OLYMPUS®

Your Vision, Our Future

Research Inverted Microscope

IX83/IX73/IX53

IX3 Series

Built for Live Cell Imaging

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 widefield imaging with minimal loss of light.

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

EXPANDABLE TO GROW WITH YOUR RESEARCH

The fully-motorized and automated IX83 along with the semi-motorized IX73, are designed to satisfy a myriad of research needs. Each model is available as a one-deck system with ergonomic 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 supply added functions. Available modules include: Fluorescence filter turrets, side ports, magnification changer 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 specialized 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, motorized microscope that can be equipped with the IX3-ZDC to create a new standard for live cell imaging.

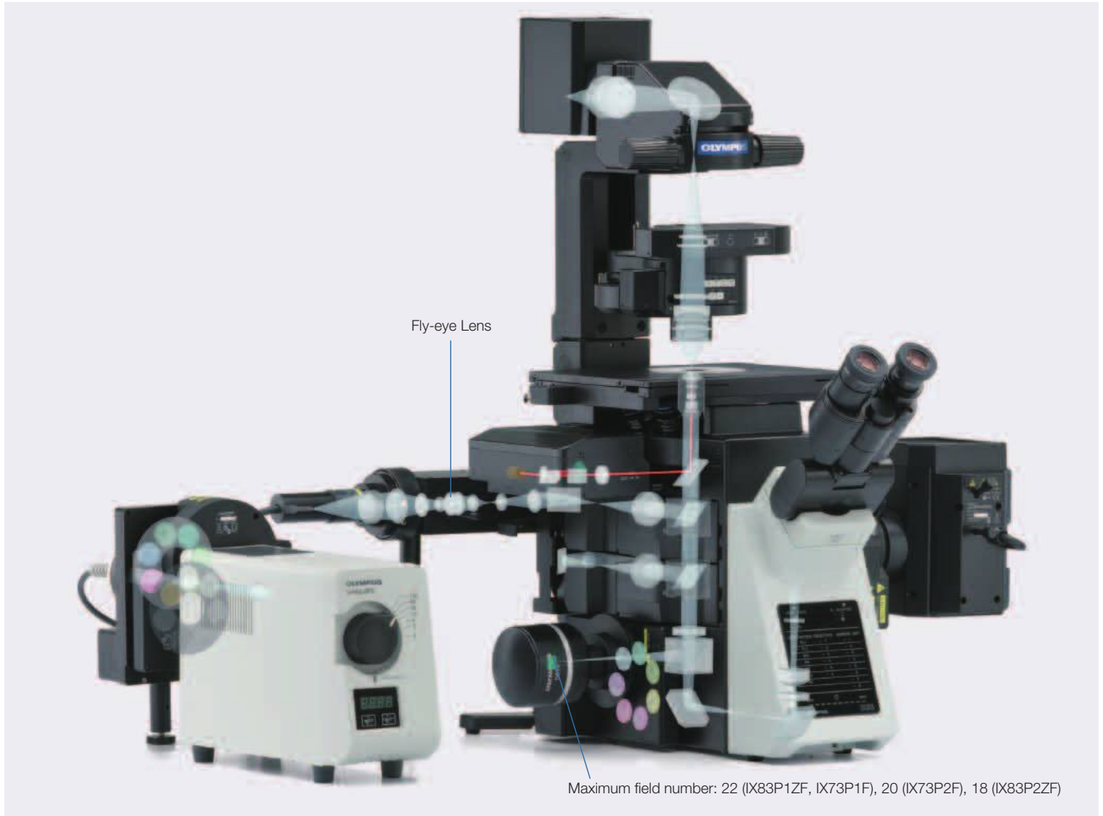
IX73: One-deck System

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

IX53: One-deck System

An outstanding microscope delivering cost efficiency for brightfield and fluorescence applications.

