

Infra-red optics - Sapphire Spherical Lenses

Sapphire crystal (Al₂O₃) is an excellent substrate for a range of rugged applications. It has high transmission from 150nm up to around 5µm therefore ideal for UV, Visible and IR applications. [Sapphire lenses](#) have excellent mechanical strength and hardness. With sapphire having superb thermal and chemical resistance and being scratch resistant, sapphire is a perfect choice for lens applications. Sapphire is inert and resistant to attack from most processing environments, such as hydrofluoric acid.

We supply a range of sapphire lens solutions and offer plano convex, biconvex and concave sapphire lens solutions. Our sapphire lenses can also be antireflective coated to increase efficiency in UV and IR applications. Sapphire grades we offer are Random, C-Cut, Z-Cut and fluorescence free sapphire.

Sapphire lenses can be found on probes that burrow deep under the earth's surface and on aerospace and aeronautical vehicles where they are subject to impact by high speed debris. The scratch resistance of sapphire ensures a long life of durability for optical components. Sapphire has a melting point over 2000°C with a high thermal conductivity makes it suitable for use in extremely hot environments such as furnaces, and high power laser applications, such as Er:YAG lasers.

Sapphire lenses are rare in the field of optical components, as most manufacturers only supply custom orders due to the high cost of sapphire. Knight Optical offers a [range of stock sapphire lenses](#) for your applications, and can also supply custom solutions to your individual specification. Every component is individually tested by our highly skilled technicians in our state of the art metrology lab to ensure your requirements are met.

Typical Specification:

Material:	Sapphire (Random grade)
Diameter:	+0 / -0.10mm
Centring accuracy:	< 5 arc min
Focal length:	± 2.0%
Centre thickness:	± 0.25mm
Surface quality:	<60-40 scratch dig

Coating options: [Extended broadband multilayer antireflective coating <0.5%@450-900nm](#)

Contact our technical sales team to discover how Knight Optical sapphire lens solutions and supply chain can improve your instrumentation systems

More Information

Sapphire PDF

https://www.knightoptical.com/_public/documents/1372681800_uvmaterialuvgradefusedsilicacorning7980opmu79802g.pdf

Capabilities

https://www.knightoptical.com/_public/documents/1498753001_capabilities-sapphirelenses.pdf

[IR material Sapphire C-cut UV](#)
[IR material Sapphire C-cut UV](#)
[IR material sapphire random](#)