

KO | BRINGING QUALITY INTO FOCUS

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Sapphire Windows for Infrared Systems

Knight Optical offer a range of [Stock Sapphire Windows](#), for use within [Infrared Systems](#).

Knight Optical can offer Sapphire (Al_2O_3) Optics for Infra-red systems over the waveband of 0.2 to $5\mu m$. We offer Sapphire optics for UV, Visible, NIR (0.9 to $1.5\mu m$) and Mid-Waveband Infra-Red (MWIR, 3 to $5\mu m$) Imaging Systems. Sapphire has hardness of about HK2000, which makes it a better choice for windows and outer elements of lens systems. Sapphire has good transmission in the MWIR band, and can be used with optical glass in the NIR, and with Silicon or Germanium in the MWIR, to form well corrected doublets and lens systems.

These systems include, for example, Forward Looking Infra-Red (FLIR) systems, and thermography. Al_2O_3 has a refractive index of about 1.9288no 1.9174ne at 200nm through to 1.623no 1.615ne in the IR ($5\mu m$). This pairing will allow for the design and manufacture of a colour corrected lens that can be used in broad spectrum thermal imaging systems.

We hold a large inventory of [Random Cut](#) and [C-Cut Sapphire Windows](#).

- Stock sizes from 5mm to 300mm diameter; between 0.5mm – 15mm thick.
- Custom shapes and sizes available to quotation.
- Edging down to smaller diameters, square and rectangular apertures.
- Custom antireflective coatings.

Typical specs:

Material:	Sapphire (Al_2O_3)
Diameter Tolerance:	+0.0/-0.20 mm
Length/Width Tolerance:	+/- 0.10mm
Thickness Tolerance:	+/-0.10mm
Wavelength Range:	0.17 – $5.5\mu m$
Transmission:	Tavg=85% dependant on substrate thickness

All our Sapphire Windows are fully inspected on their quality in our ISO 9001 certified, state-of-the-art Metrology laboratory, using our FIBSA, and Trioptic Prism Master. This allows us to work to the highest [QA standards](#) and meet the tolerance specifications on these **precision components**.

[Contact our technical sales team](#) to discover how Knight Optical's high quality Sapphire Windows and superior service can improve your instrumentation and supply chain experience.

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- View our [QA and metrology information](#)
- Watch our [Corporate Video](#)

- [View Our Corporate Brochure](#)