

Kyma's bulk GaN substrates improve device epitaxy by reducing dislocation density by 1000x and doubling thermal conductivity when compared to other non-native substrates. N+ substrates offer benefits for vertical devices as well as reduced contact resistance for all devices. Key advantages:

- Ultra-low on-resistance as well as decreased parasitic resistance for vertical power devices
- Low vertical resistance and the mitigation of current crowding effects for light emitting diodes (LEDs)



Orientation*: c-axis (00.1) $\pm 1^\circ$
 Conduction Type: N+
 Resistivity: < 0.02 Ohm-cm
 Front Surface Finish (Ga-face): Epi-ready, RMS < 0.5 nm
 Back Surface Finish: Optical polish
 Dislocation Density: $\leq 5 \times 10^6 / \text{cm}^2$
 Edge Exclusion Area: 1 mm
 TTV: < 10 μm (10 mm²), < 20 μm (18 mm²)
 Bow: < 5 μm (10 mm²), < 15 μm (18 mm²)

Available Sizes: 10mm x 10mm square and 18mm x 18mm square
 Available Grades: Prime, Production, Research, Rider
 Available Thickness*: 475 μm ($\pm 25 \mu\text{m}$)

*Varies for rider grade

Grade:	Prime	Production	Research	Rider
Macro Defect Density:	$\leq 3 \text{ cm}^{-2}$	$\leq 5 \text{ cm}^{-2}$	$\leq 10 \text{ cm}^{-2}$	$> 10 \text{ cm}^{-2}$

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