



Revision 0.91

EYP-TPA-0980-00500-3006-CMT03-0000

TAPERED AMPLIFIERS Semiconductor Optical Amplifier





General Product Information	
Product	Application
980 nm Tapered Amplifier	Spectroscopy
C-Mount Package	Metrology



Absolute Maximum Ratings					
Parameter	Symbol	Unit	min	typ	max
Storage Temperature (non condensing)	T _S	°C	-40		85
Operational Temperature at Case (non cond.)	T _C	°C	0		50
Forward Current	I _F	Α			2.0
Reverse Voltage	V_R	V			0
Output Power	P _{opt}	W			0.6

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.

Parameter	Symbol	Unit	min	typ	max
Operational Temperature at Case	T _C	°C	5		40
Forward Current	I _F	Α			1.8
Input Power	P _{input}	mW	10		50
Output Power	P _{opt}	W			0.5

Recommended Operational Conditions

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

Characteristics at T _{LD} = 25 °C	at BOL				
Parameter	Symbol	Unit	min	typ	max
Design Wavelength	λ_{C}	nm		980	
Gain Width (FWHM)	$\Delta\lambda$	nm		30	
Temperature Coefficient of Wavelength	$d\lambda$ / dT	nm / K		0.3	
Operational Current @ P _{opt} = 0.5 W	I _{op Gain}	Α			1.8
Output Power	P _{opt}	W	0.5		
Amplification	G	dB			
Cavity Length	L _C	μm		2750	

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

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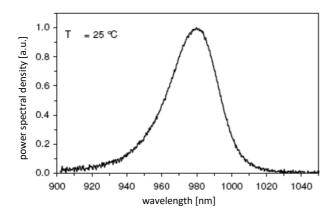


Characteristics at T _{LD} = 25 °C	at BOL				cont'd
Parameter	Symbol	Unit	min	typ	max
Reflectivity at Front Facet	R_{ff}			3·10-4	1.10-3
Reflectivity at Rear Facet	R_{rf}			3.10-4	1.10-3
Input Aperture (at rear side)	d _{in}	μm		3	
Output Aperture (at front side)	d_out	μm		190	
Astigmatism	А	μm		625	
Input Divergence parallel (1/e²)	Θ_{in}	0			
Input Divergence perpendicular (1/e²)	$\Theta_{in\perp}$	0			
Output Divergence parallel (1/e²)	$\Theta_{out }$	0			
Output Divergence perpendicular (1/e²)	$\Theta_{out\perp}$	0			
Beam quality factor	M^2				
Polarization				TE	

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

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.

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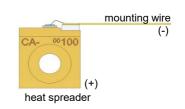
Package Dimensions

Parameter	Symbol	Unit	min	typ	max
Height of Emission Plane	h	mm	7.05	7.10	7.20
C-Mount Thickness	t	mm		2.80	

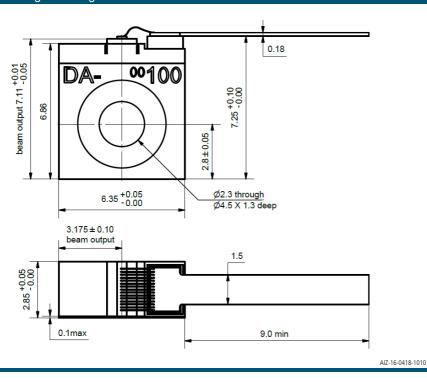
Measurement Conditions / Comments

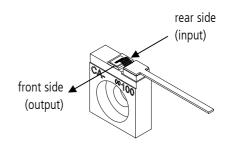
Package Pinout

Mounting Wire	Cathode (-)
Housing	Anode (+)



Package Drawings





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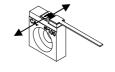
Unpacking, Installation and Laser Safety

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 willl 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.







INVISIBLE LASER RADIATION
AVOID EYE OR SKIN EXPOSURE
TO DIRECT OR SCATTERED RADIATION
CLASS 4 LASER PRODUCT
WAVELENGTH 980 nm
MAX. OUTPUT POWER 0.6 W

IEC-60825-0



