OLYMPUS

Your Vision, Our Future

Research inverted microscope

IX53/IX73/IX83

IX3 series

NEW

Built for live cell imaging

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OLYMPUS

OLYMPUS EUROPA HOLDING GMBH

Postbox 10 49 08, 20034 Hamburg, Germany
Wendenstrasse 14–18, 20097 Hamburg, Germany
Phone: +49 (0)40 237 730, Fax: +49 (0)40 230 761
Email: microscopy@olympus-europa.com

ADVANCE TO A HIGHER LEVEL OF LIVE CELL RESEARCH WITH THE IX3

The new IX3 is a highly expandable platform for live cell imaging designed with the scientist's workflow in mind.

Built on a robust foundation and able to grow as your needs evolve, the IX3 features flexible construction with an easy-access light path and offers high-definition wide-field imaging with minimal loss of light.

Equipped with a camera, the IX3 enables fast, user-friendly high-resolution digital imaging with high reproducibility.

EXPANDABLE TO GROW WITH YOUR RESEARCH

The fully motorised and automated IX83 along with the semi-motorised IX73 are designed to satisfy a myriad of research needs. Each model is available as a one-deck system with an ergonomically low stage height or as a two-deck system. With additional modules providing expanded functionality, both microscopes provide the ability to enable a multitude of imaging techniques, ranging from long-term time-lapse imaging and other demanding cutting-edge techniques to casual documentation. No matter what the task, the IX3 series delivers the performance and expandability needed to accommodate the demands of tomorrow.

The left frame port on the IX83 provides ready access to the light path making it easy to add or change modules. A variety of deck modules may be easily changed to support added functions. Available modules include: fluorescence filter turrets, side ports, magnification changers and more. Modules can be mounted with ease and allow users to build a single, uniquely flexible system. The IX3-ZDC module with its own specialised port is available for IX83 systems to maintain continuous focus throughout extended time-lapse use.

IX83: two-deck system

Enables high-speed, fully automated device selection during live cell research including time-lapse imaging. Two decks offer excellent expandability.

IX83: one-deck system

An intelligent, motorised microscope that can be equipped with the IX3-ZDC to create a new standard for live cell imaging.

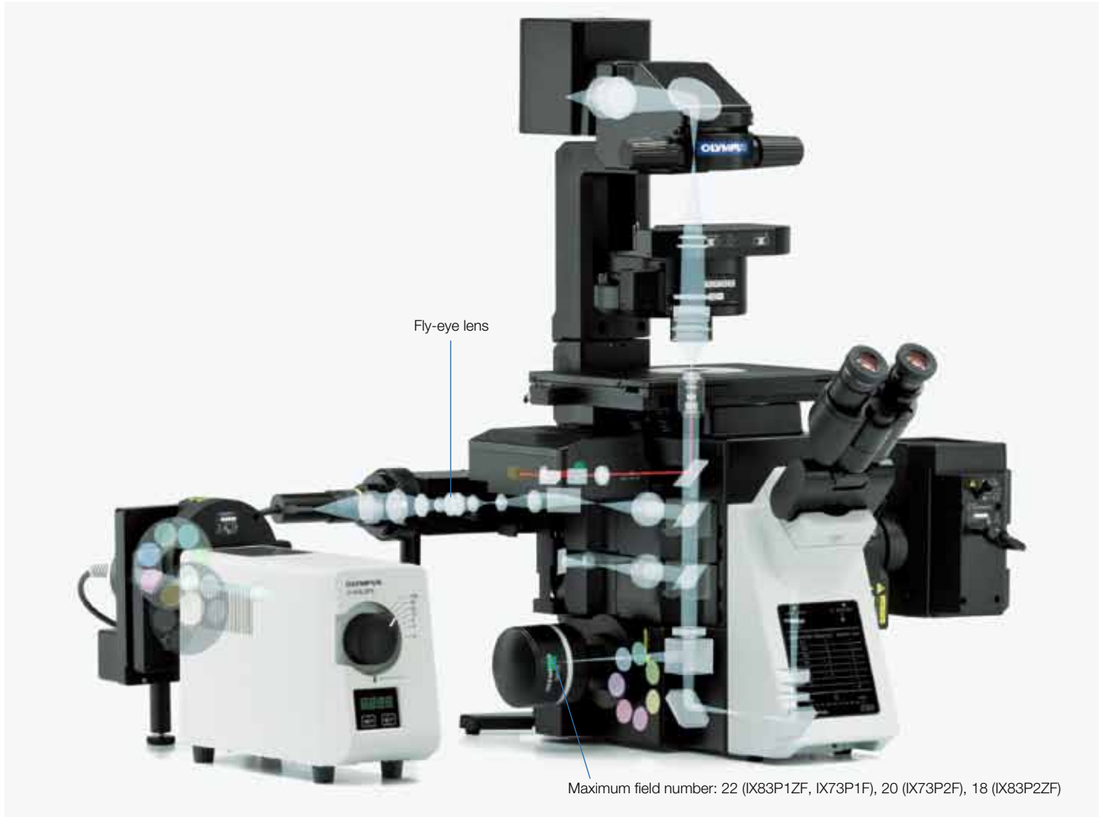
IX73: one-deck system

A microscope designed with an emphasis on working efficiency for documentation, routine testing and other tasks.

IX53: one-deck system

An outstanding microscope delivering cost-efficiency for bright-field and fluorescence applications.

