

Product  
Division



**LDBA**

## Laser Diode Bar Assemblies

Product

**LBS-80XX-YxYSa-2**

Description

Diode laser heads for **medical and aesthetical applications**.

Diode bars of 200W

**Cold-Sapphire** output optional.

Water cooled mount - No micro-channels are used.

Low power (**~1000W**), medium power and high power (**~5000W**) versions

Spot size from 0,64cm<sup>2</sup> to 4cm<sup>2</sup> (**High speed treatment**).

**30-70 J/cm<sup>2</sup> @ 1-3Hz; 10J/cm<sup>2</sup> @ 10Hz**. Typical fluencies for hair removal.

Compatible with standard operation modes (**AUTO, 30ms, 100ms, 400ms, motion,...**).

High adaptability, other configurations on request.

Main  
Features

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

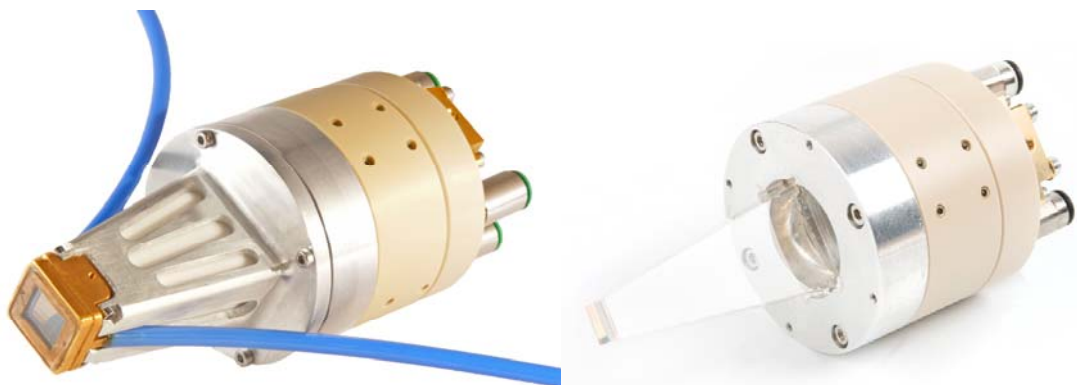
The main features of the solder free concept of the clamp-mounting technology are:

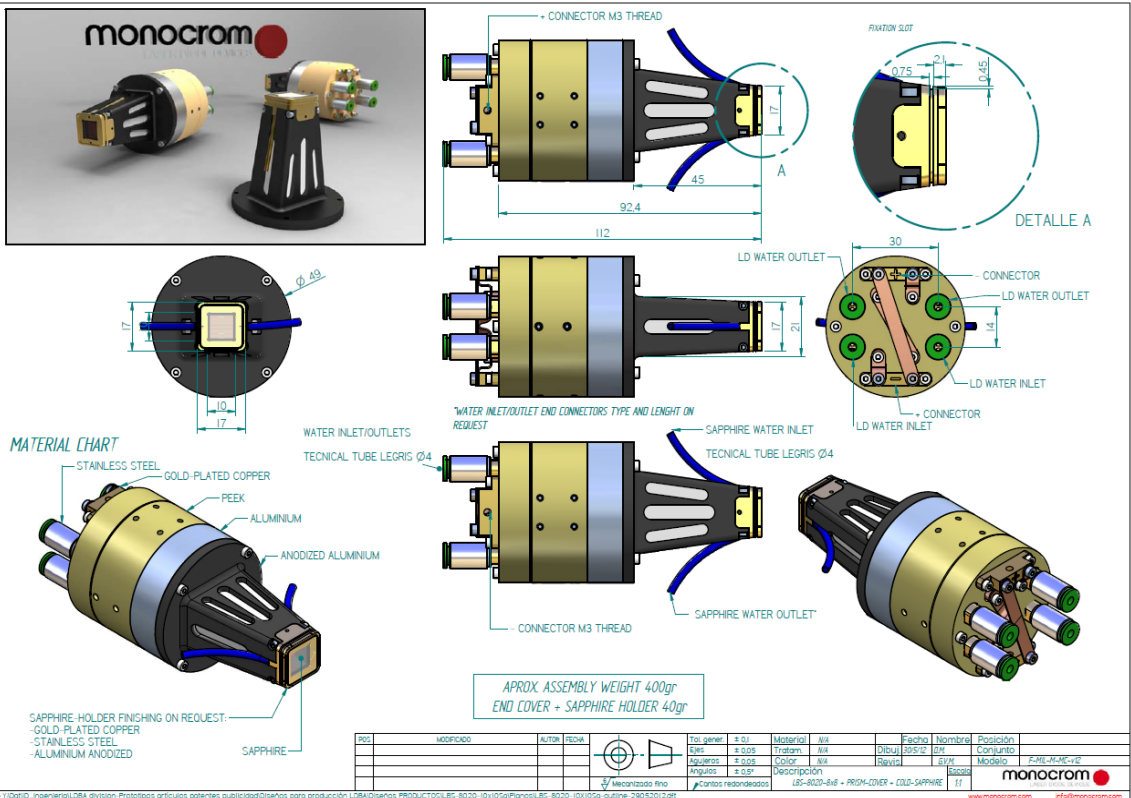
- **Long lifetime**, due to the absence of the mechanical stress caused by the soldering process at high temperature.
- **Minimum "smile"**, less than 0.5 mm.
- **High reliability in pulsed conditions**, since the clamped bars do no suffer the same fatigue effect than the soldered ones due to the thermal cycle. **More than 100.000.000 of shots**
- **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.

