ECLIPSE LV-N

Industrial Microscopes

Together with new optics, ECLIPSE is evolving to the next stage.

Modularized to meet industrial microscope applications in diverse fields of industry, including semiconductor devices, packaging, FPDs, electronic components, materials, and precision molds.

The ECLIPSE LV Series continues to evolve while offering various stand and illumination units selectable according to the observation method and purpose.

Four types – motorized and manual types plus dedicated reflected illumination and combined reflected/ transmitted illumination types – are available to meet any application.

Illuminators

Expanded lineup

Added a compact LED illuminator to the existing lineup.
With the use of LED, Nikon illuminators are power saving and achieve long life.

CFI60-2

Evolved optical performance

Nikon's CFI60 optical system, highly evaluated for its unique concept of high NA combined with long working distance has further evolved to achieve the apex in long working distance, chromatic aberration correction, and light weight.

Easy Operation

Combination with digital camera

Detection of microscope information, including objective lens information, and motorized unit microscope operation are now possible using imaging software, for more efficient observation and image capture.

Observation Methods

Diverse observation / optical contrast methods

Combinations of a full range of accessories expand the observation methods available when using transmitted illumination, allowing adaptability to a greater diversity of samples.
All models enable brightfield, darkfield, differential interference, fluorescence, polarizing, and two-beam interferometry observation, while the LV100ND LED and LV100NDA LED also allow transmission-type differential interference, darkfield, polarizing, and phase contrast observation.

LV-N Series

Model features

LV150N

LV150NA

Dedicated reflected illumination models

	LV150N	LV150NA
Microscope type	Manual type	Motorized type (Nosepiece)
Compatible observation methods	See table below	See table below
Compatible stages	See list below	See list below
Integration with Digital Sight cameras for microscopes	Digital Sight 10 or DS-Fi3 or Digital Sight 1000*	Digital Sight 10 or DS-Fi3 or Digital Sight 1000*

	Brightfield	Darkfield	DIC	Fluorescence	Polarizing	Two-beam Interferometry
Episcopic	○	○	○	○	○	○
Episcopic (LED)	○	○	○	—	△	—

* Use an objective lens appropriate to the observation method.
△: only simple polarizing observation

- LV-S32 3x2 stage (Stroke: 75 x 50 mm with glass plate)
  *Can be fitted with LV-S32SPL ESD plate
- LV-S6 6x6 stage (Stroke: 150 x 150 mm)
  *Can be fitted with LV-S6WH wafer holder / LV-S6PL ESD plate
- LV-SRP P revolving stage

- Objective lens information detection** (when used with combination of Intelligent Nosepiece LV-NU5I and LV-INAD)

- Objective lens information detection and control**

LV100ND LED

LV100NDA LED

Combined reflected/transmitted illumination models

	LV100ND LED	LV100NDA LED
Microscope type	Manual type	Motorized type (Nosepiece / light intensity / aperture stop / observation method selector)
Compatible observation methods	See table below	See table below
Compatible stages	See list below	See list below
Integration with Digital Sight cameras for microscopes	Digital Sight 10 or DS-Fi3 or Digital Sight 1000*	Digital Sight 10 or DS-Fi3 or Digital Sight 1000*

	Brightfield	Darkfield	DIC	Fluorescence	Polarizing	Two-beam Interferometry	Phase-contrast
Episcopic	○	○	○	○	○	○	—
Diascopic	○	○	○	—	○	—	○

* Use an objective lens appropriate to the observation method.

- LV-S32 3x2 stage (Stroke: 75 x 50 mm with glass plate)
  *Can be fitted with LV-S32SGH slide glass holder
- LV-S64 6x4 stage (Stroke: 150 x 100 mm with glass plate)
- LV-SRP P revolving stage
- NIU-CSRR2 Ni-U right handle rotatable ceramic stage (Stroke: 78 x 54 mm)
- C-CSR2S right handle stage (Stroke: 78 x 54 mm: Used with stage adapter LV-SAD)

- Objective lens information detection** (when used with combination of Intelligent Nosepiece LV-NU5I and LV-INAD)

- Information detection and control of objective lens, light intensity, aperture stop, and observation method (brightfield / darkfield / fluorescence)**

Note: *With imaging software NIS-Elements L and F, functions above are not available. Use NIS-Elements D/Br/Ar. **Excluding Digital Sight 1000

CFI60-2

Evolved optical performance

Nikon's CFI60 optical systems are highly evaluated for their unique concept of high NA combined with a long working distance. These lenses have been developed further and evolved achieving the apex in long working distance specifications, correct chromatic aberration, and an optimized lens weight.

T Plan & TU Plan Fluor & TU Plan Apo Lenses

Standard Plan objective lenses

Standard objective lenses

TU Plan Fluor Series

EPI/BD 5x/10x/20x/50x/100x

Long WD · Semi-apo · Light weight · Fly-eye lens

Enable brightfield, darkfield, simple polarizing, sensitive polarizing, differential interference, and epi-fluorescence observations with just one lens. Achieves superior chromatic aberration performance with long working distance for all magnifications to adapt to any application.

*Brightfield observation (EPI) objective lens

Model	Magnification	NA	Working Distance (mm)
TU Plan Fluor EPI (brightfield type)	5×	0.15	23.5
	10×	0.30	17.5
	20×	0.45	4.5
	50×	0.80	1.0
	100×	0.90	1.0
TU Plan Fluor BD (brightfield/darkfield type)	* 5×	0.15	18.0
	* 10×	0.30	15.0
	* 20×	0.45	4.5
	50×	0.80	1.0
	100×	0.90	1.0

* Uses fly-eye lens.

Low-magnification objective lenses

T Plan EPI

EPI 1x/2.5x

Wide field of view

Both clear observation using a conventional analyzer/polarizer and operability-oriented observation without the need of an analyzer/polarizer are possible.