RELIABLE HIGH-RESOLUTION IMAGES THAT ARE CLEAR AND BRIGHT



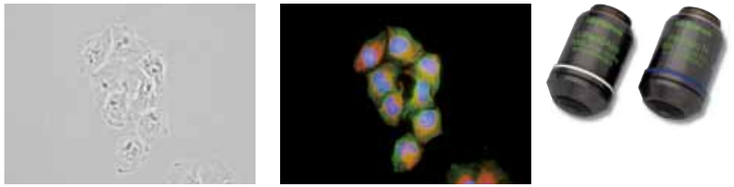
Olympus UIS2 infinity-corrected optics provide bright, high-resolution images from ultraviolet to near-infrared.

The system ensures high optical transmittance with a broad range of objectives providing wide chromatic correction and high resolution, as well as high S/N primary images regardless of the observation method. The wide field of view and fly-eye lens system provide uniform fluorescence images and enable the use of sCMOS cameras with large chips.

Excellent image

Apochromatic objectives enable high-resolution observation of phase contrast and fluorescence

Phase contrast apochromatic objectives (UPLSAPO100×OPH, PLAPON60×OPH) enable high-precision observation free from optical axis displacement – even during simultaneous observation of phase contrast and fluorescence, negating the need to change the objective when switching methods.



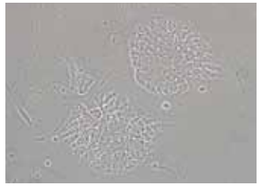
HeLa cells

Silicone objectives* enable high-resolution observation of deep live cells

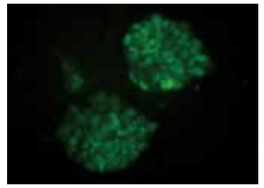
These high-NA objectives (UPLSAPO30×S and UPLSAPO60×S) use silicon oil as an immersion medium with a refractive index (ne≈1.40) close to that of living tissue (ne≈1.38) normally investigated in live cell imaging. As a result, these objectives allow for high-resolution observation with minimal spherical aberration that is commonly caused by a refractive index mismatch when viewing deep inside living tissue.

Special objective available for iPS/ES and floating cell observation

This high-NA phase contrast objective (UCPLFLN20×PH) is especially suited for the observation of Petri dish. It enables phase contrast observation of the cell proliferation process, for example, and delivers differentiation across a wide area in high resolution.



Phase contrast image of mouse ES cells



Immunofluorescence staining for Nanog

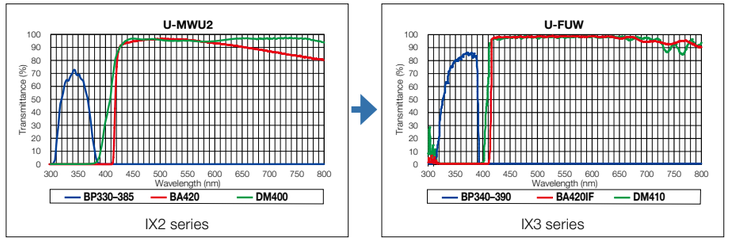
Bright, uniform fluorescent illumination

The fluorescence illuminator (IX3-RFALFE) incorporates a fly-eye lens system to provide an even distribution of fluorescence illumination.

Surface of a fly-eye lens system (enlarged image)

High S/N fluorescent mirror units that efficiently detect fluorescence signals

All fluorescence mirror units feature filters treated with a coating specially developed to minimise noise by absorbing more than 99% of stray light, while the sharp performance and high transmittance of the mirror units ensure efficient fluorescence signal detection.



LED transmitted illumination

With its perfect colour reproduction and low heat generation, this LED illumination is ideal for time-lapse imaging.

*Use dedicated silicone oil.

INTUITIVE AND ERGONOMIC CONTROL OF MICROSCOPE PERFORMANCE

The IX3 imaging system incorporates a range of advanced technologies to enable fine control of your imaging. As a result, it allows researchers to quickly and easily refine complex sequences of operations into workflows, eliminating burden on the observer and minimising cell damage.

A repositionable controller can be located comfortably close to the hand, while Olympus cellSens* imaging software enables advanced control of functions. There is also an innovative, user-friendly touch panel that makes digital control simple and accurate, even when working under darkroom conditions. The IX3-ZDC Z-drift compensation system employs a near-infrared light to minimise cell damage while enabling instant focus.

Smart control

Switch observation methods with a tap of the touch panel

One tap of the touch panel is all it takes to change observation settings, with automatic controls enabling switching of optical components, aperture adjustment and exposure.

ZDC one-shot function detects focus fast, even in high-magnification observation

IX3-ZDC focus detection and tracking can be performed via the innovative touch panel independent of software. There is also a focus search function supported by a cell-safe, near-infrared laser enabling instant focusing on samples – even at high magnification.

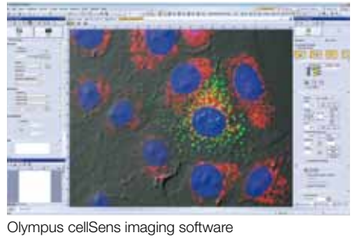
Just touch the panel → for instant focus

Intuitive microscope and XY stage controllers

The combination of the U-MCZ and XY controller makes it possible to provide the familiarity of conventional handle operation to work confidently even in a darkroom.

Microscope configuration recall (Olympus cellSens)

The system saves microscope configurations alongside image data through the incorporation of a readout function that utilises motorised units and coded units. With this advanced system, a wide range of settings can be recalled to recreate the desired imaging conditions, thus creating an easy-to-use reproducible high-end imaging system.



Olympus cellSens imaging software

Operator-friendly design

Smooth tracking at high magnification

The IX3-SVR manual stage features a smooth positioning system which enables the easy tracking of cells even at high magnifications. The user-defined position limits immobilise the stage, ensuring that the observation position is maintained during operations such as reagent application, even if the stage is inadvertently touched. It is also possible to remove 35 mm dishes from the stage, place them in an incubator for culturing and return them to the stage – repositioning the exact location of the cells within the field of view.

