# High brightness Fiber-coupled Diode Blue Laser

## Features
- Direct diode laser
- High power conversion efficiency
- Compact design
- Temperature sensor
- Water cooling

## Applications
- Materials processing
- Micro soldering
- Laser display / projector
- 3D Printing
- Scientific applications

## Technical Specifications

### Part Number
| GP-450-100-20 |

### Optical Specifications

| CW Output Power | 20 | W |
| Center Wavelength | 450 | nm |
| Center Wavelength Tolerance | ±10 | nm |
| Spectral Width (FWHM) | <15 | nm |
| Beam Divergence | 0.22 | NA |
| Beam Diameter (µm) | 105 | µm |

### Electrical Characteristics (typical)

| Power Conversion Efficiency | >20 | % |
| Threshold Current | ~0.3 | A |
| Operating Current @ 20W | 3.0-3.5 | A |
| Operating Voltage @ 20W | 34-40 | V |
| Recommended Hookup Wire | 16 or heavier | AWG |
| | 1.3 or heavier | mm² |

### Thermal Specifications

- Water temperature: +20 to +25 °C
- Environmental Temperature: +15 to +30 °C
- Storage Temperature: +5 to +60 °C

### Mechanical Specifications

| Dimensions (LxWxH) | 215 x 82 x 31.5 | mm |
| | 8.46 x 3.23 x 1.24 | inch |
| Weight | 950 | g |
| Fiber core diameter | 105 or larger | µm |
| Fiber numeric aperture | 0.22 or larger | NA |
| Fiber Connector | SMA-905 |

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1. All values measured at water temperature and environmental temperature = 25°C.
2. Reduced lifetime if used above normal operation temperature
3. A non-condensing environment is required
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Genesee Photonics follows a policy of continuous product improvement. Specifications are subject to change without notice. We offer a limited warranty for all laser products.
Testing Data

<table>
<thead>
<tr>
<th>Typical Testing Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part Number: GP-450-100-18</td>
</tr>
<tr>
<td>Laser Output Power at 2.0 Amp: 18.5 W</td>
</tr>
<tr>
<td>Center Wavelength: 450 nm</td>
</tr>
<tr>
<td>Spectral Width: 10 nm</td>
</tr>
<tr>
<td>Operating Current: 2.0 A</td>
</tr>
<tr>
<td>Operating Voltage at 18 W: 35 V</td>
</tr>
<tr>
<td>Power Conversion Efficiency at 2.0 Amp: &gt;20 %</td>
</tr>
<tr>
<td>Slope Efficiency at 2.0 Amp: 9.0 W/A</td>
</tr>
<tr>
<td>Water temperature: +25 °C</td>
</tr>
<tr>
<td>Environment Temperature: +25 °C</td>
</tr>
<tr>
<td>Fiber core diameter: 105 µm</td>
</tr>
<tr>
<td>Fiber numeric aperture: 0.22 NA</td>
</tr>
</tbody>
</table>

Output Power

![Output Power Graph](image)

Emission Spectrum

![Emission Spectrum Graph](image)