
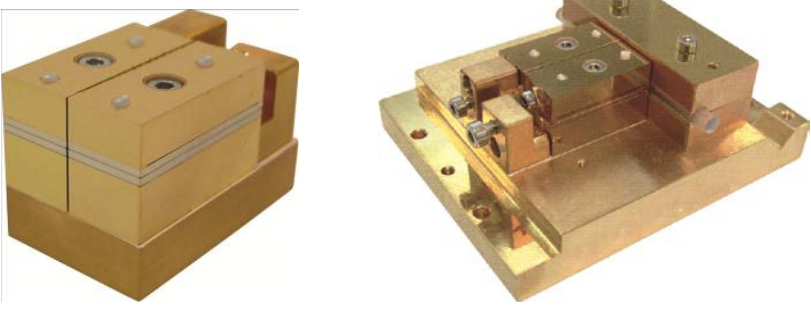
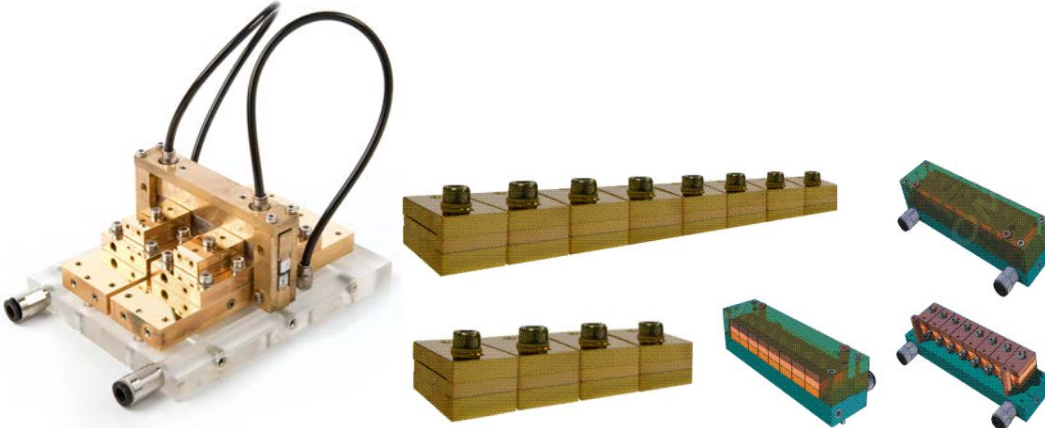
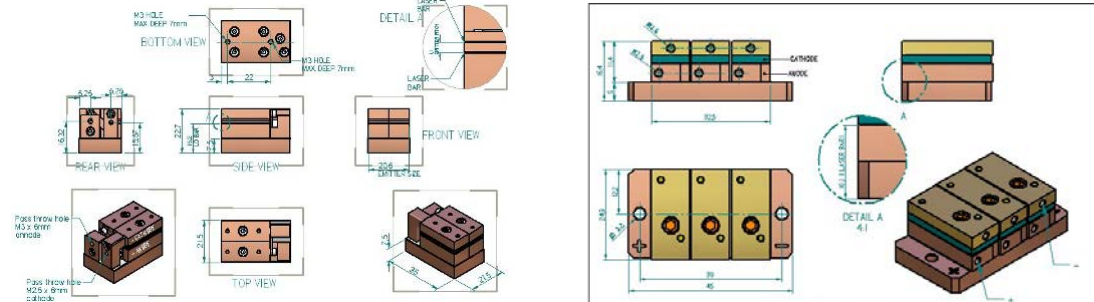
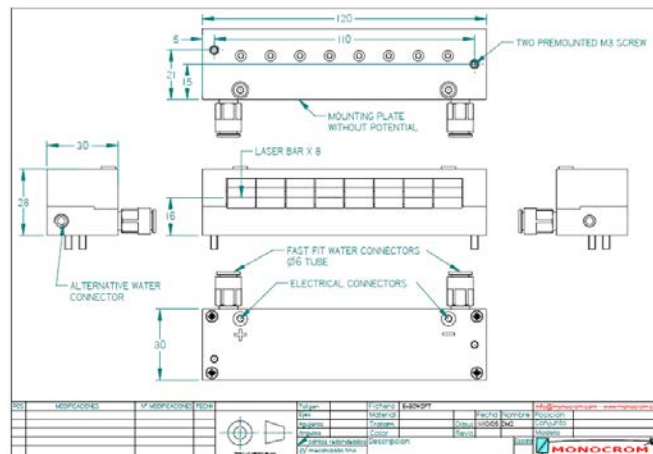