Model	Magnification	NA	Working Distance (mm)
T Plan EPI (brightfield type)	1×	0.03	3.8
	2.5×	0.075	6.5

Apochromatic objective lenses

TU Plan Apo Series

EPI/BD 50x/100x/150x

Long WD · Apo · Light weight

By using phase Fresnel lenses, these objective lenses achieve significantly longer operating distances while maintaining the superior chromatic aberration performance of apochromatic lenses.

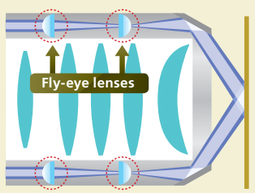
*Brightfield observation (EPI) objective lens

Model	Magnification	NA	Working Distance (mm)
TU Plan Apo EPI (brightfield type)	50×	0.8	2.0
	100×	0.9	2.0
	150×	0.9	1.5
TU Plan Apo BD (brightfield/darkfield type)	50×	0.8	2.0
	100×	0.9	2.0
	150×	0.9	1.5

Dark Field Illumination

Fly-eye lens

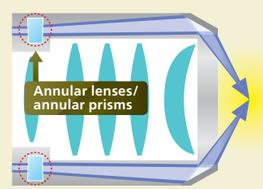
Through the use of fly-eye lenses, the CFI60-2 optical system offers bright darkfield illumination throughout the field of view with little unevenness, even for low-magnification lenses.



Fly-eye lenses adjust the diffusion angle of light so light strikes the focal surface without unevenness

Darkfield illumination system

As NA and WD improve, objective lenses increase in outside diameter. However, as the width of incident light is fixed, light intensity decreases with conventional illumination systems.
The illumination system uses annular lenses or annular prisms to increase captured light and achieve bright darkfield illumination with no deterioration.



Annular lenses/prisms take in more light to increase brightness

TU Plan ELWD & T Plan SLWD Lenses

Long working distance / Super-long working distance objective lenses

Long working distance objective lenses

TU Plan ELWD Series

EPI/BD 20x/50x/100x

Long WD · Semi-apo · Light weight

With the phase Fresnel lenses, these objective lenses enable long working distances while offering higher level chromatic aberration correction than conventional objective lenses. This improves operability for samples with different heights.

*Brightfield observation (EPI) objective lens

Model	Magnification	NA	Working Distance (mm)
TU Plan EPI ELWD (brightfield type)	20×	0.4	19.0
	50×	0.6	11.0
	100×	0.8	4.5
TU Plan BD ELWD (brightfield/darkfield type)	20×	0.4	19.0
	50×	0.6	11.0
	100×	0.8	4.5

Super-long working distance objective lenses

T Plan EPI SLWD

EPI 10x/20x/50x/100x

Long WD · Semi-apo · Light weight

Improving on chromatic aberration while prioritizing working distance, the T Plan SLWD Series achieve the best-in-class super-long working distance. The SLWD 10x (WD: 37 mm) lens enables use with a greater diversity of samples.

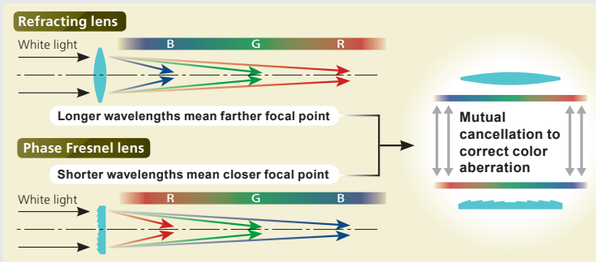
Model	Magnification	NA	Working Distance (mm)
T Plan EPI SLWD (brightfield type)	10×	0.2	37.0
	20×	0.3	30.0
	50×	0.4	22.0
	100×	0.6	10.0

Phase Fresnel

Color aberration correction and longer working distance through phase Fresnel lenses

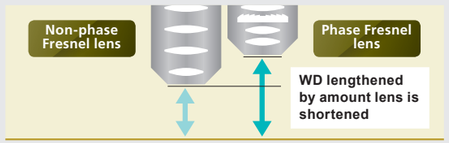
Color aberration correction

Conventional lenses rely upon the refraction of light to form an image. As the strength of refraction varies according to color (wavelength), the image is formed starting with the light closest to the lens, in the order of blue, green, and red. In contrast, a phase Fresnel lens uses the diffraction of light to form an image starting with the light closest to the lens, this time, red, green, and blue, yielding a property opposite that of refraction. Combining these two lenses cancels out the color aberration of each and enables an image with little color aberration.



Realization of Long Working Distance

Correction of color aberration, even with short distances between lenses, is possible with the use of phase Fresnel lenses. This enables longer working distance than that of conventional lenses.



Other lenses

Objective lenses with glass thickness correction features

CFI L Plan EPI CR

20x/50x/100x

Equipped with corrective features that enable high contrast observation of cells or patterns, these observation lenses are unaffected by the glass substrate.

