Wafer

N-type
M11-L-Res0.4~1.6-A

TOP PV TECH,
DRIVING ONWARD FOR GREEN ENERGY

Monocrystalline Silicon Wafer Specification

N–type–M11–L–Res 0.4~1.6–Grade A

Key Parameters

Conductive Type	N–type	P/N Type Tester (DLY – 2 P/N)
Doping Element	Phos. (Phosphorus)	––
Resistivity/Ω·cm	0.4–1.6	Silicon Wafer Automatic Testing Equipment
Minority Carrier Lifetime/μs	⩾1000	Transient Photoconductance Decay Method
Interstitial Oxygen Content/at/cm^3	⩽6.0×10^{17}	Fourier Transform Infrared Spectrometer (ASTM F121–83)
Substitutional Carbon Content/at/cm^3	⩽5.0×10^{16}	Fourier Transform Infrared Spectrometer (GB/T1558–2009)

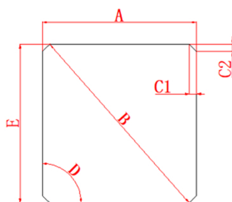
Material Properties

Growth Method	Czochralski Method	––
Crystallinity	Single Crystal	––
Dislocation Density/pcs/cm^2	⩽500	Preferred Chemical Etching Method(ASTM F47–88)
Surface Crystal Orientation/°	<100>±3	X–ray Diffractometer(ASTMF26–1987)
Side Crystal Orientation/°	<010>, <001>±3	X–ray Diffractometer(ASTMF26–1987)

Geometric Dimensions and Surface Properties

Silicon Wafer Model	M11–L	––
Geometric Shape	Standard	––
Chamfered Edge Shape	Rounded	––
Silicon Wafer Edge Distance/mm	Short side 182.2 ± 0.25; Long side 191.6 ± 0.25	Silicon Wafer Automatic Testing Equipment
Silicon Wafer Diameter/mm	Φ262.5±0.25	Silicon Wafer Automatic Testing Equipment
Arc Length Projection/mm	C1：1.38±0.5；C2：1.32±0.5	Silicon Wafer Automatic Testing Equipment
Perpendicularity/°	90±0.15	Silicon Wafer Automatic Testing Equipment
Thickness/μm	130±8	Silicon Wafer Automatic Testing Equipment
Batch Thickness/μm	⩾130	Silicon Wafer Automatic Testing Equipment
TTV/μm	⩽20	Silicon Wafer Automatic Testing Equipment
Scratch/μm	⩽13	Silicon Wafer Automatic Testing Equipment
Warpage/μm	⩽40	Silicon Wafer Automatic Testing Equipment
Bow/μm	⩽40	Silicon Wafer Automatic Testing Equipment
Cutting Method	Diamond Wire Cutting	––
Surface Quality	The surface is clean, with no visible pollution, and color deviation (judged according to standard sample pieces)	Silicon Wafer Automatic Testing Equipment
Edge Chipping	Depth⩽0.3mm&Length⩽0.5mm, no more than 1 piece,no V – shaped edge chipping	Manual Inspection or Silicon Wafer Automatic Testing Equipment
Hidden Cracks/Pores	Not Allowed	Silicon Wafer Automatic Testing Equipment

Schematic diagram of silicon wafer dimensions



Size：M11–L
A：182.2±0.25mm
E：191.6±0.25mm
B：ϕ262.5±0.25mm
C1：1.38±0.5mm
C2：1.32±0.5mm
D：90±0.15°