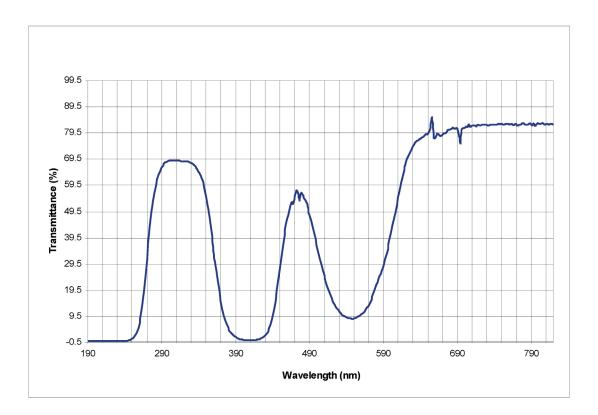
Optical Materials



Optical material / crystals (Ultraviolet)

Material / Specification: Ruby for 250nm - NIR transmission **Range / Description:** OPMU-RUBY



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Optical Materials



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Technical Details of Synthetic Ruby Verneuil Crystals

Physical properties	crystalline structure	rhomboerdral hexagonal single
	composition	AI203
	purity	99,99 %
	main impurities	Na20,Si, Ca, Fe, Ga, Mg,Ti, Mn, Pb, Cu, Zn, Ni
	cleavage	Conchoidal
	density	3.99 – 9.98
	dislocation density	109 . 108 /m2
Thermal Properties	melting point	2320 K
	softening point	2070 K
	specific heat	7.5 · 102 j/kg ·K at 300 K
	thermal conductivity	40 W / m · K [⊥] at 300 K
	Thermal expansion	6.2 · 10-6 /K // C-axis
Mechanical properties	hardness	Mohs 9 Knoop 2200 face // C-axis Knoop 1800 face ⊥℃-axis
	young.s modulus	4.4 · 1011 Pa at 300 K
	modulus of rupture	4.0 · 108 Pa at 300 K
	compressive strength	2.1 · 109 Pa at 300 K
	tensile strength	1.9 · 108 Pa at 300 K
	Poisson's constant	0.3
Chemical properties	cids and alkalis attack	a 0 at 570 K
	porosity	0
Electrical properties	dielectric constant	10.6 electric field // C-axis at 300 K 8.6 electric field \perp C-axis at 300
	electrical resistivity	109 Ω⊡m at 770 K 104 Ω⊡m at 1270 K 10 Ω⊡m at 2270 K

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