Some  
Applications

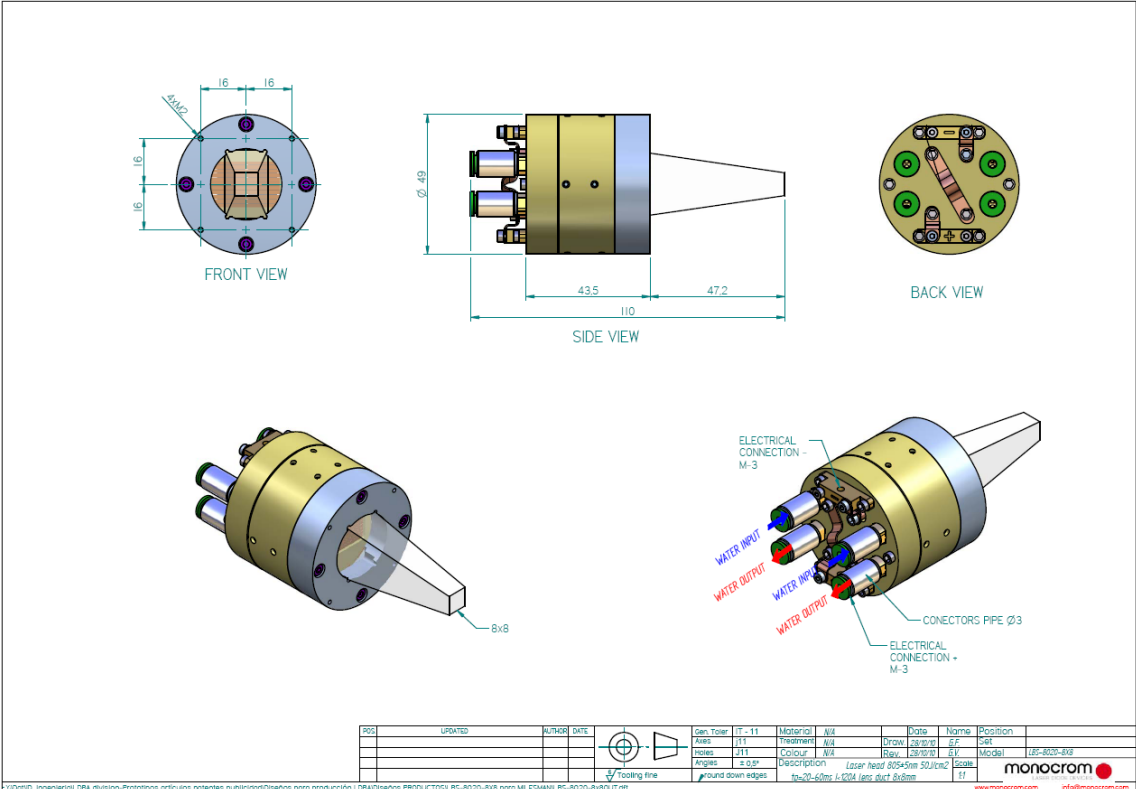
**Medical and aesthetical applications**

