

# Indium Phosphide

## Epitaxy Ready Polished Wafers



Wafer Technology offers single crystals that are grown in a pure fused silica system by the Czochralski method from multiple zone refined polycrystalline ingot.

### MECHANICAL SPECIFICATIONS

Indium Phosphide can be supplied in as-cut, etched or polished wafer forms. All slices are individually laser scribed with ingot and slice identity to ensure perfect traceability.

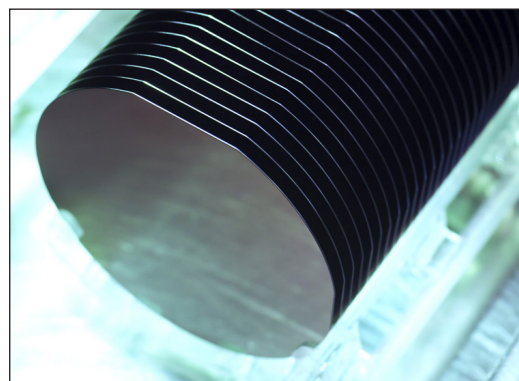
### ORIENTATION SPECIFICATIONS

Surface orientations are offered to an accuracy of +/- 0.05 degrees using a triple axis X-Ray diffractometer system. Substrates can also be supplied with very precise misorientations in any direction from the growth plane. Higher index substrates of the type (n,1,1) where n = 1,2,3,4,5,6 etc and orientations such as (110) are also available. We also offer wafers with cleaved flats.

### SURFACE SPECIFICATIONS

All wafers are offered with high quality epitaxy-ready finishing. Surfaces are characterised by in-house advanced optical metrology techniques which include Surfscan haze and particle monitoring, spectroscopic ellipsometry and grazing-incidence interferometry.

Wafer Specifications	
Diameter Slices	2"
Orientation	(100) ± 0.1°
Diameter (mm)	50.5 ± 0.4
Flat Option	EJ
Flat Tolerance	± 0.1°
Major Flat Length (mm)	16 ± 2
Minor Flat Length (mm)	8 ± 1
Thickness (µm)	350 ± 25 or 500 ± 25



Electrical and Dopant Specifications				
Dopant	Type	Carrier Concentration cm <sup>-3</sup>	Mobility cm <sup>2</sup> V <sup>-1</sup> s <sup>-1</sup>	E.P.D. cm <sup>-2</sup>
Undoped	n-type	≤10 <sup>16</sup>	≥4200	≤5000
Iron	n-type	Semi-Insulating	≥1000	≤5000
Tin	n-type	(7-40) x 10 <sup>17</sup>	2500-750	≤50000
Sulphur	n-type	(1-10) x 10 <sup>18</sup>	2000-1000	≤1000
Zinc	p-type	(1-6) x 10 <sup>18</sup>	Not Specified	≤1000
Low Zinc	p-type	(1-6) x 10 <sup>17</sup>	Not Specified	≤5000

*Tighter electrical ranges are available on request.*

### PACKAGING

#### Polished Wafers

Coin-style wafer shipper, individually sealed in two outer bags in inert atmosphere. Cassette shipments are available on request.

#### As-cut Wafers

Cassette shipment. (Glassine bag available on request).

#### 'Process Trial' wafers

Coin-style wafer shipper, individually sealed in one outer bag.

*If you do not see the specification you require, please call for details on +44 (0)1908 210444 or email sales@wafertech.co.uk*

Flatness Specifications		
Wafer Form		2"
Polish/Etched or Polish/Polish	TTV (µm)	<12
	Bow (µm)	<12
	Warp (µm)	<12



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