

High-power diode laser bars: 940 nm, 160 W cw JDL-BAB-50-47-940-TE-160-3.5

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
- Printing industry
- Defense and security

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Specifications

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Operation*	Symbol	Min	Nom	Max	Unit
Wavelength (cw)	λ	937	940	943	nm
Optical Output Power	P_{opt}		160		W
Operation Mode			cw, switched		
Power Modulation			100		%
Geometrical					
Number of Emitters			47		
Emitter Width	W	95	100	105	μm
Emitter Pitch	P		200		μm
Filling Factor	F		50		%
Bar Width	B	9600	9800	10000	μm
Cavity Length	L	3480	3500	3520	μm
Thickness	D	115	120	125	μm
Electro Optical Data*					
Fast Axis Divergence (FWHM)	θ_{\perp}		27	30	$^{\circ}$
Fast Axis Divergence**	θ_{\perp}		47	50	$^{\circ}$
Slow Axis Divergence at 160 W (FWHM)	θ_{\parallel}		5	7	$^{\circ}$
Slow Axis Divergence at 160 W**	θ_{\parallel}		8	9	$^{\circ}$
Pulse Wavelength	λ	927	930	933	nm
Spectral Bandwidth (FWHM)	$\Delta\lambda$		3	4	nm
Slope Efficiency***	η	1.0	1.1		W/A
Threshold Current	I_{th}		24	28	A
Operating Current	I_{op}		170	180	A
Operating Voltage	V_{op}		1.7	1.9	V
Series Resistance	R_s		1.3	2.3	m Ω
Degree of TE Polarization	α	98			%
EO Conversion Efficiency***	η_{tot}	50	56		%

* Mounted on a heat sink with $R_{th} = 0.25$ K/W, coolant temperature 25 °C, operating at nominal power

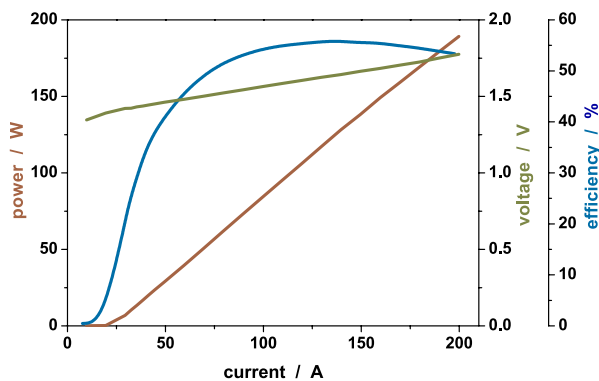
** Full width at 95 % power content

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

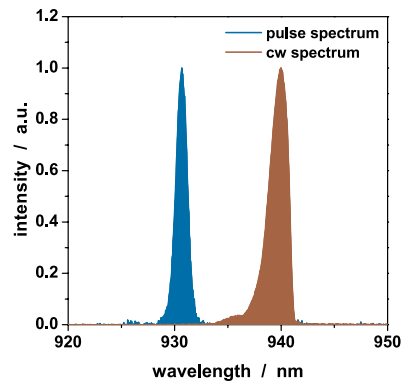
Note: Nominal data represents typical values.

Safety Advice: Laser bars are the active components in high-power diode lasers in accordance to IEC standard class 4 laser products. As delivered, laser bars cannot emit any laser beam. The laser beam can only be released if the bars 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 Characteristics*



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