

N-type-G12-R (182×210\*272) A

# Monocrystalline Wafer



Comprehensive system certification

ISO9001:2022

ISO14001:2022

ISO45001:2022

# Gokin

## Key parameters

The file version 202406

Conductivity type	N-type	PN testing machine
Dopant	Phos.(磷)	/
Resistivity/ $\Omega$ -cm	0.4-1.6	Wafer inspection system
Lifetime/ $\mu$ s	$\geq 800$	BCT-400
Oxygen concentration/ppma	$\leq 12$	FTIR (ASTM F121-83)
Carbon Concentration /ppma	$\leq 1$	FTIR (ASTM F123-91)

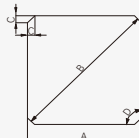
## Material properties

Growth method	CZ	/
Crystallinity	Monocrystalline	/
Etch pit density (dislocation density)/pcs/cm <sup>2</sup>	$\leq 500$	Preferential Etch Techniques(ASTM F47-88)
Surface orientation/ $^{\circ}$	$\langle 100 \rangle \pm 3$	X-ray Diffraction Method
Orientation of pseudo square sides/ $^{\circ}$	$\langle 010 \rangle, \langle 001 \rangle \pm 3$	X-ray Diffraction Method

## Geometric dimensions and surface properties

Wafer model	G12-R	/
Geometry	Quasi square	/
Bevel edge shape	Round	/
Wafer Side length/mm	182/210 $\pm$ 0.25	AOI
Wafer Diameter/mm	272 $\pm$ 0.25	AOI
Arc length projection/mm	3.93/4.57 $\pm$ 0.5	AOI
Angle between adjacent sides/ $^{\circ}$	90 $\pm$ 0.15	AOI
Thickness/ $\mu$ m	130/135/140 $\pm$ 10	AOI
Batch mean/ $\mu$ m	$\geq 130/135/140$	AOI
TTV/ $\mu$ m	$\leq 25$	AOI
Saw Mark/ $\mu$ m	$\leq 15$	AOI
Bow/ $\mu$ m	$\leq 40$	AOI
Warpage/ $\mu$ m	$\leq 40$	AOI
Cutting method	DW	/
Surface quality	No visual defects (no stains, no finger prints, no oil, no glue). No color difference, No bright line	AOI
Chipping	Depth $\leq 0.3$ mm, Length $\leq 0.5$ mm; Count $\leq 2$ /pcs, no V-chip	Naked eyes or wafer inspection system
Micro cracks / holes	None	AOI

Schematic diagram of wafer size



A.Shape/Size: 182/210 $\pm$ 0.25 mm  
 B.Diagonal: 272 $\pm$ 0.25 mm  
 C.Corner Length: 3.93/4.57 $\pm$ 0.5 mm  
 D.Right Angle: 90 $\pm$ 0.15 $^{\circ}$