

120W 9xxnm High Power Laser Diode Bar on Microchannel Cooler

BAC120C-9xx-01/02

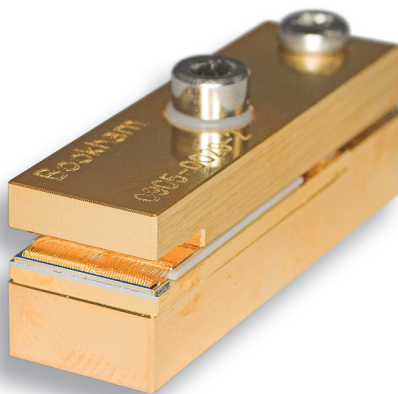
The Bookham BAC120C-9xx-01/02 50% fill factor laser diode bar on microchannel cooler series has been designed to provide the increased brightness and reliability required for pumping next generation solid-state disk and fibre lasers, and for direct applications. The proprietary E2 front mirror passivation 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 2.4mm laser diode bar
- Active microchannel cooler (water-cooled)
- 120W 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 disk and fiber laser pumping
- Direct applications such as material processing
- Printing
- Medical



Characteristics

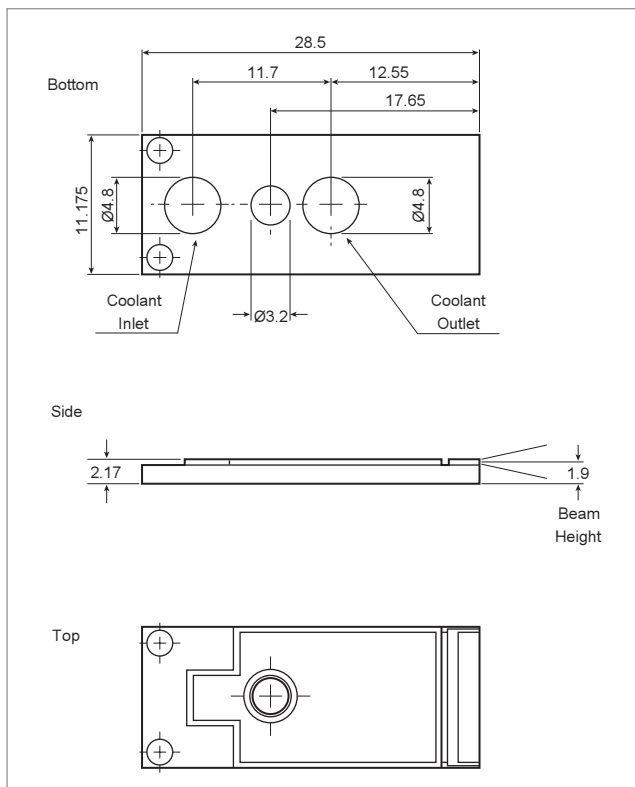
Parameter	Symbol	Typical	Unit
CW Output Power	P_{op}	120	W
Center Wavelength ^[1] BAC120C-915-01/02 BAC120C-940-01/02 BAC120C-980-01/02	λ_{c915} λ_{c940} λ_{c980}	915 ± 10 940 ± 10 980 ± 10	nm
Spectral Width (FWHM)	$\Delta\lambda$	3	nm
Wavelength Shift with Temperature	$d\lambda_c/dT_{op}$	0.3	nm/°C
Beam Divergence Parallel to Junction (90% of Power) Perpendicular to Junction (FWHM)	$\theta_{//}$ $\theta_{\perp}$	7 26	deg
Polarization	–	TE	–
Threshold Current	I_{th}	14	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}	140	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

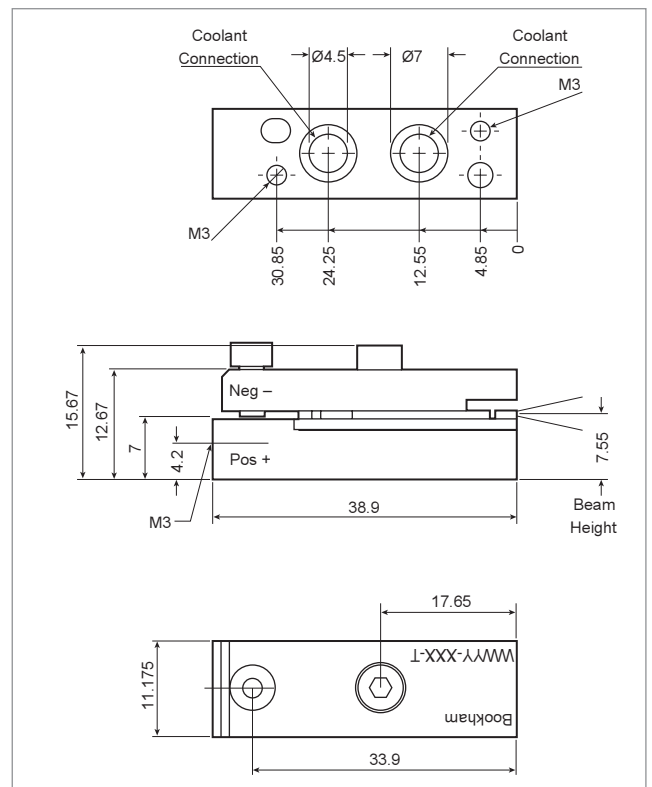
Parameter	Symbol	Typical	Unit
Bar Width	b	10	mm
Resonator Length	l	2.4	mm
Number of Emitters	n	48	–
Emitter Spacing	p	200	μm
Emitter Width	w	100	μm
Fill Factor	f	50	%

Microchannel Cooler Dimensions (mm)



BAC120C-9xx-01

Microchannel Cooler with Base and Cover Dimensions (mm)



BAC120C-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:

BAC120C-915-01	120W 915nm Laser Diode Bar on Microchannel Cooler
BAC120C-940-01	120W 940nm Laser Diode Bar on Microchannel Cooler
BAC120C-980-01	120W 980nm Laser Diode Bar on Microchannel Cooler
BAC120C-915-02	120W 915nm Laser Diode Bar on Microchannel Cooler with Base and Cover
BAC120C-940-02	120W 940nm Laser Diode Bar on Microchannel Cooler with Base and Cover
BAC120C-980-02	120W 980nm Laser Diode Bar on Microchannel Cooler with Base and Cover

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