

Indium Antimonide

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 Antimonide is supplied in polished wafer form. 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.

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

Wafer Specifications			
Diameter Slices	2"	3"	4"
Orientation	(111) A or B ± 0.1°	(111) A or B ± 0.1°	(111) A or B ± 0.1°
	(100) orientation wafers with mis-cut directions away from the growth plane, are also available.		
Diameter (mm)	50.5 ± 0.5	76.2 ± 0.4	100.0 ± 0.5
Flat Option	2 Flats at 120°	2 Flats at 120°	2 Flats at 120°
Flat Tolerance	± 0.1°	± 0.1°	± 0.1°
Major Flat Length (mm)	16 ± 2	22 ± 2	32.5 ± 2.5
Minor Flat Length (mm)	8 ± 1	11 ± 1	18 ± 1
Thickness (µm)	625 ± 25	800 or 900 ± 25	1000 ± 25

Electrical and Dopant Specifications				
Dopant	Type	Carrier Concentration cm ⁻³ at 77K	Mobility cm ² V ⁻¹ s ⁻¹	E.P.D. cm ²
Undoped	n-type	5 x 10 ¹³ - 3 x 10 ¹⁴	≥ 4 x 10 ⁵	2", 3", 4" ≤ 50
Tellurium	n-type	(1-7) x 10 ¹⁷	≥ 2.5 x 10 ⁴	
Low Tellurium	n-type	4 x 10 ¹⁴ - 2 x 10 ¹⁵	≥ 2.5 x 10 ⁵	
High Tellurium	n-type	≥ 1 x 10 ¹⁸	Not specified	
Germanium	p-type	5 x 10 ¹⁴ - 5 x 10 ¹⁵	8000 - 4000	2" ≤ 100

Tighter electrical ranges are available on request.

Flatness Specifications				
Wafer Form		2"	3"	4"
Polish/ Etched	TTV (µm)	<15	<15	<15
	Bow (µm)	<10	<10	<10
	Warp (µm)	<15	<15	<15
Polish/ Polish	TTV (µm)	<5	<5	<5
	Bow (µm)	<5	<5	<5
	Warp (µm)	<8	<8	<10



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