EYP-TBR-1064-02000-6000-BTW09-0000

Revision 0.71

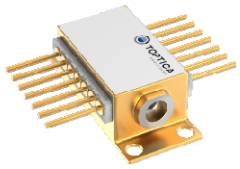
18.02.2026

SINGLE FREQUENCY LASER DIODES
Distributed Bragg Reflector Laser with integrated Amplifier

General Product Information

Product	Application
1064 nm DBR Laser	Raman Spectroscopy
with monolithically integrated Tapered Amplifier (TA)	Metrology
hermetic 14 Pin Butterfly Housing (RoHS compliant)	Nd:YAG Replacement
including Thermoelectric Cooler and Thermistor	EDFA Pumping

µMOPA



Absolute Maximum Ratings

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Storage Temperature	T_S	°C	-40		85	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.
Operational Temperature at Case	T_{case}	°C	-20		75	
Operational Temperature at Laser Ch	T_{chip}	°C	10		50	
Forward Current DBR	I_{DBR}	mA			500	
Forward Current TA	I_{TA}	A			7.5	
Reverse Voltage DBR	$V_{R\ DBR}$	V			2	
Reverse Voltage TA	$V_{R\ TA}$	V			2	
Output Power	P_{opt}	W			2	
TEC Current	I_{TEC}	A			5	
TEC Voltage	V_{TEC}	V			7	

Recommended Operational Conditions

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Operational Temperature at Case	T_{case}	°C	0		35	
Operational Temperature at Chip	T_{chip}	°C	15	25	35	
Forward Current DBR	I_{DBR}	mA			450	
Forward Current TA	I_{TA}	A			7.0	
Output Power	P_{opt}	W			2.0	
TEC Current	I_{TEC}	A			3	
TEC Voltage	V_{TEC}	V			4.5	

eagleyard Photonics GmbH Rudower Chaussee 29 12489 Berlin GERMANY
www.toptica-eagleyard.com info@toptica-eagleyard.com fon +49.30.6392 4520
This data sheet is subject to change without notice.
© eagleyard Photonics

EYP-TBR-1064-02000-6000-BTW09-0000

Revision 0.71

18.02.2026

SINGLE FREQUENCY LASER DIODES
Distributed Bragg Reflector Laser with integrated Amplifier

Characteristics

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Center Wavelength	λ_C	nm	1063	1064	1065	see images on page 4
Spectral Width (FWHM)	$\Delta\lambda$	pm		3		apart from mode-hops (see page 4)
Sidemode Supression Ratio	SMSR	dB	30			P_{opt} = 2 W
Temperature Coefficient of Waveleng	$d\lambda / dT$	nm / K		0.08		
Current Coefficient of Wavelength	$d\lambda / dI_{DBR}$	nm / mA		0.001		Laser Forward Current DBR
Current Coefficient of Wavelength	$d\lambda / dI_{TA}$	nm / A		0.035		Laser Forward Current TA
Laser Current @ P_{opt} = 2 .0 W	I_{TA}	A			7.0	
Slope Efficiency	η	W / A		0.8		Amplifier
Threshold Current	$I_{th\ TA}$	A		3		
Divergence parallel (FWHM)	$\Theta_{\parallel}$	mrad		2		parallel to the base plate of the housing
Divergence perpendicular (FWHM)	$\Theta_{\perp}$	mrad		2		perpendicular to base plate of the housing
Beam Diameter horiz ($1/e^2$)	$d_{\parallel}$	mm		1		parallel to the base plate of the housing
Beam Diameter verti ($1/e^2$)	$d_{\perp}$	mm		1		perpendicular to base plate of the housing
Degree of Polarization	DOP	%		90		P_{opt} = 2 W; E field parallel to the base plate

Thermoelectric Cooler

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Current	I_{TEC}	A		1.6	2.5	P_{opt} = 2 W, ΔT = 20 K
Voltage	U_{TEC}	V		2.0	5.0	P_{opt} = 2 W, ΔT = 20 K
Power Dissipation (total loss at case)	P_{loss}	W		10		P_{opt} = 2 W, ΔT = 20 K
Temperature Difference	ΔT	K			25	P_{opt} = 2 W, $\Delta T = \lvert T_{case} - T_{chip} \rvert$

Thermistor (Standard NTC Type)

Parameter	Symbol	Unit	min	typ	max	Measurement Conditions / Comments
Resistance	R	kΩ		10		T_{chip} 25° C
Beta Coefficient	β			3892		$R_1 / R_2 = e^{\beta (1/T_1 - 1/T_2)}$ at T_{chip} θ° … 50° C
Steinhart & Hart Coefficient A	A			$1.1293 \cdot 10^{-3}$		$1/T = A + B(\ln R) + C(\ln R)^3$
Steinhart & Hart Coefficient B	B			$2.3410 \cdot 10^{-4}$		T: temperature in Kelvin
Steinhart & Hart Coefficient C	C			$8.7755 \cdot 10^{-8}$		R: resistance at T in Ohm

