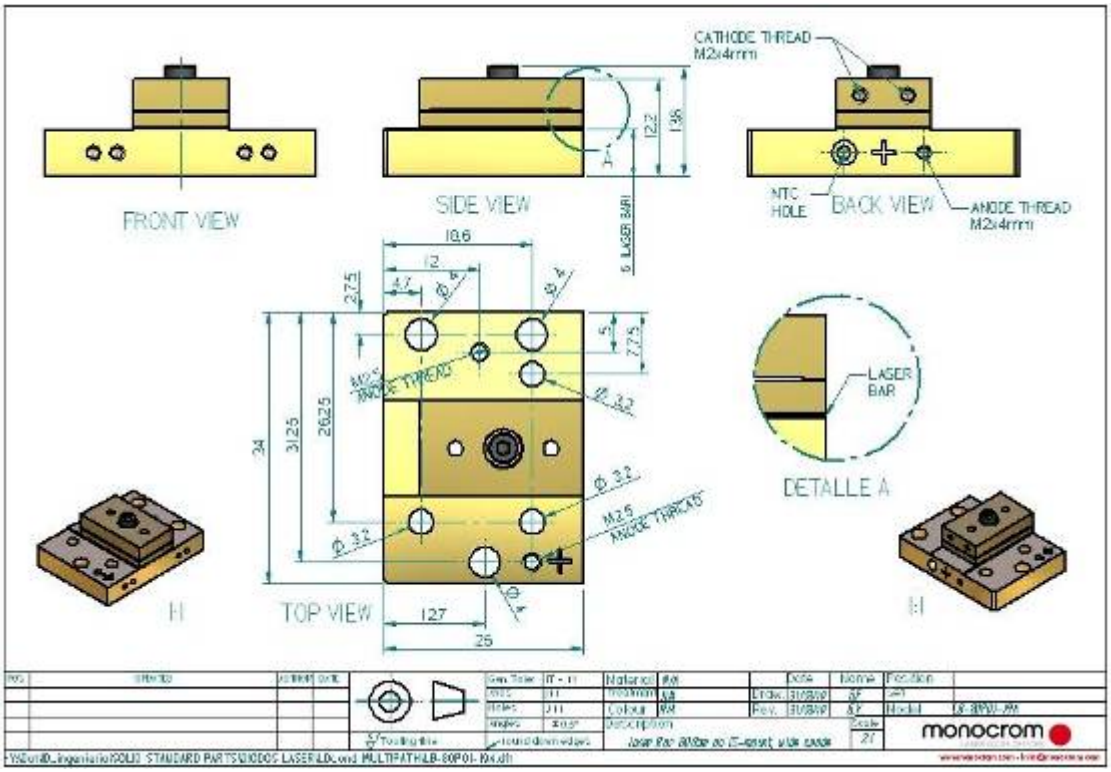
| | |
|---|---|
| Product Division | LDBA — **Laser Diode Bar Assemblies** |
| Product | B-XXVYY-ZZWWWTTPFHD Series |
| Description | Single Laser Bar for CW and QCW, conductive cool,<br>B: Model, Laser Bar, XX: Wavelength, V: Type Cooling, YY: Number of Bar, ZZ: Number of emitters,<br>WWW: Operation Mode, TT: Collimation Lenses, P: Level of Power, F: Fill Factor Bar,<br>H: Height bar, D: Dimension Bar |
| Main Features | Solder-free diode bar mounting technology, exclusive from MONOCROM S.L.<br>The main features of the solder-free concept of the clamp-mounting technology are:<br>● Long lifetime, due to the absence of the mechanical stress caused by the soldering process at high temperature<br>● Minimum “smile”, less than 0.5 □m<br>● High reliability in pulsed conditions, since the clamped bars do no suffer the same fatigue effect than the soldered ones due to the thermal cycle<br>● Small thermal resistances, owing to the reduction of the contact resistance between electrodes and laser bar. No micro channels are needed to reach low thermal resistances.<br>● Large storage temperature interval, tested from –60ºC to + 85ºC |
| Some Applications | ● Extreme Environmental conditions – aeronautics, space, automotive industry.<br>● Pulsed-Energy mode – medicine, aesthetic, laser pumping.<br>● Material processing – fibre coupling, plastic and metallic industry, research. |
| Pictures of different models |  <br>For CW operation<br>  <br>For QCW operation |

