

## 40W 806nm 30% Fill Factor High Power Laser Diode **Bar on Microchannel Cooler** BAC40C-806-01/02

The Bookham BAC40C-806-01/02 30% fill factor laser diode bar on microchannel cooler series has been designed to provide the high output power and high reliability required for both solid-state laser pumping and direct applications. 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:

- Mounted 10mm x 1.2mm laser diode bar
- Active microchannel cooler (water cooled)
- 30% fill factor (150 µm emitter / 500 µm pitch)
- 40W operating power
- Highly reliable single quantum well MBE structure
- Telecom grade AuSn mounting technology
- · Packaging option with Cu base and cover
- RoHS compliant



#### **Applications:**

- Collimated solid state laser pumping
- Direct applications such as material processing
- Printing
- Medical





## **Characteristics**

Parameter	Symbol	Typical	Unit
CW Output Power	P <sub>op</sub>	40	W
Center Wavelength [1]	$\lambda_{_{\mathbb{C}}}$	806 ± 3	nm
Spectral Width (FWHM)	Δλ	3	nm
Wavelength shift with temperature	$d\lambda_{c}/dT_{op}$	0.26	nm/°C
Beam Divergence (1/e²) Parallel to Junction Perpendicular to Junction	$\begin{matrix} \theta_{//} \\ \theta_{\perp} \end{matrix}$	10 34	deg
Polarization	-	TE	
Threshold Current	I <sub>th</sub>	8	А
Slope Efficiency	$\eta_D = P_{op}/(I_{op} - I_{th})$	1.1	W/A
Conversion Efficiency	$H=P_{op}/(V_{op}xI_{op})$	45	%
Series Resistance	R <sub>s</sub>	5	mΩ
Operating Current	l <sub>op</sub>	50	А
Operating Voltage	$V_{op}$	2	V
Operating Temperature	Тор	25 ± 5	°C
Microcooler Flow	$Q_w$	22 ± 4	l/hrs
Microcooler Differential Pressure	$P_{w}$	0.7	bar

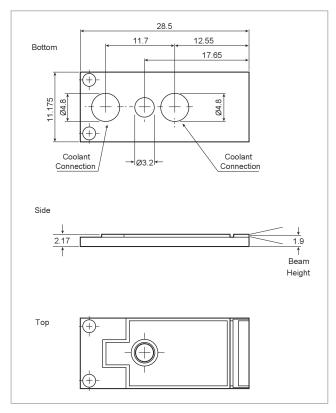
<sup>[1]</sup> Wavelength selectable, extended range on request (780-1060nm).

### **Bar Dimensions**

Parameter	Symbol	Typical	Unit
Bar Width	b	10	mm
Resonator Length	I	1.2	mm
Number of Emitters	n	19	-
Emitter Spacing	р	500	μm
Emitter Width	W	150	μm
Fill Factor	f	30	%

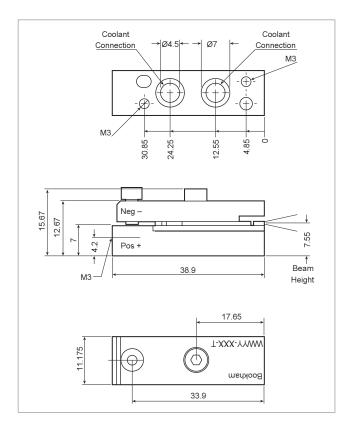


## Microchannel Cooler Dimensions (mm)



BAC40C-806-01

# Microchannel Cooler with Base and Cover Dimensions (mm)



BAC40C-806-02



## **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:**

BAC40C-806-01 40W 806nm 30% Fill Factor Laser Diode Bar on Microchannel Cooler BAC40C-806-02 40W 806nm 30% Fill Factor Laser Diode Bar on Microchannel Cooler with Base and Cover

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#### **Important Notice**

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