

**808/830 nm
Broad Area Laser Diode
Product Family**

Specification Sheet



The M8xx series of Broad Area Laser Diodes from Axcel Photonics offer high CW optical power from a 100 micron multi-mode aperture and high brightness with industry leading reliability. This series of devices is produced with Axcel's advanced wafer growth and facet passivation technology, which enables increased performance in all areas including lower threshold current, increased efficiency, and lower operating voltage.

The M8XX series consists of multi-mode operating lasers with standard apertures of 50, 100 and 200 microns. Custom devices with non-standard apertures and wavelengths, including multiple active areas are available.

808 and 830 nm high power Broad Area Laser Diodes are suited to a number applications including DPSSL pumping, fiber lasers, and materials processing. Our proprietary epitaxial wafer design and facet passivation processes significantly increase output power in these broad area devices. Higher brightness for a given active region, up to 3 Watts for a 100 micron aperture, is achieved with this revolutionary technology.

Facet Technology

The Axcel facet design, based on Axcel's highly reliable telecom design, increases the COD threshold to 20 MW/cm² (several times the industry standard). This allows the device to operate at higher output powers and maintain the reliability of the facet structure. The uniformity of the passivation also contributes to increased reliability at these elevated powers. Controlling the thickness of the passivation material creates uniform power density across the facet and prevents hotspots in the facet structure.

Chip and Sub-mount Options

Axcel's products are available as discrete single chips or in Chip On Sub-mount configurations. Axcel offers B and C-Mount options, all of which include an isolated fly lead connection for the laser cathode. All multi mode lasers regardless of sub-mount options are mounted P side down.

Fiber pigtailed lasers are offered on a custom basis only. Please contact your local distributor or sales office for details.

Benefits:

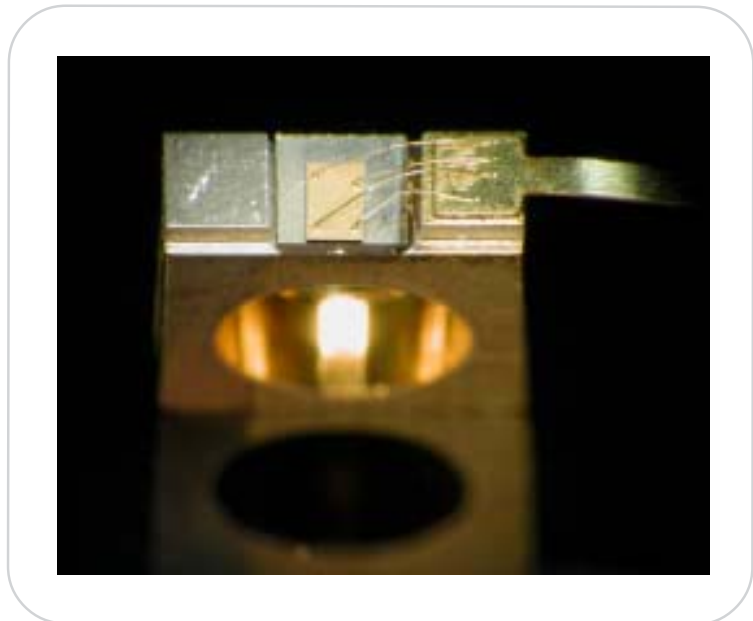
- High Output Power
- Improved Efficiency
- High Reliability

Features:

- Operating Power to 3W with 100 um aperture
- Operating Temperature Range 0 °C to 70 °C
- Available on B or C-Mount With Isolated Fly Lead Connection
- Custom Specifications
- Custom Package and Fiber Options Available

Applications:

- Materials Processing
- DPSSL Pumps
- Fiber Lasers



光技術をサポートする

株式会社オプトサイエンス

<http://www.optoscience.com>

東京本社 〒160-0014 東京都新宿区内藤町1番地 内藤町ビルディング
TEL:03(3356)1064 FAX:03(3356)3466 E-mail:info@optoscience.com
大阪支店 〒532-0011 大阪市淀川区西中島7-7-2 新大阪ビル西館
TEL:06(6305)2064 FAX:06(6305)1030 E-mail:osk@optoscience.com
名古屋営業所 〒450-0002 名古屋市中村区名駅2-37-21 東海ソフトビル
TEL:052(569)6064 FAX:052(569)8064 E-mail:ngo@optoscience.com

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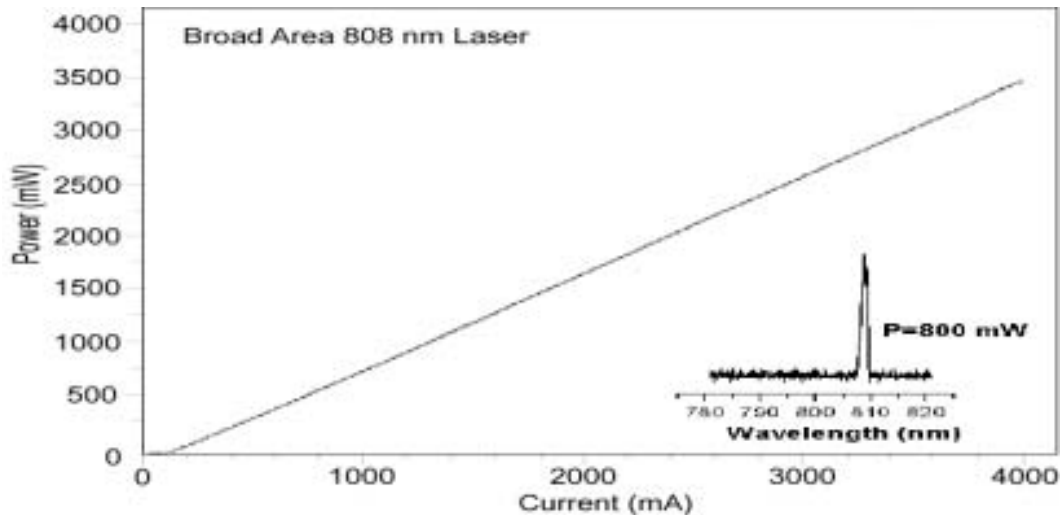
Specification Sheet

Parameter	Sym.	Condition	Min	Typ	Max	Units
Output Power	Po	25C & Iop	4			W
Forward Voltage	Vf	@ Po		1.9	2.1	V
Operating Current	Io	@ Po		4.3	4.5	A
Threshold Current	Ith			300	350	mA
Slope Efficiency	SE	25C	0.95	1.0		W/A
Horizontal Divergence Angle (//)	HFF	FWHM, Po			10	deg
Vertical Divergence Angle (^)	VFF	FWHM, Po			40	deg
Center Wavelength Variation (808/810/830 typ.)	dLc		-5		5	nm
Laser Emitter Width	We			100		um

Notes:

1. 50µm, 200µm and dual ridge designs are available, please contact your local representative for more information and specifications.
2. Output power, vertical divergence angle, and center wavelength are typical specifications and can be customized for specific applications. Please contact your sales representative for further information
3. All specifications are at a sub-mount temperature 25C.