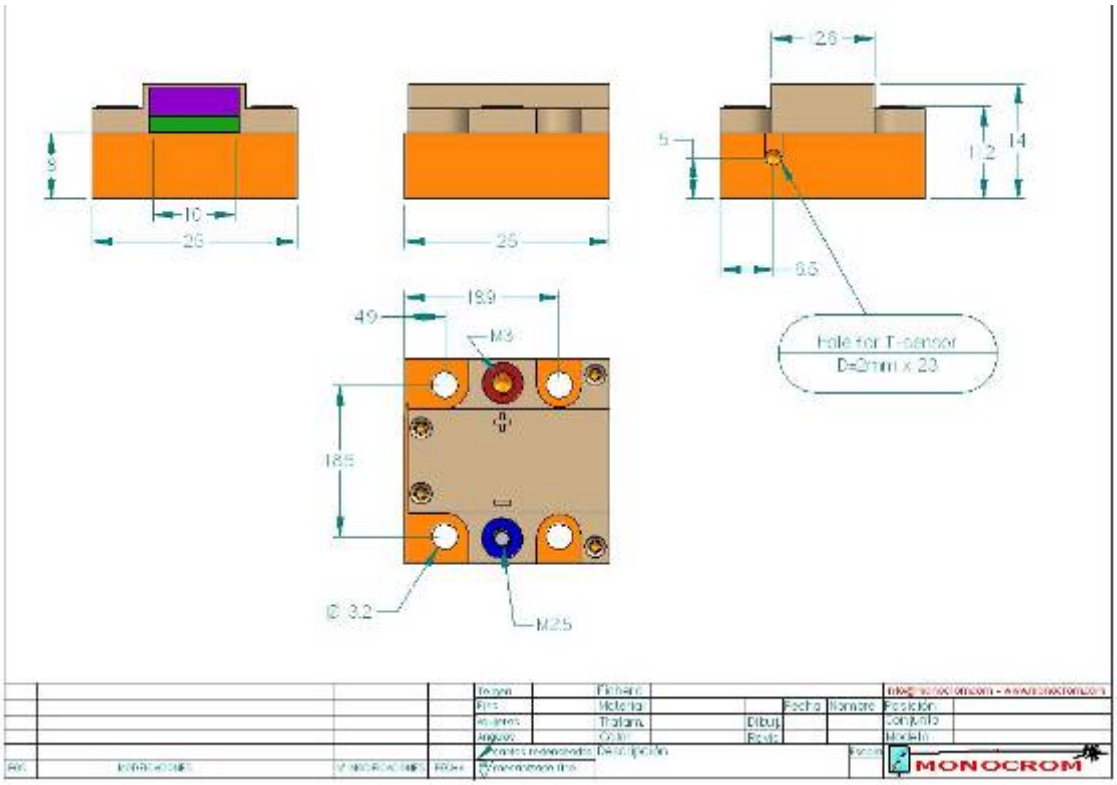
Outline of CW Mounting



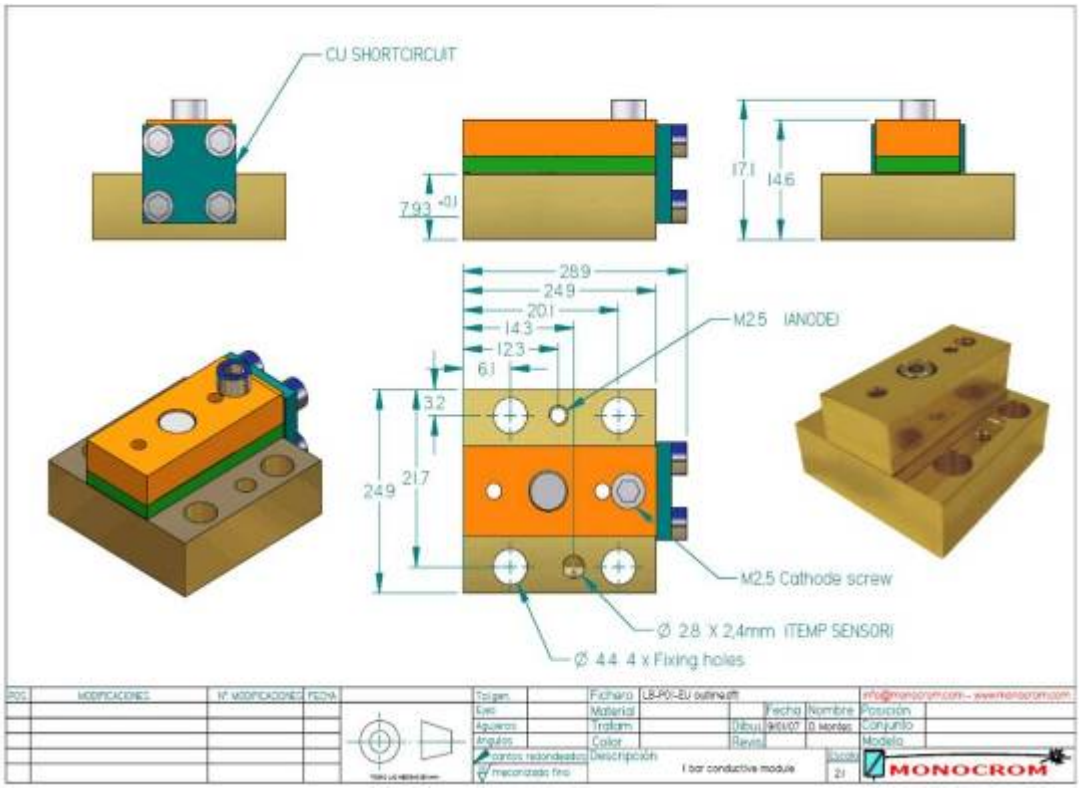

**Bar Height: 6mm**




**Bar Height: 6mm. Wide anode**

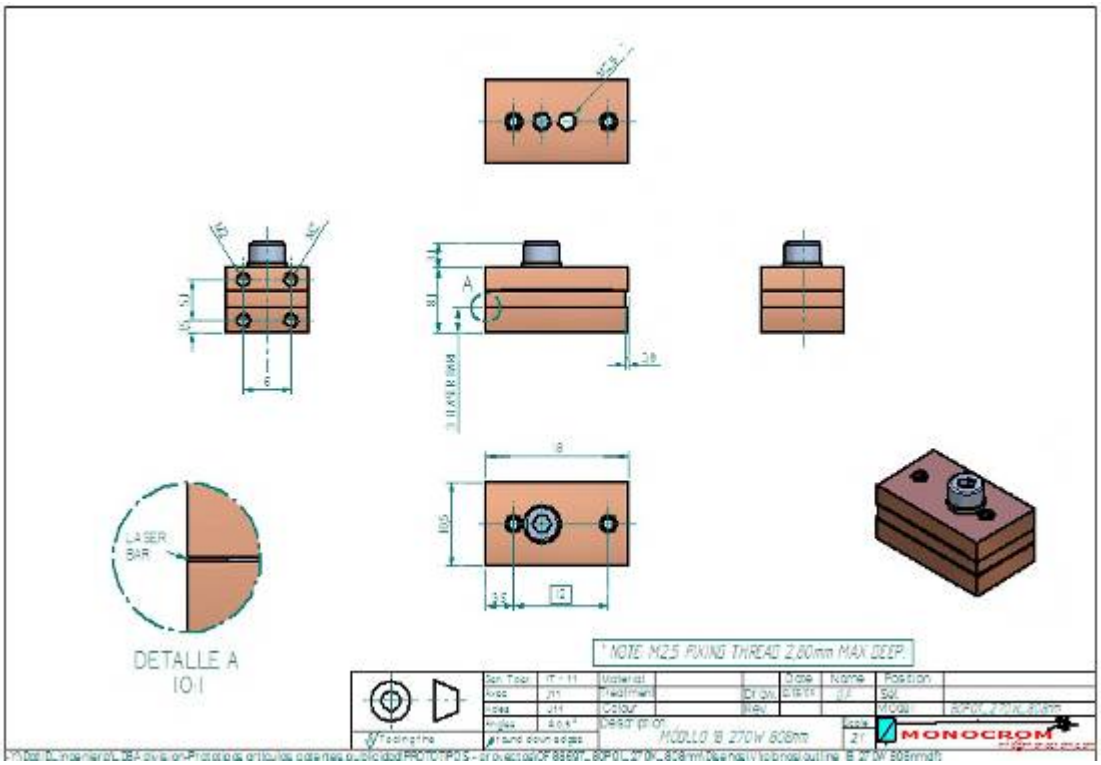



