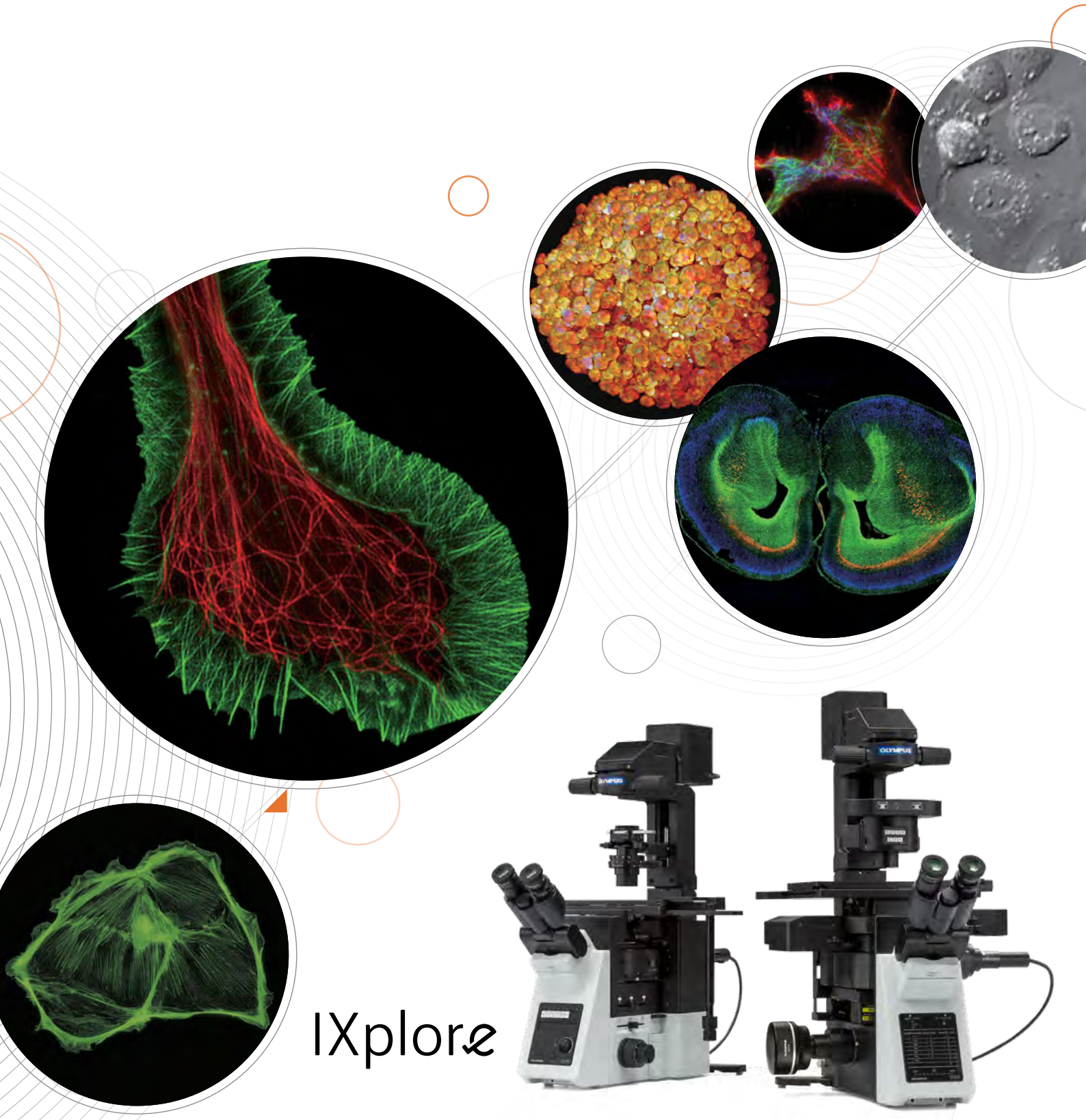
OLYMPUS

Inverted Imaging Platform

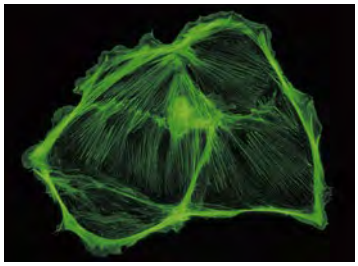
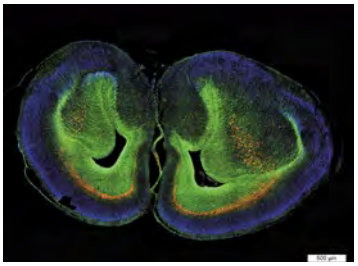
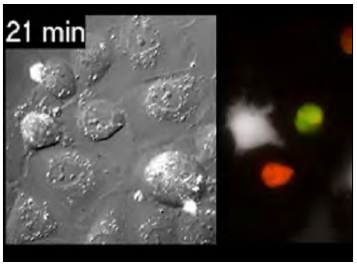
IXplore

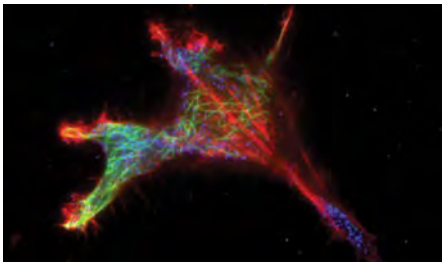
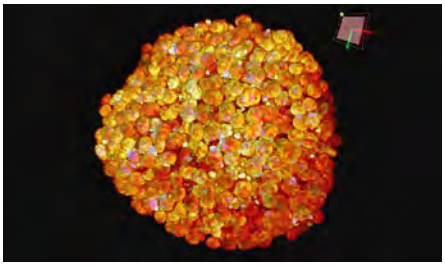
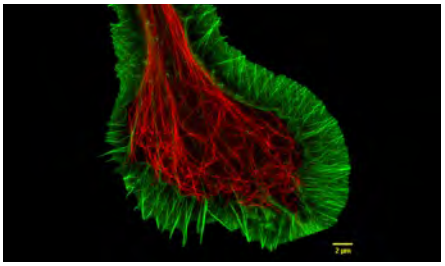
Solutions-Based Microscopy



IXplore Series Comparison Chart

Whether working with fixed samples or imaging live cells, discovery is challenging. Each system in the IXplore series is tailored to fit a specific research application to help scientists more efficiently accomplish their goals. IXplore systems provide accurate, reproducible images and data, and can be adapted as experimental needs evolve or become increasingly complex over time.

	IXplore Standard	IXplore Pro	IXplore Live
	High-quality imaging	Automated imaging for accurate and efficient experiments	Precise live-cell imaging
			
			
Unstained Contrast	✓	✓	✓
Stained Sample	✓	✓	✓
Multichannel Fluorescence	✓	✓	✓
Automated Microscopy		✓	✓
Z-Stacks		✓	✓
Stitching		✓	✓
Live Cell/ Time-Lapse			✓
3D Samples			
TIRF			
Photo Manipulation			
Low Phototoxicity			
High-Speed Confocal			
Super Resolution			

IXplore TIRF	IXplore Spin*	IXplore SpinSR*
Excellent multicolor TIRF imaging	Confocal imaging of rapid cell dynamics	Confocal super resolution for all live cell samples
		
		
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*This product is not available in some areas.

