

## LaAlO<sub>3</sub> – Lanthanum Aluminate

### MATERIAL PROPERTIES

<b>Structure formula:</b>	LaAlO <sub>3</sub>	
<b>State:</b>	monocrystalline	
<b>Crystal structure:</b>	rhombohedral	$a = 5.377 \text{ \AA}$
		$b = 60.13 \text{ \AA}$
	cubic	$a = 3.821 \text{ \AA}$
<b>Phase transition:</b>	> 500°C	
<b>Density:</b>	6.51 g/cm <sup>3</sup>	
<b>Melting point:</b>	2180°C	
<b>Coefficient of expansion:</b>	10 * 10 <sup>-6</sup> /°C	
<b>Dielectrical constant (ε):</b>	20-25	

### SUBSTRATE PROPERTIES

<b>Production method:</b>	sim. Verneuil grown (with minimum twins)
<b>Orientation:</b>	(100)
<b>Orientation accuracy:</b>	± 0.5°
<b>Standard size:</b>	10mm x 10mm x thickness 1mm or 0.5mm
<b>Tolerance of length:</b>	± 0.10mm (typical better ± 0.05mm)
<b>Tolerance of thickness:</b>	± 0.05mm
<b>Parallelness:</b>	± 0.02mm
<b>Polishing:</b>	standard: one side
<b>Flatness:</b>	±/2
<b>Roughness of surface:</b>	Rmax ± 15nm (average Ra = 3nm)
<b>Scratches:</b>	none
<b>Surface quality:</b>	with light microscope without defects

