

# Synthetic Quartz Crystal Product Optical Grade

## Crystal Wafer

Product Parameters

**Specifications for raw crystal material: High Q Quartz Bar**

ZZ: 28mm minimum  
 XX: 78-100mm nominal  
 YY: 220mm nominal  
 Alpha( $\alpha$ ): <0.033(IEC 60758 GradeA)  
 Inclusions: <12/cm<sup>2</sup>(IEC 60758 Grade A)  
 ECD: <10 (IEC 60758 Grade 1)

**Main single quartz substrate specifications**

Material	Quartz Crystal	
Cutting Angle	X/Y/Z-cut etc	
Diameter/size	1"(25.4mm)-4"(100mm)	
Tol( $\pm$ )	<0.20 mm	
Thickness	0.05mm or more	
LTV (5mmx5mm)	<1 $\mu$ m	
TTV	<3 $\mu$ m	
Bow	-30<bow<30	
Warp	<40 $\mu$ m	
Surface Type	Single Side Polished /Double Sides Polished	
Polished side Ra	<0.5nm	
Back Side Criteria	General is 0.2-0.5 $\mu$ m or as customized	
Scratch/Dig	Bette than 40/20	
Edge Criteria	R=0.2mm or Bullnose	
Wafer Surface Criteria	Particles $\phi >0.3 \mu\text{m}$	<= 30
	Scratch , Chipping	None
	Defect	No edge cracks, scratches, saw marks, stains

Please contact us for customer specific requirements Square Wafer, Special Thickness, and so on