

EYP-BAL-0905-00035-1040-TOE02-0010

Revision 0.70

19.01.2017

MULTI MODE LASER DIODES

Broad Area Laser



General Product Information

Product	Application
905 nm Broad Area Laser (Single Emitter)	Sensing
for Pulse Mode Operation	Metrology
sealed TO-18 Housing (MIL qualified)	

Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-45		90
Operational Temperature at Case	T_C	°C	-45		90
Peak Current	$I_{F\ Peak}$	A			45
Reverse Voltage	V_R	V			1
Peak Output Power	$P_{opt\ Peak}$	W			40
Forward Voltage at Peak	V_F	V			12

Measurement Conditions / Comments

Every condition of the Absolute Maximum Ratings has to be kept during operation

see Pulse Mode Conditions

see Pulse Mode Conditions

see Pulse Mode Conditions

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	-40		80
Forward Current	$I_{F\ Peak}$	A		40	
Output Power	$P_{opt\ Peak}$	W		35	

Measurement Conditions / Comments

under Pulse Mode Conditions

Characteristics at 25° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	λ_C	nm	850	905	920
Spectral Width (FWHM)	$\Delta\lambda$	nm		10	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Output Power	P_{ave}	mW		7	
Peak Output Power @ $I_F = 40\ A$	$P_{opt\ Peak}$	W	30		
Threshold Current	I_{th}	A		1.5	
Differential Series Resistance	R_S	Ω		0.1	
Cavity Length	L	μm		1000	
Stripe width	W_s	μm		400	

Measurement Conditions / Comments

see Pulse Mode Conditions

under Pulse Mode Conditions

under Pulse Mode Conditions

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

Parameter	Symbol	Unit	min	typ	max
Divergence parallel (FWHM)	$\Theta_{ }$	°	7	10	13
Divergence perpendicular (FWHM)	Θ_{\perp}	°	25	30	35
Polarization				TE	
Spectral Mode (longitudinal)				Multi Mode	

Measurement Conditions / Comments
E field perpendicular to Plane B (see drawing on p.3)

Pulse Mode Conditions

Parameter	Symbol	Unit	min	typ	max
Pulse Length	t_p	ns		100	
Pulse Repetition Rate	RR	kHz		10	
Duty Cycle	DC	%		0.1	

Measurement Conditions / Comments

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Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	d_{EP}	mm		2.4	
Excentricity of Emission Center	R	mm			0.2
Pin Length	l	mm		19	

Measurement Conditions / Comments

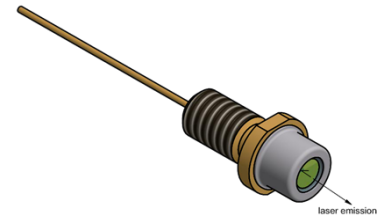
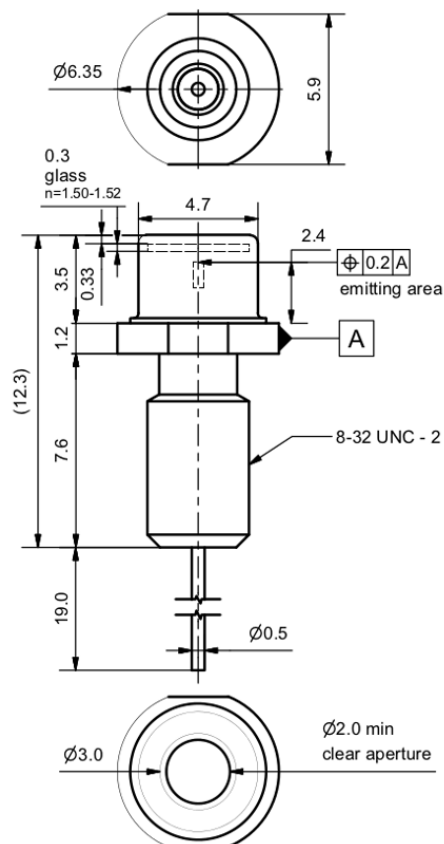
reference plane A: top side of TO header

reference B: center of outer diameter of header

Package Pinout

Laser Diode Anode (+)	Pin
Laser Diode Cathode (-)	Case

Package Drawings



AIZ-16-0411-1050

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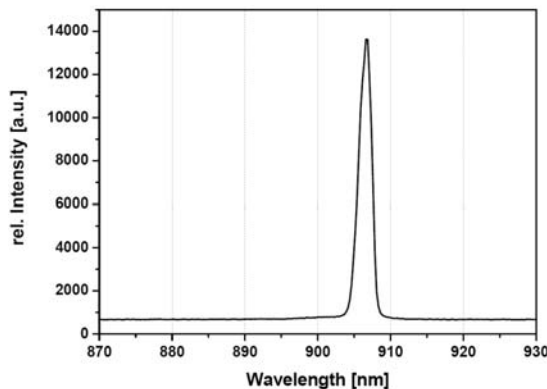
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Typical Measurement Results

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.

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 proper heat sinks will contribute to a long lifetime of the diode.

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.