Picture(s)





Outline



(example of laser head)

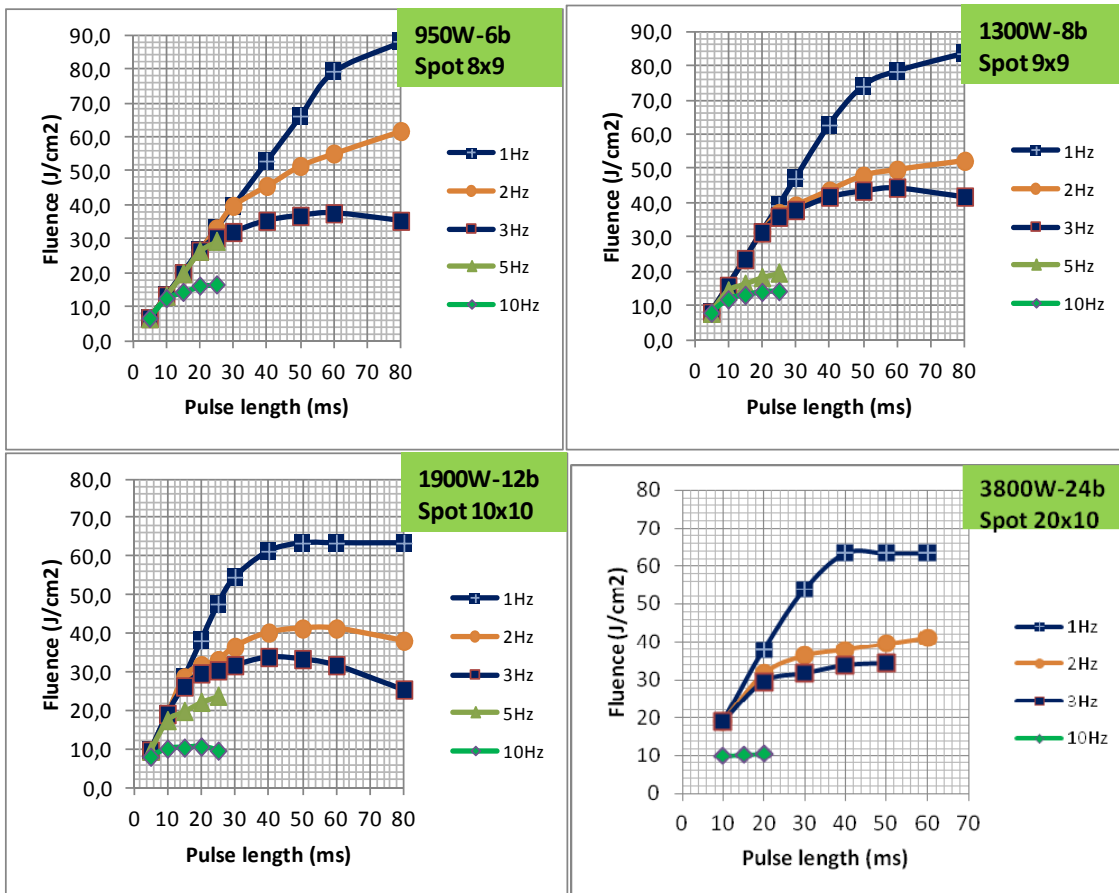
## LB-80XX-YXZSA | GENERAL TECH SPECIFICATIONS

