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 (150μm emitter / 500μm 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

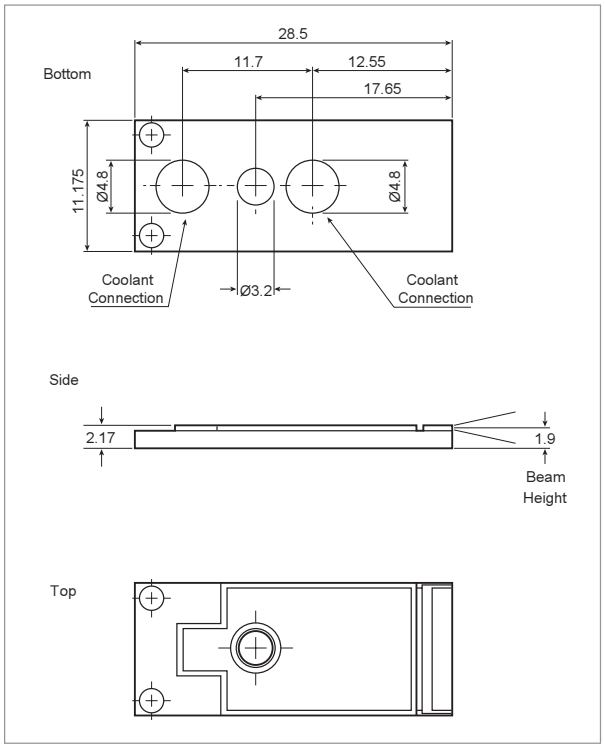
Parameter	Symbol	Typical	Unit
CW Output Power	P_{op}	40	W
Center Wavelength [1]	λ_c	806 ± 3	nm
Spectral Width (FWHM)	$\Delta\lambda$	3	nm
Wavelength shift with temperature	$d\lambda_c/dT_{op}$	0.26	nm/°C
Beam Divergence ($1/e^2$) Parallel to Junction Perpendicular to Junction	 $\theta_{//}$ $\theta_{\perp}$	 10 34	deg
Polarization	-	TE	
Threshold Current	I_{th}	8	A
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_s	5	mΩ
Operating Current	I_{op}	50	A
Operating Voltage	V_{op}	2	V
Operating Temperature	T_{op}	25 ± 5	°C
Microcooler Flow	Q_w	22 ± 4	l/hrs
Microcooler Differential Pressure	P_w	0.7	bar

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

Bar Dimensions

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

Microchannel Cooler Dimensions (mm)



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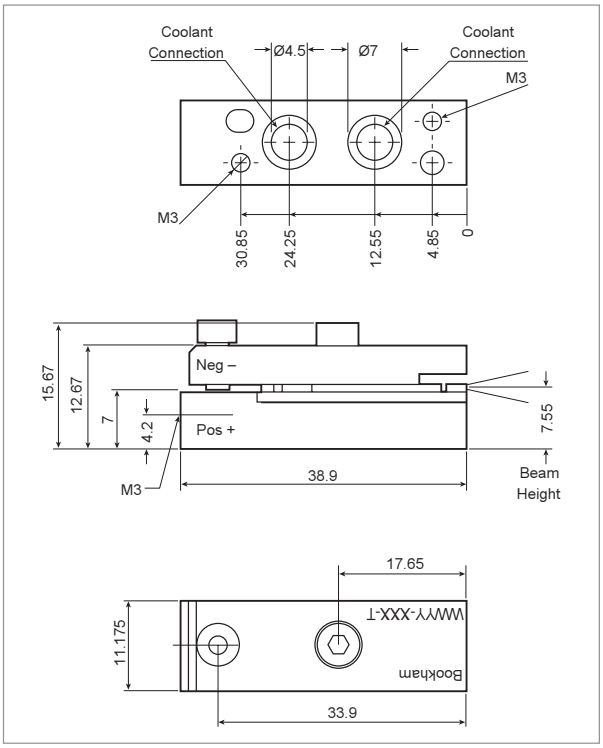
Microchannel Cooler with Base and Cover Dimensions (mm)



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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

Contact Information

Bookham (Switzerland) AG
Binzstrasse 17
8045 Zurich
Switzerland
• **Tel: +41 44 455 8787**
• **Fax:+41 44 455 8586**
www.bookham.com
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**

Important Notice

Performance figures, data and any illustrative material provided in this data sheet are typical and must be specifically confirmed in writing by Bookham before they become applicable to any particular order or contract. In accordance with the Bookham policy of continuous improvement specifications may change without notice. The publication of information in this data sheet does not imply freedom from patent or other protective rights of Bookham or others. Further details are available from any Bookham sales representative.

REFERENCE IEC 60825-Edition 1.2

This product complies with 21CFR 1040.10

ISO 9001:2000 Certified
FM 68159

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