Koehler illumination control via the frontal condenser knob

Using a condenser lock and the frontal control knobs, the condenser can be moved and easily reset to Koehler illumination.

Frame construction prevents optical system contamination

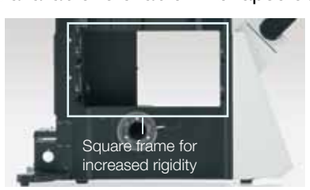
A catch tray under the nosepiece prevents damage to the microscope frequency caused by contamination through spilled liquids and simplifies maintenance.

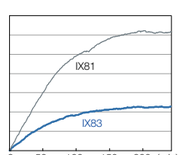
*cellSens software is not for clinical diagnostic use.

IDEAL OBSERVATION AND CAPTURING OF TIME-LAPSE IMAGES

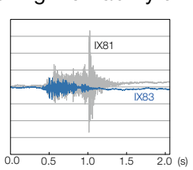
With new frame architecture and focus drive design, the IX3 system offers enhanced rigidity that reduces the impact of vibration and heat. It maintains the desired positions along the X, Y and Z axes to allow reliable time-lapse imaging. The real-time Z-drift compensation system capabilities of the IX3-ZDC combine with the Olympus ultrasonic stage capable of multipoint imaging to capture high-precision multipoint time-lapse images that are never out of focus or misaligned.

Box-type and onstage incubators are also available to enable time-lapse observation while maintaining the viability of live cells.





Thermal drift displacement



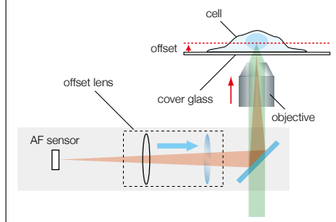
Periodic damping

Accuracy

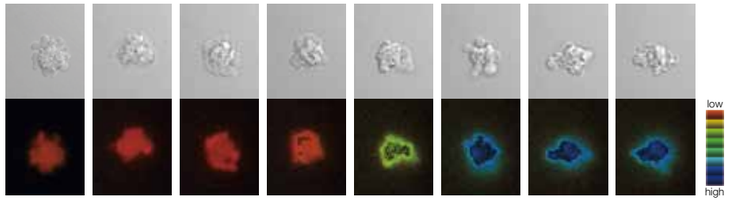
Z-drift compensation system

The IX3-ZDC uses low-phototoxicity IR light to detect the correct focus position as set by the user. One-shot AF mode allows several focus positions to be set as desired for deeper samples, enabling efficient Z-stack acquisition in multi-position experiments. Continuous AF mode keeps the desired plane of observation precisely in focus, avoiding focus drift due to temperature changes or the addition of reagents, making it ideal for measurements such as TIRF that require more stringent focusing.

IX3-ZDC optical path diagram



▼ Time-lapse observation images using ZDC example



Apoptosis in cultured human ES cells, photographed at two-minute intervals over five hours.
(Top row: DIC imaging of physical changes; bottom row: FRET imaging of caspase-3 action.)

Image data courtesy of:
Masatoshi Ohgushi, PhD
Yoshiki Sasai M.D., PhD
Human Stem Cell Technology Unit, RIKEN Research Center for Developmental Biology

Reference material:
Ohgushi, M. et al. “Molecular Pathway and Cell State Responsible for Dissociation-Induced Apoptosis in Human Pluripotent Stem Cells.” *Cell Stem Cell 7,* 225–239(2010).

Maintain cell viability over an extended period of time

The box-type incubator enables time-lapse observations over a period of several days, while the microscope CO_2 incubator can be fitted to the stage for two-day time-lapse observations maintaining cell activity to significantly improve the reliability of the time-lapse observation.

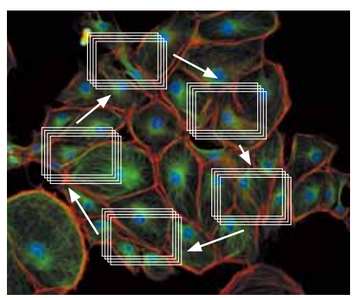
CO_2 stage-top incubator

Precise controls maintain a stable environment within the dish or well plate, controlling thermal conditions, humidity and CO_2 concentration.

IX3D CO_2 incubator
(Manufactured by Tokai Hit CO., Ltd)

Low thermal drift ultrasonic stage with multipoint registration

The Olympus ultrasonic stage enables the precise movement of specimens, while multipoint registration enables time-lapse imaging with outstanding positional accuracy.



Incubator

A box-type incubator keeps the microscope temperature stable while safely enclosing many components.

SOPHISTICATED IMAGING OPTIONS WITH INTERCHANGEABLE OPTICAL MODULES

A diverse range of units is available for the Olympus IX3 microscope system, bringing greater efficiency to everything from casual observation to serious imaging. Simple cassette-like insertion into the deck makes it easy to mount fluorescence mirror turrets, a right-side port with C-mount, an encoded magnification changer, reflected light fluorescence illuminators and other desired units.

To provide more flexibility, the two-deck system allows for the simultaneous mounting of two illumination units. The IX3 system can also be isolated from vibration sources through the combined use of a new line of high-speed filter wheels and light guide light sources. Upgrades are available to allow the IX3 to meet the needs of a wide range of other applications.

Deck units/fast speed units

Motorised fluorescence mirror turret (IX3-RFACA)

A non-click turret fitted with eight mirror units delivers smooth, fast switching. Mirror units can be used with 25 mm diameter filters or 32 mm diameter filters. No tools are required to change mirror units, which can be opened with ease.

IX3-RFACA

Right-side port with C-mount (IX3-RSPC)

A right-side port with a C-mount (field number of 11) allows the light-path switching component to be fitted with up to two mirror units, enabling the construction of customised systems for applications such as split imaging.

