


# LBA-02 806nm Macrochannel Cooler Based Lateral Laser Diode Bar Arrays

## LBAxxxC-806-02

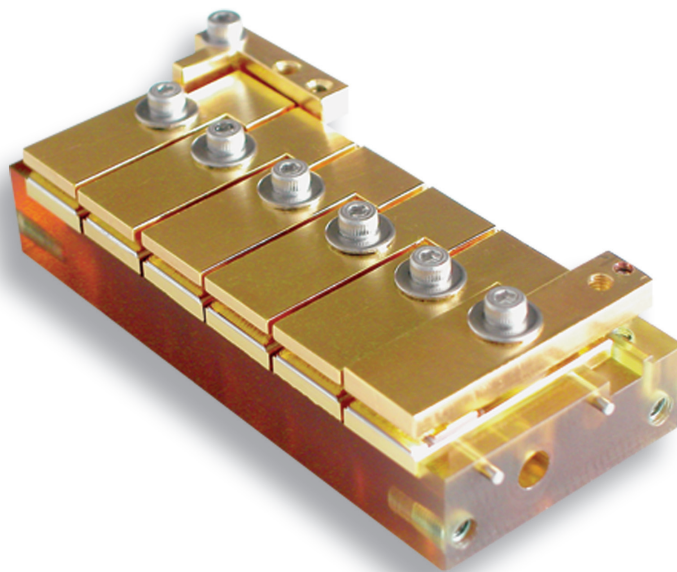
The Bookham LBA-02 macrochannel cooler based lateral laser diode bar array series has been designed to provide the high output power and high reliability required for side pumping of Nd:YAG solid-state lasers. The proprietary E2 front mirror passivation process, developed at our Zurich site, prevents Catastrophic Optical Damage (COD) to the laser diode facet even at extremely high output powers. The laser diode bars are mounted on an expansion matched CuW submount onto a water-cooled macrochannel package providing very high reliability in CW and pulsed (1-Hz type) applications.

### Features:

- Horizontally arranged laser diode bars
- Active macrochannel cooler (water-cooled)
- 20W operating power per bar
- Highly reliable single quantum well MBE structure
- Telecom-grade AuSn mounting technology
- Custom assembly options available
- RoHS compliant 

### Applications:

- Solid-state laser pumping
- Direct applications such as material processing
- Illumination



## Characteristics

Parameter	Symbol	Typical	Unit
CW Output Power LBA60W LBA120W LBA140W	$P_{op}$	60 120 140	W
Center Wavelength <sup>[1]</sup>	$\lambda_c$	$806 \pm 3$	nm
Spectral Width (FWHM)	$\Delta\lambda$	3	nm
Beam Divergence Parallel to Junction Perpendicular to Junction	$\theta_{//}$ $\theta_{\perp}$	10 34	deg
Polarization	–	TE	
Slope Efficiency	$\eta_D = P_{op} / (I_{op} - I_{th})$	1.1	W/A
Conversion Efficiency	$H = P_{op} / (V_{op} \times I_{op})$	45	%
Operating Current	$I_{op}$	<30	A
Operating Voltage per Bar	$V_{op}$	2	V
Operating Temperature	$T_{op}$	$25 \pm 5$	°C
Water Flow	$Q_w$	1	l/min
Differential Pressure Drop per Bar	$P_w$	0.1	bar

[1] Wavelength window / extended range available on request (780-1060nm).

For pumping applications further bins in wavelength and / or in operating current may be offered.

Dimensions	LBA060	LBA120	LBA140	Unit
Number of Bars	3	6	7	
Length	56.9	78.7	90.5	mm
Width	35	35	35	mm
Height	20.5	20.5	20.5	mm
Electrical Connection	Screws M3 x 5 both (+) and (-) polarity			mm
Coolant Connection	O-Rings 5 x 1			mm
Water Conductivity	5 - 8			µS/cm
Water Filtering	Filters for ø15mm particles			–
Materials recommended	Copper, Stainless Steel, Plastic – No Brass, No Nickel in the cooling circuit			

Technical drawing of the Laser Beam 13, showing top, side, and detail views with dimensions and labels.

**Top View Dimensions:**

- Overall width: 78.7  $\pm 0.05$
- Overall height: 30
- Distance from left edge to first Anode: 16.6
- Distance between Anodes: 51.5
- Distance from last Cathode to right edge: 10.6
- Distance from left edge to first Cathode: 11.1
- Distance between Cathodes: 67.6
- Distance from left edge to first Cathode (including mounting): 2
- Distance from left edge to first Cathode (excluding mounting): 16
- Distance from left edge to first Cathode (including mounting): 28
- Distance from left edge to first Cathode (including mounting): 2
- Distance from left edge to first Cathode (including mounting): 11.1
- Distance from left edge to first Cathode (including mounting): 67.6
- Distance from left edge to first Cathode (including mounting): 5.6

**Side View Dimensions:**

- Overall width: 18.3
- Overall height: 16
- Distance from top edge to first Cathode: 13
- Distance from top edge to first Cathode: 10
- Distance from top edge to first Cathode: 0.75
- Distance from top edge to first Cathode: 3.2
- Distance from top edge to first Cathode: 2.8
- Distance from top edge to first Cathode: 13
- Distance from top edge to first Cathode: Laser Beam

**Detail View Dimensions:**

- Distance from top edge to first Cathode: 18.3
- Distance from top edge to first Cathode: 13
- Distance from top edge to first Cathode: 10
- Distance from top edge to first Cathode: 0.75
- Distance from top edge to first Cathode: 3.2
- Distance from top edge to first Cathode: 2.8
- Distance from top edge to first Cathode: 13
- Distance from top edge to first Cathode: Laser Beam

**Labels:**

- Anode
- Cathode
- M3
- Bookham
- 13
- Laser Beam

## RoHS Compliance



Bookham is fully committed to environment protection and sustainable development and has set in place a comprehensive program for removing polluting and hazardous substances from all of its products. The relevant evidence of RoHS compliance is held as part of our controlled documentation for each of our compliant products. RoHS compliance parts are available to order, please refer to the ordering information section for further details.

### Ordering Information:

LBA060C-806-02	60W 806nm Macrochannel Cooler Based Lateral Laser Diode Bar Array
LBA120C-806-02	120W 806nm Macrochannel Cooler Based Lateral Laser Diode Bar Array
LBA140C-806-02	140W 806nm Macrochannel Cooler Based Lateral Laser Diode Bar Array

## Contact Information

### Bookham (Switzerland) AG

Binzstrasse 17  
8045 Zurich  
Switzerland

- Tel: +41 44 455 8787
- Fax: +41 44 455 8586

[www.bookham.com](http://www.bookham.com)  
[highpower@bookham.com](mailto:highpower@bookham.com)

### EMEA Sales Contact

Gunnar Stolze

- Tel: +41 79 635 3777

### North America Sales Contact

Michael Cutler

- Tel: +1 678 763 0777

### ASIA Sales Contact

Patrick Lee

- Tel: +852 9197 7014

### Japan Sales Contact

Japan Laser Corporation

- Tel: +813 5285 0861

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REFERENCE IEC 60825-1:2007 Edition 1.2



This product complies with 21CFR 1040.10

