Nikon

Shedding New Light On **MICROSCOPY**

Microscope objectives

Our objectives help you focus on yours

Nikon is a leader in the development and manufacture of optical and digital imaging technology for advanced science and clinical research. With over a 100-year history of optical excellence, Nikon is committed to accelerating innovation in science and clinical imaging to improve healthcare and provide a better quality of life.

Nikon's first microscope, released in 1925

The switch from traditional film photography to digital imaging was a major milestone in the field of microscopy, opening up new possibilities in both application and technology. Introduction of digital imaging spurred significant technological changes including the development of objectives with enhanced optical quality and functionality to meet the new demands. Objective lenses are arguably the most important element in the microscope and Nikon continues to invest heavily in the development of objectives to meet the changing demands of science. Explore some of Nikon's newest developments in high-performance objectives in this brochure.

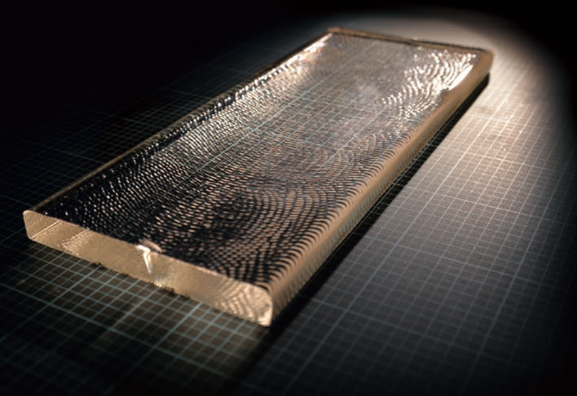
In tireless pursuit of the highest quality

Each Nikon microscope objective is precision-crafted to provide the highest level of clarity and overall optical performance. World-class Nikon objectives, including the renowned CFI60 infinity optical system, deliver brilliant images of breathtaking sharpness and clarity, from ultralow to the highest magnifications.

The initial melting process after blending glass raw materials

It Starts with the Glass

Nikon has been developing optical glass since its inception in 1917, and to this day, wholly owns and formulates all of its glass.
Optical glass starts as an ingot (shown on right) which is formed by blending raw materials and repeated melting, shaping and slow cooling to achieve a target refractive index. The glass ingots are precision-cut, polished and coated to produce lens elements for the objective.



Mastering Excellence

The front lens of high-performance objectives is hand-polished by Nikon's most highly skilled experts (shown on left), a technique requiring more than a decade to master.
By controlling the entire manufacturing process from glass formulation to assembly and alignment of lens elements, Nikon ensures the highest quality and performance of its objectives.

Objectives Inspired by Your Science

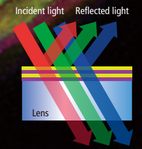
Produced to exacting standards, Nikon's objectives provide exceptional detail and clarity. The highest level of image quality can be achieved whether it be for routine tasks or cutting-edge research.

Anti-Reflective Nano Crystal Coat

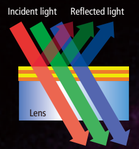
Nano Crystal Coat is ultra-low refractive index thin film technology that applies a nanoparticle film used for the projection lens of Nikon's semiconductor manufacturing equipment. An extremely high antireflection effect is achieved by forming a low-density film with particles of a few nanometers to a dozen nanometers. It also lowers the reflection of vertically incident light compared to conventional antireflection film, achieves extremely high transmittance in a wide wavelength range, has an unprecedented effect with respect to ghosting and flares caused by obliquely incident light.

