

# EYP-BAL-0905-00090-1040-TOE22-0010

Revision 0.70

20.01.2017

## MULTI MODE LASER DIODES

### Broad Area Laser

#### General Product Information

Product	Application
905 nm Broad Area Laser (Dual 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			110
Reverse Voltage	$V_R$	V			1
Peak Output Power	$P_{opt\ Peak}$	W			95
Forward Voltage at Peak	$V_F$	V			15

#### 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		100	
Output Power	$P_{opt\ Peak}$	W		90	

#### Measurement Conditions / Comments

under Pulse Mode Conditions

#### Characteristics at 25° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	$\lambda_C$	nm	850	905	920
Spectral Width (FWHM)	$\Delta\lambda$	nm		10	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Peak Output Power @ $I_F = 100\ A$	$P_{opt\ Peak}$	W		90	
Threshold Current	$I_{th}$	A		3.0	
Operational Current @ $P_{opt\ Peak} = 90\ W$	$I_{op}$	A		100	110
Cavity Length	L	µm			1000

#### 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
Stripe width	$W_s$	$\mu\text{m}$		400	
Spacing between Emitters	$W_{\text{spacing}}$	$\mu\text{m}$		200	
Stripe Pitch	$W_{\text{pitch}}$	$\mu\text{m}$		600	
Dual Emitter Width	$W_{\text{total}}$	$\mu\text{m}$		1000	
Divergence parallel (FWHM)	$\Theta_{  }$	$^\circ$	7	10	13
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	$^\circ$	25	30	35
Polarization				TE	
Spectral Mode (longitudinal)				Multi Mode	

#### Measurement Conditions / Comments

one emitter only

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		40	
Pulse Repetition Rate	RR	Hz		100	

#### 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			0.3
Pin Length	l	mm		19	

### Measurement Conditions / Comments

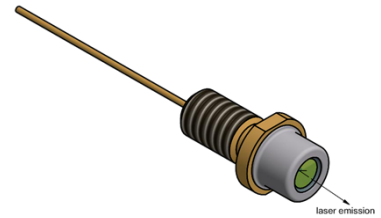
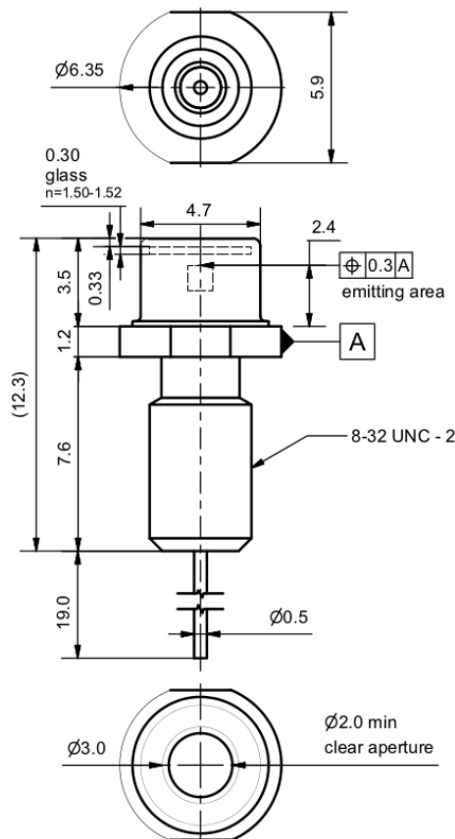
reference plane A: top side of TO header

reference B: center of outer diameter of header

### Package Pinout

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

### Package Drawings



AIZ-16-0411-1411

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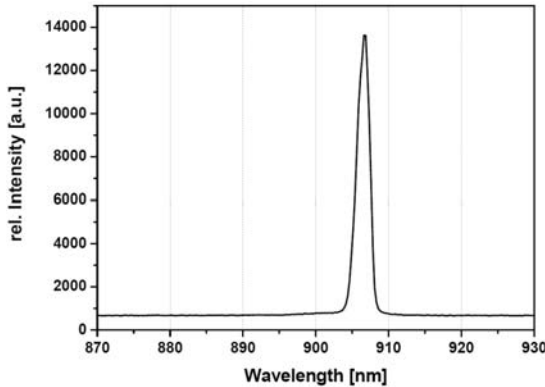
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## MULTI MODE LASER DIODES Broad Area Laser

### 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.