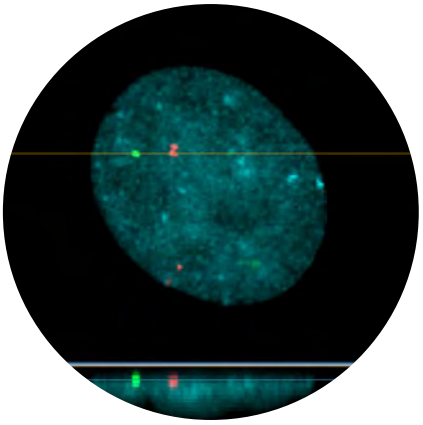
Our Most Advanced Optical Technology

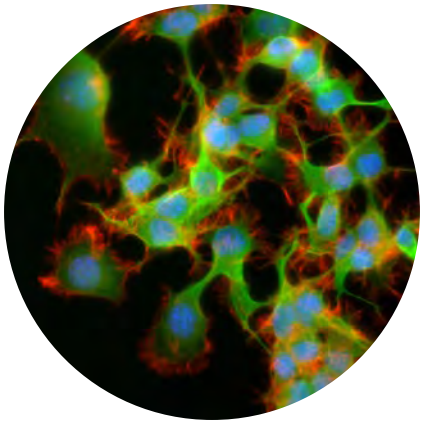
Throughout our more than 100-year history, our customers have come to associate Olympus with high-quality objectives. Our X Line high-performance objectives and A Line application-driven objectives demonstrate our commitment to continuously developing innovative optical technologies.

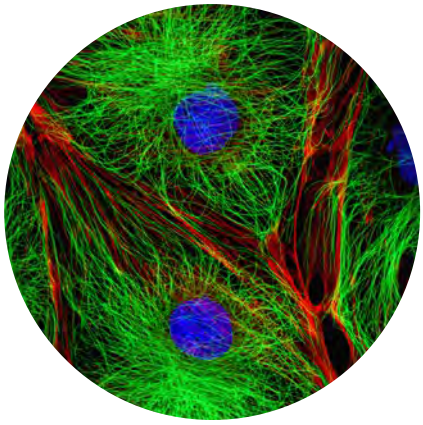
Extended Apochromat Objectives

X LINE

The UPLXAPO extended apochromat objectives have a high numerical aperture (NA), wide, homogenous image flatness, and chromatic aberration compensation from 400 nm to 1000 nm. Built with Olympus' advanced lens manufacturing technology, these objectives provide precision images in a range of applications including brightfield, fluorescence, confocal, and super-resolution microscopy.





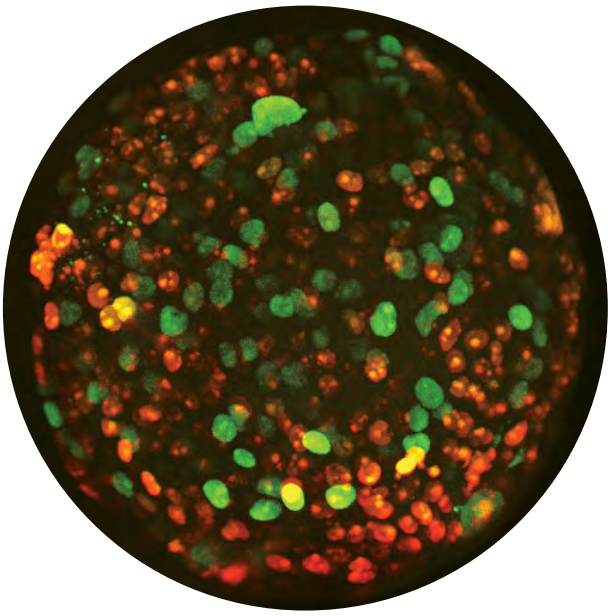


High-Resolution Objectives for Super Resolution/TIRF

A LINE

Olympus' pioneering TIRF objectives provide tight control over the evanescent wave produced in TIRF imaging with magnifications ranging from 60X to 150X. From the APON100XHOTIRF objective with the world's highest NA of 1.7* to the world's first plan apochromat objectives with an NA of 1.5* (UPLAPO60XOHR and UPLAPO100XOHR), our TIRF objectives deliver outstanding performance for real-time, super-resolution imaging of live cells and micro-organelles.