IX3-RSPC

Coded intermediate magnification changer (IX3-CAS)

Magnification can be changed between 1×, 1.6× and 2× by smooth lever operation. Since the system incorporates coded functionality, information on intermediate magnifications is saved with image data.

IX3-CAS

Motorised fast filter wheel (U-FFW)/ Motorised fast filter wheel for emission (U-FFWEM)/ Motorised fast shutter (U-FSHU)

Filter wheels can be switched between filters in just 60 milliseconds, while shutters can be opened and closed in just 26 milliseconds. The IX83 is capable of controlling up to six filter wheels and four shutters.

U-FFW

U-FFWEM

U-FSHU

Fluorescence system

Reflected light fluorescence illuminators for your specific application

Choose the illuminator best suited to meet each need, such as multi-colour fluorescence observation or photoactivation. An L-shaped fluorescence illuminator with a fly-eye lens system provides bright, consistent illumination without adjustment; an L-shaped fluorescence is equipped with a field iris diaphragm and aperture iris diaphragm, and a straight-through fluorescence illuminator is available for applications demanding intense excitation light. A wide range of light sources is available, including light guide light sources and lamp houses compatible with both 100 W mercury and 75 W xenon illumination.

1 U-LH100HG
2 U-LH75XEAPO
3 U-LH100HGAPO
4 U-HGLGPS
5 IX3-RFA
6 U-LLGAD
7 IX3-RFAL
8 IX3-RFALFE

Motorised units/coded units

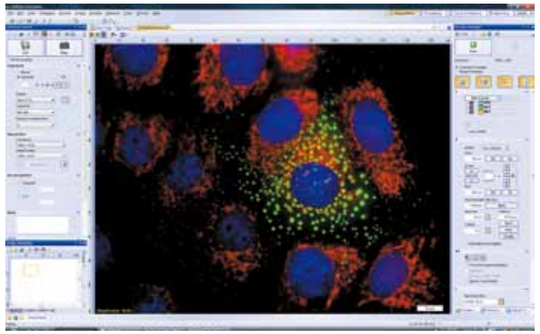
A cost-efficient way to upgrade to a motorised microscope

A wide range of motorised and encoded units are available, including an eight-position motorised fluorescent mirror turret, an encoded fluorescence mirror turret, a motorised six-position nosepiece, an encoded six-position nosepiece, a motorised long working distance universal condenser, filter wheels and shutters. Units can also be added for specific purposes at any point – improving operation at a minimum cost.

1 U-FFWEM
2 IX3-LWUCDA
3 U-FFW
4 U-FSHU
5 IX3-RFACA
6 IX3-D6RES
7 IX3-D6REA

OPTIMISED IMAGE ACQUISITION ACCORDING TO WORKFLOW

Olympus cellSens imaging software

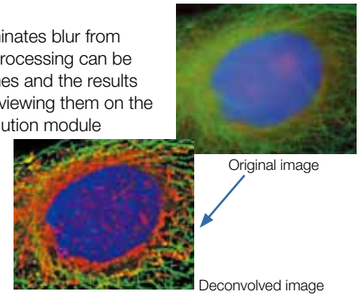


Olympus cellSens imaging software is available in three packages to meet individual workflow needs. 'Entry' is used for simple image acquisition. 'Standard' provides simple operation for imaging documentation, and 'Dimension' enables control of the complete workflow from image capture to analysis.

cellSens software is not for clinical diagnostic use.

2D deconvolution

This useful feature eliminates blur from single-plane images. Processing can be carried out multiple times and the results can be adjusted while viewing them on the screen. A 3D deconvolution module is also available for use on multi-plane images.



Well navigator

Enables the simple setting of locations and observation orders by selecting to the wells under observation. Comments can also be inserted for individual wells to further speed workflow.

cell^TIRF system

Quad-wavelength multiple TIRF image capture

Accurate, motorised control of the laser's angle of incidence enables optimum adjustment of the light emitted at each wavelength. This system allows four lasers to be used simultaneously to capture four different wavelengths (ranging from 405 nm to 640 nm), while seamlessly switching between multi-colour TIRF imaging and fluorescence. What's more, the primary laser path is equipped with a Point FRAP optical solution system that can also be used for kinetic measurements such as molecular diffusion, bonding and velocity determination.

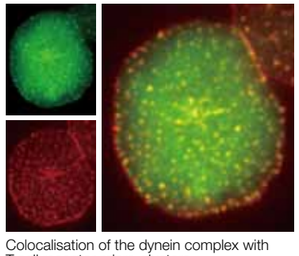
cell^TIRF is a class 3B laser product.

NA 1.7 TIRF objective

The NA 1.7 APON100×HOTIRF* objective expands the adjustable range for production of evanescent fields, enabling the user to form thin evanescent fields by simply adjusting the angle of incidence. High NA objectives for TIRF from 60× to 150× are also available.

TIRF image acquisition with high resolution and a high frame rate

TIRF observation demands more accurate focusing. To meet this demand, the IX83 two-deck system can be combined with the IX3-ZDC to enable live imaging at a high frame rate, while maintaining accurate real-time focus.



Colocalisation of the dynein complex with T-cell receptor micro-clusters

Image data courtesy of:
Akiko Hashimoto-Tane, PhD
Takashi Saito, PhD
Laboratory for Cell Signaling,
RIKEN Research Center for Allergy and Immunology

Reference material:
Akiko Hashimoto-Tane, Takashi Saito, *et al*. (2011). "Dynein-Driven Transport of T Cell Receptor Microclusters Regulates Immune Synapse Formation and T Cell Activation." *Immunity 34,* 919–931.