Model	Magnification	NA	Working Distance (mm)
CFI L Plan EPI CR (brightfield type)	20× CR	0.45	10.90 - 10.00
	50× CR	0.70	3.90 - 3.00
	100× CRA	0.85	1.20 - 0.85
	100× CRB	0.85	1.30 - 0.95

Objective lenses for brightfield observation

CFI LE Plan EPI

EPI 5x/10x/20x/50x/100x

LE Plan EPI

Model	Magnification	NA	Working Distance (mm)
LE Plan EPI (brightfield type)	5×	0.1	31.0
	10×	0.25	13.0
	20×	0.4	3.6
	50×	0.75	0.5
	100×	0.9	0.31

Easy Operation

Combination with digital camera

LV150N / LV150NA / LV100ND LED

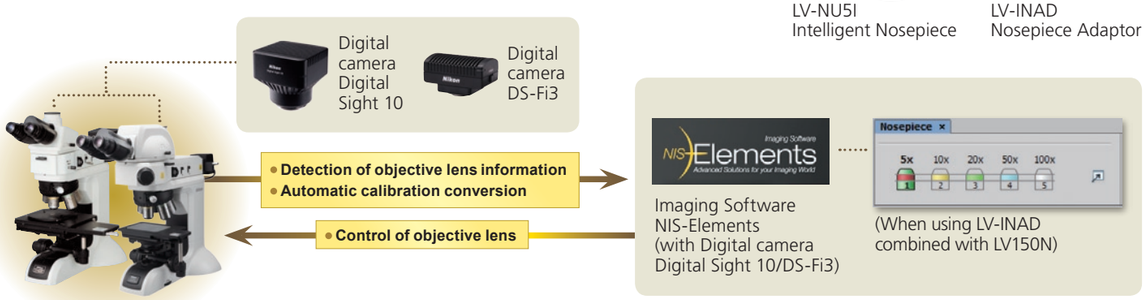
Objective lens information detection and control

Information about the objective lens being used can be detected when combining the Intelligent Nosepiece LV-NU5I and the Nosepiece Adaptor LV-INAD. The information is automatically converted to appropriate calibration data when changing the magnification.

In addition, the LV150NA allows switching of objective lenses via the imaging software.

LV-NU5I
Intelligent Nosepiece

LV-INAD
Nosepiece Adaptor

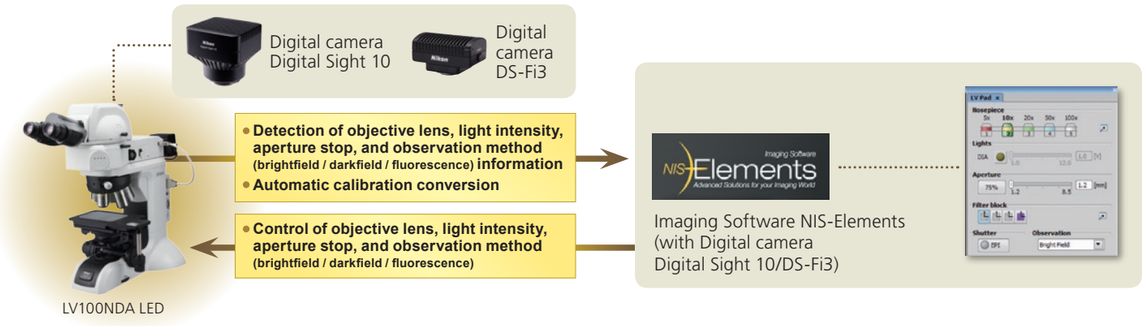


LV150N / LV150NA / LV100ND LED

LV100NDA LED

Microscope information detection and control

The LV100NDA LED allows detection of information and control of objective lenses, light intensity, aperture stop, and observation method (brightfield / darkfield / fluorescence) via the imaging software, enabling optimization of the conditions vital for image acquisition.



LV100NDA LED

Compatibility Chart of Information Detection and Control by Model

◎: Information detection and control possible
○: Information detection only

	LV150N/LV100ND LED (When using LV-NU5I and LV-INAD)	LV150NA	LV100NDA LED (When using LV-UEPI2A Illuminator)
	Digital Sight 10/DS-Fi3 (+NIS-Elements)	Digital Sight 10/DS-Fi3 (+NIS-Elements)	Digital Sight 10/DS-Fi3 (+NIS-Elements)
Objective lens	○	◎	◎
Reflected illumination (ON/OFF, light intensity adjustment) *When using C-LL-I	—	—	◎
Transmitted illumination (ON/OFF, light intensity adjustment)	—	—	◎
Aperture stop	—	—	◎
Observation method selector (brightfield / darkfield / fluorescence)	—	—	◎

Note: With NIS-Elements L and F, functions above are not available. Use NIS-Elements D/Br/Ar.

Camera System

Digital camera system for microscopes "Digital Sight System"

Microscope Camera

Digital Sight 1000

Equipped with a 2 megapixel CMOS image sensor, it can capture full HD microscope images. By connecting a microscope to this camera and HDMI monitor, movies and images can be captured and saved onto a pre-inserted SD card in the camera.

2.0 megapixel | Color | Full HD

DS-Fi3

Three main features of the previous models, high-resolution, high sensitivity and low noise, and high-speed live display are offered in 1 camera.

5.9 megapixel | Color | High-resolution

Digital Sight 10

This high-resolution camera captures both color and monochromatic images at up to 6,000 x 3,984 pixels. This enables the wide range of images to be captured and then many of them to be stitched together making a single and large combined image.

23.9 megapixel | Color/Mono-chrome | High-resolution

	Digital Sight 1000	DS-Fi3	Digital Sight 10
Frame Rate	30 fps (1920×1080)	30 fps (1440×1024)	66 fps (1920×1080)
Max Recordable Pixels	1920×1080	2880×2048	6000×3984

Imaging software NIS-Elements

Using a tablet PC

L

Simply installing NIS-Elements L on a tablet PC enables setting and control of Digital Sight 1000/DS-Fi3/Digital Sight 10 microscope cameras, live image display, and image acquisition.

Using a desktop PC

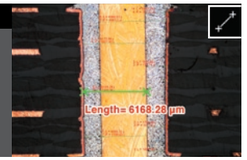
F | D | Br | Ar

Wide variety of tools

NIS-Elements L enables the conducting of simple measurements on images, with input of lines and comments. These can also be written onto and saved with the image, and measurement data can be output.

