

# SILICON ( Si )

Refrac Index (n) vs Wavelength (λ)	
Wavelength (μm)	Refractive Index
1.357	3.4975
1.367	3.4962
1.395	3.4929
1.529	3.4795
1.660	3.4696
1.709	3.4664
1.813	3.4608
1.970	3.4537
2.153	3.4476
2.325	3.4430
2.714	3.4358
3.000	3.4320
3.303	3.4300
3.500	3.4284
4.000	3.4257
4.258	3.4245
4.500	3.4236
5.000	3.4223
5.500	3.4213
6.000	3.4202
6.500	3.4195
7.000	3.4189
7.500	3.4186
8.000	3.4184
8.500	3.4182
10.00	3.4179
10.50	3.4178
11.04	3.4176

Optical Properties	
Refractive Index	3.42
Thermal co-efficient of Refractive Index	$1.5 \times 10^{-6}$
Transmission Range	1.2 – 9.0 μm
Thermal Properties	
Thermal Linear Expansion	$2.6 \times 10^{-6} / ^\circ\text{C}$ at 20°C
Thermal Conductivity	$163.3 \text{ W m}^{-1} \text{ K}^{-1}$ at 273 K
Specific Heat Capacity	$703 \text{ J Kg}^{-1} \text{ K}^{-1}$
Melting Point	1420 °C
Mechanical Properties	
Density	2.33 g/cc
Knoop Hardness	1150
Young Modulus	131 GPa
Shear Modulus	79.9 GPa
Poisson Ratio	0.266

