

Business
Division



Laser Diode Bar Assemblies

Product

LB-80A10-25CW-2

Description

LBS 25em., 10 bars, 808 +/- 3 nm @ 80W/bar up to 800W CW, 120W/bar up to 1200W QCW, water –cooling (Fast Axis Collimation optional)

Main
Features

Solder-free diode bar mounting technology, exclusive from MONOCROM S.L.

The main features of the solder free concept of the clamp-mounting technology are:

- **Long lifetime**, due to the absence of the mechanical stress caused by the soldering process at high temperature.
- **Minimum “smile”**, less than 0.5 mm.
- **High reliability in pulsed conditions**, since the clamped bars do not suffer the same fatigue effect than the soldered ones due to the thermal cycle.
- **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.
- **Large storage temperature interval**, tested from –60°C to + 85°C.
- Monocrom active mounting uses millimetre-water channels instead of microchannels. **NORMAL WATER CAN BE USED FOR COOLING.** No problems of obstruction or channel degradation exist.

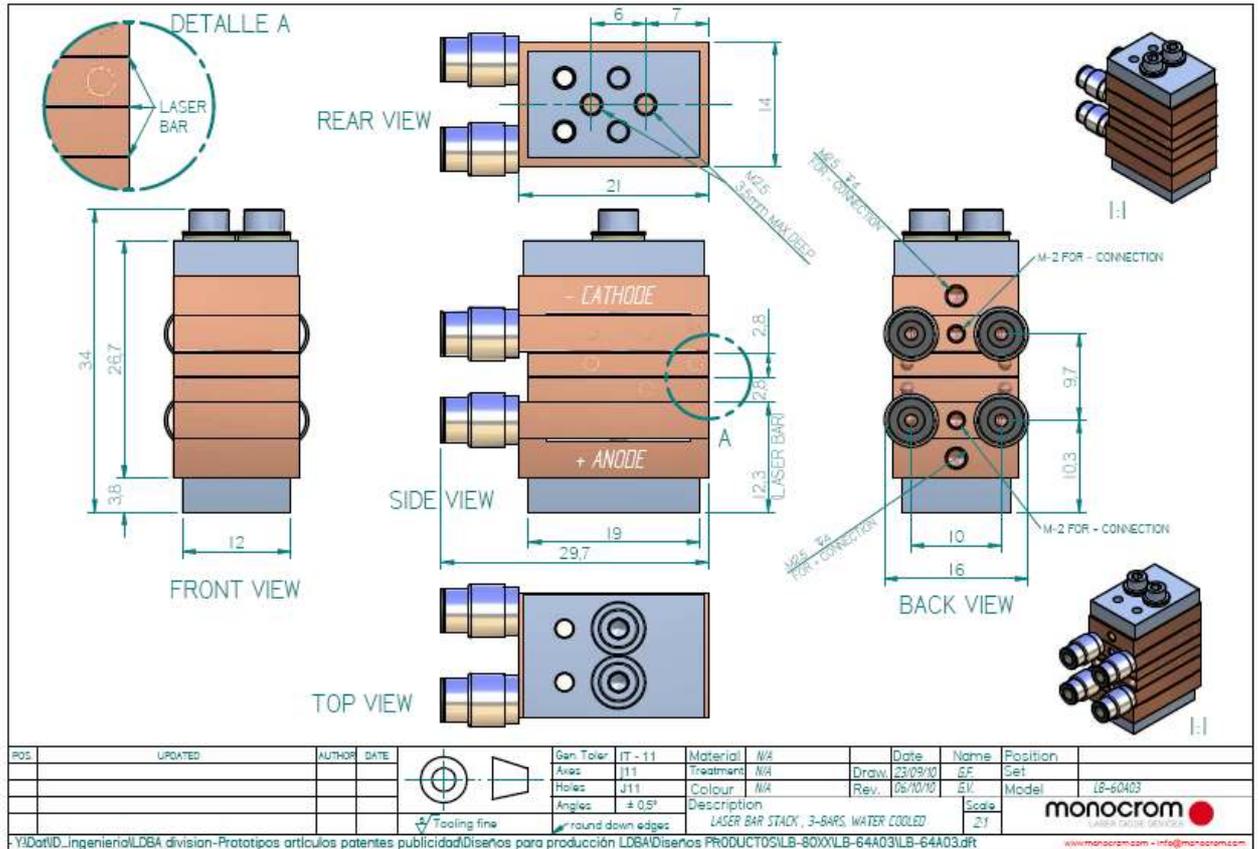
Main
Applications

- **Extreme Environmental conditions** –aeronautics, space, automation–
- **Pulsed-Energy mode** –medicine, aesthetic, laser pumping–
- **Material processing** –fibre coupling, plastic and metallic industry, research–

Picture(s)



Outline



(Example for three-bar stack)

Ordering Information:



800 Village Walk #316
 Guilford, CT 06437
 Ph: 203-401-8093

Email orders to: sales@xsoptix.com
 Fax orders to: 800-878-7282



LBS-80A10-25CW-2-FSAC | GENERAL TECH SPECIFICATIONS

Product number (according to type of diode)		LB-80A10-25CW-2-FAC; 10 bars 810 nm, water cooled, 100W-25em. bars. Fast axis collimation	
Number of laser bars		10	
Number of emitters in each laser bar		25	
Laser bar geometry		1 cm wide emitter size: 200 μ m	50% fill factor emitter spacing: 400 μ m
Center wavelength		808 \pm 3nm	
Output peak power, Pop Maximum ⁽¹⁾	CW	800W	
	QCW	1200 W	
Operation current, Iop	CW	90 A	
	QCW	120 A	
Threshold current, typical		20 A	
Operation voltage		< 20 V	
Pulse length in QCW		No-limitations	
Duty cycle, Max		< 50%	
Wavelength FWHM ⁽²⁾		2,5 nm	
Polarization		TE	
Wavelength Temp. Coefficient		0,3 nm/°C	
Thermal resistance @ 1l/min		<0,08 °C/W	
Collimation		Cylindrical lenses on each diode bar, glued at the laser stack 5% power losses expected from lenses	
Beam divergence without collimation		Fast axis \approx 35°, slow axis \approx 10°	
Beam divergence with FAC		Fast axis \approx 3-6 mrad, slow axis \approx 10°	
Laser spot size after optics (Height x width)		23 x 11 mm	
Total stack size (Height x width x depths)		35x14x30 mm	
Cooling System		TAP water (distilled water with 5% ethylenglycol is recomm.)	
Water pressure		2-3 bars	
Water flow		>1 l/min	
Diode operation temperature, for max.Power		<20°C. If wet atmosphere, T>15°C is recommended	
Electrical connections		Fast connectors (Pin \varnothing 2x10mm), or threads M2	
Water connections		Water flow outlet for \varnothing 3mm tube	
Water tubes		Rigid tube \varnothing int.2mm / \varnothing ext.3mm	
Laser class product (EN-60825)		4	
Expected lifetime		10 ⁴ hours	

1) Peak power before collimation lenses

2) Spectral Width per bar. The total spectral width of the stack will depend on the centre wavelength tolerance of the bars forming the stack, on duty cycle and pulse width

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

Parametrical and dimensional specifications can be modified upon request.