

MATERIAL QUICK OVERVIEW

Material	Main composition	Size	Density	Hardness	Index of refraction
Ruby	$\text{Al}_2\text{O}_3 + \text{Cr}_2\text{O}_3$	0.127 to 15.00 mm	3.98 g/cm ³	1700 HV	n/a
Sapphire + UV	Al_2O_3	0.20 to 25.40 mm	3.98 g/cm ³	1700 HV	1.76
Polyruby	$\text{Al}_2\text{O}_3 + \text{Cr}_2\text{O}_3$	0.20 to 150 mm	3.99 g/cm ³	2000 HV	n/a
Fused silica, UV material	SiO_2	0.30 to 25.40 mm or upon request	2.20 g/cm ³	900 HV	1.45
Spinel	$\text{MgO} \cdot 3.5 \text{Al}_2\text{O}_3$	0.20 to 8.00 mm	3.61 g/cm ³	8 mohs	1.72
Cubic zirconia	$\text{ZrO}_2 + \text{CaO}$ or Y_2O_3	0.20 to 20.00 mm	5.65 g/cm ³	8.5 mohs	2.17
Silicon	Si	0.20 to 25.40 mm or upon request	2.32 g/cm ³	7 mohs	3.40
Zerodur	lithium aluminum silicon oxide glass ceramic	Upon request	2.53 g/cm ³	620 HK	n/a
Alumina	Al_2O_3	0.20 to 150 mm	3.96 g/cm ³	2000 HV	n/a
Zirconia	$\text{ZrO}_2 + \text{Y}_2\text{O}_3$	0.20 to 150 mm	6.05 g/cm ³	1200 HV	n/a
ZTA (zirconia toughened alumina)	$\text{ZrO}_2 + \text{Al}_2\text{O}_3$	0.20 to 150 mm	4.13 g/cm ³	1800 HV	n/a
Silicon nitride	Si_3N_4	0.20 to 25.40 mm	3.24 g/cm ³	1500 HV	n/a
NBK-7		0.20 to 20.00 mm	2.51 g/cm ³	610 HK	1.51

LASFN-9		0.20 to 20.00 mm	4.41 g/cm ³	515 HK	1.85
LASFN-35		0.20 to 12.00 mm	5.41 g/cm ³	810 HK	2.02
LASFN-44		0.20 to 20.00 mm	4.44 g/cm ³	720 HK	1.80
Borosilicate	SiO ₂ 80 % + others	0.50 to 20.00 mm	2.23 g/cm ³	6 mohs	1.47
Black glass	lead free	1.00 to 12.70 mm	2.67 g/cm ³	6 mohs	n/a
Red glass	cadmium!	1.00 to 12.70 mm	2.60 g/cm ³	6 mohs	n/a
Advanced Crystal	lead free	1.00 to 12.70 mm	2.67 g/cm ³	6 mohs	1.56
Sodalime		1.00 to 12.70 mm	2.47 g/cm ³	6 mohs	1.51
Tungsten carbide		0.13 to 25.40 mm	14.95 g/cm ³	1640 HV	n/a
Steel		0.13 to 25.40 mm	7.95 g/cm ³	700 HV10	n/a

Quality

A highly skilled team is dedicated to inspection.

Daily check of diameter, form deviation and surface aspect during polishing process.

Final inspection

VISUAL: 100 % of the pieces, 16X magnification

DIAMETER: sampling

FORM DEVIATION: sampling