

# QUARTZ WAFER

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**HOYA CORPORATION USA offers Quartz Wafers with Standard and Ultra-Parallel surfaces.**

**Quartz wafer features include:**

- **Dimensional Replica of Standard Silicon Wafers**
- **Ultra-Parallel**
- **Super Fine Surface Finish**
- **High Transmission**

<b>PRODUCT CODE</b>	<b>DIAMETER (+/-0.3mm)</b>	<b>THICKNESS (+/-0.05mm)</b>	<b>ORI-FLAT (+/-2.5mm)</b>
<b>4 W 55</b>	<b>100.0</b>	<b>0.525</b>	<b>32.5</b>
<b>5 W 65</b>	<b>125.0</b>	<b>0.625</b>	<b>42.5</b>
<b>6 W 675</b>	<b>150.0</b>	<b>0.675</b>	<b>57.5</b>

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<b>Physical Specifications</b>		
	<b>Standard Products</b>	<b>Ultra-Parallel Products</b>
<b>Inclusion</b>	None (@ > 3μm)	None (@ > 3μm)
<b>Scratch</b>	None (@ > 1μm)	None (@ > 20μm)
<b>Sleek</b>	None (@ > 3μm)	None (@ > 30μm)
<b>Pit</b>	0.05 pcs/cm <sup>2</sup> (@ > 1-4μm)	0.05 pcs/cm <sup>2</sup> (@ > 10-30μm)
<b>Total Thickness Variation</b>	-	< 3μm
<b>Local Thickness Variation (20mm sq.)</b>	-	< 0.5μm
<b>Physical Properties</b>		
<b>Coefficient of Thermal Expansion</b>	5.0 x 10 <sup>-7</sup> (50-200°C)	
<b>Annealing Point</b>	1,120°C	
<b>Optical Properties</b>		
<b>Refractive Index (n<sub>d</sub>)</b>	1.46	
<b>Chemical Properties</b>		
<b>Wt. loss DI water</b>	0.000% (100°C, 1 hour)	
<b>Wt. loss 1/100N HNO<sup>3</sup></b>	0.000% (100°C, 1 hour)	
<b>Wt. loss 5% NaOH</b>	0.17% (80°C, 1 hour)	
<b>Mechanical Properties</b>		
<b>Specific Gravity</b>	2.2	
<b>Young's Modulus</b>	7,413 Kg/mm <sup>2</sup>	
<b>Sheer Modulus</b>	3,170 Kg/mm <sup>2</sup>	
<b>Poisson's Ratio</b>	0.18	
<b>Knoop Hardness</b>	615 Kg/mm <sup>2</sup>	
<b>Lapping Hardness</b>	210	
<b>Electrical Properties</b>		
<b>Surface Resistivity</b>	1 x 10 <sup>19</sup> Ω	
<b>Bulk</b>	1 x 10 <sup>18</sup> Ω•cm <sup>2</sup>	

**Note:** The listed data are standard values. Because of continuous product improvement, the various data listed are subject to change without notice.