RELIABLE HIGH RESOLUTION IMAGES THAT ARE CLEAR AND BRIGHT



Maximum field number: 22 (IX83P1ZF, IX73P1F), 20 (IX73P2F), 18 (IX83P2ZF)

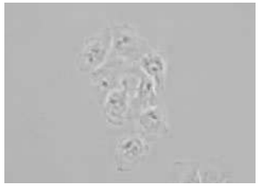
Olympus UIS2 infinity-corrected optics provide bright, high resolution images from ultraviolet to near-infrared.

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.

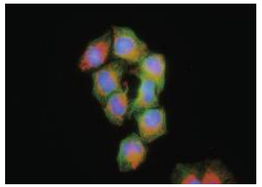
Excellent Image

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

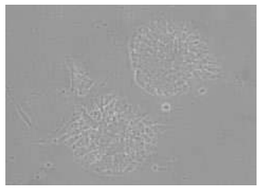


Silicone Objectives* Enable High Resolution Observation of Deep Live Cells

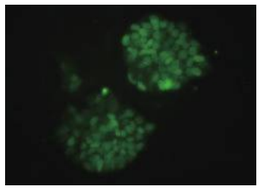
These high-NA objectives (UPLSAPO30×S and UPLSAPO60×S) use silicon oil as an immersion medium with a refractive index (ne≈1.40) close to that of living tissue (ne≈1.38) normally investigated in live cell imaging. As a result, these objectives deliver high resolution observation with minimal spherical 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 plastic dishes. It enables phase contrast observation of the cell proliferation process, for example, and delivers differentiation across a wide area in high resolution.



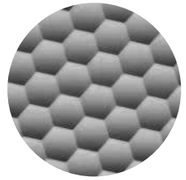
Phase contrast image of mouse ES cells



Immunofluorescence staining for Nanog

Bright, Uniform Fluorescent Illumination

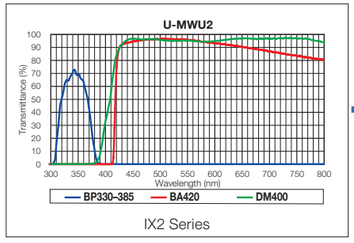
The fluorescence illuminator (IX3-RFALFE) incorporates a fly-eye lens system to provide an even distribution of fluorescence illumination.



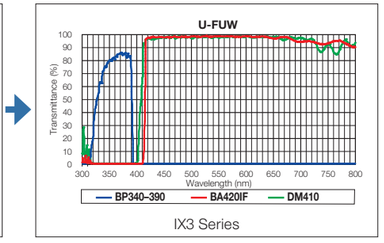
Surface of a Fly-eye Lens System, Enlarged Image

High S/N Fluorescent Mirror Units that Efficiently Detect Fluorescence Signals

All fluorescence mirror units feature filters treated with a coating specially developed to minimize 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.



IX2 Series



IX3 Series

LED Transmitted Illumination

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

*Use dedicated silicone oil.

INTUITIVE AND ERGONOMIC CONTROL OVER 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 refine complex sequences of operations into workflows with speed and comfort, eliminating burden on the observer and minimizing cell damage.

A repositionable controller can be located comfortably close to 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 minimize cell damage while enabling instant focus.

Smart Control

Switch Observation Methods with a Tap of the Touch Panel

A press of a 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's also a focus search function supported by a cell-safe, near-infrared laser enabling instant focusing on samples—even at high magnification.

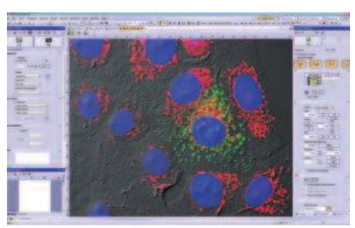
Just Touch the Panel → For Instant Focus

Intuitive Microscope and XY Stage Controllers

The combination of the U-MCZ and XY-controller make it possible to provide the familiarity of conventional handle operation for confident working even in a darkroom.