<b>Product number</b>	<b>LBS-80XX-YXZSa-2</b> 800-810 nm, laser wavelength; XX: number of laser diode bars; YxZSa: output spot size after cold-Sapphire tip (without tip also available) 2: <b>NEW</b> diode bars of 200W			
<b>Number of bars</b>	XX: From 6 to 16 Standard versions: 6, 8, 12, 24			
<b>Spot size</b>	YxZ: From 8x8 to 16x25 mm <sup>2</sup> (other sizes on request) Standard versions: 8x9, 9x9, 10x10, 10x20			
<b>Wavelength <sup>(1)</sup></b>	800-810 nm			
<b>Peak power, P<sub>op</sub> <sup>(2)</sup>, Max.</b>	From 1000 to 5000W Standard versions: 950, 1300W, 1900, 3850W			
<b>Pulse duration, t<sub>p</sub> <sup>(4)</sup></b>	<500ms <60ms using continuous pulses 60-500ms using burst of pulses			
<b>Frequency/repetition rate, f</b>	1-3 Hz (>30J/cm <sup>2</sup> ) 5-15Hz (>10J/cm <sup>2</sup> , typical)			
<b>Duty Cycle, DC</b>	<3%@200A <15%@100A (depending on model)			
<b>Electrical current, I<sub>op</sub></b>	Standard versions: 20-200A			
<b>Voltage before cables, V</b>	V = 2 * number of bars Standard versions: 13, 18V, 26V, 52V			
<b>Energy, E</b>	<70 J			
<b>Operating Modes, EXAMPLES of application. Max.specs@15°C SEE PICTURES BELOW</b>	LBS-8006-8X9Sa-2 <b>NEW</b>	LBS-8008-9X9Sa-2 <b>NEW</b>	LBS-8012-10x10Sa-2 <b>NEW</b>	LBS-8024-10X20Sa-2 <b>NEW</b>
<b>Peak power</b>	<b>950W-200A</b>	<b>1300W-200A</b>	<b>1900W-200A</b>	<b>3800W-200A</b>
<b>Laser Pulse Fluency (J/cm<sup>2</sup>) @ t<sub>p</sub> (ms) and I<sub>op</sub>(A)</b>	40@30ms-200A 65@50ms-200A 40@100ms-200A 70@400ms-100A	45@30ms-200A 70@50ms-170A 45@100ms-200A 70@400ms-90A	55@30ms-190A 60@50ms-140A 55@100ms-200A 55@400ms-65A	55@30ms-190A 60@50ms-140A 55@100ms-200A 55@400ms-65A
<b>f=1-3Hz<sup>(3)</sup></b>	10@10ms-175A	10@10ms-140A	10@10ms-115A	10@10ms-115A
<b>f=10Hz</b>	10@10ms-175A	10@10ms-140A	10@10ms-115A	10@10ms-115A
<b>Electrical parameters for Laser</b>	Voltage drop < 13V DC<6%@200A DC<15%@120A Elect.Power<250W Heat Power<150W	Voltage drop < 18V DC<4%@200A DC<15%@120A Elect.Power<350W Heat Power<200W	Voltage drop < 26V DC<3%@200A DC<15%@80A Elect.Power<350W Heat Power<200W	Voltage drop < 52V DC<3%@200A DC<15%@80A Elect. Power<700W Heat Power<400W
<b>Beam divergence, near field</b>	< 45°			
<b>Beam divergence, far field</b>	< 90 °			
<b>Package Dimensions</b>	Ø50x110 mm (Ø85x120 mm for the LBS-8024-10X20-2 model)			
<b>Weight</b>	400 gr			
<b>Cooling</b>	LASER HEAD: Water COLD SAPPHIRE: Coolant			

	(Distilled water with 5-10% of ethyleneglycol is recommended)
<b>Water pressure</b>	LASER HEAD: 1.5-2 bars COLD SAPPHIRE TIP: 2.5-3 bars
<b>Water flow</b>	LASER HEAD: > 0,5 l/min COLD SAPPHIRE: > 0,1 l/min
<b>Water Laser Diode temperature</b>	LASER HEAD: 15-25 °C COLD SAPPHIRE: 0-10°C (according to the application)
<b>Electrical connections</b>	Threads M3mm
<b>Water connections</b>	LASER HEAD: Water flow outlet for Ø4mm tube COLD SAPPHIRE TIP: Water flow outlet for Ø3mm tube
<b>Laser class product (EN-60825)</b>	4
<b>Expected lifetime</b>	10 <sup>8</sup> pulses

1. Wavelengths from 780-980nm also available on request.
2. Up to 60ms using continuous pulses. Longer pulses are achieved by burst of shorter pulses
3. Max. specs at 1Hz (rounded numbers). It is recommended to decrease the pulse energy as repetition rate increases.
4. For longer pulse length, the laser energy can be increased proportionally to the pulse duration, or kept constant by adjusting the operation current

**GRAPHS OF FLUENCY vs. PULSE DURATION, for different operation rates**  
(values in the beginning of life time)



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