80W 9xxnm High Power Laser Diode Bar on Microchannel Cooler

BAC80C-9xx-01/02

The Bookham BAC80C-9xx-01/02 50% fill factor laser diode bar on microchannel cooler series has been designed to provide the high brightness and reliability required for pumping solid-state and fibre lasers, and for 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)
- 80W operating power
- Highly reliable single quantum well MBE structure
- Telecom grade AuSn mounting technology
- Assembly option with Cu base and cover
- Standard wavelengths at 915nm, 940nm, and 980nm (others available on request)
- RoHS compliant

Applications:

- Solid-state and fiber laser pumping
- Direct applications such as material processing
- Printing
- Medical



Characteristics

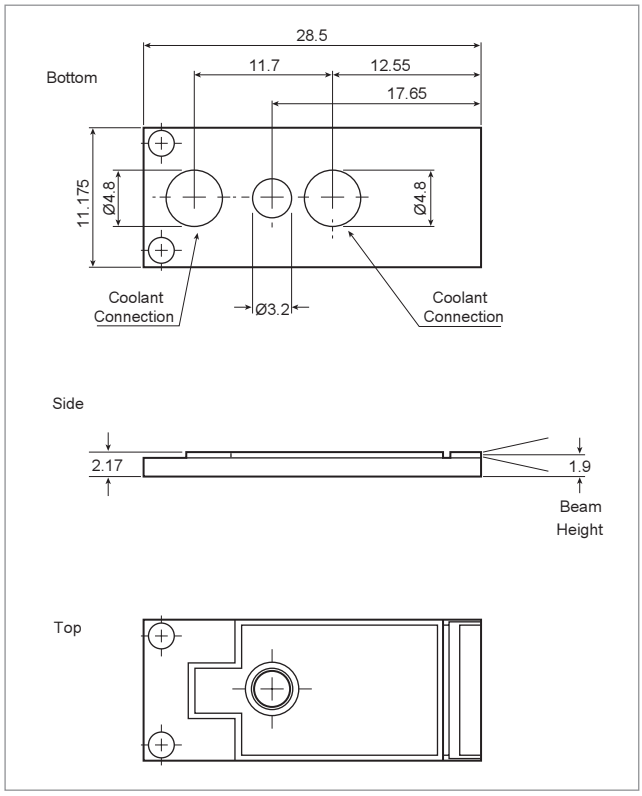
Parameter	Symbol	Typical	Unit
CW Output Power	P_{op}	80	W
Center Wavelength [1] BAC80C-915-01/02 BAC80C-940-01/02 BAC80C-980-01/02	 λ_{c915} λ_{c940} λ_{c980}	 915 ± 10 940 ± 10 980 ± 10	nm
Spectral Width (FWHM)	$\Delta\lambda$	3	nm
Wavelength Shift with Temperature	$d\lambda_c/dT_{op}$	0.3	nm/°C
Beam Divergence Parallel to Junction (90% of Power) Perpendicular to Junction (FWHM)	 $\theta_{//}$ $\theta_{\perp}$	 7 26	deg
Polarization	–	TE	–
Threshold Current	I_{th}	9	A
Slope Efficiency	$\eta_D=P_{op}/(I_{op}-I_{th})$	1	W/A
Conversion Efficiency	$H=P_{op}/(V_{op}\times I_{op})$	60	%
Series Resistance	R_s	5	mΩ
Operating Current	I_{op}	87	A
Operating Voltage	V_{op}	1.5	V
Operating Temperature	T_{op}	25 ± 5	°C
Microcooler Flow	Q_w	22 ± 4	l/hrs
Microchannel Cooler Differential Pressure	P_w	0.7	bar

[1] Reduced wavelength window / extended range available on request (900-1060nm).

Bar Dimensions

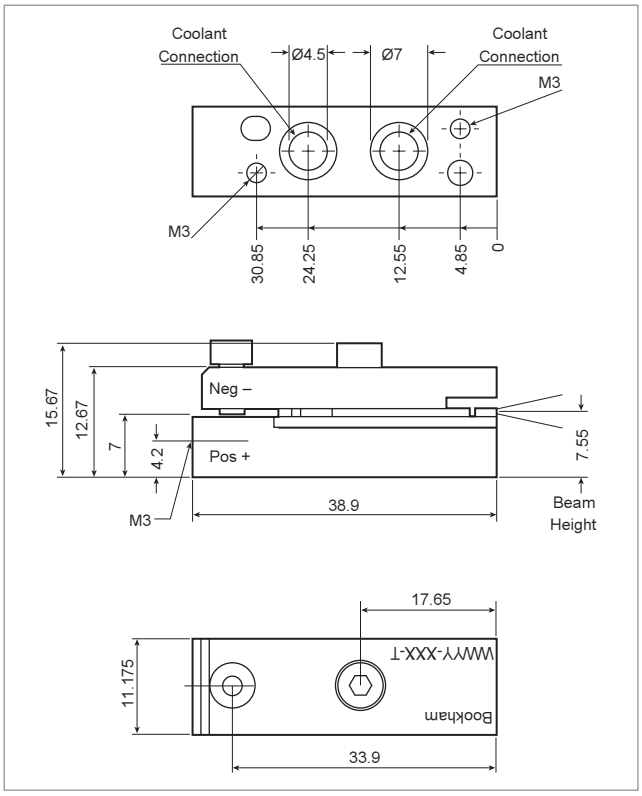
Parameter	Symbol	Typical	Unit
Bar Width	b	10	mm
Resonator Length	l	1.2	mm
Number of Emitters	n	25	–
Emitter Spacing	p	400	µm
Emitter Width	w	200	µm
Fill Factor	f	50	%

Microchannel Cooler Dimensions (mm)



BAC80C-9xx-01

Microchannel Cooler with Base and Cover Dimensions (mm)



BAC80C-9xx-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:

BAC80C-915-01	80W 915nm Laser Diode Bar on Microchannel Cooler
BAC80C-940-01	80W 940nm Laser Diode Bar on Microchannel Cooler
BAC80C-980-01	80W 980nm Laser Diode Bar on Microchannel Cooler
BAC80C-915-02	80W 915nm Laser Diode Bar on Microchannel Cooler with Base and Cover
BAC80C-940-02	80W 940nm Laser Diode Bar on Microchannel Cooler with Base and Cover
BAC80C-980-02	80W 980nm Laser Diode Bar on Microchannel Cooler with Base and Cover

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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.

INVISIBLE LASER RADIATION AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION CLASS 4 LASER PRODUCT

REFERENCE IEC 60825-Edition 1.2

DANGER
INVISIBLE LASER RADIATION - AVOID EYE OR SKIN EXPOSURE TO DIRECT OR SCATTERED RADIATION
OUTPUT POWER 80W WAVELENGTH 915 - 980nm
CLASS IV LASER PRODUCT

THIS PRODUCT COMPLIES WITH 21CFR 1040.10

ISO 9001:2000 Certified
BSI REGISTERED
FM 68159

CAUTION
STATIC SENSITIVE DEVICE
OBSERVE PRECAUTIONS

BH12920 Rev 3.1 June 2007

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