Measurement function

- Line distance
- Circle disance
- Area
- Pitch distance
- Circle
- Angle



Annotate function

- Line
- Marker
- Arrow
- Polyline
- Text

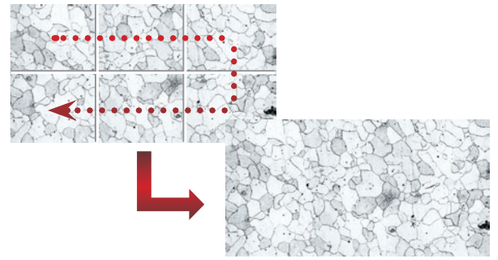
Scene Mode

Ten camera setting patterns for optimal color reproduction and contrast for each microscope light source, observation method and type of sample, as well as custom settings, can be selected.

- Wafer/IC
- Metal, Ceramic/Plastic
- Circuit board
- Flat Panel Display

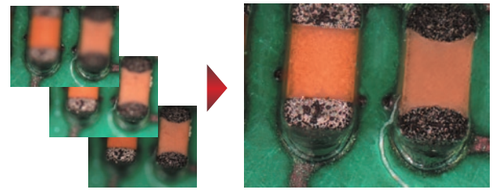
Image Stitching

Stitches together images acquired from multiple fields of view to create one image.



EDF (Extended Depth of Focus)

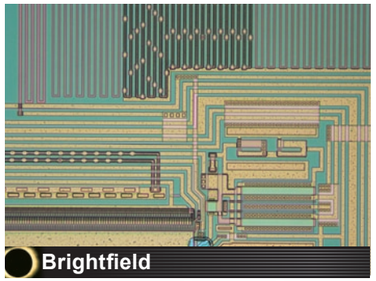
Create a single, all-in-focus image from images of differing focus.



*** See the "Digital Camera Digital Sight Series for Microscopes" brochure for details on Digital Sight features.**

Observation Methods

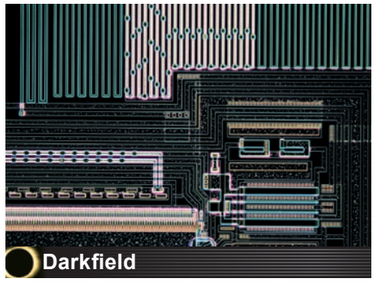
Compatible with a wide range of observation / optical contrast methods: In reflected light mode -brightfield, darkfield, polarizing, differential interference, epi-fluorescence, and two-beam interferometry, and in Transmitted light mode- brightfield, darkfield, polarizing, differential interference, and phase contrast.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Semiconductors (IC wafers)

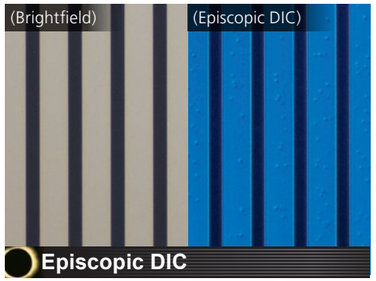
From its objective lenses to its illumination systems, the LV-N Series offers thorough measures against flare and provides bright, high-contrast images.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Semiconductors (IC wafers)

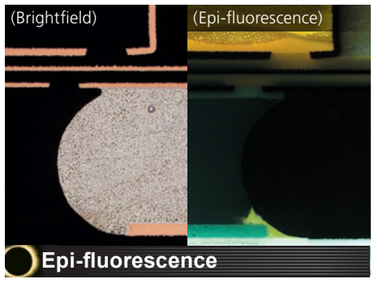
The use of Nikon's unique concepts in the objective lens darkfield illumination system enables bright darkfield observation and provides high-sensitivity detection of level differences and defects in samples.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Substrate

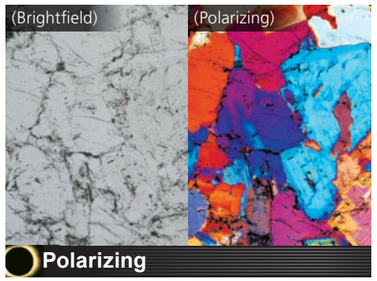
Standard-type and high-contrast-type DIC sliders are available to match samples. The LV-N Series is effective for applications such as observation of minute level differences in devices and precision molds.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Substrate (solder)

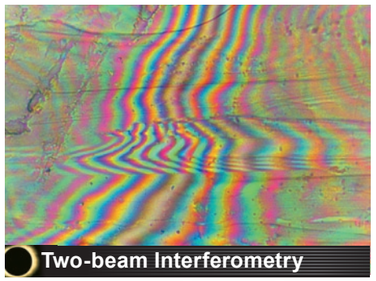
The LV-N Series demonstrates superiority in the observation of samples with fluorescent properties, such as organic ELs or mounted substrates.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Minerals

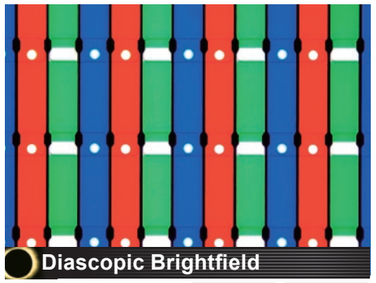
The LV-N Series is effective in the observation of samples with birefringent properties, such as liquid crystals or plastics/glass containing distortion.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Mica

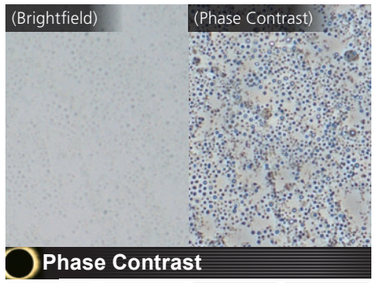
Michelson (TI) and Mirau (DI) reflection-type two-beam interferometry is possible with the LV-N Series. When used with micrometer eyepieces, minute level differences can be detected and measured without contact with the sample.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

LCD (color filter)

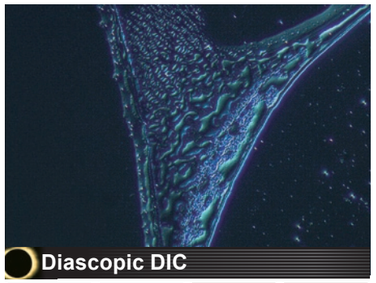
The LV-N Series is effective in the observation of samples with transparency, such as optical components, FPDs, and slide glass samples. When used in conjunction with the C-SP Simple Polarizer and analyzers, transmitted simple polarized observation is possible.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Emulsion

Colorless, transparent samples can be made visible through bright/dark contrast and the use of diffraction and interference, two properties of light.



