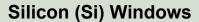
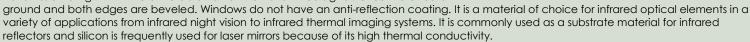
## **MATERIAL PROPERTIES & SPECIFICATIONS**



Fairfield Crystal's silicon windows (Si) are manufactured from optical grade silicon and are designed to be used in precision optical systems for the 1.2 - 7µm spectral region. Due to its low cost and low-density silicon is ideal for weight sensitive applications. The optical transmission is high with little or no distortion of the transmitted signal. Circumference is





|                      | Silicon             |  |  |  |  |
|----------------------|---------------------|--|--|--|--|
| Physical properties  |                     |  |  |  |  |
| Density              | 2.3296gm/cc         |  |  |  |  |
| Melting Point        | 1410 deg C          |  |  |  |  |
| Thermal Expansion    | x 10-6/deg C @ 273K |  |  |  |  |
| Youngs Modulus (E)   | Up to 188 GPa       |  |  |  |  |
| Hardness             | 11270 N/mm2         |  |  |  |  |
| Crystal Structure    | Diamond- cubic      |  |  |  |  |
| Refractive Index     | 3.4223 @ 5 µm       |  |  |  |  |
| Thermal Conductivity | 500 W/mK            |  |  |  |  |

| Substance | Form           | Diameter Range | Thickness Range | Transmission<br>Range (µm) | Finish      |
|-----------|----------------|----------------|-----------------|----------------------------|-------------|
| Silicon   | Single Crystal | 10 to 75mm     | 1 to 10 mm*     | 1.2 to 7.00                | 40/20 S/D** |

<sup>\*</sup> Special orders available \*\*

Standard finish – other finish available upon request