

Magnesium Oxide Wafers

Advanced Single Crystal Technology for High-Temperature Superconductor Applications

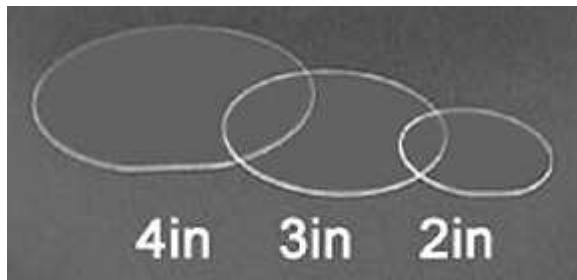
Crystal and Physical Properties

Crystal Structure	Cubic
Lattice Constant	4.212 Å
Dielectric Constant*	9.85
Loss Tangent*	7.8×10^{-6}
*R.T., 14-16 GHz	



Typical Chemical Analysis

Calcium	220 ppm
Silicon	<10 ppm
Aluminum	100 ppm
Iron	95 ppm
Manganese	<10 ppm
Boron	10 ppm
Vanadium	15 ppm
Chromium	25 ppm
Calcium	220 ppm



Thermal Expansion Coefficient

Temperature, °C	$\times 10^{-6} / ^\circ\text{C}$
100	8.0
200	9.8
300	10.3
400	11.5
500	12.0
600	12.6
700	12.8
800	13.1
900	13.4
1000	13.7

Orientation: $\langle 100 \rangle \pm 0.5^\circ$

Polished Surface: EPI polished on both sides

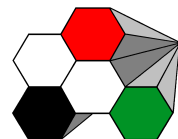
Standard Thickness:

Polished substrates	$0.5 \pm 0.02\text{mm}$
As-cleaved substrates	$0.5 \pm 0.2\text{mm}$

Standard Substrate Sizes:

as-polished (mm)	as-cleaved (mm)
10 x 10 x 0.5	10 x 10 x 0.5
20 x 20 x 0.5	20 x 20 x 0.5
30 x 30 x 0.5	30 x 30 x 0.5
25.4φ x 0.5	
50.8φ x 0.5	
76.2φ x 0.5	

Other sizes and orientations are available upon request.



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