LV150N | LV150NA | LV100ND LED | LV100NDA LED

Nanoparticle (silver)

Colorless, transparent samples can be observed in three dimensions by using polarization to create interference between two beams of light.

Specifications

	LV150N	LV150NA
Base unit	Maximum sample height: 38 mm (when used with LVNU5A U5A nosepiece and LV-S32 3x2 stage / LV-S64 6x4 stage) *73 mm when used with one column riser 12V50W internal power source for dimmer, coarse and fine adjustment knobs Left: coarse and fine adjustment / Right: fine adjustment, 40 mm stroke Coarse adjustment: 14 mm/turn (with torque adjustment, refocusing mechanism) Fine adjustment: 0.1 mm/turn (1 µm/graduation) Stage mounting hole intervals: 70 x 94 (fixed by 4-M4 screw)	
Nosepieces	C-N6 ESD Sextuple Nosepiece ESD LV-NU5 Universal Quintuple Nosepiece ESD LV-NBD5 BD Quintuple Nosepiece ESD LV-NU5I Intelligent Universal Quintuple Nosepiece ESD	LV-NU5A Motorized Universal Quintuple Nosepiece ESD LV-NU5AC Motorized Universal Quintuple Nosepiece ESD
Episcopic Illuminator	**LV-UEPI-N** LV-LH50PC 12V50W Precentered Lamphouse, LV-LL LED Lamphouse Bright/darkfield switch and linked aperture stop (centerable), field diaphragm (centerable) Accepts ø 25 mm filter (NCB11, ND16, ND4), polarizer/analyzer, λ plate, excitation light balancer; equipped with noise terminator **LV-UEPI2** LV-LH50PC 12V50W Precentered Lamphouse, LV-LL LED Lamphouse Fluorescence LED Light Source D-LEDI (with light adjustment (PC controllable)) Bright/darkfield switch and linked aperture stop (centerable), field diaphragm (centerable), automated optical element switching feature matched to brightfield, darkfield, and epi-fluorescence switch Accepts ø 25 mm filter (NCB11, ND16, ND4), polarizer/analyzer, λ plate, excitation light balancer; equipped with noise terminator	
Eyepiece tubes	LV-TI3 trinocular eyepiece tube ESD (Erected image, FOV: 22/25) LV-TT2 TT2 tilting trinocular eyepiece tube (Erected image, FOV: 22/25) C-TB binocular tube (Inverted image, FOV: 22) P-TB Binocular Tube (Inverted image, FOV: 22) P-TT2 Trinocular Tube (Inverted image, FOV: 22)	
Stages	LV-S32 3x2 stage (Stroke: 75 x 50 mm with glass plate) ESD compatible LV-S64 6x4 stage (Stroke: 150 x 100 mm with glass plate) ESD compatible LV-S6 6x6 stage (Stroke: 150 x 150 mm) ESD compatible	
Eyepieces	CFI eyepiece series	
Objective lenses	Industrial Microscope CFI$_{60}$-2/CFI$_{60}$ optical system Objective lens series: Combinations in accordance with the observation method	
ESD performance	1,000 to 10V, within 0.2 sec. (excluding certain accessories)	
Power consumption	1.2 A / 75 W	
Weight	Approx. 8.6 kg	Approx. 8.7 kg