Bar Height: 8mm. Plastic Cover

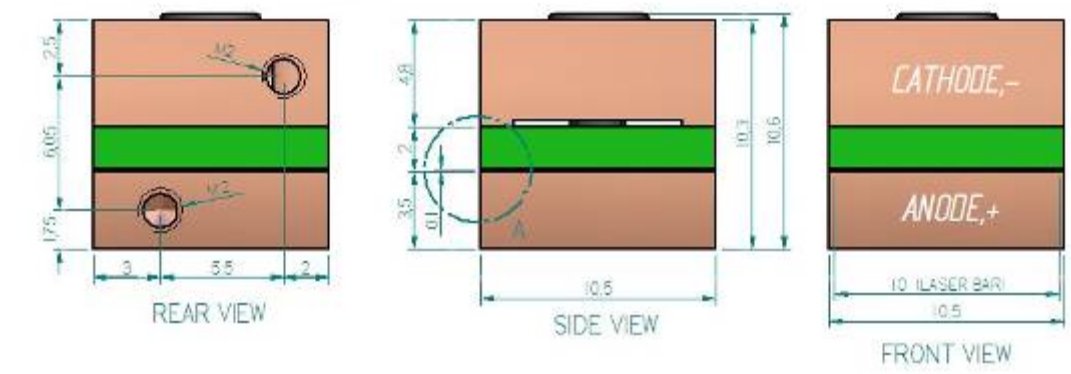


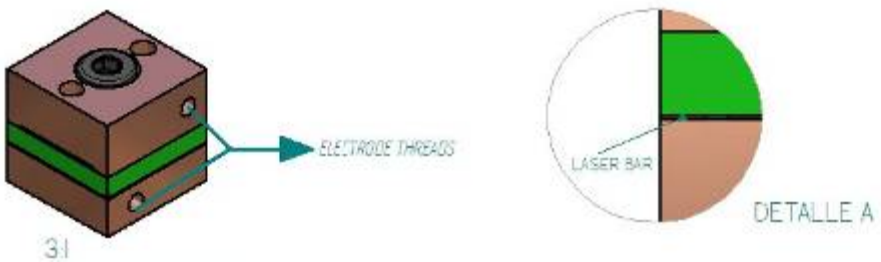

Bar Height: 8mm, compatible with other commercial CS-mount

Outline of QCW Mounting




Standard mounting for QCW




Compact design

**Other customized designs under request**

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# LB-XXP01-YYZCW | GENERAL TECH SPECIFICATIONS

