**DATA SHEET** 

# EYP-TPA-0650-00250-2007-CMT02-0000

Ordering Information:

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

Fax orders to: sales@xsoptix.com Fax orders to: 800-878-7282

Revision 1.00

## TAPERED AMPLIFIERS Semiconductor Optical Amplifier



TOPTICA

Application	
Spectroscopy	



### Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max
Storage Temperature (non condensing)	Ts	°C	-40		85
Operational Temperature at Case (non cond.)	T <sub>C</sub>	°C	0		30
Forward Current	I <sub>F</sub>	А			1
Reverse Voltage	V <sub>R</sub>	V			0
Output Power	P <sub>opt</sub>	W			0.3
Output Power	P <sub>opt</sub>	W			

### Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T <sub>C</sub>	°C	5	15	20
Forward Current	I <sub>F</sub>	А			0.75
Input Power	P <sub>input</sub>	mW	10		50
Output Power	P <sub>opt</sub>	W			0.25
	υρι				

## Characteristics at $T_{LD}$ = 15 °C at BOL

Parameter	Symbol	Unit	min	typ	max
Design Wavelength	$\lambda_{C}$	nm		650	
Gain Width (FWHM)	Δλ	nm		10	
Temperature Coefficient of Wavelength	dλ / dT	nm / K		0.25	
Operational Current @ $P_{opt} = 0.25 W$	I <sub>op Gain</sub>	А			0.75
Output Power	P <sub>opt</sub>	W	0.25		
Amplification	G	dB		12	
Cavity length	L <sub>C</sub>	μm		2000	

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#### Measurement Conditions / Comments

Stress in excess of one of the Absolute Maximum Ratings may damage the laser. Please note that a damaging optical power level may occur although the maximum current is not reached. These are stress ratings only, and functional operation at these or any other conditions beyond those indicated under Recommended Operational Conditions is not implied.

Measurement Conditions / Comments
non condensing
with proper injection from a seed laser

see im	ages on pa	age 4			
with pr	oper injec	tion from	a seed l	aser	
with p	oper injec	tion from	a seed l	aser	

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# EYP-TPA-0650-00250-2007-CMT02-0000

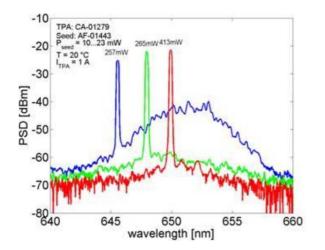
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## TAPERED AMPLIFIERS Semiconductor Optical Amplifier

Characteristics at T <sub>LD</sub> = 15 °C	Cat BOL				cont'd
Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R <sub>ff</sub>			3.10-4	1.10-3
Reflectivity at Rear Facet	R <sub>rf</sub>			3.10-4	1.10-3
Input Aperture (at rear side)	d <sub>in</sub>	μm		7.5	
Output Aperture (at front side)	d <sub>out</sub>	μm		70	
Astigmatism	А	μm		tbd	
Input Divergence parallel (1/e <sup>2</sup> )	$\Theta_{in}$	0		tbd	
Input Divergence perpendicular (1/e <sup>2</sup> )	$\Theta_{\text{in}\perp}$	0		tbd	
Output Divergence parallel (1/e <sup>2</sup> )	$\Theta_{\text{out}}$	0		tbd	full angle
Output Divergence perpendicular (1/e <sup>2</sup> )	$\Theta_{\text{out}\perp}$	0		tbd	
Beam quality factor	M <sup>2</sup>				
Polarization				TE	

# Measurement Conditions / Comments estimated at recommended maximum forward current full angle E field parallel to junction plane

## Typical Measurement Results



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.





2011-12-08

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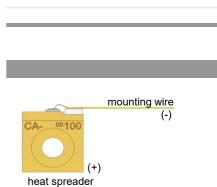
## **TAPERED AMPLIFIERS Semiconductor Optical Amplifier**

Package Dimensions					
Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.05	7.10	7.20
C-Mount Thickness	t	mm		2.15	

## Package Pinout

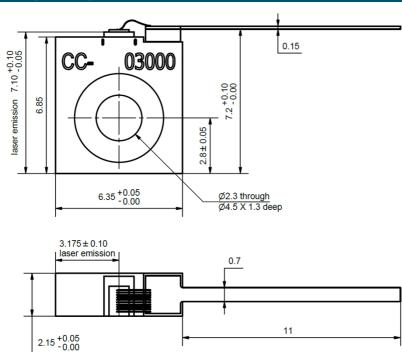
Mounting Wire Housing

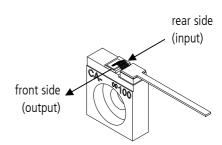
Cathode (-) Anode (+)



Measurement Conditions / Comments

### Package Drawings





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## **TAPERED AMPLIFIERS Semiconductor Optical Amplifier**

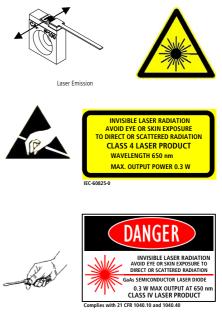
Unpacking, Installation and Laser Safety

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 sensitive against thermal stress. It should not be operated without appropriate injection from a seed laser. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode. The chip should be protected against moisture. A water vapor content below 5000 ppm is recommended for applications with high reliability requirements.

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.









2011-12-08