	LV100ND LED	LV100NDA LED
Base unit	Maximum sample height: 38 mm (when used with LV-NU5 U5 nosepiece and LV-S32 3x2 stage / LV-S64 6x4 stage) 12V50W internal power source for dimmer, coarse and fine adjustment knobs Left: coarse and fine adjustment / Right: fine adjustment, 40 mm stroke Coarse adjustment: 14 mm/turn (with torque adjustment, refocusing mechanism) Fine adjustment: 0.1 mm/turn (1 µm/graduation)	Maximum sample height: 33 mm (when used with LVNU5AI U5AI nosepiece and LV-S32 3x2 stage / LV-S64 6x4 stage) 12V50W internal power source for dimmer, coarse and fine adjustment knobs Left: coarse and fine adjustment / Right: fine adjustment, 40 mm stroke Coarse adjustment: 14 mm/turn (with torque adjustment, refocusing mechanism) Fine adjustment: 0.1 mm/turn (1 µm/graduation)
Nosepieces	C-N6 ESD Sextuple Nosepiece ESD, LV-NU5 Universal Quintuple Nosepiece ESD LV-NBD5 BD Quintuple Nosepiece ESD, LV-NU5I Intelligent Universal Quintuple Nosepiece ESD D-ND6 Sextuple DIC Nosepiece	LV-NU5AI Motorized Universal Quintuple Nosepiece (High-durability motorized 5-hole universal nosepiece)
Episcopic Illuminators	**LV-UEPI-N** High color-rendering LED Lamphouse C-LL-I: 50,000 hours of life *1 Bright/darkfield switch and linked aperture stop (centerable), field diaphragm (centerable), accepts ø 25 mm filter (LV-C-LCB), polarizer/analyzer; equipped with noise terminator **LV-UEPI2** High color-rendering LED Lamphouse C-LL-I: 50,000 hours of life *1 Fluorescence LED light source D-LEDI (with light adjustment (PC controllable)) *option Bright/darkfield switch and linked aperture stop (centerable), field diaphragm (centerable), automated optical element switching feature matched to brightfield, darkfield, and epi-fluorescence switch Accepts ø 25 mm filter (LV-C-LCB), polarizer/analyzer, λ plate, excitation light balancer; equipped with noise terminator	**LV-UEPI2A** High color-rendering LED Lamphouse C-LL-I: 50,000 hours of life *1 Fluorescence LED light source D-LEDI (with light adjustment (PC controllable)) *option Motorized operation and control of illumination selector turret Motorized aperture stop linked to bright/darkfield selector (automatic optimization matched to objective lens), field diaphragm (centerable) Accepts ø 25 mm filter (LV-C-LCB), polarizer/analyzer, λ plate, excitation light balancer; equipped with noise terminator
Diascopic Illuminator	Built-in high color-rendering LED Lamphouse C-LL-I (50,000 hours of life) (Fly Eye optical system) *1 Internal aperture, field diaphragm, filter (45C-LCB); transmitted/reflected selector switch	
Eyepiece tubes	LV-TI3 trinocular eyepiece tube ESD (Erected image, FOV: 22/25), LV-TT2 TT2 tilting trinocular eyepiece tube (Erected image, FOV: 22/25), P-TB Binocular Tube (Inverted image, FOV: 22), P-TT2 Trinocular Tube (Inverted image, FOV: 22)	
Stages	LV-S32 3x2 stage (Stroke: 75 x 50 mm with glass plate) / LV-S32SGH slide glass holder LV-S64 6x4 stage (Stroke: 150 x 100 mm with glass plate), LV-SRP P revolving stage NIU-CSRR2 Ni-U right handle rotatable ceramic stage (Stroke: 78 x 54 mm), C-CSR2S right handle stage (Stroke: 78 x 54 mm: Used with stage adapter LV-SAD)	
Condensers	LWD achromat condenser (brightfield), LV-CUD U condenser dry (phase contrast, diascopic DIC, darkfield), Achromat 2x-100x slide condenser (brightfield), DF dry condenser (darkfield), and others	
Eyepieces	CFI eyepiece series	
Objective lenses	Industrial Microscope CFI$_{60}$-2/CFI$_{60}$ optical system Objective lens series: Combinations in accordance with the observation method	
ESD performance	1,000 to 10V, within 0.2 sec. (excluding certain accessories)	
Power consumption	0.7 A / 58 W *2	0.7 A / 58 W *2
Weight	Approx. 9 kg	Approx. 10 kg

***1** Estimated value based on Nikon regulations ***2** Reference value based on Nikon regulations

Lens Specifications

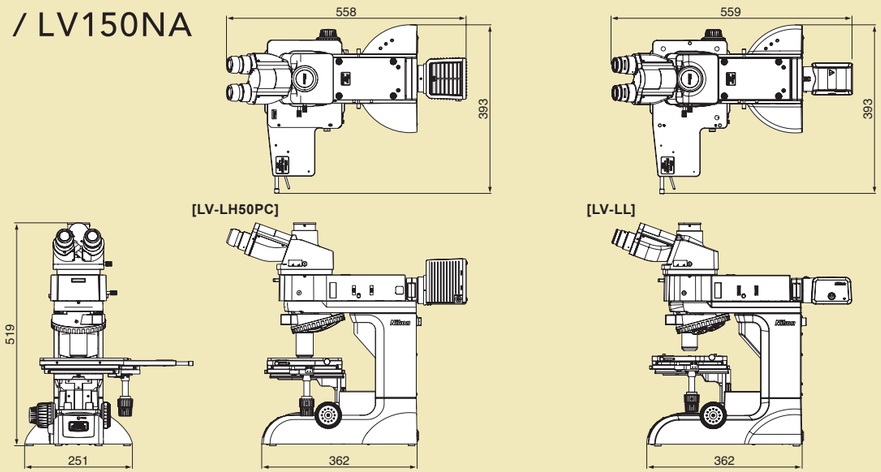
	Type	Model	Magnification	Product Code No.	NA	Working Distance (mm)
CFI60-2	Brightfield	T Plan EPI Plan (Achromat)	1×	MUE12010	0.03	3.8
			2.5×	MUE12030	0.075	6.5
		TU Plan Fluor EPI Universal Plan Fluor (Semi-apochromat)	5×	MUE12050	0.15	23.5
			10×	MUE12100	0.3	17.5
			20×	MUE12200	0.45	4.5
			50×	MUE12500	0.8	1.0
			100×	MUE12900	0.9	1.0
		TU Plan Apo EPI Universal Plan Apo (Apochromat)	50×	MUC11500	0.8	2.0
			100×	MUC11900	0.9	2.0
			150×	MUC11150	0.9	1.5
	Polarizing	TU Plan Fluor EPI P Polarizing Universal Plan Fluor (Semi-apochromat)	5×	MUE13050	0.15	23.5
			10×	MUE13100	0.3	17.5
			20×	MUE13200	0.45	4.5
			50×	MUE13500	0.8	1.0
			100×	MUE13900	0.9	1.0
	Brightfield Long Working Distance	TU Plan EPI ELWD Long Working Distance Universal Plan (Semi-apochromat)	20×	MUE21200	0.4	19.0
			50×	MUE21500	0.6	11.0
			100×	MUE21900	0.8	4.5
	Brightfield Super-long Working Distance	T Plan EPI SLWD Super-long Working Distance Plan (Semi-apochromat)	10×	MUE31100	0.2	37.0
			20×	MUE31200	0.3	30.0
			50×	MUE31500	0.4	22.0
			100×	MUE31900	0.6	10.0
	Brightfield/Darkfield	TU Plan Fluor BD Universal Plan Fluor (Semi-apochromat)	5×	MUE42050	0.15	18.0
			10×	MUE42100	0.3	15.0
			20×	MUE42200	0.45	4.5
			50×	MUE42500	0.8	1.0
			100×	MUE42900	0.9	1.0
		TU Plan Apo BD Universal Plan Apo (Apochromat)	50×	MUC41500	0.8	2.0
			100×	MUC41900	0.9	2.0
			150×	MUC41150	0.9	1.5
	Brightfield/Darkfield Long Working Distance	TU Plan BD ELWD Long Working Distance Universal Plan (Semi-apochromat)	20×	MUE61200	0.4	19.0
			50×	MUE61500	0.6	11.0
			100×	MUE61900	0.8	4.5