L-I Performance Curves



Part Number : M-LLL-TT-WWWW-UUU

M = Multi Mode

LLL: Wavelength in nm
800 to 840, 808=808 nm; 830=830 nm

TT: Submount Type
CH=Chip; BM=B Mount; CM=C Mount; SM=Special Mount

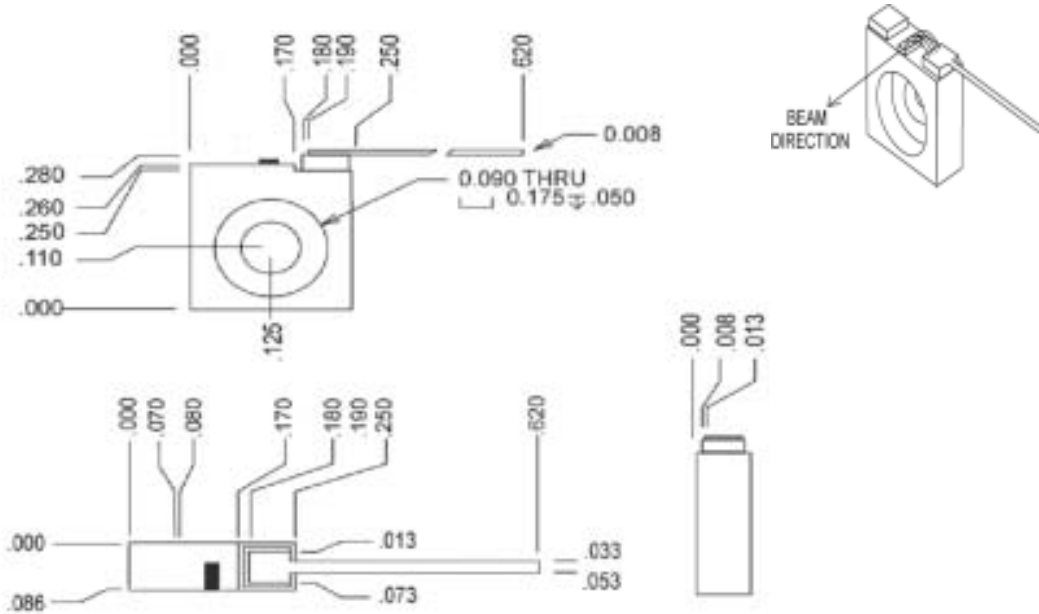
WWW: Output Power in mW
0300 = 300 mW; 5000 = 5000 mW

UUU: Emission Aperture Size
050 = 50 µm; 100 = 100 µm

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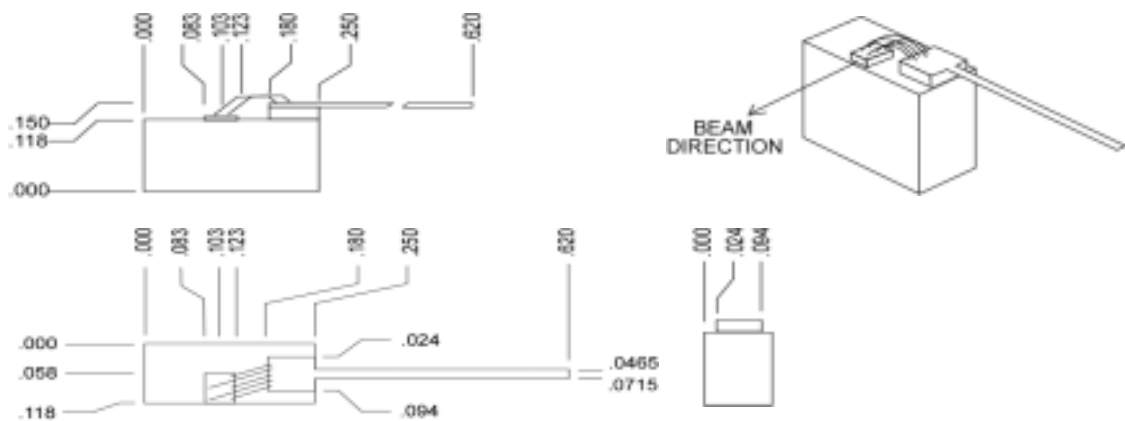
Sub-mount Options

C Mount Mechanical Drawing



Sub-mount Options

B Mount Mechanical Drawing



Mounting Block Notes:

1. B, C, and D mounts are manufactured of oxygen-free high conductivity (OFHC) Cu with diamond machined laser mounting surfaces.
2. Cu mounts have been plated with one micron of Au over a Ni flash.
3. All lasers are attached with a flux-less Indium solder process.
4. All wire bonds are 2 mil Au wires with current carrying capability of 3A per wire.
5. All units in inches.