This data sheet is subject to change without notice.
© eagleyard Photonics

EYP-TBR-1064-02000-6000-BTW09-0000

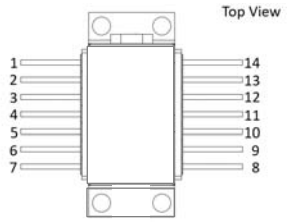
Revision 0.71

18.02.2026

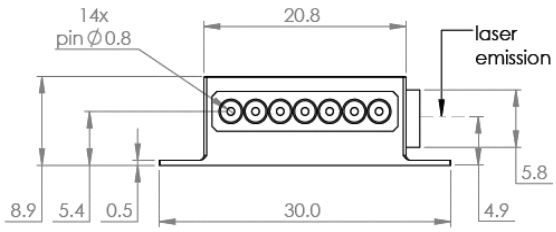
SINGLE FREQUENCY LASER DIODES
Distributed Bragg Reflector Laser with integrated Amplifier

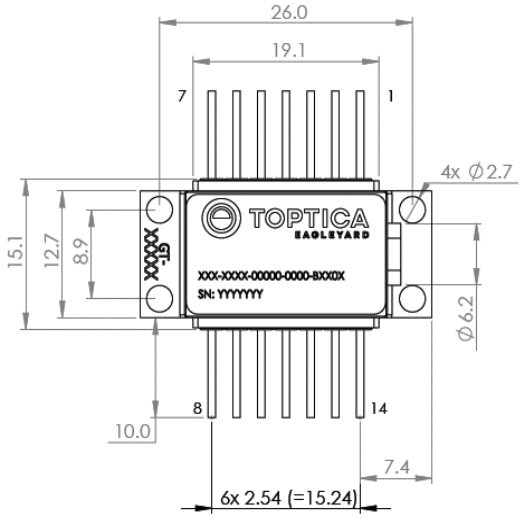
Pin Assignment

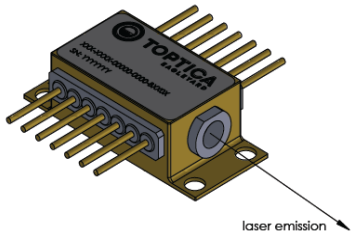
1	Thermoelectric Cooler (+)	14	Thermoelectric Cooler (-)
2	Thermistor +	13	not connected
3	not connected	12	Amplifier Cathode
4	(Thermistor +)	11	Amplifier Cathode
5	Thermistor -	10	Amplifier Anode
6	DBR Laser Cathode	9	Amplifier Anode
7	DBR Laser Anode	8	not connected



Package Drawings







Caution

Excessive mechanical stress on the package can lead to a damage of the laser.

SWZ-23-0116-1755

This data sheet is subject to change without notice.
© eagleyard Photonics

EYP-TBR-1064-02000-6000-BTW09-0000

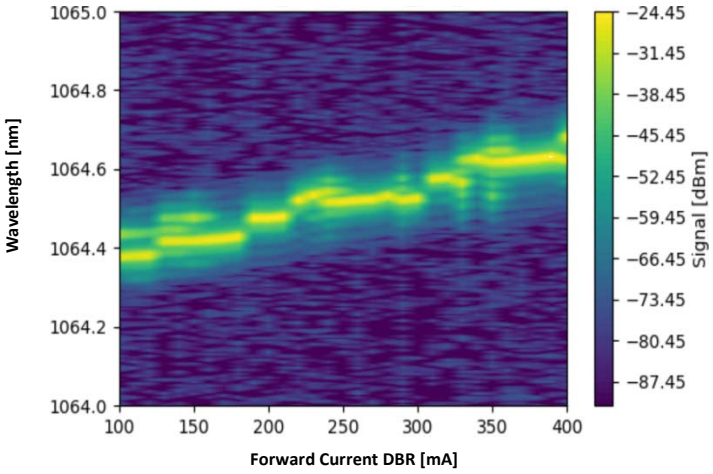
Revision 0.71

18.02.2026

SINGLE FREQUENCY LASER DIODES
Distributed Bragg Reflector Laser with integrated Amplifier

Typical Measurement Results

Spectral Map



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.

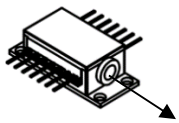
Unpacking, Installation and Laser Safety

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.

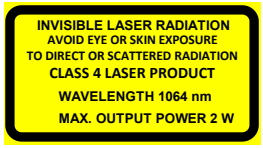
The TBR laser is sensitive against optical feedback, so an optical isolator may be required in order to avoid any disturbance of the emission spectrum. Operating at moderate temperatures on proper heat sinks will contribute to a long lifetime of the diode.

Avoid direct and/or indirect exposure to the free running beam. Collimating and focussing the free running beam with optics as common in optical instruments will increase threat to the human eye.

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.



Laser Emission



This data sheet is subject to change without notice.
© eagleyard Photonics