| | | | | | | |
|---|---|---|---|---|---|---|
| Product Reference (according to type of diode) | Single Bar mounted; XX: Wavelength, P passive cooling; YCW: QCW or CW operation<br>With or without fast and/or slow axis collimation. | | | | | |
| | LB-XXP01-19YCW-20 | LB-XXP01-19YCW | LB-XXP01-49YCW | LB-XXP01-49CW-2 | LB-XXP01-60QCW | LB-XXP01-60QCW-2 |
| N° of emitters in the laser bar[1] | 19 | 19 | 25 – 49 | 25-49 | 60-75 | 60-75 |
| Laser Bar geometry[1] | 1 cm wide<br>em. Size:100µm<br>em. Spacing:500 µm | 1 cm wide<br>em. Size:150µm<br>em. Spacing:500 µm | 1 cm wide<br>em. Size:100/200µm<br>em. Spacing:200/400 µm | 1 cm wide<br>em. Size:100/200µm<br>em. Spacing:200/400 µm | 1 cm wide<br>em. Size:110/150µm<br>em. Spacing:130/160 µm | 1 cm wide<br>em. Size:110/150µm<br>em. Spacing:130/160 µm |
| Fill factor | 20% | 30% | 50% | 50 % | 80 – 90% | 80 – 90% |
| Center wavelength | 780 – 1064 nm (780, 790, 800, 810, 910, 940, 975, 1060) | | | | | |
| Typical Spectral Bandwidth FWHM (nm) | 2 – 3,5 nm | | | | | |
| Wall Plug efficiency (W/A, %) | Up to 70% | | | | | |
| Max. peak power | 60W CW<br>80W QCW | 50W CW<br>60W QCW | 60W CW<br>70W QCW | 100 W CW<br>125W QCW | 150W QCW | 270W QCW |
| Operation current (for max. power)[1] | 65-70A CW<br>80-85A QCW | 55-60A CW<br>60-65A QCW | 65-70A CW<br>75-80A QCW | 105-115A CW<br>125-135A QCW | 150-160A QCW | 260-270A QCW |
| Threshold current, typical[1] | 8 A | 8 A | 10 A | 25 A | 20 A | 30 A |
| Pulse length, QCW[2] | Up to hundreds of milliseconds | Up to hundreds of milliseconds | Up to hundreds of milliseconds | Up to hundreds of milliseconds | Up to tens of milliseconds | Up to milliseconds |
| Duty cycle (DC), QCW[3] | <50 % QCW | <50 % QCW | <50 % QCW | <50 % | <20% | <10% |
| Wavelength Temp.Coefficient | 0,27-0,3 nm/ºC | | | | | |
| Thermal resistance[3] | 0,6-0,8 ºC/W | | | | | |
| Smile | < +/- 0,3 µm | | | | | |
| Voltage @ Iop | 1,6-2,1 V ( Base to + voltage ) | | | | | |
| ΔV/I(1) | 2-2.5 mV/A | | | | | |
| Beam divergence FWHM[1] | Typical high divergence without collimation optics (~30º-fast axis; 10º-slow axis) | | | | | |
| Beam divergence with FAC or FSAC[4] | FAC: FA(3-6mrad)<br>SA 10°<br><br>FSAC:FA(3-6mrad)<br>SA (2-4°) | FAC: FA(3-6mrad)<br>SA 10°<br><br>FSAC:FA(3-6mrad)<br>SA (3-5°) | FAC: FA(3-6mrad)<br>SA 10° | | | |
| Cooling | Conductive | | | | | |
| Operation temperature[5] | <25ºC.<br>If wet atmosphere, T>15ºC is recommended | | | | | |
| Electrical connections, typical | On the top: Threads M2,5mm<br>Behind: Fast connectors (Pin ∅2x10mm), or threads M2mm | | | | | |
| Laser class product (EN-60825) | 4 | | | | | |
| Expected lifetime | 10.000 hours CW<br>$10^9$ shots QCW tp<1ms<br>$10^8$ shots QCW tp>1ms | | | | | |

1) These values could change depending on the type of laser bars chosen by customer.
2) Higher values also available for lower operation current
3) The module should be cooled properly to achieve these values
4) FSAC is only possible with laser bars of 19 emitters
5) Operation temperature could be increased for lower DC, up to 45ºC for 1%DC

**Device sensitive to ESD & dust contamination => Handling under clean area conditions advised.**

**Parametrical and dimensional specifications can be modified upon request.**

*Ordering Information:*

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