

# EYP-RWL-0840-00100-0750-TOF01-0000



We focus on power.

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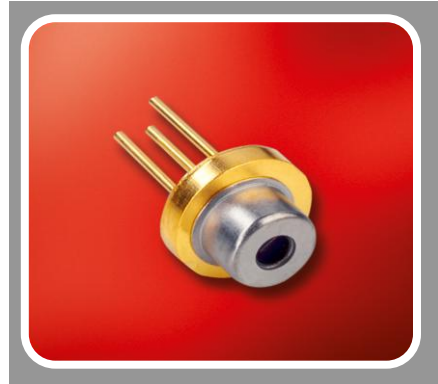
## RIDGE WAVEGUIDE LASER

GaAs Semiconductor Laser Diode  
Fabry-Perot Laser



### General Product Information

Product	Application
840 nm Fabry-Perot Laser with hermetic TO Housing	Spectroscopy
Monitor Diode	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	$\lambda_C$	nm	830	840	850
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	$\eta_d$	W / A	0.6	0.8	
Threshold Current	$I_{th}$	mA			70
Cavity Length	L	$\mu\text{m}$		750	
Divergence parallel	$\Theta_{  }$	°		10	
Divergence perpendicular	$\Theta_{\perp}$	°		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 <sub>00</sub>	
Spectral Mode (longitudinal)				Single/Multi Mode	

#### Measurement Conditions / Comments

E field parallel to Pin 2 - Pin 3 - plane

Fundamental Mode

depending on operating conditions

### Monitor Diode

Parameter	Symbol	Unit	min	typ	max
Monitor Detector Responsivity	$I_{mon} / P_{opt}$	$\mu A / mW$	0.5		20
Reverse Voltage Monitor Diode	$U_{RMD}$	V	3		5

#### Measurement Conditions / Comments

$U_R = 5 V$ , target values

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### Package Dimensions

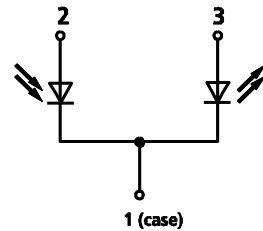
Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	$d_{EP}$	mm		1.27	
Diameter	D	mm		5,6	
Pin Length	$l_{PIN}$	mm	6		

### Measurement Conditions / Comments

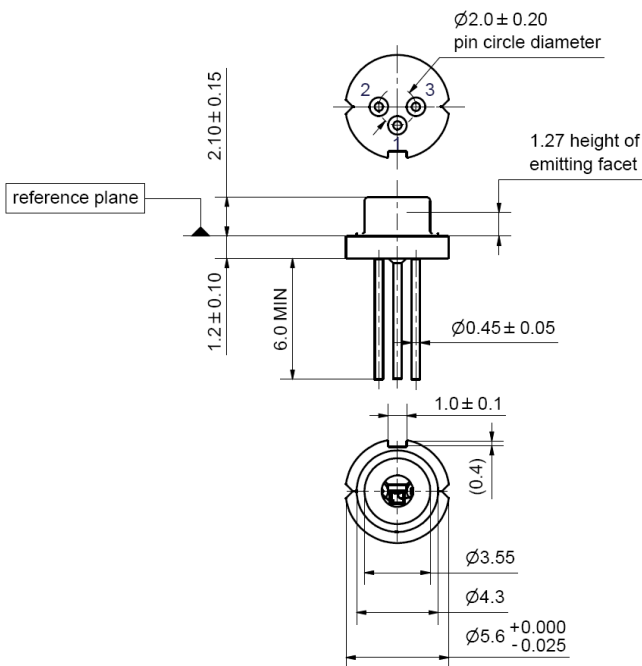
reference plane: top side of TO header

### Package Pinout

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



### Package Drawings



Z12-SPEC-SOT56-COM-0000

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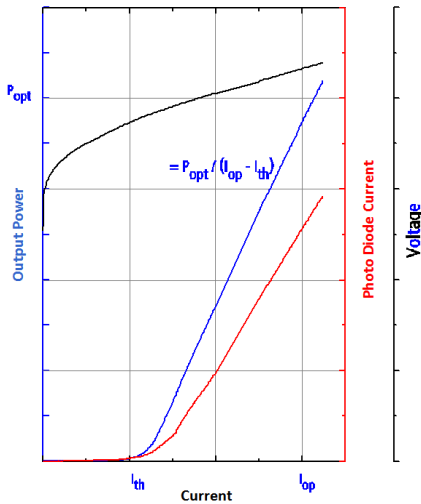
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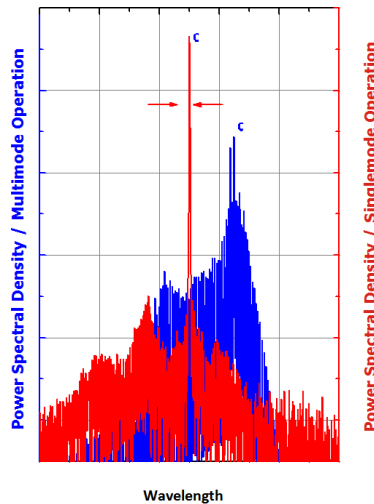


### Typical Measurement Results

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.

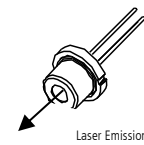
### Unpacking, Installation and Laser Safety

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.

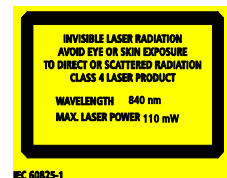
The RWL diode type is known to be sensitive against thermal stress. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

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.



Laser Emission



IEC 60825-1



Complies with 21 CFR 1040.10 and 1040.40