JENOPTIK

High Power Single Emitter Diode Lasers

90 µm, 940 nm, 12 W

JDL-BAE-090-940-TE-12-4.0

Features:

- High laser power
- High efficiency
- Long lifetime, high reliability
- Excellent beam characteristics

Applications:

- Pumping of solid-state lasers and fiber lasers
- Industrial, scientific and medical systems
- Applications in the printing industry
- Defense and security

High Power Single Emitter Diode Lasers

90 µm, 940 nm, 12 W

Specifications

Product	JDL-BAE-090-940-TE-812-4.0				
	Symbol	Min	**Nom**	Max	Unit
Operation*					
Wavelength (cw)	λ	937	**940**	943	nm
Optical Output Power	P_{opt}		**12**		W
Operation Mode			**cw, switched**		
Power Modulation			**100**		%
Geometrical					
Number of Emitters			**1**		
Emitter Width	W	85	**90**	95	µm
Emitter Pitch	P		**-**		µm
Filling Factor	F		**-**		%
Width	B		**600**		µm
Cavity Length	L	3980	**4000**	4020	µm
Thickness	D	115	**120**	125	µm
Electro Optical Data*					
Fast Axis Divergence (FWHM)	$\theta_{\perp}$		**23**	26	°
Fast Axis Divergence**	$\theta_{\perp}$		**55**	58	°
Slow Axis Divergence at 12 W (FWHM)	$\theta_{\parallel}$		**6**	8	°
Slow Axis Divergence at 12 W**	$\theta_{\parallel}$		**11**	13	°
Pulse Wavelength	λ	933	**936**	940	nm
Spectral Bandwidth (FWHM)	$\Delta\lambda$		**4**	5	nm
Slope Efficiency***	η	0.95	**1.0**	1.05	W/A
Threshold Current	I_{th}		**0.30**	0.40	A
Operating Current	I_{op}		**12.5**	13.0	A
Operating Voltage	V_{op}		**1.55**	1.65	V
Series Resistance	R_s		**15**	20	mΩ
Degree of TE Polarization	α	97			%
EO Conversion Efficiency***	η_{tot}		**61**	63	%

* Mounted on a heat sink with Rth = 2.0 K/W, coolant temperature 25 °C, operating at nominal power

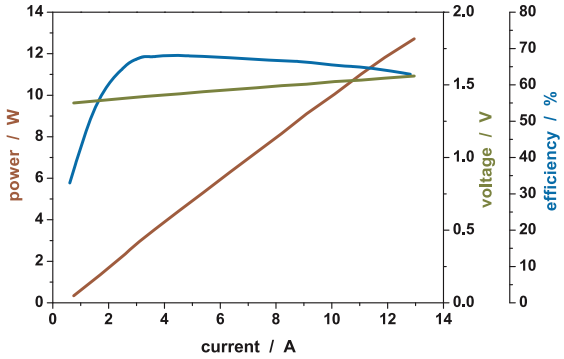
** Full width at 95 % power content

*** Item may change upon notice and acceptance by JENOPTIK Diode Lab GmbH, due to future improvements of technology or processing

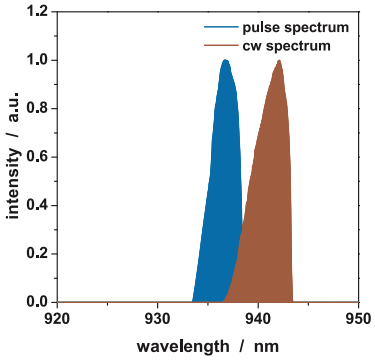
Note: Nominal data represents typical values.

Safety Advices: Single emitter diode lasers are the active components in high-power diode lasers in accordance to IEC standard class 4 laser products. As delivered, single emitter diode lasers cannot emit any laser beam. The laser beam can only be released if the single emitter diode lasers are connected to a source of electrical energy. In this case, IEC-Standard 60825-1 describes the safety regulations to be taken to avoid personal injury.

Power - Current - Voltage - Characteristics*



Spectral Characteristic*



Specifications may change in compliance with our quality management system.

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