DATA SHEET

EYP-RWL-0850-00100-0750-TOS52-0000

Revision 0.93

1900-01-00

SINGLE MODE LASER
Ridge Waveguide Laser

General Product Information

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

Absolute Maximum Ratings

	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			180
Reverse Voltage	V_R	V			2
Output Power	P_{opt}	mW			110

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

	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	15		40	
Forward Current	I_F	mA			160	
Output Power	P_{opt}	mW	10		100	

Characteristics at T_{LD} = 25 °C at Begin Of Life

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	840	850	860	see images on page 4
Spectral Width (FWHM)	$\Delta\lambda$	nm			1	
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3		
Output Power @ I_F : 160 mA	P_{opt}	mW	100			total output measured with integrating sphere
Slope Efficiency	η_d	W / A	0.6	0.8		
Threshold Current	I_{th}	mA			70	
Cavity Length	L	µm		750		
Divergence parallel	$\Theta_{\parallel}$	°		10		FWHM
Divergence perpendicular	$\Theta_{\perp}$	°		30		FWHM

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Characteristics at T_{amb} 25 °C at Begin Of Life cont'd

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Polarization				TE		E field parallel to Pin 2 - Pin 3 - plane
Spatial Mode (transversal)				TEM_{00}		Fundamental Mode
Spectral Mode (longitudinal)				Single/Multi Mode		depending on operating conditions

Package Dimensions

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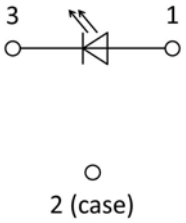
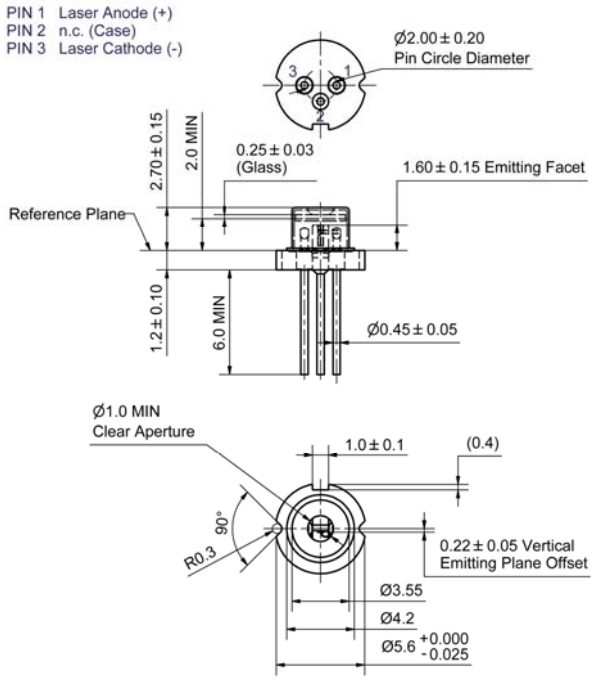
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	d_{EP}	mm		1.60		reference plane: top side of TO header
Diameter	D	mm		5,6		
Pin Length	l_{PIN}	mm	6			

Package Pinout

Case	2
Laser Cathode (-)	3
Laser Anode (+)	1



Package Drawings



Typical Measurement Results

Output Power vs. Current

Spectra at Specified Optical Output Power

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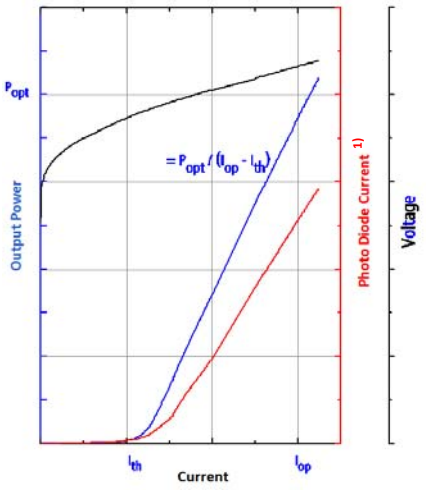
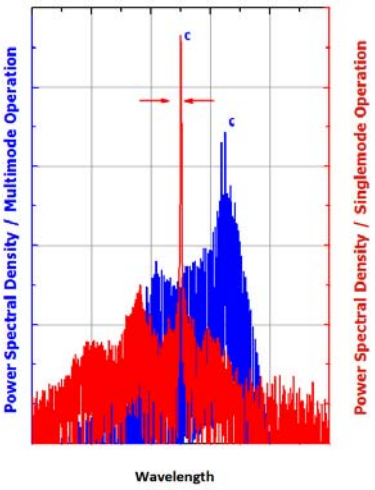




1) only applicable for variants with monitor diode

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.

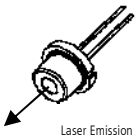
Unpacking, Installation and Laser Safety

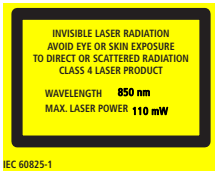
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use.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


Laser Emission



Complies with 21 CFR 1040.10 and 1040.40

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