



# AlGaAs/GaAs Edge-Emitter Wafers:

High-performance laser technology for industrial, medical, printer, and communications applications.

### Specifications

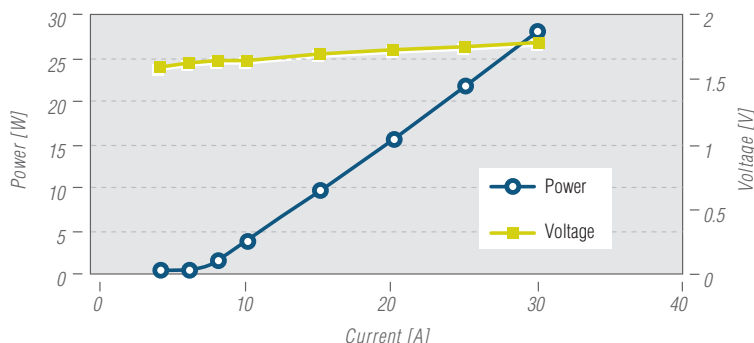
- 50, 75, 100 mm
- MOCVD production
- Laser applications

### Features

- Laser emission ranging from 740 nm to 980 nm
- QW Active Layer Materials
  - 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

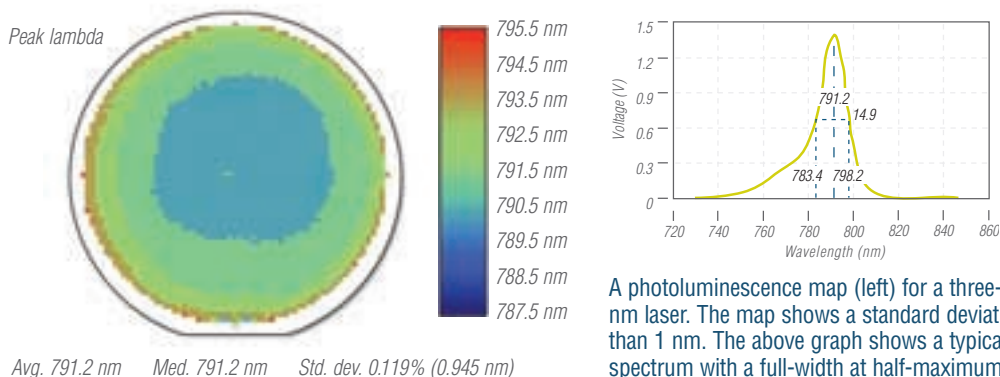
Designed to meet the demands of industrial, medical, printer, automotive, military, and communication applications, EpiWorks' AlGaAs/GaAs edge-emitter epi wafers deliver the performance and reliability you demand. Manufactured on a state-of-the-art MOCVD production platform, EpiWorks wafers set a new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

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



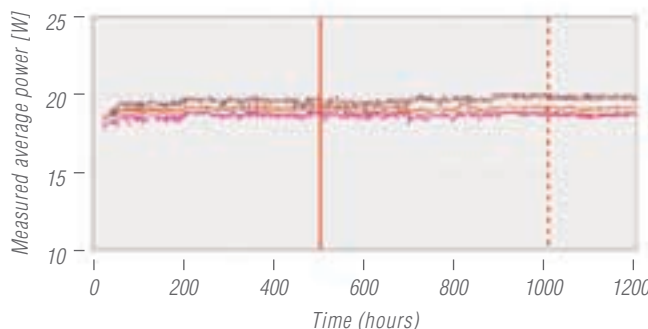
A plot of the output power versus drive current and voltage from an 808 nm AlGaAs/GaAs edge-emitter laser bar. The laser bar has 46 emitters with a cavity length of 1mm and a stripe size of 80µm. The plot shows an excellent slope efficiency of 1.1 W/A with a threshold of 7.5A.

### 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 28A of drive current at 25°C and shows a lifetime greater than 1,200 hours.

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.

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

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



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