DATA SHEET

EYP-BAL-0760-00008-2020-SOT23-0016

Revision 0.90

18.11.2021

MULTI MODE LASER DIODES
Broad Area Laser

General Product Information

Product	Application
760 nm Broad Area Laser	Pulsed Material Processing
for High Energy Pulse Mode Operation	Medical
sealed TO Housing	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	Every condition of the Absolute Maximum Ratings has to be kept during operation
Operational Temperature at Case	T_C	°C	-40		70	
Peak Current	$I_{F\ Peak}$	A			10	see Pulse Mode Conditions
Reverse Voltage	V_R	V			2	
Peak Output Power	$P_{opt\ Peak}$	W			11	see Pulse Mode Conditions
Forward Voltage at Peak	V_F	V			3	see Pulse Mode Conditions

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	0		45	
Forward Current	$I_{F\ Peak}$	A			8	see Pulse Mode Conditions
Output Power	$P_{opt\ Peak}$	W	8			see Pulse Mode Conditions

Characteristics at 25° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	755	760	765	see Pulse Mode Conditions
Spectral Width (FWHM)	$\Delta\lambda$	nm		2	10	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.2		
Peak Output Power @ $I_F = 8$ A	$P_{opt\ Peak}$	W	8			see Pulse Mode Conditions
Threshold Current	I_{th}	A		1.2		
Differential Series Resistance	R_S	Ω		0.14		

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Characteristics at 25° C at Begin Of Life cont'd

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Emitter Cavity Length	L	µm		2000		
Stripe Width	W_S	µm		200		
Divergence parallel (FWHM)	$\Theta_{\parallel}$	°	6	8	12	
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	°	25	27	35	
Polarization				TE		E field parallel to Pin 2 - Pin 3 plane
Spectral Mode (longitudinal)				Multi Mode		

Pulse Mode Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Pulse Length	t_p	µs	5.9	6	6.1	
Pulse Repetition Rate	RR	kHz		25		
Burst Duration	t_{pp}	s		0.8		20.000 Pulses
Burst Repetition Rate		Hz		0.5		

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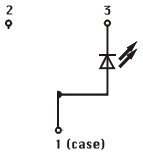
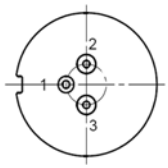
Package Dimensions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	d_{EP}	mm		3.83		reference plane B: top side of TO header
Excentricity of Emission Center	R	mm			0.12	reference A: center of outer diameter of header
Pin Length	l	mm		14.0		

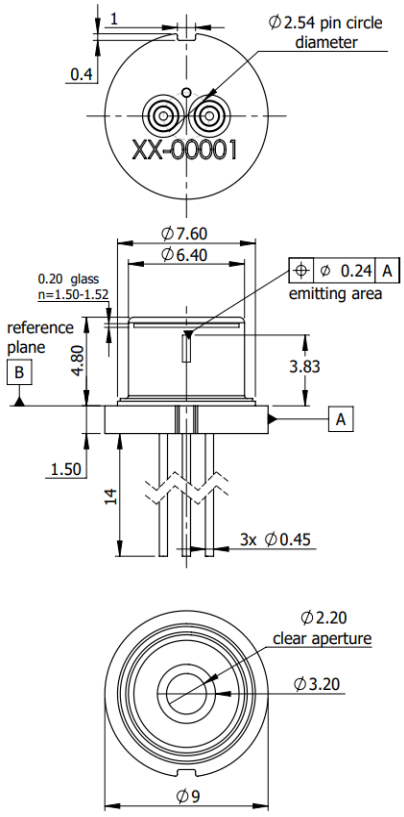
Pin Assignment

1	Laser Diode Anode, Case
2	not connected
3	Laser Diode Cathode





Package Drawings



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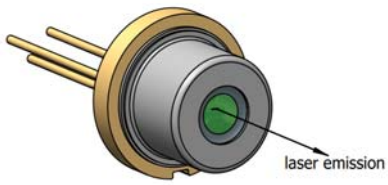

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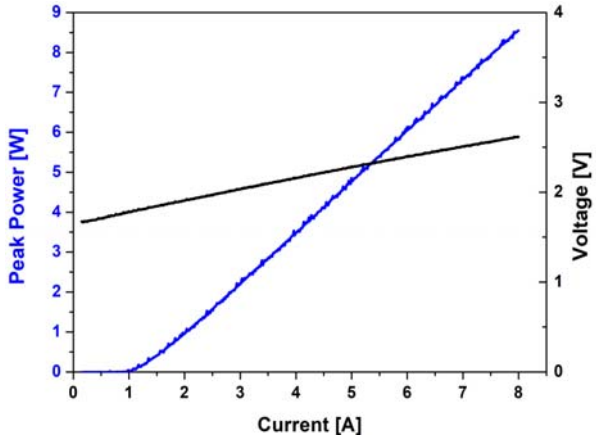
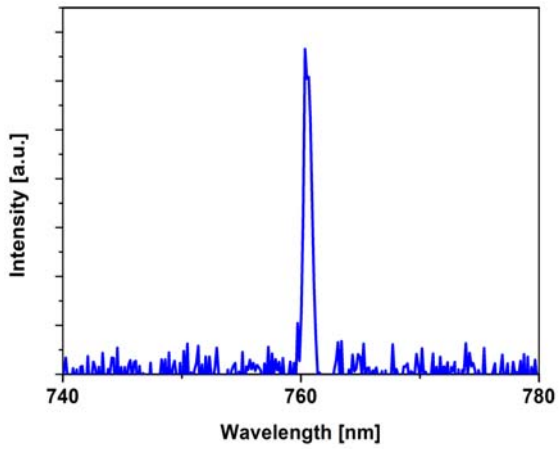
Typical Measurement Results

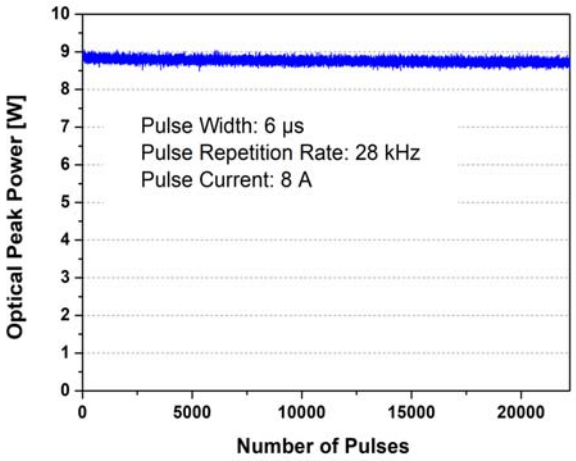
P-I-V curve



Spectrum



Burst Mode



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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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.

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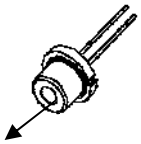
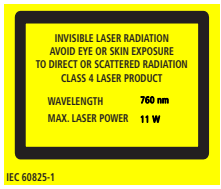


Laser Emission

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.

Complies with 21 CFR 1040.10 and 1040.40