

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
Operational Temperature at Case	T_C	°C	15		40
Forward Current	I_F	mA			160
Output Power	P_{opt}	mW	10		100

Measurement Conditions / Comments

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

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

Measurement Conditions / Comments

see images on page 4

total output measured with integrating sphere

FWHM

FWHM

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

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

Measurement Conditions / Comments

E field parallel to Pin 2 - Pin 3 - plane
Fundamental Mode
depending on operating conditions

Package Dimensions

info@toptica-eagleyard.com
www.toptica-eagleyard.com

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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

Package Pinout

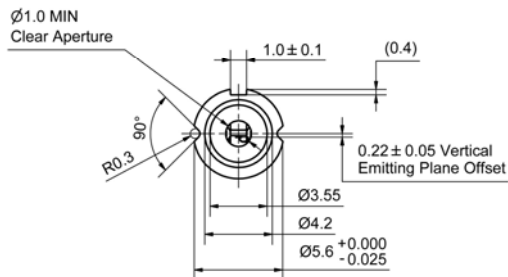
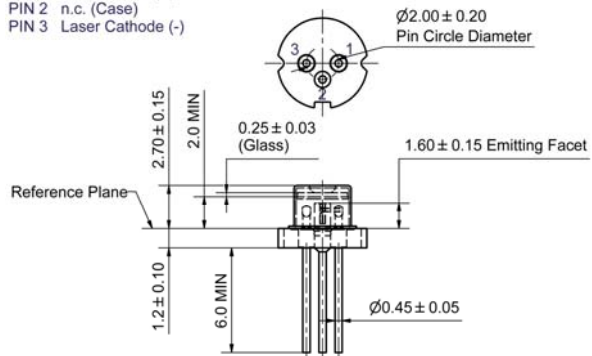
Case	2
Laser Cathode (-)	3
Laser Anode (+)	1



2 (case)

Package Drawings

PIN 1 Laser Anode (+)
PIN 2 n.c. (Case)
PIN 3 Laser Cathode (-)



Typical Measurement Results

info@toptica-eagleyard.com
www.toptica-eagleyard.com

Output Power vs. Current

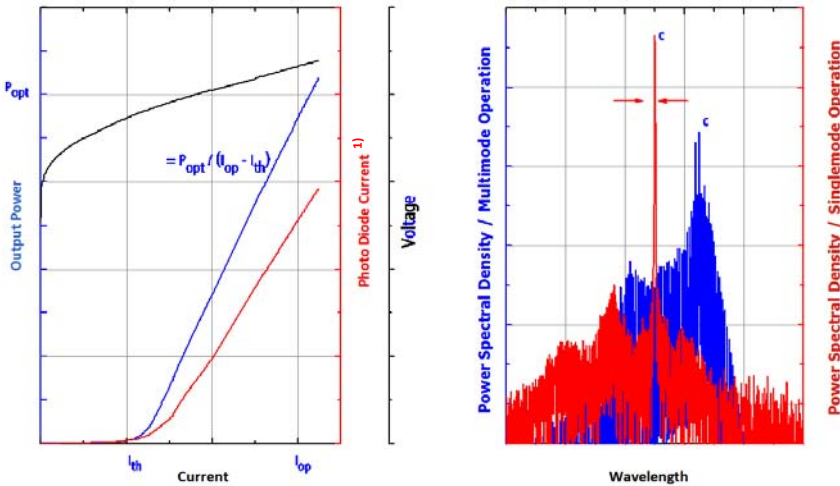
Spectra at Specified Optical Output Power

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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.

1) only applicable for variants with monitor diode

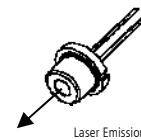
Unpacking, Installation and Laser Safety

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

