DATA SHEET

EYP-BAL-0653-01000-1510-CMT02-0000

Revision 0.93

08.08.2017

MULTI MODE LASER DIODES
Broad Area Laser

General Product Information

Product	Application
653 nm Broad Area Laser	Sensing
mounted on C-Mount	Medical

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	non condensing
Operational Temperature at Case	T_C	°C	-20		30	non condensing
Forward Current	I_F	A			1.8	Stress in excess of one of the absolute maximum ratings can cause permanent damage to the device. Do not exceed the max. output power or max. forward current, whichever occurs first.
Reverse Voltage	V_R	V			2	
Output Power	P_{opt}	W			1.2	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	10		20	non condensing
Forward Current	I_F	A			1.6	
Output Power	P_{opt}	W			1.0	

Characteristics at 20° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	648		658	see image on page 2
Spectral Width (FWHM)	$\Delta\lambda$	nm		2		
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3		
Slope Efficiency	η_d	W/A		0.7		
Threshold Current	I_{th}	A		0.75	0.85	
Operating Current @ Popt = 1.0 W	I_{op}	A			1.6	
Operating Voltage @ Popt = 1.0 W	V_{op}	V		2.5		

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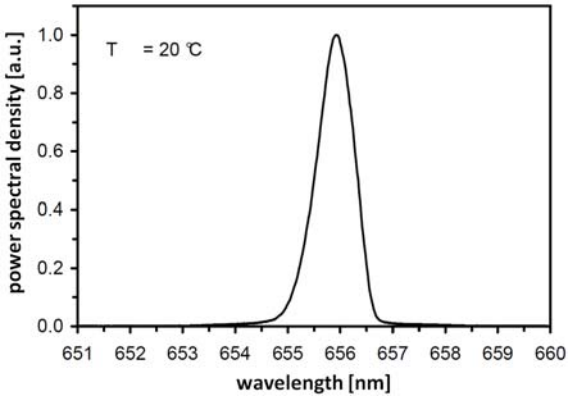
Characteristics at 20° C at Begin Of Life cont'd

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Stripe Width	W_S	µm		100		
Cavity Length	L	µm		1500		
Divergence parallel (FWHM)	$\Theta_{\parallel}$	°		8		beam divergence parallel to junction plane
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	°		30		beam divergence perpendicular to junction plane
Spectral Mode (longitudinal)				multimode		
Polarization				TE		polarization parallel to junction plane

Typical Measurement Results

Spectrum



Performance figures, data and any illustrative material provided in this specification are typical and must be specifically confirmed in writing by eagleyard Photonics before they become applicable to any particular order or contract. In accordance with the eagleyard Photonics policy of continuous improvement specifications may change without notice.

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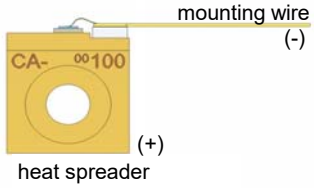
Package Dimensions

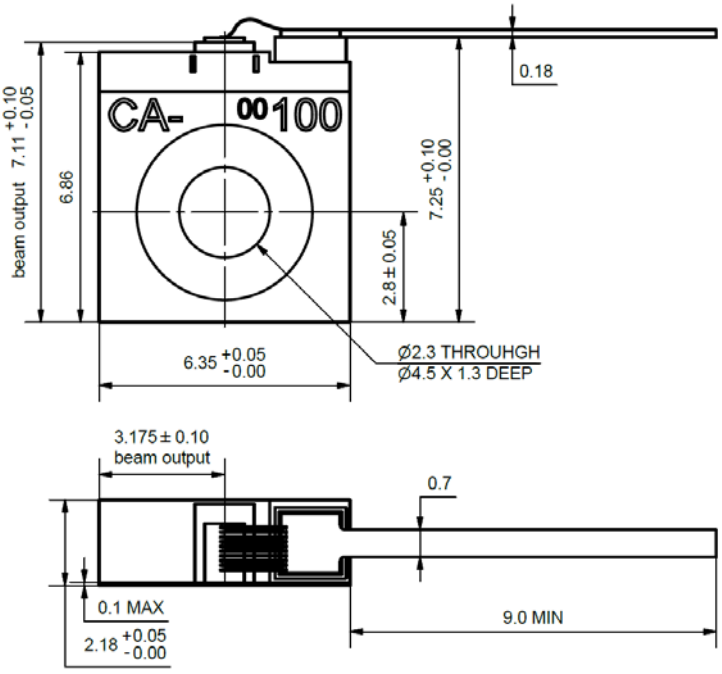
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h_{EP}	mm	7.05	7.20	7.35	
Excentricity of Emission Center	R	mm		2.18		

Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings



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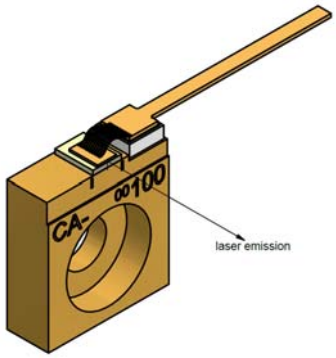

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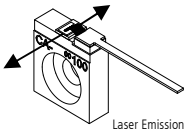
Unpacking, Installation and Laser Safety

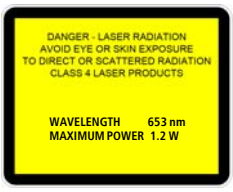
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use. During device installation, ESD protection has to be maintained.

The BAL diode type is known to be sensitive against thermal stress. Operating at moderate temperatures on propper heat sinks willl contribute to a long lifetime of the diode.

The laser emission from this diode is close to the invisible infrared region of the electromagnetic spectrum. Avoid direct and/or indirect exposure to the free running beam. Collimating the free running beam with optics as common in optical instruments will increase threat to the human eye.

Each laser diode will come with an individual test protocol verifying the parameters given in this document.





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Complies with 21 CFR 1040.10 and 1040.40

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