

Calcium Fluoride (CaF₂) is widely used in infrared optical systems in windows, lenses, prisms and mirror substrates and is harder than Barium Fluoride.

Calcium Fluoride can be used for many applications, including vacuum ultra violet, ultra violet and infrared thermal imaging. Calcium fluoride is traditionally used in apochromatic design to reduce light dispersion in lenses, both in cameras and telescopes, and has uses in the oil and gas industry as a component in detectors and spectrometers.

Primarily used in spectroscopic windows, as well as in thermal imaging and other systems where high transmission between 0.2µm and 8µm is required, calcium fluoride is attacked by few reagents and offers a low absorption coefficient and high damage threshold, beneficial in its use in excimer laser systems.

Diameter:	1 - 450mm
Thickness:	0.07 - 50mm
Tolerances:	±0.02mm
Surface Quality:	10/5 Scratch/Dig
Flatness:	λ/8
Parallelism:	5"
Centration:	10"

Mounting into cells.

- Edging down to smaller sizes.
- Optical Components for Spectroscopy

Calcium Fluoride is used in spectroscopy systems for beam steering and focussing. The CaF₂ lenses and windows offer over 90% transmission from 350nm through to 7µm and are used in spectrometer systems where a broad wavelength range is required. Calcium Fluoride's low index of refraction allow Calcium Fluoride to be used in systems without the use of antireflection coatings, unlike other IR materials.

Optics for Cryogenically Cooled Thermal Imaging:

Cryogenic cooling is required for cameras where a semiconductor material is used in the camera system. Cooling of the camera system is cooled from anywhere between 4 Kelvin to just below 20 degrees. Without this cooling the camera would suffer from interference created by the heat created by the camera system. Calcium Fluoride offers toughness where other IR materials would suffer in an application where system care and stability are not always guaranteed.

Lenses for Gas Analysers:

Knight Optical's Calcium Fluoride lenses have been used in spectroscopic gas analyser systems. These systems are used to monitor the emissions of processes in industrial and marine markets where the level of pollutants and emissions needs to be tightly controlled and monitored. Calcium Fluoride's resistance to reagents and its superior hardness compared to other IR materials make it ideal for this application.

Please contact our multilingual technical sales team and discover how Knight Optical's high quality optical components and sub-assemblies with superior service can improve your instrumentation and supply chain experience.

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keywords

Knight Optical Ltd. Infrared Infra Red Window Prism Lens Custom Customised Customized oil and gas defence instrumentation medical biotechnology biotech manufacture design, gas analysers, gas detectors, gas sensors, thermal imaging