*As of November 2018; according to Olympus research.



Silicone Oil Objectives*2 —Unparalleled Visibility Deep into Live Cells

A LINE

The refractive index of silicone oil (ne≈1.40) is close to that of living tissue (ne≈1.38), enabling high-resolution observations deep inside living tissue with minimal spherical aberration caused by refractive index mismatch. Silicone oil does not dry out or harden, so there is never a need to refill oil, making it ideal for extended time-lapse observations.

*2 Uses dedicated silicone oil.

Objective Specifications

UIS2 Objective		X/A Line	NA	W.D. (mm)	OFN	Cover glass thickness (mm)	Immersion medium	Spring loaded	Correction collar	Iris	TruFocus
UPLXAPO	UPLXAPO4X	X Line	0.16	13	26.5	–					
	UPLXAPO10X	X Line	0.4	3.1	26.5	0.17					✓
	UPLXAPO20X	X Line	0.8	0.6	26.5	0.17		✓			✓
	UPLXAPO40X	X Line	0.95	0.18	26.5	0.11–0.23		✓	✓		✓
	UPLXAPO40XO	X Line	1.4	0.13	26.5	0.17	Oil	✓			✓
	UPLXAPO60XO	X Line	1.42	0.15	26.5	0.17	Oil	✓			✓
	UPLXAPO100XO	X Line	1.45	0.13	26.5	0.17	Oil	✓			✓
	UPLXAPO60XOPH	X Line	1.42	0.15	26.5	0.17	Oil	✓			✓
	UPLXAPO100XOPH	X Line	1.45	0.13	26.5	0.17	Oil	✓			
UPLSAPO	UPLSAPO30XS	A Line	1.05	0.8	22	0.13–0.19	Silicone oil		✓		✓
	UPLSAPO40XS	A Line	1.25	0.3	22	0.13–0.19	Silicone oil	✓	✓		✓
	UPLSAPO60XW		1.2	0.28	26.5	0.13–0.21	Water	✓	✓		✓
	UPLSAPO60XS2	A Line	1.3	0.3	22	0.15–0.19	Silicone oil	✓	✓		✓
	UPLSAPO100XS	A Line	1.35	0.2	22	0.13–0.19	Silicone oil	✓	✓		✓
PLAPON	PLAPON60XOSC2	A Line	1.4	0.12	22	0.17	Oil	✓			✓
UPLFLN	UPLFLN4X		0.13	17	26.5	–					
	UPLFLN10X2		0.3	10	26.5	–					✓
	UPLFLN20X		0.5	2.1	26.5	0.17		✓			✓
	UPLFLN40X		0.75	0.51	26.5	0.17		✓			✓
	UPLFLN60X		0.9	0.2	26.5	0.11–0.23		✓	✓		✓
	UPLFLN60XOI		1.25–0.65	0.12	26.5	0.17	Oil	✓		✓	✓
	UPLFLN100XO2		1.3	0.2	26.5	0.17	Oil	✓			✓
	UPLFLN100XOI2		1.3-0.6	0.2	26.5	0.17	Oil	✓		✓	✓
	UPLFLN4XPH		0.13	17	26.5	–					
	UPLFLN10X2PH		0.3	10	26.5	–					✓
	UPLFLN20XPH		0.5	2.1	26.5	0.17		✓			✓
	UPLFLN40XPH		0.75	0.51	26.5	0.17		✓			✓
	UPLFLN60XOIPH		1.25–0.65	0.12	26.5	0.17	Oil	✓		✓	
	UPLFLN100XO2PH		1.3	0.2	26.5	0.17	Oil	✓			✓
PLFLN	PLFLN100X		0.95	0.2	26.5	0.14–0.2		✓	✓		
UCPLFLN	UCPLFLN20X		0.7	0.8–1.8	22	0–1.6			✓		✓
	UCPLFLN20XPH	A Line	0.7	0.8–1.8	22	0–1.6			✓		✓
LUCPLFLN	LUCPLFLN20X		0.45	6.6–7.8	22	0–2			✓		✓
	LUCPLFLN40X		0.6	2.7–4	22	0–2			✓		✓
	LUCPLFLN60X		0.7	1.5–2.2	22	0.1–1.3			✓		✓
	LUCPLFLN20XPH		0.45	6.6–7.8	22	0–2			✓		✓
	LUCPLFLN40XPH		0.6	3.0–4.2	22	0–2			✓		✓
	LUCPLFLN60XPH		0.7	1.5–2.2	22	0.1–1.3			✓		✓
CPLFLN	CPLFLN10XPH		0.3	9.5	22	1					✓
LCACHN	LCACHN20XPH		0.4	3.2	22	1					
	LCACHN40XPH		0.55	2.2	22	1					
CPLN	CPLN10XPH		0.25	10	22	1					
UAPON 340	UAPON20XW340		0.7	0.35	22	0.17	Water	✓			✓
	UAPON40XO340-2		1.35	0.1	22	0.17	Oil	✓			✓
	UAPON40XW340		1.15	0.25	22	0.13–0.25	Water	✓	✓		✓
TIRF	UPLAPO60XOHR	A Line	1.5	0.11	22	0.13–0.19	Oil		✓		✓
	UPLAPO100XOHR	A Line	1.5	0.12	22	0.13–0.19	Oil		✓		✓
	APON100XHOTIRF*	A Line	1.7	0.08	22	0.15	Oil		✓		✓
	UAPON150XOTIRF	A Line	1.45	0.08	22	0.13–0.19	Oil		✓		

