



John Moncrieff Ltd

Quartz Glass Specification

Transmission Range (Medium transmission ratio)	0.26~2.10um (Tavg>85%)
OH- Content	150 ppm
Fluorescence (ex 254nm)	Strong v-b
Impurity Content	20-40 ppm
Birefringence Constant	4-6 nm/cm
Melting Method	Oxy-hydrogen melting
Density	2.20g/cm ³
Abbe Constant	67.6
Refractive Index (nd) at 588nm	1.4586
Hardness	5.5 - 6.5 Mohs' Scale 570 KHN 100
Design Tensile Strength	4.8x10 ⁷ Pa (N/mm ²) (7000 psi)
Design Compressive Strength	Greater than 1.1x10 ⁹ Pa (160,000 psi)
Bulk Modulus	3.7x10 ¹⁰ Pa (5.3x10 ⁶ psi)
Rigidity Modulus	3.1x10 ¹⁰ Pa (4.5x10 ⁶ psi)
Young's Modulus	7.2x10 ¹⁰ Pa (10.5x10 ⁶ psi)
Poisson's Ratio	0.17
Coefficient of Thermal Expansion	5.5x10 ⁻⁷ cm/cm.°C (20°C-320°C)
Thermal Conductivity	1.4 W/m.°C
Specific Heat	670 J/kg.°C
Softening Point	1683°C
Annealing Point	1215°C
Strain Point	1120°C
Electrical Receptivity	7x10 ⁷ ohm.cm (350°C)
Dielectric Properties (20°C and 1 MHz)	
Constant	3.75
Strength	5x10 ⁷ V/m
Loss Factor	Less than 4x10 ⁻⁴
Dissipation Factor	Less than 1x10 ⁻⁴
Velocity of Sound-Shear Wave	3.75x10 ³ m/s
Velocity of Sound/Compression Wave	5.90x10 ³ m/s
Sonic Attenuation	Less than 11 db/m MHz



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Permeability Constants ($\text{cm}^3\text{mm}/\text{cm}^2 \text{ sec cm of Hg}$)	(700°C)
Helium	210×10^{-10}
Hydrogen	21×10^{-10}
Deuterium	17×10^{-10}
Neon	9.5×10^{-17}
Chemical Stability (except hydrofluoric)	High resistance to water and acids