• Images shown left acquired by IX81.

Objective specifications

UIS2 objective		NA	W.D. (mm)	FN	Cover glass thickness (mm)	Immersion	Spring	Correction ring	Iris diaphragm	Waterproof and oil-proof function
UPLSAPO	UPLSAPO 4×	0.16	13	26.5	—					
	UPLSAPO 10×2	0.40	3.1	26.5	0.17					
	UPLSAPO 20×	0.75	0.6	26.5	0.17		✓			
	UPLSAPO 20×0	0.85	0.17	26.5	—	Oil	✓			✓
	UPLSAPO 30×S	1.05	0.8	22	0.13–0.19	Silicone		✓		✓
	UPLSAPO 40×2	0.95	0.18	26.5	0.11–0.23		✓	✓		
	UPLSAPO 60×W	1.20	0.28	26.5	0.13–0.21	Water	✓	✓		✓
	UPLSAPO 60×0	1.35	0.15	26.5	0.17	Oil	✓			✓
	UPLSAPO 60×S	1.30	0.3	22	0.15–0.19	Silicone	✓	✓	✓	✓
	UPLSAPO 100×0	1.40	0.13	26.5	0.17	Oil	✓			✓
	UPLSAPO 100×OPH	1.40	0.13	26.5	0.17	Oil	✓			✓
PLAPON	PLAPON 60×O	1.42	0.15	26.5	0.17	Oil	✓			✓
	PLAPON 60×OSC	1.40	0.12	22	0.17	Oil	✓			✓
	PLAPON 60×OPH	1.42	0.15	26.5	0.17	Oil	✓			✓
UPLFLN	UPLFLN 4×	0.13	17	26.5	—					
	UPLFLN 10×2	0.30	10	26.5	—					
	UPLFLN 20×	0.50	2.1	26.5	0.17		✓			
	UPLFLN 40×	0.75	0.51	26.5	0.17		✓			
	UPLFLN 40×0	1.30	0.2	26.5	0.17	Oil	✓			✓
	UPLFLN 60×	0.90	0.2	26.5	0.11–0.23		✓	✓		
	UPLFLN 60×OI	1.25–0.65	0.12	26.5	0.17	Oil	✓		✓	✓
	UPLFLN 100×O2	1.30	0.2	26.5	0.17	Oil	✓			✓
	UPLFLN 100×OI2	1.3-0.6	0.2	26.5	0.17	Oil	✓		✓	✓
PLFLN	PLFLN 100×	0.95	0.2	26.5	0.14–0.2		✓	✓		
UCPLFLN	UCPLFLN 20×	0.7	0.8–1.8	22	0–1.6			✓		
	UCPLFLN 20×PH	0.7	0.8–1.8	22	0–1.6			✓		
LUCPLFLN	LUCPLFLN 20×	0.45	6.6–7.8	22	0–2			✓		
	LUCPLFLN 40×	0.60	2.7–4	22	0–2			✓		
	LUCPLFLN 60×	0.70	1.5–2.2	22	0.1–1.3			✓		
	LUCPLFLN 20×PH	0.45	6.6–7.8	22	0–2			✓		
	LUCPLFLN 20×RC	0.45	6.6–7.8	22	0–2			✓		
	LUCPLFLN 40×PH	0.60	3.0–4.2	22	0–2			✓		
	LUCPLFLN 40×RC	0.60	3.0–4.2	22	0–2			✓		
	LUCPLFLN 60×PH	0.70	1.5–2.2	22	0.1–1.3			✓		
UPLFLN-PH	UPLFLN 4×PH	0.13	17	26.5	—					
	UPLFLN 10×2PH	0.30	10	26.5	—					
	UPLFLN 20XPH	0.50	2.1	26.5	0.17		✓			
	UPLFLN 40XPH	0.75	0.51	26.5	0.17		✓			
	UPLFLN 60XOIPH	1.25-0.65	0.12	26.5	0.17	Oil	✓			✓
	UPLFLN 100XO2PH	1.30	0.2	26.5	0.17	Oil	✓			✓
UPLFLN-PHP	UPLFLN 4×PHP	0.13	16.4	22	—					
CPLFLN	CPLFLN 10×PH	0.30	9.5	22	1					
	CPLFLN 10×RC	0.30	9	22	1.5					
LCACHN	LCACHN 20×PH	0.40	3.2	22	1					
	LCACHN 20×PHP	0.40	3.2	22	1					
	LCACHN 20×RC	0.40	2.8	22	1.5					
	LCACHN 40×PH	0.55	2.2	22	1					
	LCACHN 40×PHP	0.55	2.2	22	1					
	LCACHN 40×RC	0.55	1.9	22	1.5					
CACHN, CPLN	CACHN 10×PHP	0.25	8.8	22	—					
	CPLN 10×PH	0.25	10	22	1					
	CPLN 10×RC	0.25	9.7	22	1.5					
UAPON 340	UAPON 20×W340	0.70	0.35	22	0.17	Water	✓			✓
	UAPON 40×0340	1.35	0.1	22	0.17	Oil	✓			✓
	UAPON 40×W340	1.15	0.25	22	0.13–0.25	Water	✓	✓		✓
TIRF	APON 60×OTIRF	1.49	0.1	22	0.13–0.19	Oil		✓		✓
	APON 100×HOTIRF*	1.70	0.08	22	0.15	Oil		✓		✓
	UAPON 100×OTIRF	1.49	0.1	22	0.13–0.19	Oil		✓		✓
	UAPON 150×OTIRF	1.45	0.08	22	0.13–0.19	Oil		✓		✓

*HIGH-INDEX-CG cover glass and dedicated immersion oil required.

