LBA-01 806nm Microchannel Cooler Based Lateral Laser Diode Bar Arrays

LBAxxxC-806-01

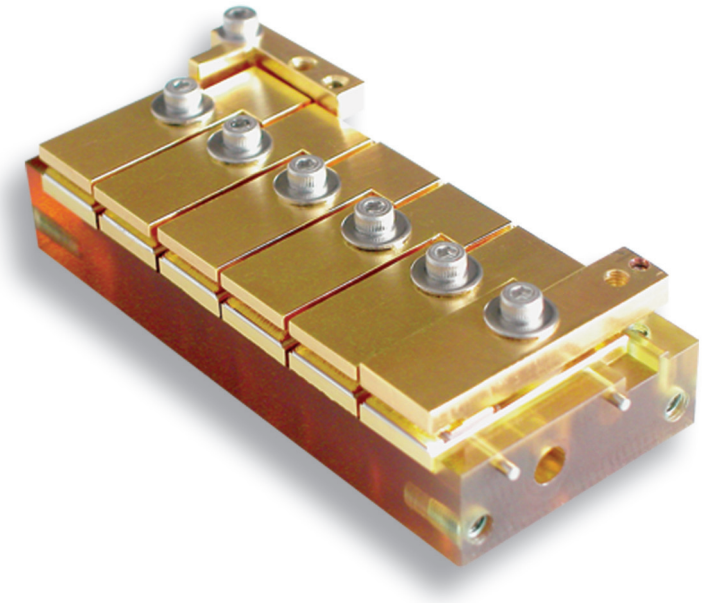
The Bookham LBA-01 microchannel cooler based lateral laser diode bar array series has been designed to provide the high output power and high reliability required for side pumping of Nd:YAG solid-state lasers. The proprietary E2 front mirror passivation process, developed at our Zurich site, prevents 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 microchannel package providing very high reliability in CW and pulsed (1-Hz type) applications.

Features:

- Horizontally arranged laser diode bars
- Active microchannel cooler (water-cooled)
- 50W 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

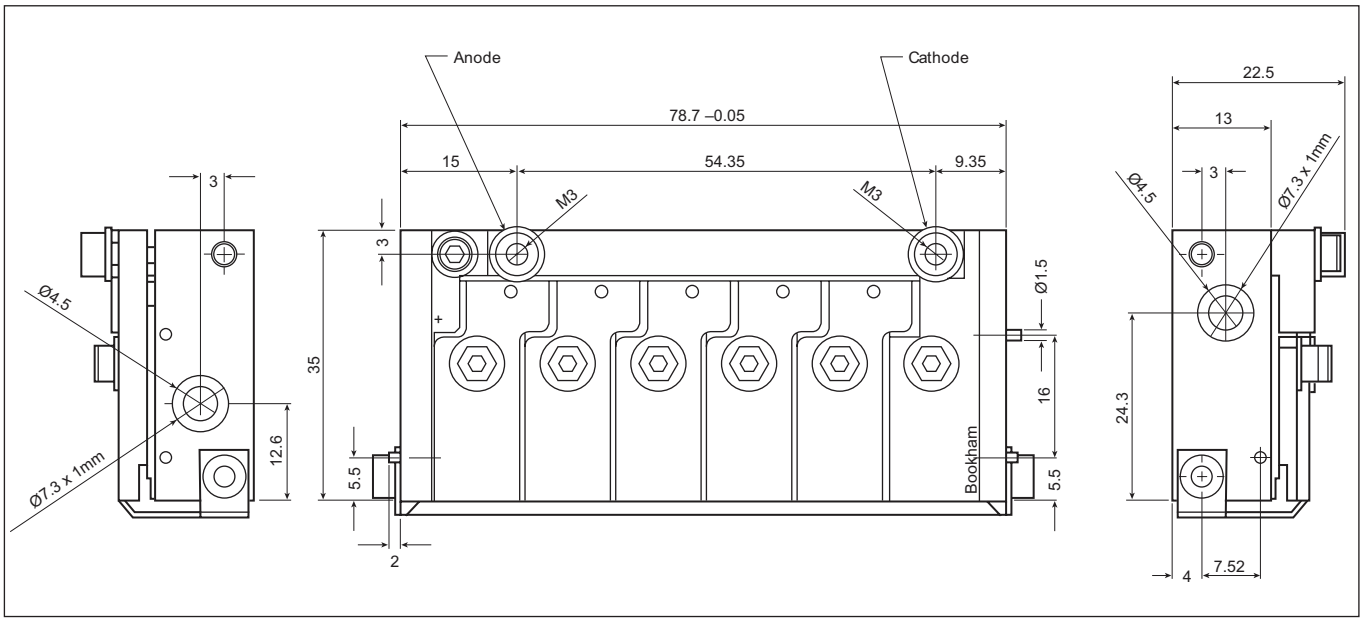
Parameter	Symbol	Typical	Unit
CW Output Power LBA100 LBA200 LBA300	P_{op}	 100 200 300	W
Center Wavelength [1]	λ_c	806 ± 3	nm
Spectral Width (FWHM)	$\Delta\lambda$	3	nm
Wavelength Shift with Temperature	$d\lambda_c/dT_{op}$	0.26	nm/°C
Beam Divergence (FWHM) Parallel to Junction Perpendicular to Junction	 $\theta_{//}$ $\theta_{\perp}$	 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	%
Series Resistance	R_s	30	mΩ
Operating Current	I_{op}	65	A
Operating Voltage per Bar	V_{op}	2	V
Operating Temperature	T_{op}	25 ± 5	°C
Water Flow per Bar	Q_w	0.3 ± 0.04	l/min
Differential Pressure Drop	P_w	0.7	bar

[1] Reduced wavelength window / extended range available on request (900-1060nm).
For pumping applications further bins in wavelength and / or in operating current may be offered.

Dimensions

Dimensions	LBA100	LBA200	LBA300	Unit
Number of Bars	2	4	6	
Length	30.7	54.7	78.7	mm
Width	35			mm
Height	22.2			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 in the cooling circuit	Copper, Stainless Steel, Plastic No Brass, No Nickel			–

Technical Drawing for LBA300C-806-01 (mm) (Drawings for other configurations upon request)



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:

LBA100C-806-01	100W 806nm Microchannel Cooler Based Lateral Laser Diode Bar Array
LBA200C-806-01	200W 806nm Microchannel Cooler Based Lateral Laser Diode Bar Array
LBA300C-806-01	300W 806nm Microchannel Cooler Based Lateral Laser Diode Bar Array

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Important Notice

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REFERENCE IEC 60825-Edition 1.2

This product complies with 21CFR 1040.10

ISO 9001:2000 Certified
FM 68159

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