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

Recommended Configurations

IXplore Standard	
Microscope frame	IX73 (IX73P2F)
Transmitted Köhler illumination	12 V 100 W halogen (U-LH100L)
Stage	Mechanical stage with right handle (IX3-SVR)
Condenser	Long working distance universal (IX3-LWUCD)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Coded fluorescence mirror turret (IX3-RFACS)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLFLN, LUCPLNFLN-PH, UCPLNFLN-PH, UPLXAPO
Camera	DP74
Imaging software	cellSens Standard

IXplore Pro	
Microscope frame	IX83 (IX83P2ZF)
Transmitted Köhler illumination	High color rendering LED (IX3-LHLEDC)
Stage	Ultrasonic scanning stage (IX3-SSU)
Condenser	Motorized long working distance universal (IX3-LWUCDA)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Motorized fluorescence mirror turret (IX3-RFACA)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLXAPO, LUCPLNFLN-PH, UCPLNFLN-PH
Camera	DP74 or ORCA-Fusion
Imaging software	cellSens Dimension

IXplore Live	
Microscope frame	IX83 (IX83P2ZF)
Transmitted Köhler illumination	High color rendering LED (IX3-LHLEDC)
Stage	Ultrasonic scanning stage (IX3-SSU)
Condenser	Motorized long working distance universal (IX3-LWUCDA)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Motorized fluorescence mirror turret (IX3-RFACA)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLXAPO, UPLSAPO-S
Camera	ORCA Flash4.0 V3
Imaging software	cellSens Dimension
Accessories	TruFocus system (IX3-ZDC2) Remote correction collar controller (IX3-RCC) Real-time controller (U-RTC/U-RTCE) Incubation housing

IXplore TIRF	
Microscope frame	IX83 (IX83P2ZF)
Transmitted Köhler illumination	High color rendering LED (IX3-LHLEDC)
Stage	Ultrasonic scanning stage (IX3-SSU)
Condenser	Motorized long working distance universal (IX3-LWUCDA)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Motorized fluorescence mirror turret (IX3-RFACA)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLXAPO, (U)APON-TIRF, UPLAPO-HR
Camera	ORCA Flash4.0 V3
Imaging software	cellSens Dimension
TIRF illuminator	cellTIRF
Accessories	TruFocus system (IX3-ZDC2) Remote correction collar controller (IX3-RCC) Real-time controller (U-RTC/U-RTCE) Incubation housing