Observation tubes, eyepieces

WHN10×
WHN10×-H
Eyepieces

U-CT30-2
Centring telescope

U-BI90
Binocular tube

U-TBI90
Tilting binocular tube

U-TR30-2, U-TR30NIR
Trinocular tubes

U-TR30H-2
Trinocular tube

IX-ATU
Intermediate tube

GX-SPU
Side port intermediate tube

U-EPA2
Eyepoint adjuster

U-CA
Magnification changer 1×, 1.25×, 1.6×, 2×

U-ECA
Magnification changer 2×

1

Stages

IX-HOP
Petri dish holder

IX-HOS
Slide glass holder

IX-HOT
Terasaki plate holder

IX-CLMT, IX-CLM96
Well positioners

IX-PPM
Scale for NUNC plate

IX-MVR
Mechanical stage

U-FMP
Mechanical stage

IX3-HO35D
Dish holder

IX3-HOS
Slide holder

IX3W/IX3D
CO_2 incubator
(Stage adapters required separately. Available in the near future.)

IX3-HOW
Microplate holder

IX-CP50
Insert plate

IX2-GCP
Glass stage insert plate

Thermoplate
(Available in the near future.)

IX-SCL
Slide clip

IX-SCL
Slide clip

IX-SCL
Slide clip

CK2-SS
Side stage

IX2-SP
Plain stage

IX3-SVR
Mechanical stage with right handle

IX2-GS
Gliding stage

GX-SVR
Right-handle stage for GX (Separate plate insertion required.)

GX-SFR
Flexible right-handle stage (Exclusive unit for IX73. Separate plate insertion required.)

BX3-SSU
Scanning stage with ultrasonic

XY controller (attached to BX3-SSU)

Control box (attached to BX3-SSU)

2

Incubator

Incubator
(Available in the near future.)

8

Camera adapters, camera ports

U-BMAD
Bayonet mount adapter

U-CMAD3
C-mount adapter

U-SMAD
Sony mount adapter

U-TMAD
T-mount adapter

U-TV1×-2
Primary image camera port tube

U-TVZ
Zoom camera port tube

U-TV1×C
C-mount camera adapter 1× (XY adjustment)

U-TV0.63×C
C-mount camera port tube with 0.63× lens

U-TV0.5×C-3
C-mount camera port tube with 0.5× lens

U-TV0.35×C-2
C-mount camera port tube with 0.35× lens

U-TV0.25×C
C-mount camera port tube with 0.25× lens

U-FFWEM
Motorised fast filter wheel for emission

U-DPCAD
Dual port tube with C-mounts

Cube cassette for full image/ split images (Not available in some areas.)

U-SIP
Split primary image camera port (Not available in some areas.)

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U-CMT
C-mount adapter

U-FMT
F-mount adapter

IX-TVAD
Primary image camera port tube

Transmitted illumination

IX-ADUCD
Condenser adapter

Optical elements

U-UCD8-2
Universal condenser

U-TLO
Oil top lens

U-TLD
Dry top lens

IX2-MLWPO
Polariser attachment

Optical elements

IX2-MLWCD
Mid-long working distance condenser

IX-LWPO
Polariser attachment

Optical elements

IX2-LWUCD
Long working distance universal condenser

U-IFCBL100
Interface cable, 100 cm

IX3-LWUCDA
Motorised LWD condenser

U-IFCBL200
Interface cable, 200 cm

Optical elements

IX-ULWCD
Ultra-long working distance condenser

45FR
45-LBD-IF
45-ND25
45-ND6
43IF550W45
Filters

IX3-ILL
Transmitted illuminator

3

U-LHEAD
Extension adapter for lamp housing

U-LH100L-3
100 W halogen lamp housing

U-LH100-3
100 W halogen lamp housing

U-RMT
Extension cord

TH4-HS
Hand switch

TH4-100
Power supply unit

IX3-LHLEDC
LED lamp house

U-LEDPS
LED power supply

U-FSHU
Motorised fast shutter

U-IFCBL15
Interface cable, 15 cm

U-NPCBL100
Interface cable, 100 cm

U-AW
Motorised attenuator wheel

U-IFCBL100
Interface cable, 100 cm

U-IFCBL200
Interface cable, 200 cm

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U-IFCBL100
Interface cable, 100 cm

U-IFCBL200
Interface cable, 200 cm

Controllers

IX3-CBH
Control box

C1394A
Interface cable

U-CBFCBL
CBF cable

U-CBF
Control box for fast filter wheel and shutter

U-CBF
Control box for fast filter wheel and shutter

U-HSCBM
Hand switch

IX3-CBM
Control box M (For motorised function)

RS232C
Interface cable

U-CB5S
Control box for coded function

cellSens
Imaging software

Revolving nosepiece

IX3-D6RES
Coded 6-position nosepiece

U-NPCBL100
Interface cable, 100 cm

IX3-D6REA
Motorised 6-position nosepiece

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IX3-CAS
Coded intermediate magnification changer

U-COCBL100
CODE cable

IX3-FDICT
Transmitted DIC filter unit

IX3-FFXL
IX3-FCFPXL
IX3-FGFPXL
IX3-FYFPXL
IX3-FMCHEXL
IX3-FUWXL
IX3-FGWXL
IX3-FBVWXL
XL mirror units (ø32)

