

## EYP-RWE-0670-00702-1000-SOT02-0000

Revision 1.10

2013-03-15

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## RIDGE WAVEGUIDE LASER with AR-COATING

GaAs Semiconductor Laser Diode

Tunable Fabry-Perot Laser for External Cavity Operation



## General Product Information

Product	Application
tunable 670 nm Fabry-Perot Laser	Spectroscopy
for use in an External Cavity Diode Laser (ECDL)	
sealed SOT Housing	
Monitor Diode	

## Absolute Maximum Ratings

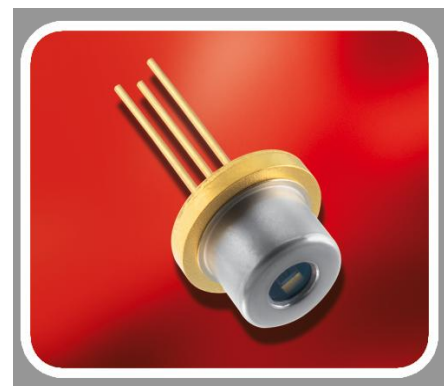
	Symbol	Unit	min	typ	max
Storage Temperature	$T_S$	°C	-20		85
Operational Temperature at Case	$T_C$	°C	-20		25
Forward Current	$I_F$	mA			160
Reverse Voltage	$V_R$	V			0
Output Power (extracavity)	$P_{opt}$	mW			20

## Recommended Operational Conditions

	Symbol	Unit	min	typ	max
Operational Temperature at Case	$T_C$	°C	15		20
Forward Current	$I_F$	mA			140

Characteristics at  $T_{LD} = 20\text{ °C}$  at Begin Of Life

Parameter	Symbol	Unit	min	typ	max
Center Wavelength	$\lambda_C$	nm		670	
Tuning Range	$\Delta\lambda_{tun}$	nm	660		675
Output Power (extracavity)	$P_{opt}$	mW		15	
Cavity Length	$L$	μm		1000	
Reflectivity at Front Facet	$R_{ff}$			$3 \cdot 10^{-4}$	$1 \cdot 10^{-3}$
Polarization				TE	
Spatial Mode (transversal)				$TEM_{00}$	
Spectral Mode (longitudinal)				Single/Multi Mode	



Stress in excess of the Absolute Maximum Ratings can cause permanent damage to the device.

## Measurement Conditions / Comments

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Tuning range and output power are estimated from the gain profile of the laser. The actual achieved wavelength and power are strongly influenced by the external cavity. Therefore eagleyard Photonics will give no guarantee on these parameters.

E field parallel to Pin 2 - Pin 3 - plane

Fundamental Mode

depending on operating conditions

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We focus on power.

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**Monitor Diode**

Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	$I_{mon} / P_{opt}$	$\mu A / mW$	1		40
Reverse Voltage Monitor Diode	$U_{R MD}$	V	3		5

Measurement Conditions / Comments
$U_R = 5 V$ ; $P_{opt}$ intracavity

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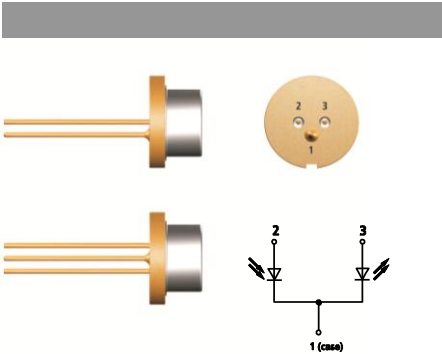
### Package Dimensions

Parameter	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	$l_{PIN}$	mm		14	

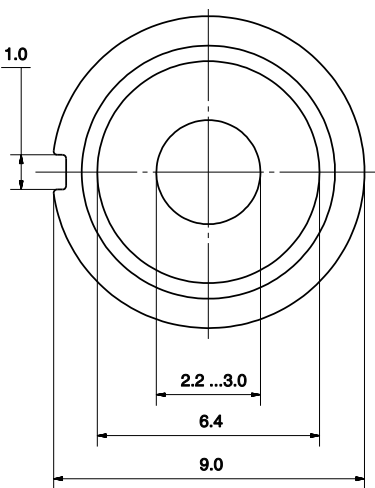
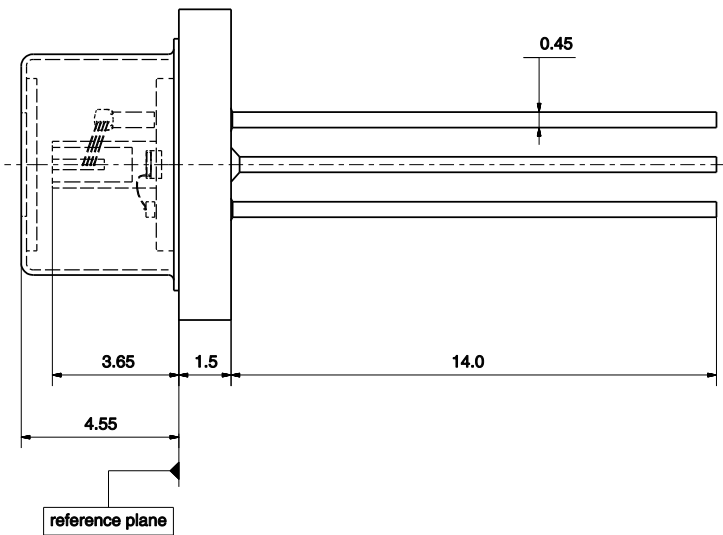
Measurement Conditions / Comments  
reference plane: top side of TO header  
reference: center of outer diameter of header

### Package Pinout

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



### Package Drawings



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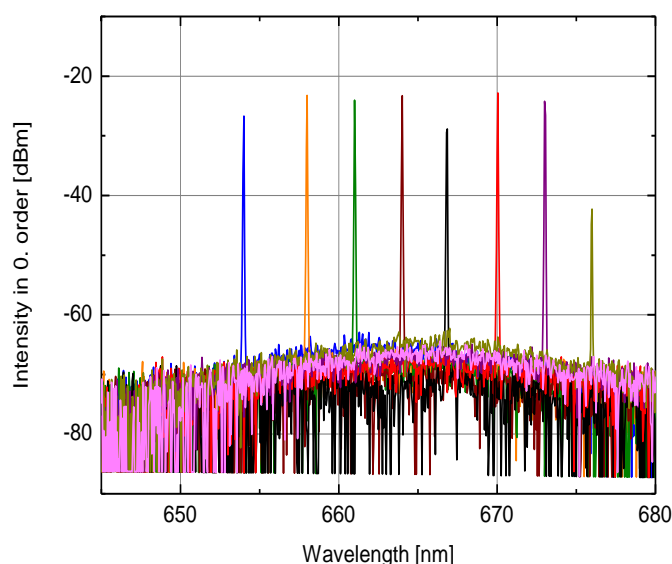
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## Typical Measurement Results

Emission Spectrum with external feedback



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.

## Ordering Information:



800 Village Walk #316  
Guilford, CT 06437  
Ph: 203-401-8093

Email orders to: [sales@xsoptix.com](mailto:sales@xsoptix.com)  
Fax orders to: 800-878-7282

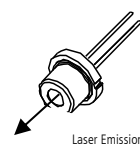
## Unpacking, Installation and Laser Safety

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 RWE diode type is known to be sensitive against thermal stress. It should not be operated without appropriate optical feedback from an external cavity. 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



IEC 60825-1



Complies with 21 CFR 1040.10 and 1040.40







