

News Letter

Advanced Solutions Utilizing the Properties of Sapphires

Controlling surface damage on sapphires by high-precision processing technology

Sapphires and rubies, aluminum oxide (Al_2O_3) crystals containing small amounts of metals, have bewitched us with their mysterious brightness since ancient times. They are also chemically stable, with a hardness second only to that of diamonds, a high refractive index, and resistance to such harsh environments as acids, alkalis and plasmas. Various applications utilize these properties by employing colorless and transparent sapphires.

Nikon's sapphire optics have three key features: high-precision processing technology, high transmittance material technology and cutting-edge thin-film coating technology. Firstly, high-precision processing technology leads to excellent flatness and surface roughness. When used in window materials for laser equipment, laser damage to the polished sapphire surface is reduced to an absolute minimum.

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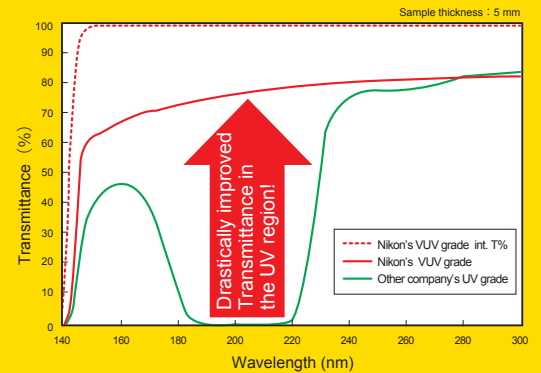
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High transmittance in the VUV region

Nikon's sapphire optics realize high transmittance in the previously problematic vacuum ultraviolet region. Also having resistance to lasers, they are available for laser instruments, windows installed in industrial equipment used in VUV wavelengths, various optics such as lenses, VUV wave plates utilizing birefringence properties, and optical equipment requiring ultra-high accuracy etc.



Original coating to maximize the sapphire properties

By applying Nikon's unique coating to the surface of sapphire, by means of the cutting-edge thin-film coating developed in the lens manufacturing process, optical loss in the sapphire surface coating can be suppressed and the properties of the sapphire can be exhibited to their maximum extent. AR^{*1} coating and HR^{*2} coating can be customized according to various requirements.

Nikon provides a broad range of solutions using sapphires, expanding its range of applications from consumer use to industrial equipment. We believe our sapphire optics can be helpful in developing new products and providing a wide range of solutions.

*1 AR: Anti-reflection *2 HR: High-reflection

TOPICS

We look forward to seeing you at our booth at the exhibitions.

CIOE 2016 PRECISION OPTICS, LENS & CAMERA MODULE EXPO

Date: Sept. 6 (Tue.) - Sept. 9 (Fri.), 2016 Venue: Shenzhen Convention & Exhibition Center (Shenzhen, China)

SPIE Photomask Technology 2016

Date: Sept. 12 (Mon.) - Sept.13 (Tue.), 2016 Venue: San Jose Convention Center (San Jose, USA)