Mirror units

IX3-RFACA
Motorised fluorescence mirror turret

IX3-RSPC
Right side port with C-mount

IX3-RFACS
Coded fluorescence mirror turret

U-COCBL100
CODE cable

U-ANT
Analyser for transmitted light

U-DICT
DIC slider for transmitted light

U-DICTS
Shift DIC slider for transmitted light

U-DICTHC
High-contrast DIC slider for transmitted light

U-DICTHR
High-resolution DIC slider for transmitted light

IX3-AN
Analyser slider

IX73P2F
IX73 2-port frame

IX73P1F
IX73 1-port frame

U-IFCBL15
Interface cable, 15 cm

U-IFCBL100
Interface cable, 100 cm

IX3-ZDC
Z-drift compensator

IX83P2ZF
IX83 2-port frame

IX83P1ZF
IX83 1-port frame

U-IFCBL200
Interface cable, 200 cm

U-MCZ
Controller

Touch panel controller (attached to IX83P2ZF/IX83P1ZF)

IX3-FP
Frame fix plate

Fluorescence illuminators

IX3-RFA
Fluorescence illuminator

IX3-RFAL
L-shaped fluorescence illuminator

U-RFSS
Rectangular field stop

IX3-RFALFE
L-shaped fluorescence illuminator with fly-eye lens

cell^TIRF
Motorised TIRF system
(Cannot be used with IX83P1ZF. Cannot be used with other illuminators.)

4

25ND1.5
25ND6
25ND25
25ND50
Filters

U-LHEAD
Extension adapter for lamp housing

U-DULHA
Double lamp housing adapter

U-FFW
Motorised fast filter wheel

U-FFW
Motorised fast filter wheel

U-FSHU
Motorised fast shutter

U-AW
Motorised attenuator wheel

U-IFCBL100
Interface cable, 100 cm

U-IFCBL200
Interface cable, 200 cm

Microscope adapter

XLED1
High-intensity LED fluorescence microscope light source
(Available in the near future.)

U-LH100HG
100 W mercury lamp housing

U-LH100HGAPO
100 W mercury apo lamp housing

U-CLA
Collector lens adjustment

U-LH75XEAPO
75 W xenon apo lamp housing

U-LLGAD
Liquid light guide adapter

U-LLG150
Liquid light guide (1.5 m)

U-LLG300
Liquid light guide (3 m)

U-FFWADP
Adapter for light guide illumination system

U-RFL-T
Power supply unit for mercury lamp

U-RX-T
Power supply unit for xenon lamp

U-HGLGPS
130 -W mercury lamp housing with fibre

U-FFW
Motorised fast filter wheel

U-FFW
Motorised fast filter wheel

U-FSHU
Motorised fast shutter

Exclusive units for IX83

Exclusive units for IX73

IX3 specifications

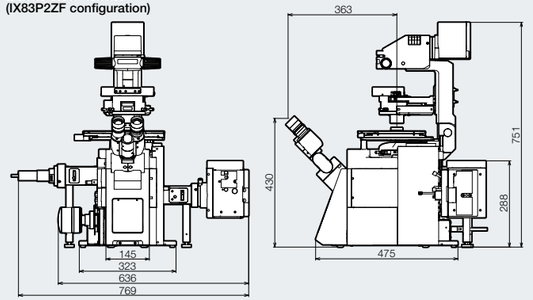
		IX83	IX73	IX53
Microscope frame	Optical system	UIS2 optical system		
	Revolving nosepiece	• Motorised sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure	• Motorised sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure • Coded sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure	• Sextuple revolving nosepiece, simple waterproof structure
	Focus	Stroke: 10.5 mm Minimum increment: 0.01 µm, Maximum nosepiece movement speed: 3 mm/s	Stroke: 10 mm	Stroke: 10 mm
	Light-path selection	Motorised 0:100/50:50/100:0 (Left-side port: BI port)	0:100/50:50/100:0 (Left-side port: BI port)	50:50 (Left-side port: BI port)
Transmitted light illuminator		Pillar tilt mechanism (30° inclination angle, with vibration-reducing mechanism), Condenser holder (with 88 mm stroke, refocusing mechanism), Field iris diaphragm adjustable, 4 filter holders Light source: •12 V 100 W halogen bulb (pre-centred) • High-colour-reproductive LED light source		• 30 W halogen illuminator: Detachable condenser lens system (NA 0.3, W.D. 72 mm), single filter holder aperture iris diaphragm adjustable • 100 W halogen illuminator: pillar tilt mechanism (30° inclination angle, with vibration reducing mechanism), Condenser holder (with 88 mm stroke, refocusing mechanism) Field iris diaphragm adjustable, 4 filter holders
Observation tube	Wide-field (FN 22)	• Wide-field tilting binocular • Wide-field binocular • Wide-field trinocular		• Wide-field tilting binocular • Wide-field binocular
Stage	Scanning stage with ultrasonic	Stage stroke: X: 76 mm x Y: 52 mm, maximum stage movement speed: 30mm/s		—
	Mechanical stage with right handle	Stage stroke: X: 114 mm x Y: 75 mm, stage position locking function		
	Right-handle stage	Stage stroke: X: 50 mm x Y: 50 mm		—
	Flexible right-handle stage	—	Stage stroke: X: 50 mm x Y: 50 mm	—
	Gliding stage	Upper circular stage 360° rotatable, 20 mm (X/Y) travel		
	Plain stage	232 mm (X) × 240 mm (Y) stage size, stage insert plate exchangeable (ø110 mm)		
Condenser	Motorised long working distance condenser	W.D. 27 mm, NA 0.55, Motorised turret with 7 position slots for optical devices (3 positions for ø30 mm and 4 positions for ø38 mm), Motorised aperture and polariser		—
	Long working distance universal condenser	NA 0.55, W.D. 27 mm 5 positions for optical devices (3 positions for ø30 mm and 2 position for ø38 mm)		
	Long working distance relief contrast	NA 0.5, W.D. 45 mm, 4 positions for optical devices (for ø50 mm, relief contrast optical devices rotatable)		
	Ultra long working distance	NA 0.3, W.D. 73.3 mm, 4 positions for optical devices (for ø29 mm)		
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens	L-shaped design with exchangeable FS module		—
	L-shaped fluorescence illuminator	L-shaped design with exchangeable FS and AS modules		—
	Fluorescence illuminator	Straight design with field iris diaphragm		
Fluorescence mirror turret	Motorised fluorescence mirror turret	Motorised turret with 8 positions, built-in shutter, simple waterproof structure		—
	Coded fluorescence mirror turret	—	Coded 8-position turret, built-in shutter, simple waterproof structure	—
	Fluorescence mirror turret	—	—	Turret with 8 positions, built-in shutter, simple waterproof structure
Fluorescence light source		• 130 W Halogen light guide illumination • 100 W Hg apo lamp housing and transformer • 100 W Hg lamp housing and transformer • 75 W Xenon lamp housing and transformer		
Focus compensator	Z-drift compensator	Offset method (Focus search, one-shot focus, continuous focus), Class 1 laser product	—	
Filter wheel/shutter	Motorised fast filter wheel	High-speed mode 60 ms, Low-vibration mode 100 ms (rotation time to next hole on the wheel)		—
	Motorised fast filter wheel for emission	High-speed mode 60 ms, Low-vibration mode 100 ms (rotation time to next hole on the wheel) C-mount adapter and bayonet mount adapter are enclosed		—
	Motorised fast shutter	High-speed mode 26.2 ms, Low-vibration mode 60 ms (rotation time one way)		—
	Motorised attenuator wheel	Time to shift to another filter 300 ms (rotation time to next hole on the wheel)		—
Operating environment	• Indoor use • Ambient temperature: 5º to 40ºC (41º to 104ºF) • Maximum relative humidity: 80% for temperatures up to 31ºC (88ºF), decreasing linearly through 70% at 34ºC (93ºF), 60% at 37ºC (99ºF), to 50% relative humidity at 40ºC (104ºF) • Supply voltage fluctuations: Not to exceed ±10% of the normal voltage			