Microscope Configuration Recall (Olympus cellSens)

The system saves microscope configurations alongside image data through incorporation of a readout function that utilizes motorized 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 in high magnifications. The user settable position limits immobilizes 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 35mm 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 front-located control knobs, the condenser can be moved and easily reset to Koehler Illumination.

Frame Construction Prevents Optical System Contamination

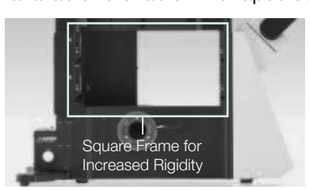
A catch tray under the nosepiece prevents damage to the microscope frequency caused by contamination through spilled liquids and simplifies maintenance.

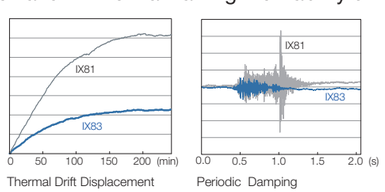
*cellSens software is not for clinical diagnostic use.

IDEAL OBSERVATION AND CAPTURE 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 desired positions along 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 enable capturing 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.





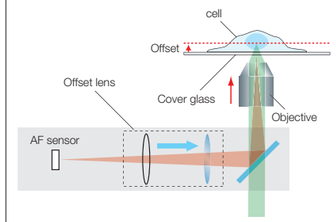
Thermal Drift Displacement Periodic Damping

Accuracy

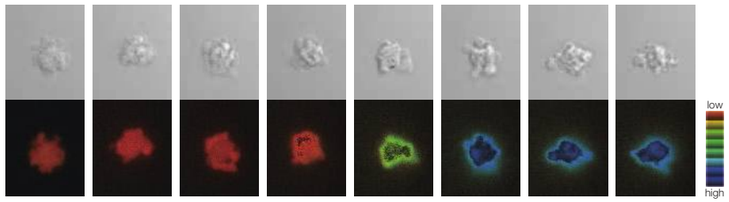
Z-drift Compensation System

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 requires more stringent focusing.

IX3-ZDC Optical Path Diagram



▼ Time-lapse Observation Images Using ZDC Example



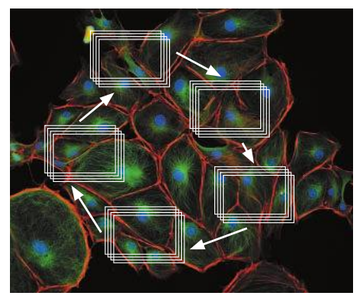
Apoptosis in cultured human ES cells, photographed at 2-minute intervals over 5 hours.
(Top row: DIC imaging of physical changes; Bottom row: FRET imaging of Caspase-3 action)

Image data courtesy of:
Masatoshi Ohgushi, Ph.D.
Yoshiki Sasai M.D., Ph.D.
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).

Low Thermal Drift Ultrasonic Stage with Multipoint Registration

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



Maintain Cell Viability Over an Extended Period of Time

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 time-lapse observation.

CO_2 Stage Top Incubator

Precise controls maintain a constant environment within the dish or well plate controlling thermally, humidity and CO_2 concentration.

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

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 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

Motorized Fluorescence Mirror Turret (IX3-RFACA)

A non-click turret fitted with 8 mirror units delivers smooth, fast switching. Mirror units can be used with 25mm diameter filters or 32mm diameter filters. No tool use is 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 customized systems for applications such as split imaging.

