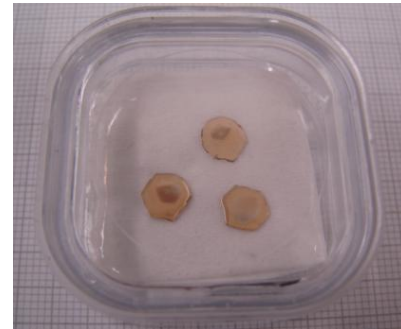


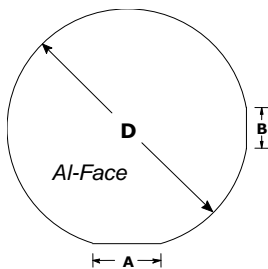
Aluminum Nitride (AlN)

Fairfield Crystal Technology uses a unique patented process to produce our Aluminum Nitride (AlN) crystals. We produce single-crystal hexagonal material for a variety of device applications. The most important area of interest for the AlN substrates is solid-state lighting for general illumination, followed by blue laser diodes for optical recording, high power and high frequency devices for telecommunication and radar applications, and UV detectors for various analytical applications, including detecting chemical and biological agents for homeland security applications.



Substance	Form	Diameter Range	Thickness Range	Surface Finish
Aluminum Nitride (AlN)	Single Crystal	5 to 10mm	250 - 500	*Single side Polished

*Standard finish – other finish available upon request



Diameter: 10.0 +/- 0.25mm
 Thickness: 350 microns +/- 100 microns
 TTV: ≤ 25 microns
 Bow & Warp ≤ 25 microns
 Surface Roughness <math>< 1.0</math>nm
 Orientation: (0001) +/- 2 degrees

WAFER PROPERTIES

Diameter (mm)	5 to 10
Thickness (μm)	350 +/- 100
Total Thickness Variation – TTV (μm)	< 25
Bow & Warp (μm)	< 25
Orientation	$\langle 0001 \rangle$ +/- 2 degrees
Dislocation (cm^2)	1×10^4
Bragg (FWHM)	< 200 arc seconds
Surface Roughness – Polished side (RMS)	< 1nm

PHYSICAL PROPERTIES

Crystal Structure	Hexagonal
Bandgap (eV)	6.2
Thermal Conductivity ($\text{Wm}^{-1}\text{K}^{-1}$)	210 - 275
Coefficient Thermal Expansion (CTE) ($10^{-6}/^\circ\text{C}$)	4.5
Knopp Hardness (kg/mm^2)	1100
Density (gm/cm^3)	3.26
Poisson Ratio (μ)	0.240

Hazard Labeling: Not regulated by Department of Transportation (DOT)
Shipping Classification: UPS or FedEx: Ground, Air
Fairfield Crystal Technology will be pleased to quote you price and delivery.

Contact us

Sales email: atimmerman@fairfieldcrystal.com
Telephone: (860) 354-2111 ext 200
Fax: (860) 354-3093