Conventional anti-reflection multilayer film

Nano Crystal Coat



Conventional multi-layer coating



Nano Crystal Coat

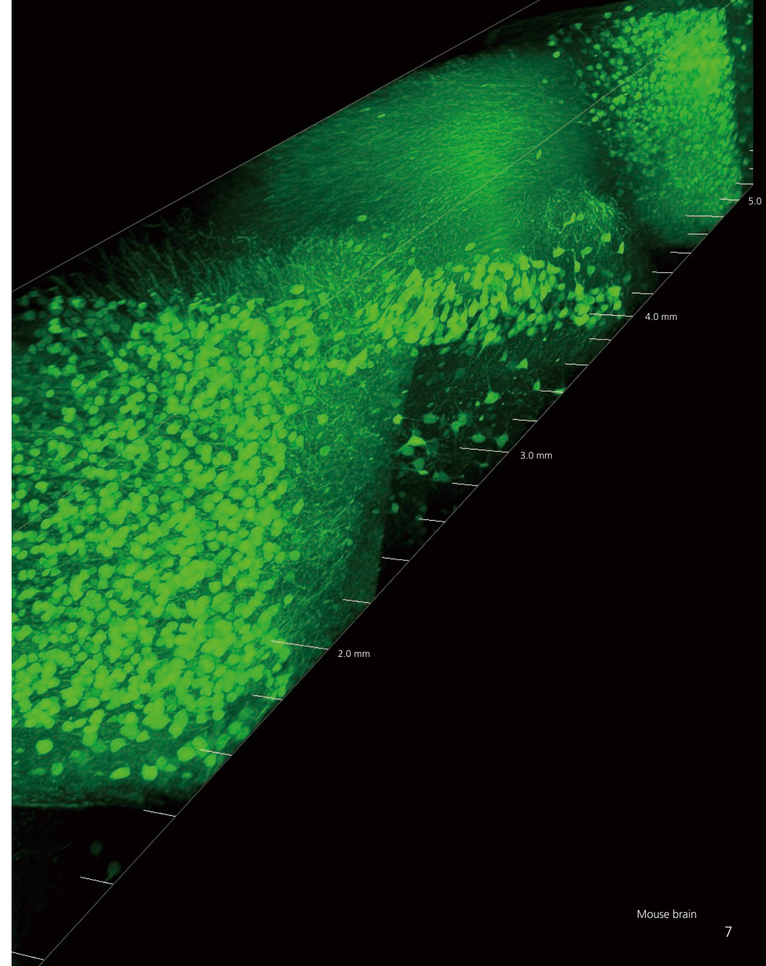
Cleared Tissue Imaging

CFI90 20XC Glyc

Designed for deep imaging of cleared tissues

The unique CFI90 design results in an incredibly high N.A. while maintaining a large field of view and ultra-long working distance. Incorporates a correction collar for compensating for different refractive indices of clearing agents.

- NA: 1.00, WD: 8.20 mm
- Chromatic aberration correction from the visible to IR range
- High-transmittance Nano Crystal Coat
- Correction collar for spherical aberration correction



Mouse brain

CFI Plan Achromat series

CFI Plan Achromat series provides incredible image flatness, with chromatic aberration corrected throughout the entire visible spectrum. These objectives are suitable not only for observation but also for capturing images.

CFI Plan 1X, 2X, 4X, 10X, 20X, 40X and 100X Oil

CFI Plan DL 10X, 20X, 40X and 100X Oil

Water Dipping Series

Sharper tips and broad approach angles provide improved accessibility for manipulator control. Aberrations are corrected even in the infrared range for high-magnification objectives, making them suitable for multi-photon imaging using infrared light.

CFI Plan Fluor 10XW, CFI75 LWD 16XW, CFI Apochromat NIR 40XW/60XW and CFI Plan 100XC W

