DATA SHEET

EYP-TPA-0870-00500-3006-CMT03-0000

We focus on power.

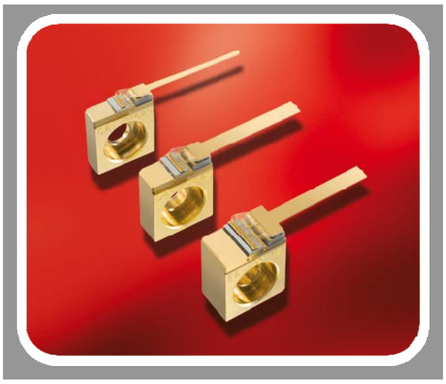
TAPERED AMPLIFIER

GaAs Semiconductor Laser Diode

RWE / RWL BAL DFB / DBR **TPL / TPA**

General Product Information

Product	Application
870 nm Tapered Amplifier	Spectroscopy
C-Mount Package	



Absolute Maximum Ratings

	Symbol	Unit	min	typ	max	
Storage Temperature	T_S	°C	-40		85	non condensing
Operational Temperature at Case	T_C	°C	0		50	non condensing
Forward Current	I_F	A			1.7	Stress in excess of the Absolute Maximum Ratings can cause permanent damage to the device.
Reverse Voltage	V_R	V			0	
Output Power	P_{opt}	W			0.6	

Recommended Operational Conditions

	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_C	°C	5		40	non condensing
Forward Current	I_F	A			1.5	
Input Power	P_{input}	mW	10		50	
Output Power	P_{opt}	W			0.5	with proper injection from a seed laser

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

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	870	880	890	see images on page 4
Gain Width (FWHM)	$\Delta\lambda$	nm		20		
Temperature Coefficient of Wavelength	$d\lambda$ / dT	nm / K		0.25		
Amplification	P_{opt}	dB		10		
Operational Current @ P_{opt} = 0.5 W	$I_{op\ Gain}$	A			1.5	with proper injection from a seed laser
Output Power @ I_F = 1.5 A	P_{opt}	W	0.5			
Cavity Length	L	µm		2750		

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

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Input Aperture (at rear side)	d_{input}	µm		3		
Output Aperture (at front side)	d_{output}	µm		190		
Astigmatism	A	µm	500	600	700	depending on operating conditions
Divergence parallel (FWHM)	$\Theta_{\|\|}$	°		14		
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	°		28		
Polarization				TE		E field parallel to junction plane

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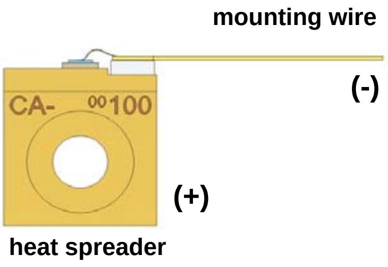
Package Dimensions

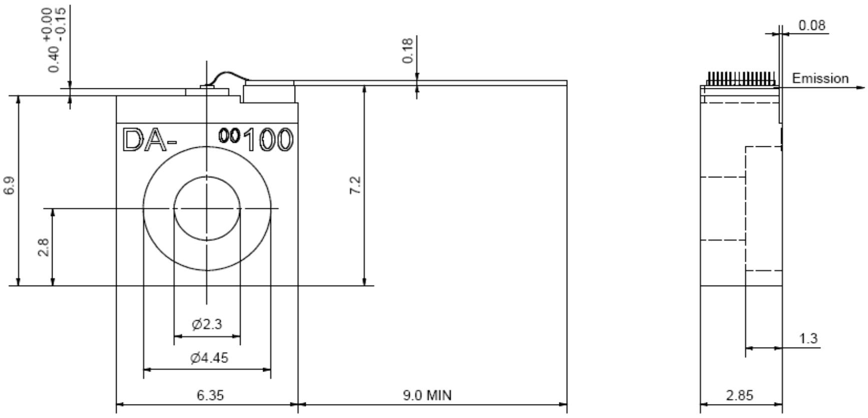
Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Height of Emission Plane	h	mm	7.05	7.20	7.35	
C-Mount Thickness	t	mm		2.75		

Package Pinout

Cathode (-)	Mounting Wire
Anode (+)	Housing

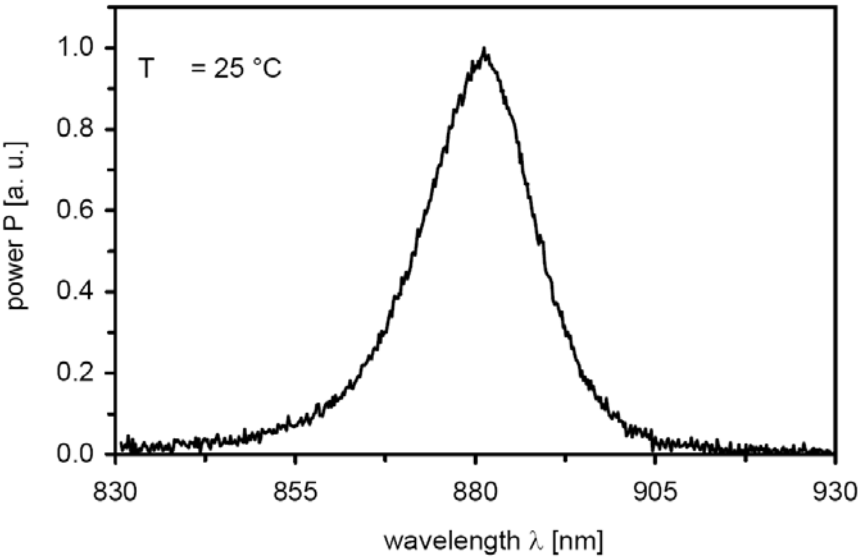


Package Drawings



Typical Measurement Results

Spectrum measured w/o injection:



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:

XSoptix
800 Village Walk #316
Guilford, CT 06437
Ph: 203-401-8093
Email orders to: sales@xsoptix.com
Fax orders to: 800-878-7282

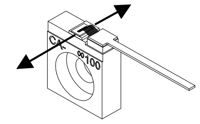
Unpacking, Installation and Laser Safety

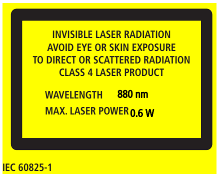
Unpacking the laser diodes should only be done at electrostatic safe workstations (EPA). Though protection against electro static discharge (ESD) is implemented in the laser package, charges may occur at surfaces. Please store this product in its original package at a dry, clean place until final use.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

The TPA diode type is known to be The TPA diode type is known to be sensitive against thermal stress. sensitive against thermal stress. It It should not be operated without appropriate injection from a seed should not be operated without laser. Operating at moderate temperatures on propper heat sinks appropriate injection from a seed laser. 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.

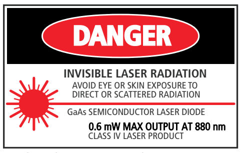
Each laser diode will come with an individual test protocol verifying the parameters given in this document.


Laser Emission


INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT

WAVELENGTH 880 nm
MAX. LASER POWER 0.6 W

IEC 60825-1


DANGER
INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE TO
DIRECT OR SCATTERED RADIATION
GaAs SEMICONDUCTOR LASER DIODE
0.6 mW MAX OUTPUT AT 880 nm
CLASS IV LASER PRODUCT

Complies with 21 CFR 1040.10 and 1040.40