IX3-RSPC

Coded Intermediate Magnification Changer (IX3-CAS)

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

IX3-CAS

Motorized Fast Filter Wheel (U-FFW)/ Motorized Fast Filter Wheel for Emission (U-FFWEM)/ Motorized 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

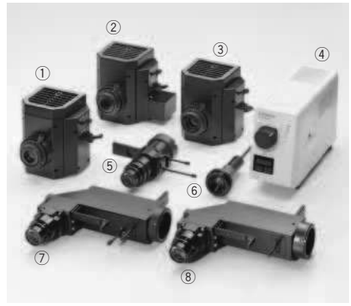
U-FFWEM

U-FSHU

Fluorescence System

Reflected Light Fluorescence Illuminators for Your Specific Application

Choose the illuminator best suited to meet each need, such as multicolor fluorescence observation or photoactivation. An L-shaped fluorescence illuminator with a fly-eye lens system provides bright, consistent illumination without adjustment, an L-shape-fluorescence illuminator 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 are available, including light guide light sources and lamp houses compatible with both 100W mercury and 75W xenon illumination.



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

Motorized Units/Coded Units

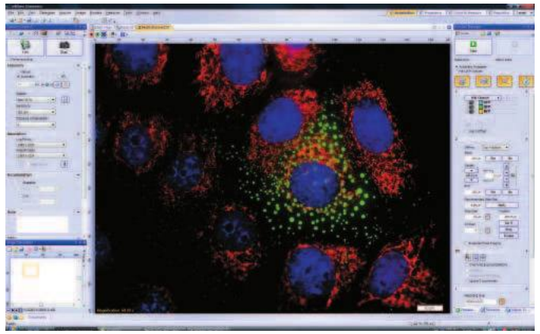
A Cost-efficient Way to Upgrade to a Motorized Microscope

A wide range of motorized and encoded units are available, including an 8-position motorized fluorescent mirror turret, an encoded fluorescence mirror turret, a motorized 6-position nosepiece, an encoded 6-position nosepiece, a motorized 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.

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

OPTIMIZED IMAGE ACQUISITION ACCORDING TO WORKFLOW

Olympus cellSens Imaging Software

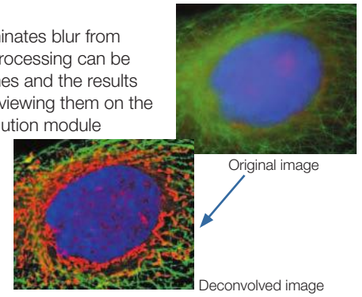


Olympus cellSens imaging software is available in three packages to meet individual workflow needs. “Entry” is used for simple image acquisition. “Standard” provides simple operation for imaging documentation and “Dimension” allows control of the complete workflow from image capture to analysis.

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, motorized 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 multicolor 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.

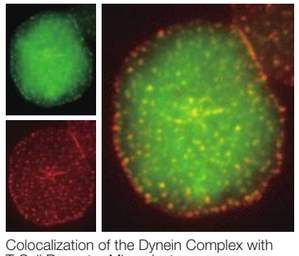
cell^TIRF is a class 3B laser product.

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 deliver live imaging at a high frame rate, while maintaining accurate real-time focus.



Colocalization of the Dynein Complex with T Cell Receptor Microclusters

Image data courtesy of:
Akiko Hashimoto-Tane, Ph.D.
Takashi Saito, Ph.D.
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 Micro-clusters 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	Water proof & 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		✓		✓

*HIGHINDEX-CG cover glass and dedicated immersion oil required.

Observation tubes, eyepieces

WHN10×
WHN10×-H
Eyepieces

U-CT30-2
Centering 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 1x, 1.25x, 1.6x, 2x

U-ECA
Magnification changer 2x

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 separately required. 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 (Insert plate separately required.)

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

BX3-SSU
Scanning stage with ultrasonic

XY-controller (attached to BX3-SSU)

Control box (attached to BX3-SSU)

V

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-CMT
C-mount adapter

U-FMT
F-mount adapter

IX-TVAD
Primary image camera port tube

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

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

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

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

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

U-FFWEM
Motorized 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.)