Motorised or coded units are designed for the IX3 series, for use in industrial environments for the EMC performance (IEC61326-1 Class A device). Using them in a residential environment may affect other equipment in the environment.

Dimensions

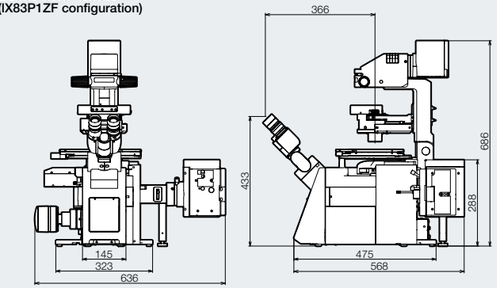
(Unit : mm)

IX83: two-deck
(IX83P2ZF configuration)



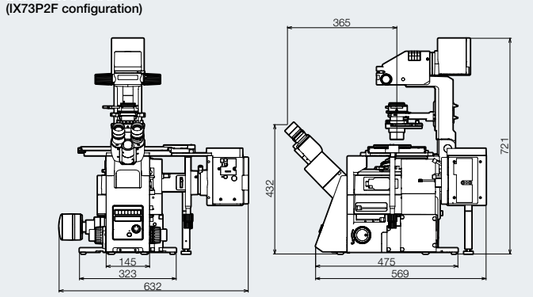
Weight: approx. 54 kg Power consumption: approx. 530 W

IX83: one-deck
(IX83P1ZF configuration)



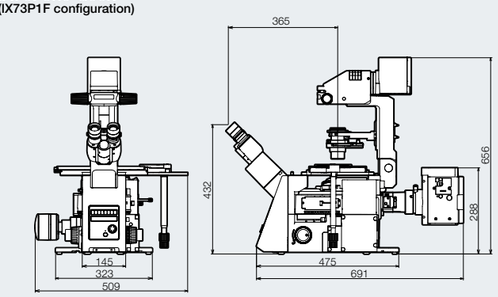
Weight: approx. 47 kg Power consumption: approx. 370 W

IX73: two-deck
(IX73P2F configuration)



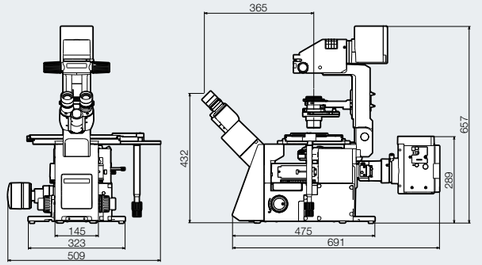
Weight: approx. 41 kg Power consumption: approx. 310 W

IX73: one-deck
(IX73P1F configuration)



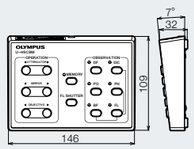
Weight: approx. 35 kg Power consumption: approx. 310 W

IX53: one-deck
(IX53P1F configuration)

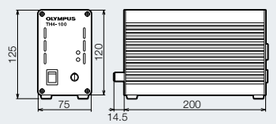


Weight: approx. 32 kg Power consumption: approx. 300 W

U-HSCBM

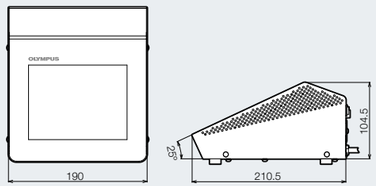


TH4-100

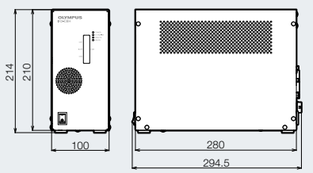


Voltage/current:
100–120 V 50/60 Hz 1.8 A

Touch panel controller



IX3-CBH



Voltage/current: 100–120/220–240 V
50/60 Hz 4.6 A/2.8 A