



GaN Substrates: Semi-Polar

Kyma's semi-polar bulk GaN substrates are free of stacking faults and further improve device epitaxy by reducing dislocation density by 10,000x and doubling thermal conductivity when compared to other non-native substrates. GaN substrates provide an alternative to multi-step nucleation processes, allowing customers to:

- Eliminate interlayers
- Eliminate processing steps
- Improve device yield and reliability



Orientation: (10-11), (10-12), (10-13), (11-22) and (20-21) $\pm 1.0^\circ$

Conduction Type: N-type

Resistivity: $< 5 \text{ Ohm-cm}$

Front Surface Finish: Epi-ready, RMS $< 0.5 \text{ nm}$

Back Surface Finish: Optical polish, RMS $< 1 \text{ }\mu\text{m}$

Dislocation Density: $\leq 5 \times 10^6 / \text{cm}^2$

Edge Exclusion Area: 1 mm

Available Sizes: 5 mm x 10 mm and irregular bars

Available Grades: Production, Research and Rider

Available Thickness: 475 μm ($\pm 25 \text{ }\mu\text{m}$)

Grade:	Production	Research	Rider
Useable Surface Area:	$>90\%$	$\geq 80\%$	$< 80\%$

*Other polishing options available: double-side CMP, double-side optical
Other thickness, size and offcut options available*