A 6

6

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
Polarizer attachment

Optical elements

IX2-MLWCD
Mid long working distance condenser

IX-LWPO
Polarizer attachment

Optical elements

IX2-LWUCD
Long working distance universal condenser

II

U-IFCBL100
Interface cable, 100 cm

IX3-LWUCDA
Motorized LWD condenser

VII

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

7

IX3-LHLEDC
LED lamp house

U-LEDPS
LED power supply

XI

XII

VI

U-FSHU
Motorized fast shutter

U-IFCBL15
Interface cable, 15 cm

VII

U-NPCBL100
Interface cable, 100 cm

X

U-AW
Motorized attenuator wheel

II

U-IFCBL100
Interface cable, 100 cm

VII

U-IFCBL200
Interface cable, 200 cm

XIII

Controllers

IX3-CBH
Control box

C1394A
Interface cable

U-IFCBL100
Interface cable, 100 cm

U-CBFCBL
CBF cable

U-CBF
Control box for fast filter wheel and shutter

VI

U-CBF
Control box for fast filter wheel and shutter

VI

U-IFCBL200
Interface cable, 200 cm

VII

U-HSCBM
Hand switch

IX3-CBM
Control box M
(For motorized function)

RS232C
Interface cable

VIII

IX

X

U-CB5S
Control box for coded function

I

III

IV

V

cellSens
Imaging software

Revolving nosepiece

IX3-D6RES
Coded 6-position nosepiece

U-NPCBL100
Interface cable, 100 cm

IX3-D6REA
Motorized 6-position nosepiece

IX

XI

VII

XII

5

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-CAS
Coded intermediate magnification changer

VIII

U-COCBL100
CODE cable

IX3-RFACA
Motorized fluorescence mirror turret

IX3-RSPC
Right side port with C-mount

IX3-RFACS
Coded fluorescence mirror turret

VIII

U-COCBL100
CODE cable

U-IFCBL15
Interface cable, 15 cm

II

U-IFCBL100
Interface cable, 100 cm

VII

U-ANT
Analyzer 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
Analyzer slider

2 5 3

1

4

IX73P2F
IX73 2port frame

IX73P1F
IX73 1port frame

6 8 XIII

IX3-ZDC
Z drift compensator

II

2 3

1

4

7

IX83P2ZF
IX83 2port frame

IX83P1ZF
IX83 1port frame

6 8 I II

U-IFCBL200
Interface cable, 200 cm

II

III

U-MCZ
Controller

IV

Touch panel controller (attached to IX83P2ZF/IX83P1ZF)

IX3-FP
Frame fix plate

Fluorescence illuminators

IX3-RFA
Fluorescence illuminator

25ND1.5
25ND6
25ND25
25ND50
Filters

U-FFW
Motorized fast filter wheel

VI

U-FFW
Motorized fast filter wheel

VI

U-FSHU
Motorized fast shutter

VI

U-AW
Motorized attenuator wheel

U-IFCBL100
Interface cable, 100 cm

III

U-IFCBL200
Interface cable, 200 cm

VII

IX3-RFAL
L-shape-fluorescence illuminator

U-RFSS
Rectangular field stop

U-LHEAD
Extension adapter for lamp housing

Microscope adapter

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

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

U-DULHA
Double lamp housing adapter

U-LH100HG
100 W mercury lamp housing

U-LH100HGAPO
100 W mercury apo lamp housing

U-CLA
Collector lens adjustment

U-RFL-T
Power supply unit for mercury lamp

U-RX-T
Power supply unit for xenon lamp

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-HGLGPS
100 W mercury lamp housing with fiber

cell^TIRF
Motorized TIRF system
(Cannnot be used with IX83P1ZF. Cannnot be used with other illuminators. Available in the near future.)

