**EpiLaser™ AlGaAs/GaAs Edge-Emitter Wafers**

**Specifications**
- 50, 75, 100 mm
- MOCVD production
- Laser applications

**Features**
- Laser emission ranging from 740 nm to 980 nm
- QW Active Layer
  - GaAs
  - AlGaAs
  - InGaAs
  - InAlGaAs
  - GaAsP
  - InGaAsP
- Carbon-doped GaAs up to 1E20
- Zinc-doped GaAs up to 1E20
- Carrier concentration verified via both Hall and Polaron

**AlGaAs/GaAs Edge-Emitter Wafers:**
High-performance laser technology for industrial, medical, printer, and communications applications.

Designed to meet the demands of industrial, medical, printer, automotive, military, and communication applications, EpiWorks’ AlGaAs/GaAs edge-emitter epi wafers deliver the performance and reliability you demand. Manufactured on a state-of-the-art MOCVD production platform, EpiWorks wafers set a new standard for quality, performance, and yield.

**L-I-V curve for an 808 nm AlGaAs/GaAs laser bar**

A plot of the output power versus drive current and voltage from an 808 nm AlGaAs/GaAs edge-emitter laser bar. The laser bar has 46 emitters with a cavity length of 1 mm and a stripe size of 80 µm. The plot shows an excellent slope efficiency of 1.1 W/A with a threshold of 7.5 A.

**PL map for a three-inch 808 nm high-power edge-emitting laser**

A photoluminescence map (left) for a three-inch 808 nm laser. The map shows a standard deviation of less than 1 nm. The above graph shows a typical PL spectrum with a full-width at half-maximum of 15 nm.

**Reliability for an 808 nm high-power laser**

A lifetime plot for an 808 nm AlGaAs/GaAs edge-emitter laser bar with 46 emitters, a cavity length of 1 mm and an 80 µm stripe width. This device was tested under 28 A of drive current at 25°C and shows a lifetime greater than 1,200 hours.

**Epiworks characterization of GaAs edge-emitter laser wafers**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Measurement technique</th>
<th>Standard tolerance of specified value</th>
</tr>
</thead>
<tbody>
<tr>
<td>QW PL Wavelength</td>
<td>PL Mapping</td>
<td>±3nm</td>
</tr>
<tr>
<td>Composition</td>
<td>X-Ray</td>
<td>±3%</td>
</tr>
<tr>
<td>Thickness</td>
<td>Alpha-step and PL fringes</td>
<td>±10%</td>
</tr>
<tr>
<td>Doping</td>
<td>Polaron and Hall</td>
<td>±30%</td>
</tr>
<tr>
<td>Defect density (diameter &gt; 2 µm)</td>
<td>Surfscan</td>
<td>&lt;10 cm²</td>
</tr>
</tbody>
</table>

**Note:**
EpiWorks offers customers high-level interaction with leading researchers, next-generation GaAs and InP materials technology, device expertise, and a high-yield, reliable product. In addition to our quality EpiLaser™ wafers, EpiWorks also offers a range of products featuring advanced material systems for wireline and wireless applications, including our EpiFET™, EpiHBT™, and EpiDetector™ lines.