



NIKON GLASS NEWS

SPRING 2013



NIKON CORPORATION

NIKON GLASS DIVISION

Welcome to the spring edition of the Nikon Glass Division newsletter. In this issue we will focus on our upcoming participation at the exhibitions held in Germany and Taiwan. In addition to our standard product offering we will be featuring new products such as Synthetic Silica Glass Wafer and Calcium Fluoride for VIS-IR Applications.

Our exhibition schedule for spring 2013

Nikon Glass Division will be exhibiting at two of the world's leading photonics exhibitions this spring: May 13-16 LASER World of PHOTONICS held in Munich and June 18-20 OPTO Taiwan held in Taipei. Come visit us and see our new generation optical solutions!

LASER World of PHOTONICS 2013, we will be showcasing our complete solution for high-power CaF₂ laser optics. Available for a wide range of laser applications, our new high fluence solution optics provide ultra-high durability against laser irradiation resulting in unparalleled operating life time.

OPTO Taiwan 2013, our new "Super Flat Mask" which is a high-precision LCD photomask substrate optimized for production of next generation, high-resolution liquid crystal and AMOLED panels.



LASER World of PHOTONICS 2013

Dates	May 13 (Mon.) - 16 (Thu.)
Venue	Neue Messe München, Munich, Germany
Booth	C1.205
Time	9:00 - 17:00 (last day closing at 16:00 p.m.)



OPTO Taiwan 2013

Dates	June 18 (Tue.) - 20 (Thu.)
Venue	Taipei World Trade Center Nangang Exhibition Hall, Taipei, Taiwan
Booth	K525
Time	10:00 - 17:30



Nikon's new product

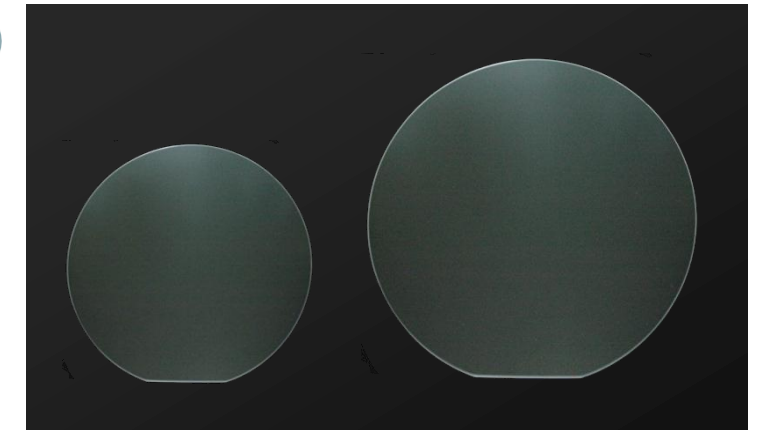
Nikon's new product announcement spring 2013: Synthetic Silica Glass Wafer and Calcium Fluoride for VIS-IR Applications.

Synthetic Silica Glass Wafer

High purity, high precision and large size are the key advantages of our new wafer products. Nikon's Synthetic Silica Glass Wafers are made from our industry leading ultra-low impurity synthetic silica glass. With available sizes up to ϕ 300 mm, our new wafers cover a wide range of applications such as semiconductor processing, biotechnology and other advanced technology fields requiring high purity and high precision polishing.

Applications

- Semiconductor processing
- Biotechnology
- MEMS (Micro Electro Mechanical Systems)
- HTPS (High Temperature Poly-Silicon)



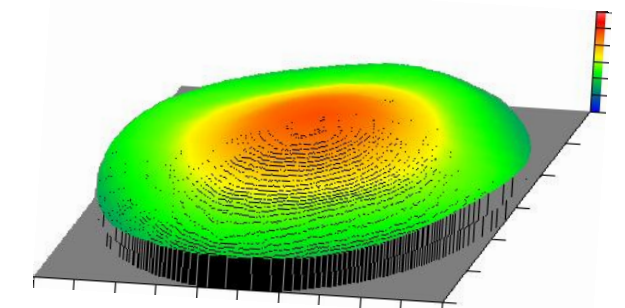
Specifications

- Optimized to customer application (Size: up to ϕ 300 mm)

Thickness		≥ 0.4 mm
Dimensional Tolerance	Radial Direction	± 0.1 mm
	Thickness Direction	± 0.02 mm
Flatness (PV) (Transmitted Wavefront)		$\leq \lambda$ ($\lambda = 632.8$ nm)
TTV		≤ 1 μ m (ϕ 200 mm)
Surface Roughness (Ra)		≤ 0.001 μ m
Scratch		Line width ≤ 10 μ m
Dig		Diameter ≤ 10 μ m
Chipping		≤ 300 μ m (Edge line) ≤ 200 μ m (End face)

Measurement example

- ϕ 300 mm
- Flatness (PV) $\leq \lambda$ ($\lambda = 632.8$ nm)
- Surface roughness (Ra) ≤ 0.001 μ m



Nikon's new product

Calcium Fluoride for VIS-IR Applications



Our single crystal VIS-IR grade CaF₂ material is based on our extensive development for high-quality single crystal CaF₂ used in the most demanding applications such as projection / illumination lenses for IC steppers / scanners. Utilizing Nikon's years' of experience in crystal growing technology, strict process controls and newly introduced proprietary process technologies we can ensure compatibility with a wide range of demanding VIS-IR applications.

Applications

- Lenses for microscopes, SLR cameras, digital cameras, TV cameras, video cameras, telescopes, astronomical telescopes
- Filters and windows for infrared analyzers
- Infrared night vision cameras

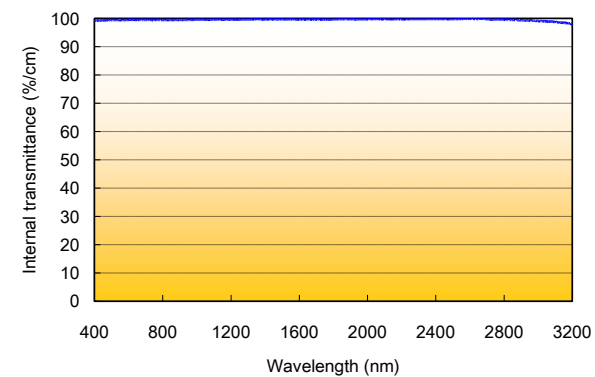
Specifications

Please contact our sales staff to discuss your specific requirements

Size	~ φ 140 mm, ~t 20 mm
Internal Transmittance	≥ 98 % (400 nm – 3000 nm)
Bubbles and Inclusions	Total number ≤ 5 (by visual inspection), Maximum size = 0.1 mm
Stress Birefringence	≤ 40 nm/cm
Homogeneity	≤ 10 ppm
Crystallization	Single crystal / poly crystal
Crystal Orientation	Not specified
Sub-grain Boundaries	Not specified
Surface Finishing	Fine grinding / polishing / coating

Transmittance

Guaranteed high transmittance from visible to infrared wavelengths



Contact Information

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Thank you for reading our newsletter. We also send our newsletter to those who have attended exhibitions. Please feel free to contact us at the email address below for inquiries or feedback.
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