● : Phase Fresnel lens (diffraction optical element) type ● A circular polarizing plate and depolarizer are built into T Plan EPI 1x/2.5x. (Circular polarizing plate can be attached/detached.)

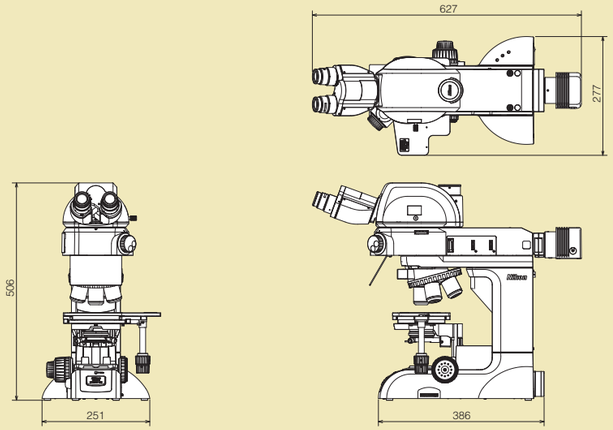
	Type	Model	Magnification	Product Code No.	NA	Working Distance (mm)
CFI60	Brightfield With Correction Mechanism	L Plan EPI CR For Inspecting LCDs Plan	20×	MUE35200	0.45	10.9 - 10.0
			50×	MUE35500	0.7	3.9 - 3.0
			100×	MUE35900	0.85	1.2 - 0.85
			100×	MUE35910	0.85	1.3 - 0.95
	Brightfield	L Plan EPI Plan (Achromat)	40×	MUE00400	0.65	1.0
	Brightfield	LE Plan EPI (Achromat)	5×	MUD00050	0.1	31.0
			10×	MUD00100	0.25	13.0
			20×	MUD00200	0.4	3.6
			50×	MUD00500	0.75	0.5
			100×	MUD00900	0.9	0.31

Dimensions

LV150N / LV150NA

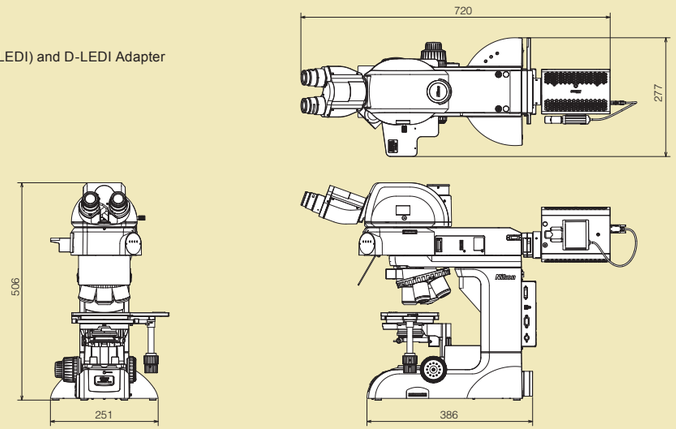


LV100ND LED



LV100NDA LED

*Using fluorescence LED light source (D-LEDI) and D-LEDI Adapter for fluorescence observation



System Diagram

for LV150N/LV150NA/LV100ND LED/LV100NDA LED

C-mount CCD Camera

MQD12012 C-mount Adapter
MQD12014 Relay Lens 1x
MQD51040/MQD42040/MQD42060 C-mount TV Adapter 0.35×/0.45×/0.6×
MQD42005 C-mount Adapter C-DA
MQD42075 C-mount Adapter 0.7×
MQA19000 Digital Sight 1000
MQA18000 DS-Fi3
MQA20000 Digital Sight 10
MQD42120 C-mount Adapter VM2.5x
MQD42140 C-mount Adapter VM4x
MQD42056 C-mount Adapter 0.55x
MED53130 T-BPA Photo Adapter
MQD43020 F-mount Adapter 2.5x
MQD44000 DS10-IRCF Motorized Adapter
MQD43000 F-mount Adapter
MBB63435 LV-TV TV Adapter
MBB73520 Y-V TV Tube
MBB73550 Y-TV55 TV Tube
MDB92100 P-TB2 Binocular Tube
MDB93100 P-TT3 Trinocular Tube
MXA20714 0.5× Tube Unit
MBB92100 C-TB Binocular Tube
MBB63425 LV-TI3 Trinocular Tube TI3
MBB61000 LV-TT2 Tilting Trinocular Tube
MDV40100 P-CS Senarmont Compensator
MDV40200 P-CQ Quartz Wedge
MDV40300 P-CL λ Plate
MDB45300 P-I Tube
MBD65031 LV-CR Column Riser 35

