

EYP-RWL-0830-00250-1300-TOS22-0000

Revision 0.70

02.08.2017

SINGLE MODE LASER Ridge Waveguide Laser



General Product Information

Product	Application
830 nm Fabry-Perot Laser with hermetic TO Housing	Spectroscopy
	Sensing



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature	T_S	°C	-20		85
Operational Temperature at Case	T_C	°C	-20		50
Forward Current	I_F	mA			400
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	mW			300

Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings can cause permanent damage to the device. Please note that a damaging optical power level may occur although the maximum current is not reached.

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T_C	°C	15		40
Forward Current	I_F	mA			360
Output Power	P_{opt}	mW	50		250

Measurement Conditions / Comments

measured with integrating sphere

Characteristics at 25° C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	λ_c	nm	820	830	840
Spectral Width (FWHM)	$\Delta\lambda$	nm			1
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Forward Current @ $P_{opt} = 250$ mW	I_F	mA			360
Slope Efficiency	η_d	W / A	0.6	0.8	
Threshold Current	I_{th}	mA			70
Divergence parallel	$\Theta_{ }$	°		12	
Divergence perpendicular	Θ_{\perp}	°		15	

Measurement Conditions / Comments

see images on page 4

total output measured with integrating sphere

FWHM

FWHM

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

Parameter	Symbol	Unit	min	typ	max
Polarization				TM	
Spatial Mode (transversal)				TEM ₀₀	
Spectral Mode (longitudinal)				Single/Multi Mode	

Measurement Conditions / Comments
E field perpendicular to Pin 2 - Pin 3 - plane
Fundamental Mode
depending on operating conditions

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Package Dimensions

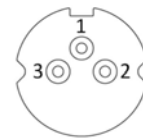
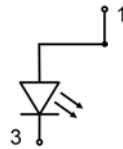
Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	d_{EP}	mm		1.60	
Diameter	D	mm		5.6	
Pin Length	l_{PIN}	mm	6		

Measurement Conditions / Comments

reference plane: top side of TO header

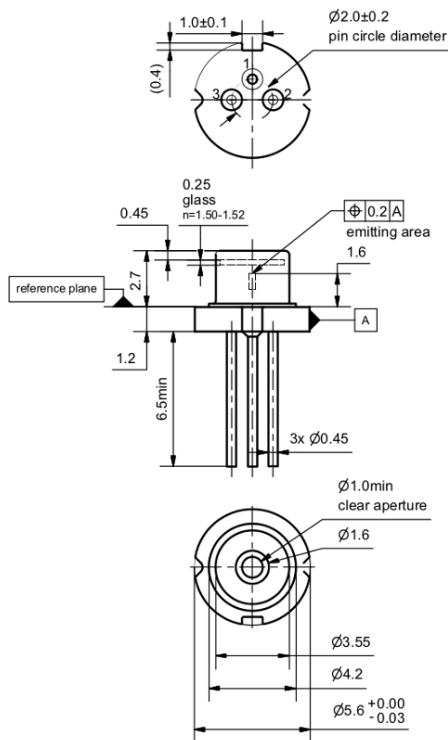
Pin Assignment

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



bottom view

Package Drawings



AIZ-15-1019-1332

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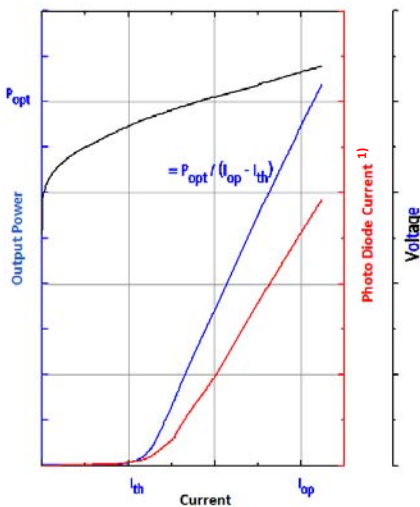
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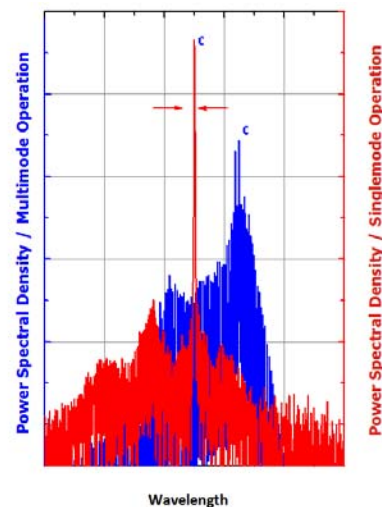
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Typical Measurement Results

Output Power vs. Current



Spectra at Specified Optical Output Power



1) only applicable for variants with monitor diode

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.

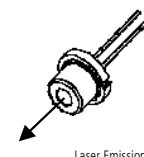
Unpacking, Installation and Laser Safety

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 RWL 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.

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.



Laser Emission