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		Near- infrared DIC
											UV	Visible light	
Brightfield (CFI Plan)	1X	0.04	3.20	—		○				●		●	
	2X	0.06	7.50	—		○				●		●	
	4X	0.10	30.00	—		○				●		○	
	10X	0.25	10.50	—		○	△			●		○	
	20X	0.40	1.20	0.17		○	○●			●		○	
	40X	0.65	0.56	0.17	✓	○	○●			●		○	
	50X Oil	0.90	0.35/0.18	—/0.17	✓	○	●			●		○	
	100X Oil	1.25	0.20	0.17	✓	○				●		○	
	NCG 40X	0.65	0.48	0	✓	○	○●			●		○	
	NCG 100X	0.90	1.00	0	✓	○	●			●		○	
Phase contrast (CFI Plan)	DL 10X	0.25	10.50	—		○	△		◎ PH1	●		●	
	DL 20X	0.40	1.20	0.17		○	○●		◎ PH1	●		●	
	DL 40X	0.65	0.56	0.17	✓	○	○●		◎ PH2	●		●	
	DL 100X Oil	1.25	0.20	0.17	✓	○			◎ PH3	●		●	
DIC (CFI Plan Fluor)	10X W	0.30	3.50	0		○	△	○		○	◎	◎	○
IR-DIC (CFI Apo)	NIR 40X W	0.80	3.50	0		○	●	○		○	●	◎	◎
	NIR 60X W	1.00	2.80	0		○	●	○		○		◎	◎
DIC (CFI Plan)	100XC W	1.10	2.50	0		○	●	○		○		◎	○
DIC (CFI75)	LWD 16X W *	0.80	3.00	0		○	●	○		○	○	◎	○

* Dedicated for FN1, Ni-E focusing nosepiece type, and AX-FN

CFI Achromat series

This series of objectives provide dramatic correction for chromatic aberration, spherical aberration and coma. Image flatness is significantly improved.
Nikon specifically developed ADL series for phase contrast observations by using its proprietary apodization process to improve the objective's phase ring. Imaging cell division is often impeded by unwanted halos due to the sample thickness. ADL mitigates this effect for clearer observation of mitotic events.

CFI 4X and 10X, CFI LWD 20X, CFI 40X, CFI NCG 60X and CFI 100X Oil

CFI DL 10X, CFI LWD DL 20X, CFI DL 40X and 100X Oil

CFI ADL 10XF, CFI LWD ADL 20XF, 40XF and 40XC

Use	Model	NA	W.D. (mm)	Cover glass thickness	Spring loaded	Brightfield	Darkfield	DIC	Phase contrast	Polarizing	Fluorescence		TI2-E PFS
											UV	Visible light	
Brightfield (CFI)	4X	0.10	30.00	—		○				●		○	
	10X	0.25	7.00	—		○	△			●		○	
	LWD 20X	0.40	3.90	0.17		○	○●			●		○	
	40X	0.65	0.65	0.17	✓	○	○●			●		○	
	LWD 40XC	0.55	2.70-1.70	0-2.00		○	○●			●		○	
	60X	0.80	0.30	0.17	✓	○	●			●		○	
	NCG 60X	0.80	0.30	0.17	✓	○	○●					○	
	100X Oil	1.25	0.23	0.17	✓	○				●		○	
Phase contrast (CFI)	DL 10X	0.25	7.00	—		○	△		◎ PH1	●		●	
	LWD DL 20X	0.40	3.90	0.17		○	○●		◎ PH1	●		●	
	LWD DL 20XF	0.40	3.10	1.20		○			◎ PH1	●		●	
	DL 40X	0.65	0.65	0.17	✓	○	○●		◎ PH2	●		●	
	LWD DL 40XC	0.55	2.70-1.70	0-2.00		○	○●		◎ PH2	●		●	
	DL 100X Oil	1.25	0.23	0.17	✓	○			◎ PH3	●		●	
	BM 10X	0.25	7.00	0.70		○			◎ PH1	●		●	
Apodized phase contrast (CFI)	ADL 10XF	0.25	6.20	1.20		○			◎ PH1	●		●	
	LWD ADL 20XF	0.40	3.10	1.20		○			◎ PH1	●		●	
	LWD ADL 40XF	0.55	2.10	1.20		○			◎ PH1	●		●	
	LWD ADL 40XC	0.55	2.70-1.70	0-2.00		○	○●		◎ PH2	●		●	

Specifications and equipment are subject to change without any notice or obligation on the part of the manufacturer. February 2026

⚠ WARNING	TO ENSURE CORRECT USAGE, READ THE CORRESPONDING MANUALS CAREFULLY BEFORE USING YOUR EQUIPMENT.

N.B. Export of the products* in this brochure is controlled under the Japanese Foreign Exchange and Foreign Trade Law. Appropriate export procedure shall be required in case of export from Japan.
*Products: Hardware and its technical information (including software)

Optics product page

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