High-power diode laser bars:
808 nm, 80 W cw
JDL-BAB-50-47-808-TE-80-2.0

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
- Printing industry
- Defense and security
## Specifications

### Operation*

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Min</th>
<th>Nom</th>
<th>Max</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \lambda )</td>
<td>803</td>
<td>806</td>
<td>809</td>
<td>nm</td>
</tr>
<tr>
<td>( P_{\text{peak}} )</td>
<td>80</td>
<td></td>
<td></td>
<td>W</td>
</tr>
<tr>
<td>Operation Mode</td>
<td></td>
<td>cw, switched</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Modulation</td>
<td>100</td>
<td></td>
<td></td>
<td>%</td>
</tr>
</tbody>
</table>

### Geometrical

| Emitter Width | W | 95 | 100 | 105 | \( \mu \)m |
| Emitter Pitch | \( P \) | 200 | | | \( \mu \)m |
| Filling Factor | \( F \) | 50 | | | % |
| Bar Width | \( B \) | 9600 | 9800 | 10000 | \( \mu \)m |
| Cavity Length | \( L \) | 1980 | 2000 | 2020 | \( \mu \)m |
| Thickness | \( D \) | 115 | 120 | 125 | \( \mu \)m |

### Electro Optical Data*

- **Fast Axis Divergence (FWHM)**: \( \theta_o \) 36 \( ^\circ \) 39 \( ^\circ \)
- **Slow Axis Divergence at 80 W (FWHM)**: \( \theta_l \) 6 \( ^\circ \) 8 \( ^\circ \)
- **Slow Axis Divergence at 80 W**: \( \eta \) 6 \( ^\circ \) 9 \( ^\circ \)
- **Pulse Wavelength**: \( \lambda \) 798 nm 801 nm 804 nm
- **Spectral Bandwidth (FWHM)**: \( \Delta \lambda \) 2 nm 3 nm
- **Slope Efficiency****: \( \eta \) 1.15 1.2 1.2 W/A
- **Threshold Current****: \( I_{\text{th}} \) 19 A 22 A
- **Operating Current****: \( I_{\text{op}} \) 85 A 92 A
- **Operating Voltage****: \( V_{\text{op}} \) 1.8 V 2.0 V
- **Series Resistance****: \( R_s \) 2 m\( \Omega \) 4 m\( \Omega \)
- **Degree of TE Polarization****: \( \alpha \) 98 % 55 %
- **EO Conversion Efficiency****: \( \eta_{\text{tot}} \) 51 % 55 %

### Notes

- * Mounted on a heat sink with \( R_{\text{th}} = 0.5 \) K/W, coolant temperature 25 \( ^\circ \)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

### 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.

### Performance Figures and Dates in this Sheet

- Are typical and must be specifically confirmed in writing by JENOPTIK Diode Lab GmbH before they become applicable to any particular or contract.

- In accordance with our policy of continuous improvement specifications may change without notice.

- Accordingly, the details represented herein cannot be regarded as final and binding.

- It is our policy to constantly improve the design and specifications of our products.

- Note: Nominal data represents typical values.

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**Power - Current - Voltage - Characteristics**

![Graph showing power, current, and efficiency characteristics](image1)

**Spectral Characteristics**

![Graph showing spectral characteristics](image2)

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11/2017 | Specifications may change in compliance with our quality management system.