

## High-power diode laser bars: 940 nm, 80 W cw JDL-BAB-50-47-940-TE-80-1.5

### 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

# High-power diode laser bars | 940 nm, 80 W cw

## JDL-BAB-50-47-940-TE-80-1.5

### Specifications

JDL-BAB-50-47-940-TE-80-1.5

| Operation*                          | Symbol               | Min  | Nom          | Max   | Unit          |
|-------------------------------------|----------------------|------|--------------|-------|---------------|
| Wavelength (cw)                     | $\lambda$            | 935  | 938          | 941   | nm            |
| Optical Output Power                | $P_{opt}$            |      | 80           |       | W             |
| Operation Mode                      |                      |      | cw, switched |       |               |
| Power Modulation                    |                      |      | 100          |       | %             |
| <b>Geometrical</b>                  |                      |      |              |       |               |
| Number of Emitters                  |                      |      | 47           |       |               |
| Emitter Width                       | W                    | 95   | 100          | 105   | $\mu\text{m}$ |
| Emitter Pitch                       | P                    |      | 200          |       | $\mu\text{m}$ |
| Filling Factor                      | F                    |      | 50           |       | %             |
| Bar Width                           | B                    | 9600 | 9800         | 10000 | $\mu\text{m}$ |
| Cavity Length                       | L                    | 1480 | 1500         | 1520  | $\mu\text{m}$ |
| Thickness                           | D                    | 115  | 120          | 125   | $\mu\text{m}$ |
| <b>Electro Optical Data*</b>        |                      |      |              |       |               |
| Fast Axis Divergence (FWHM)         | $\theta_{\perp}$     |      | 27           | 30    | $^{\circ}$    |
| Fast Axis Divergence**              | $\theta_{\perp}$     |      | 47           | 51    | $^{\circ}$    |
| Slow Axis Divergence at 80 W (FWHM) | $\theta_{\parallel}$ |      | 5            | 7     | $^{\circ}$    |
| Slow Axis Divergence at 80 W**      | $\theta_{\parallel}$ |      | 7            | 9     | $^{\circ}$    |
| Pulse Wavelength                    | $\lambda$            | 929  | 932          | 935   | nm            |
| Spectral Bandwidth (FWHM)           | $\Delta\lambda$      |      | 3            | 4     | nm            |
| Slope Efficiency***                 | $\eta$               | 1.0  | 1.1          |       | W/A           |
| Threshold Current                   | $I_{th}$             |      | 11           | 14    | A             |
| Operating Current                   | $I_{op}$             |      | 84           | 94    | A             |
| Operating Voltage                   | $V_{op}$             |      | 1.7          | 1.9   | V             |
| Series Resistance                   | $R_s$                |      | 2            | 4     | m $\Omega$    |
| Degree of TE Polarization           | $\alpha$             | 98   |              |       | %             |
| EO Conversion Efficiency***         | $\eta_{tot}$         | 57   | 62           |       | %             |

\* Mounted on a heat sink with  $R_{th} = 0.5$  K/W, coolant temperature 25 °C, operating at nominal power

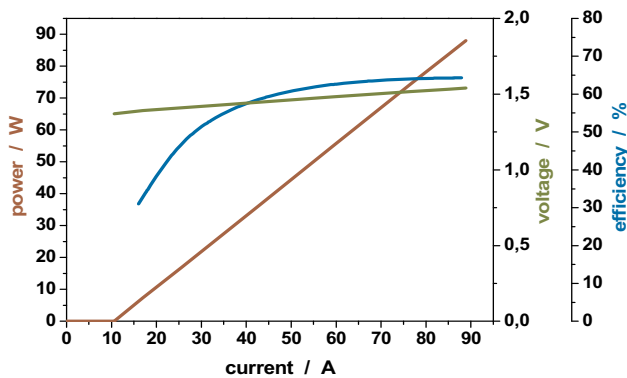
\*\* Full width at 95 % power content

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

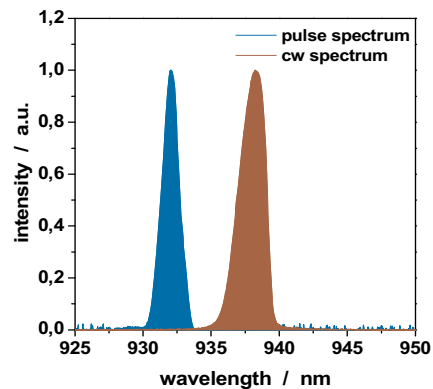
Note: Nominal data represents typical values.

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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