MAK30105 CFI UW 10×
ø25
MBJ62105 LV-10× ESD CH F.N.ø22
MAK10110 CFI 10× F.N.ø22
MAK12105 CFI 10×CM F.N.ø22
MAK10120 CFI 12.5× F.N.ø16
MAK10150 CFI 15× F.N.ø14.5
MAK85005 C-CT Centering Telescope
Below ø22
MBB75710 C-ER Eyelevel Riser
MBB74100 Y-IDP Double Port (100/0-55/45)
MBB74105 Y-IDP Double Port (0-100)
MBE60500 LV-EPILED White LED Illuminator
(Can only be used with LV150N/LV150NA)
MBE60310 LV-UEPI2A Motorized Universal Epi-illuminator 2
MBE60300 LV-UEPI2 Universal Epi-illuminator 2
MBE60201 LV-UEPI-N Universal Epi-illuminator
MBE41201, etc Fluorescence Filter Block
MBE64100 LV-PAB Cube
MBN66923 LV-PO Polarizer
MBN66927 LV-UPO Polarizer
MBN66924 LV-λP λ Plate
MBN71930 D-FB Excitation Balancer
MBN66922 L-AN Analyzer
MBN66925 LV-FLAN FL Analyzer
MBN66750 NCB Slider
MBN66760 ND Slider
MBN66950 LV-C-LCB
(Can only be used with LV100ND LED/LV100NDA LED)
MBD65030 LV-ARM Basic Arm
MBD65040 LV-FMA Motorized Focusing Module A
MBD65050 LV-FM Focusing Module
MBD64080 LV-IM Focusing Module
MBD64070 LV-IMA Focusing Module A
MBF12200 LV-ECON E Controller
MEF52300 C-LL-CTRL
MXA29016 C-LL-CTRL Cable 2M
MBE65900 C-LL-i LED Lamphouse
(Can only be used with LV100ND LED/LV100NDA LED/LVDIA-N)
(C-LL-CTRL is necessary when using with LVDIA-N)
MBD65015 LVDIA-N DIA-N Base

MBE65700 LV-LL LED Lamphouse
(Can only be used with LV150N/LV150NA)
MBE65275 LV-LH50PC Precentered Lamphouse
(Can only be used with LV150N/LV150NA)
MXA23045 LV-HL50W 12V-50W-LL Halogen Lamp
MXA20095 12V-50W Halogen Lamp
MBA61005/MBA61015 **LV150NA/LV150N**
MBA61150 **LV100ND LED**
MBA61140 **LV100NDA LED**

MBP60170 L-DIC DIC Prism
MBP60160 L-DIHC High Contrast DIC Prism
MBN64960 LV-LP λ Plate
MBH63100/MBH63110 LV-DIC Slider Position A&B
MBH63200/MBH63210 LV-DIHC Slider Position A&B
MBH76221, etc D-C DIC Slider
MBP60105 LV-NU5A U5A Nosepiece
MBP60106 LV-NU5AC U5AC Nosepiece
MBP60107 LV-NU5AI U5AI Nosepiece
MBP60108 LV-NU5I NU5I Nosepiece
MBP60115 LV-NU5 NU5 Nosepiece
MBP60125 LV-NBD5 BD5 Nosepiece
MBP71316 C-N6 ESD6 Nosepiece
MBF65331 LV-NCNT-N Nosepiece Controller
MXA23017 LU Nosepiece Adapter
MBF65410 LV-INAD Magnification-detecting Nosepiece Adaptor
MUE42050, etc TU Plan Fluor BD Objective Lens
MUE12050, etc TU Plan Fluor EPI Objective Lens
(1x objective lens not available when column riser is used)
MUD00055, etc CFI LE Plan EPI Objective Lens
MRL00402, etc BIO CFI60 Objective Lens
MXA20750 C-OA 15 mm Adapter
MUL40100, etc DI Objective Lens
MBN74920 D-DA DIC Analyzer
MBN74960 D-LP λ Plate
MBP73325 D-ND6 DIC Nosepiece
MDP44205 P-N N5 Nosepiece
MUE13050, etc CFI TU EPI P Objective Lens
MXA23059 LV-TI Adapter
MUL42051, etc TI Objective Lens
MBE65600 LVN-DLEDI Adapter
MBF83000 D-LEDI
MBF12250 D-LEDI RCB
(Necessary for anti-glare when simultaneously using motorized nosepiece and D-LED)

MDL11300 P Achromat Condenser
(Compatible with revolving stage)
MBL12010 DF Dry Condenser
MBL71100 C-C Abbe Condenser
MBL71200 C-C Achromat Condenser
MBL16105 C-LAR LWD Achromat Condenser
MBL71500 Achromat 2x-100x Slide Condenser
MBL68615 LV-CUD Universal Condenser Dry
MDN11920 PT Polarizer
MBH72300, etc D-C DIC Module Dry
MBH70250 D-C Darkfield Ring
MBH70230, etc D-C PH Module
MBH60201 LV-C 2-4x Lens
MBB75370 C-SP Simple Polarizer
MBN74940 D-DP DIC Rotatable Polarizer
MBN66960 45C-LCB ø45 Filter
(Can only be used with LV100ND LED/LV100NDA LED)

MBC60710 LV-S32SGH Slide Glass Holder
MBC60720 LV-S32PL ESD Plate
MBC60700 LV-S32 3x2 Stage
MBC60600 L-S6WH Wafer Holder
MBC60610 LV-S6PL ESD Plate
MBC60411 LV-S64 6x4 Stage
MBC60405 LV-S6 6x6 Stage
(Episcopic only)
MDC45000 P-AMH Mechanical Stage
MDC82005 LV-SRP P revolving stage
MBC91136 C-CSR2S Right Handle Stage with 2S Holder
MBC91036 NIU-CSRR2 Right Handle Rotatable Ceramic Stage with Holder
MBD65003 LV-SAD Stage Adapter

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

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