4

U-FFW
Motorized fast filter wheel

VI

U-FFW
Motorized fast filter wheel

VI

U-FSHU
Motorized fast shutter

VI

Exclusive units for IX83

Exclusive units for IX73

IX3 specifications

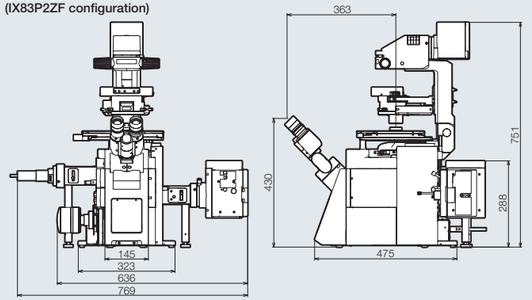
		IX83	IX73	IX53
Microscope frame	Optical system	UIS2 optical system		
	Revolving nosepiece	• Motorized sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure	• Motorized sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure • Coded sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure	• Sextuple revolving nosepiece, simple waterproof structure
	Focus	Stroke: 10.5mm Minimum increment: 0.01µm, Maximum nosepiece movement speed: 3mm/s	Stroke: 10mm	Stroke: 10mm
	Light path selection	Motorized 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 with 88mm stroke, refocusing mechanism), Field iris diaphragm adjustable, 4 filter holders Light source: •12V 100W halogen bulb (pre-centered) • High color reproductive LED light source		•30W halogen illuminator: Detachable condenser lens system (NA 0.3, W.D. 72mm), single filter holder aperture iris diaphragm adjustable •100W halogen illuminator: Pillar tilt mechanism (30° inclination angle, with vibration reducing mechanism), Condenser holder (with 88mm stroke, refocusing mechanism) Field iris diaphragm adjustable, 4 filter holders
Observation tube	Widefield (FN 22)	•Widefield tilting binocular •Widefield binocular •Widefield trinocular		•Widefield tilting binocular •Widefield binocular
Stage	Scanning stage with ultrasonic	Stage stroke: X: 76mm x Y: 52mm, maximum stage movement speed: 30mm/s		—
	Mechanical stage with right handle	Stage stroke: X: 114mm x Y: 75mm, stage position locking function		
	Right handle stage	Stage stroke: X: 50mm x Y: 50mm		—
	Flexible right handle stage	—	Stage stroke: X: 50mm x Y: 50mm	—
	Gliding stage	Upper circular stage 360° rotatable, 20mm (X/Y) travel		
	Plain stage	232mm (X) x 240mm (Y) stage size, stage insert plate exchangeable (ø110mm)		
Condenser	Motorized long working distance condenser	W.D. 27mm, NA 0.55, motorized turret with 7 position slots for optical devices (3 positions for ø30mm and 4 positions for ø38mm), motorized aperture and polarizer		—
	Long working distance universal condenser	NA 0.55, W.D. 27mm 5 positions for optical devices (3 positions for ø30mm and 2 position for ø38mm)		
	Long working distance relief contrast	NA 0.5, W.D. 45mm, 4 positions for optical devices (for ø50mm, Relief Contrast optical devices rotatable)		
	Ultra long working distance	NA 0.3, W.D. 73.3mm, 4 positions for optical devices (for ø29mm)		
Fluorescence illuminator	L-shape-fluorescence illuminator with flyeye lens	L-shaped design with exchangeable FS module		—
	L-shape-fluorescence illuminator	L-shaped design with exchangeable FS and AS modules		—
	Fluorescence illuminator	Straight design with field iris diaphragm		
Fluorescence mirror turret	Motorized fluorescence mirror turret	Motorized turret with 8 positions, built-in shutter, simple waterproof structurer		—
	Coded fluorescence mirror turret	—	Coded 8 positions turret, built-in shutter, simple waterproof structure	—
	Fluorescence mirror turret	—	—	Turret with 8 positions, built-in shutter, simple waterproof structure
Fluorescence light source		•130W Hg light guide illumination •100W Hg apo lamp housing and transformer •100W Hg lamp housing and transformer •75W Xe 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	Motorized fast filter wheel	High speed mode 60ms, Low vibration mode 100ms (rotation time until next hole on the wheel)		—
	Motorized fast filter wheel for emission	High speed mode 60ms, Low vibration mode 100ms (rotation time until next hole on the wheel) C-mount adapter and bayonet mount adapter are enclosed		—
	Motorized fast shutter	High speed mode 26.2ms, Low vibration mode 60ms (rotation time on one way)		—
	Motorized attenuator wheel	Time to shift another filter 300ms (rotation time until next hole on the wheel)		—
Operating environment	• Indoor use • Ambient temperature: 5 ºto 40ºC (41° 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			