Product Division	 <b>LDBA</b> <b>Laser Diode Bar Assemblies</b>
Product	<b>LBH-80XYY-ZZMMM series</b>
Description	<p>Horizontal laser bar stack for pumping applications.</p> <p>With or without fast and slow axis collimation. Water or conductive cooling system.</p> <p>No micro-channels are used.</p>
Main Features	<p>Solder-free diode bar mounting technology, exclusive from MONOCROM S.L.</p> <p>The main features of the solder free concept of the clamp-mounting technology are:</p> <ul style="list-style-type: none"> <li>● Long lifetime, due to the absence of the mechanical stress caused by the soldering process at high temperature.</li> <li>● Minimum “smile”, less than 0.5 mm</li> <li>● 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.</li> <li>● 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.</li> <li>● Large storage temperature interval tested from -60°C to + 85°C.</li> <li>● Monocrom active mounting uses millimetre-water channels instead of micro channels. <b>NORMAL WATER CAN BE USED FOR COOLING.</b> No problems of obstruction or channel degradation exist.</li> </ul>
Some Applications	<b>Pumping applications</b>
Picture(s)	<div>  <p>(Examples of conductive cooling stacks)</p> </div> <div>  <p>(Examples of water cooling horizontal stacks)</p> </div>
	GVM 2009



(Examples of conductive cooling stacks)



(Examples of water cooling horizontal stacks)

Outline

## LBH-80XYZ-ZZMMM | GENERAL TECH SPECIFICATIONS

Product number (according to type of diode)		LBH-80XXY-ZZMMM					
		Horizontal stacked bars, 808 nm, X = A Active cooling, P Passive Cooling; YY: N° of bar, ZZ N° Of Emitters; MMM: CW or QCW					
		LBH-80PXX-19MMM	LBH-80AXX-19MMM	LBH-80PXX-49MMM	LBH-80AXX-49MMM	LBH-80PXX-60MMM	LBH-80AXX-60MMM
Number of emitters in the laser bar <sup>(1)</sup>		19		49		60	
Laser Bar geometry <sup>(1)</sup>		1 cm wide emitter size: emitter spacing:	30% fill factor 150 μm 500 μm	1 cm wide emitter size: emitter spacing:	50% fill factor 100 μm 200 μm	1 cm wide emitter size: emitter spacing:	90% fill factor 150 μm 160 μm
Output power, Max. Pop, <sup>(2)</sup>	CW	40xN°bars W	50xN°bars W	40xN°bars W	50xN°bars W	-	-
	QCW	55xN°bars W	55xN°bars W	70xN°bars W	70xN°bars W	150xN°bars W	150xN°bars W
Operation current, typ. for Pmax, Iop	CW	40 – 45 A	50 – 55 A	45 – 50 A	55 – 60 A		
	QCW	55 – 60 A	55 – 60 A	75 – 80 A	75 – 80 A	150 – 160 A	150 – 160 A
Threshold current, typical		7 A	7 A	10 A	10 A	20 A	20 A
Wavelength FWHM @ Iop, typical		3 nm	3 nm	3,5 nm	3,5 nm	3,5 nm	3,5 nm
Pulse Length QCW <sup>(2)</sup>		Up to seconds	Without limits	Up to hundreds of ms	Without limits	Up to tens of ms	Up to tens of ms
Duty cycle, DC <sup>(2)</sup>		50%	50%	20%	50%	10%	20%
Center wavelength at 25°C <sup>(3)</sup>		808 ± 3nm					
Wavelength Temp. Coefficient		0,27-0,3 nm/°C					
Thermal resistance <sup>(4)</sup>		0,3-0,6 °C/W – water cooled			0,6-1 °CW-Conductive cooled		
Smile		< +/- 0,3 μm					
Voltage @ Iop		1,7-2,1 V ( Base to + voltage )					
ΔV/I		2 mV/A					
Beam divergence FWHM <sup>(1)</sup>		Typical High divergence without collimation optics (~30° - fast axis; 10°slow axis)					
Beam divergence after FAC collimation		Fast axis ≈ 3-6 mrad, slow axis ≈ 10°					
Water connection		Lateral (with fast connectors) or below					
Cooling		Conductive or Tap Water (distilled water with 5% ethylenglycol is recomm.)					
Water pressure (for water cooling)		2 – 3 bars					
Water flow (for water cooling)		>0,3 l/min					
LD Operation temperature <sup>(6)</sup>		<25°C. If wet atmosphere, T>15°C is recommended					
Expected lifetime		10.000 hours CW 10 <sup>9</sup> shots QCW tp<1ms 10 <sup>8</sup> shots QCW tp>1ms					
Electrical connections		On the top: Behind:		Threads M2,5mm Fast connectors (Pin ∅ 2x10mm), or threads M2mm			
Laser class product (EN-60825)		4					

(1) These values could change depending on the type of laser bars chosen by customer.

(2) Higher values could be also available on request

(3) Wavelengths from 780 to 1060 nm also available on request.

- (4) The module should be cooled properly to achieve these values. Low thermal resistance is possible without microchannels by cooling both anode and cathode with millimeter-channels. The different values depend on the type of mounting
- (5) Operation temperature could be increased for lower 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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