

NK OPTIMER® NL series

Advanced UV-Curable Materials for AR/MR, Waveguides, and Photonics Integration

Innovation for Next-Generation Optics

NK OPTIMER® NL materials enable precision patterning and bonding for optical elements used in AR/MR displays, sensors, and silicon photonics.

- ❖ Exceptionally-high refractive index (up to 1.93) for DOE
- ❖ Exceptionally-low refractive index (up to 1.29) for Advanced optics
- ❖ Ultra-high RI (~ 1.68) (Solvent-free) for compact optical waveguide, Meta optics
- ❖ Ultra-low RI (~ 1.46) (Solvent-free) for Advanced optics, Meta optics
- ❖ Optimized for photonic and optical communication devices, achieving a refractive index of 1.589 at 1550 nm
- ❖ Optical communication cladding material with a refractive index precisely matched to quartz (1.444 at 1550 nm)
- ❖ Adjustable refractive index ($n_D = 1.29 - 1.93$)
- ❖ High optical transparency and durability
- ❖ Compatible with NIL and spin coating processes

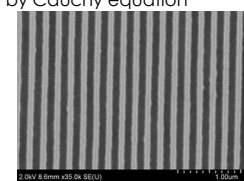
Applications

- ❖ AR/MR waveguides and couplers
- ❖ DOE / MLA / WLO for imaging and sensing
- ❖ Photonic chip encapsulation and bonding
- ❖ Meta optics and hybrid optical packaging

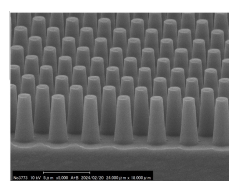
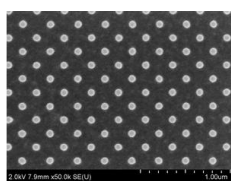
Highlighted Products

	NL-N29X	NL-N4646NF	NL-S1040	NL-S1060-V2k	NL-N6226NF	NX003	NL-N93X
Properties before UV-curing							
NV	~20	100	100	100	~50	100	~20
Contains filler	✓					✓	✓
Viscosity [mPa·s] (25°C/77°F)		135	500	2100		2200	
Properties after UV-curing							
RI (25°C/77°F)	588nm (d)	1.294	1.456※	1.507	1.602	1.616※	1.688※
	1550nm		1.444			1.589	1.661
Abbe number at 25°C/77°F (V_d) ※		46				26	34
85°C 85%RH [hours]		✓ 1000	✓ 1000	✓ 1000	✓ 1000	✓ 1000	

※ Calculated value by Cauchy equation



(NK Optimizer® NL-S1040 W100nm x H500nm)



(NX003 W1000nm x H5000nm)

Why Choose NK OPTIMER®

- ❖ Proven NIL performance with sub-100 nm features
- ❖ Tunable refractive index ($n_D = 1.29 - 1.93$)
- ❖ Customizable to meet your required properties

Contact: Website → Contact / Request a Sample

Website: <https://www.shin-nakamura.com>

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