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

Dimensions

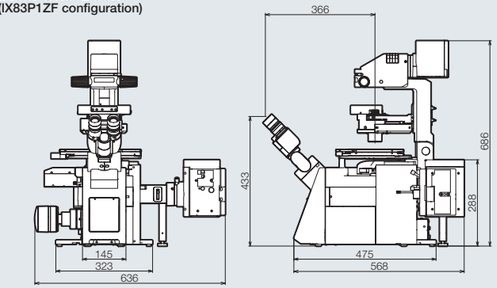
(Unit : mm)

IX83: Two-Decks
(IX83P2ZF configuration)



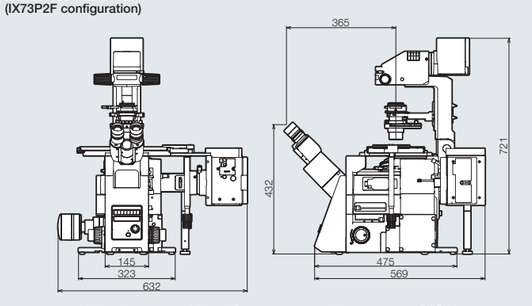
Weight: approx. 54kg Power consumption: approx. 530W

IX83: One-Deck
(IX83P1ZF configuration)



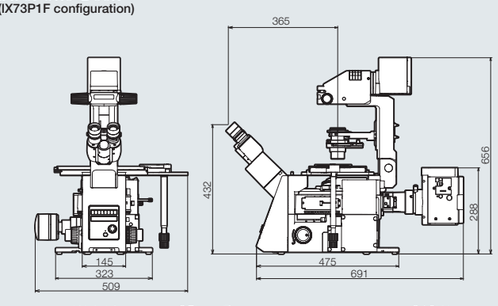
Weight: approx. 47kg Power consumption: approx. 370W

IX73: Two-Decks
(IX73P2F configuration)



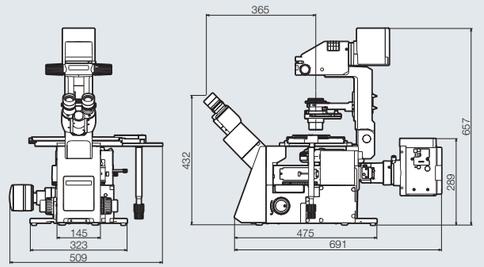
Weight: approx. 41kg Power consumption: approx. 310W

IX73: One-Deck
(IX73P1F configuration)



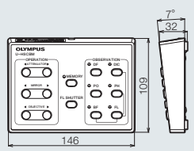
Weight: approx. 35kg Power consumption: approx. 310W

IX53: One-Deck
(IX53P1F configuration)

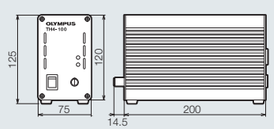


Weight: approx. 32kg Power consumption: approx. 300W

U-HSCBM

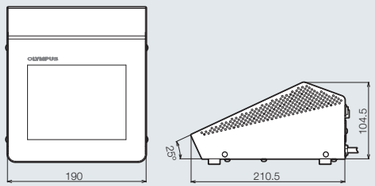


TH4-100

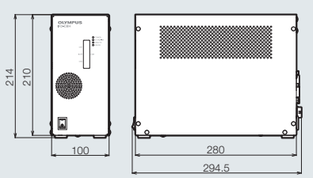


Voltage/current:
AC 100-120V 50/60Hz 1.8A

Touch panel controller



IX3-CBH



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