Fiber-Coupled Diode Lasers
cw, passively cooled with integrated TEC, new: 880 nm

JOLD-45-CPXF-1L

Features:
- High optical output power of 45 W cw
- Fiber core diameter: 400 μm to 600 μm (NA 0.22)
- Integrated power monitor
- Long Lifetime > 20,000 h, high reliability

Design 215415624 | 215415124

Applications:
- Pumping of solid-state lasers and fiber lasers
- Material processing
- Medical applications
Fiber-Coupled Diode Lasers
cw, passively cooled with integrated TEC, new: 880 nm

Specifications (Start of Life)

<table>
<thead>
<tr>
<th>Product</th>
<th>JOLD-45-CPXF-1L, Design 215415624 / 215415124</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Mode</td>
<td>cw, power modulation only between threshold and maximum current</td>
</tr>
<tr>
<td>Maximum Optical Output Power</td>
<td>45  45  45  45  45 W</td>
</tr>
<tr>
<td>Center Wavelength</td>
<td>808  880  915  938  976 nm</td>
</tr>
<tr>
<td>Center Wavelength Variation at 25 °C</td>
<td>3  3  5  3  3 nm</td>
</tr>
<tr>
<td>Typical Spectral Bandwidth (FWHM)</td>
<td>3  3  3  3  3 nm</td>
</tr>
<tr>
<td>Maximum Spectral Bandwidth (FWHM)</td>
<td>4  4  4  4  4 nm</td>
</tr>
<tr>
<td>Typical Operation Current</td>
<td>59  60  60  60  64 A</td>
</tr>
<tr>
<td>Maximum Operation Current</td>
<td>65  66  66  66  70 A</td>
</tr>
<tr>
<td>Typical Threshold Current</td>
<td>10  9  6  6  6 A</td>
</tr>
<tr>
<td>Maximum Threshold Current</td>
<td>13  12  9  9  9 A</td>
</tr>
<tr>
<td>Typical Slope</td>
<td>0.95  0.90  0.85  0.85  0.80 W/A</td>
</tr>
<tr>
<td>Minimum Slope</td>
<td>0.80  0.75  0.75  0.75  0.70 W/A</td>
</tr>
<tr>
<td>Maximum Operating Voltage</td>
<td>2  2  2  2  2 V</td>
</tr>
</tbody>
</table>

Fiber Core Diameter, Numerical Aperture
- Design 215415624: 400 μm, NA 0.22; free standing fiber inside F-SMA 905 towards the module
- Design 215415124: 600 μm, NA 0.22

Fiber Connector
- F-SMA 905

Power Monitor
- Infineon, SFH 229

Anode, Cathode Connectors
- M5 (e.g. socket cap screw ISO 4762), M4 (threaded bolt and hex nut ISO 4032)

Operation Conditions
- Non-condensing atmosphere

Expected Lifetime
- > 20,000 h (constant current), partly under qualification

Cooling:
- Mounting: Via thermally conductive foil (thickness 25 ... 100 μm) on cooled surface
- Diode Laser Operating Temperature: 15 ... 30 °C, measured with internal temperature sensor
- Temperature Sensor: PT 100 and PT 1000
- Integrated TECs: Connected in series, cold side at max. 30 °C
- Maximum Cooling Power: 2 TECs x 173 W => 346 W
- Maximum TEC Voltage, Current: 2 x 24.6 V => 49.2 V, 11.3 A

Options on request:
- 88x nm; for additional designs or specifications please visit our website: www.jenoptik.com

See General User Information!