

**RIDGE WAVEGUIDE LASER**GaAs Semiconductor Laser Diode  
Fabry-Perot Laser**PRELIMINARY SPECIFICATION****RW Laser****EYP-RWL-0790-00100-1500-SOT02-0000****General Product Information**

Product	Application
790 nm Fabry-Perot Laser	Spectroscopy
sealed SOT Housing	
Monitor Diode	

**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			200
Reverse Voltage	$V_R$	V			0
Output Power	$P_{opt}$	mW			110

**Recommended Operational Conditions**

	Symbol	Unit	min	typ	max
Operational Temperature at case	$T_C$	°C	15		40
Forward Current	$I_F$	mA			180
Output Power	$P_{opt}$	mW	10		100

**Characteristics at  $T_{amb} 25\text{ °C}$  at Begin Of Life**

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	$\lambda_c$	nm	783	790	797
Spectral Width (FWHM)	$\Delta\lambda$	nm			1
Temperature Coefficient of Wavelength	$d\lambda / dT$	nm / K		0.3	
Output Power @ $I_F = 180\text{ mA}$	$P_{opt}$	mW	100		
Slope Efficiency	$\eta_d$	W / A	0.6	0.8	1.2
Threshold Current	$I_{th}$	mA			70



Stress in excess of the Absolute Maximum Ratings can cause permanent damage to the device. Operation at the Absolute Maximum Rating for extended periods of time can adversely affect the device reliability and may lead to reduced operational life.

**Measurement Conditions / Comments**

total output measured with integrating sphere

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Parameter	Symbol	Unit	min	typ	max
Operational Current @ $P_{opt} = 100$ mW	$I_{op}$	mA			180
Cavity Length	L	$\mu\text{m}$		1500	
Divergence parallel (FWHM)	$\Theta_{  }$	$^{\circ}$		10	
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	$^{\circ}$		30	
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

**Monitor Diode**

Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	$I_{mon} / P_{opt}$	$\mu\text{A} / \text{mW}$	1		10
Reverse Voltage Monitor Diode	$U_{R,MD}$	V	3		5

**Measurement Conditions / Comments**

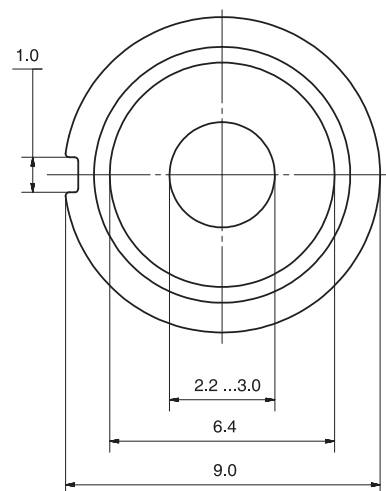
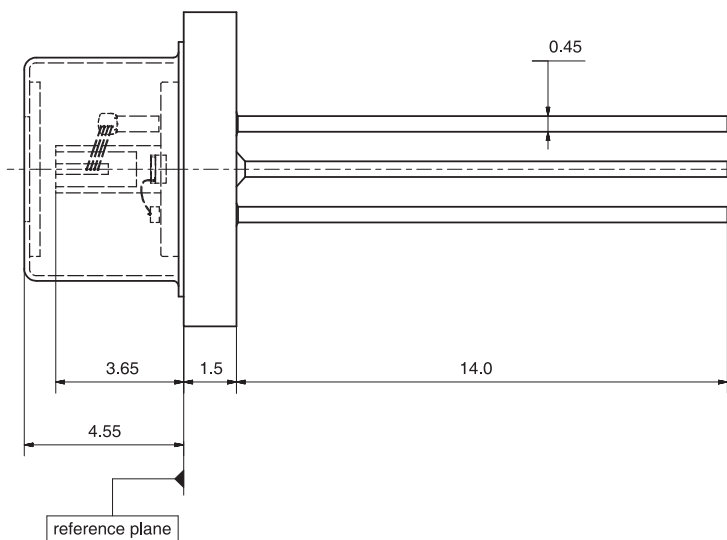
$U_R = 5$  V, target values

**RIDGE WAVEGUIDE LASER**GaAs Semiconductor Laser Diode  
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	Symbol	Unit	min	typ	max
Height of Emission Plane	$d_{EP}$	mm	3.50	3.65	3.70
Excentricity of Emission Center	R	mm			0.12
Pin Length	l	mm		14.0	

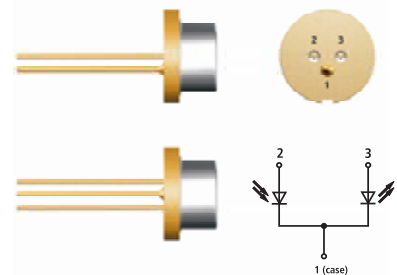
**Package Pinout****M-Type**

Ground	1
Photo Diode (+)	2
Laser (+)	3

**Package Drawings****RW Laser**

reference plane: top side of TO header

reference: center of outer diameter of header



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Fabry-Perot Laser



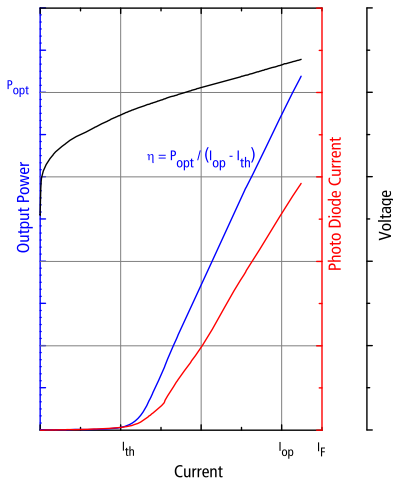
## PRELIMINARY SPECIFICATION

RW Laser

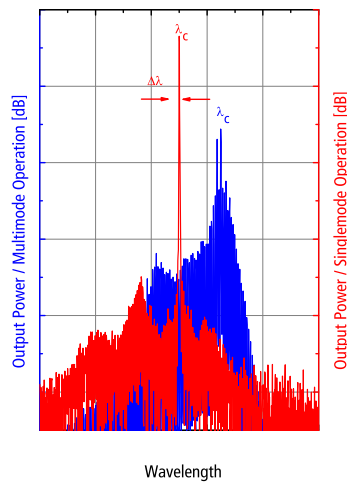
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## Typical Measurement Results

Output Power vs. Current



Spectra at Specified Optical Output Power



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.

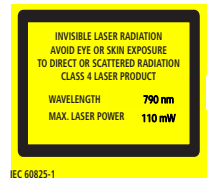
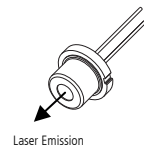
## Unpacking, Installation and Laser Safety

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.



Complies with 21 CFR 1040.10 and 1040.40