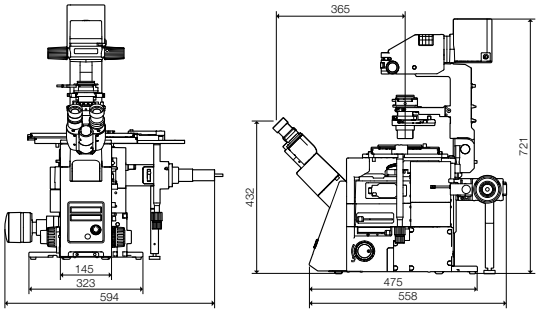
IXplore Spin	
Microscope frame	IX83 (IX83P2ZF)
Transmitted Köhler illumination	High color rendering LED (IX3-LHLEDC)
Stage	Ultrasonic scanning stage (IX3-SSU)
Condenser	Motorized long working distance universal (IX3-LWUCDA)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Motorized fluorescence mirror turret (IX3-RFACA)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLXAPO, UPLAPO-HR, UPLSAPO-S
Camera	ORCA Flash4.0 V3
Imaging software	cellSens Dimension
Confocal scanner	Spinning disk confocal scanner
Accessories	TruFocus system (IX3-ZDC2) Remote correction collar controller (IX3-RCC) Real-time controller (U-RTCE) Incubation housing

IXplore SpinSR	
Microscope frame	IX83 (IX83P2ZF)
Transmitted Köhler illumination	High color rendering LED (IX3-LHLEDC)
Stage	Ultrasonic scanning stage (IX3-SSU)
Condenser	Motorized long working distance universal (IX3-LWUCDA)
Fluorescence illuminator	L-shaped fluorescence illuminator with fly-eye lens (IX3-RFALFE)
Fluorescence mirror turret	Motorized fluorescence mirror turret (IX3-RFACA)
Fluorescence mirror unit	UIS2 mirror units
Fluorescence light source	LED and LDP light source (U-LGPS)
Objective	UPLXAPO, UPLAPO-HR, UPLSAPO-S
Camera	ORCA Flash4.0 V3
Imaging software	cellSens Dimension
Confocal scanner	Spinning disk confocal scanner
Super-resolution processing	Olympus super-resolution (OSR) filter
Accessories	TruFocus system (IX3-ZDC2) Remote correction collar controller (IX3-RCC) Real-time controller (U-RTCE) Incubation housing

Dimensions

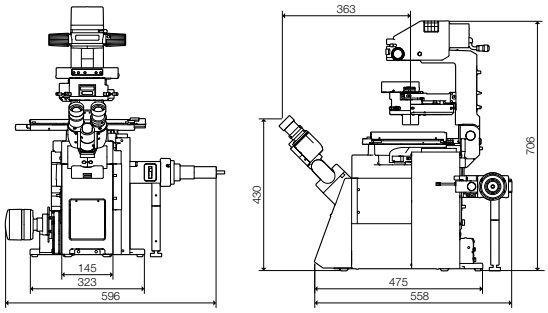
IXplore Standard basic configuration

(unit: mm)



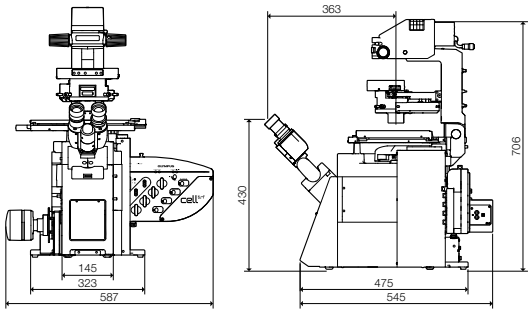
IXplore Pro/Live basic configuration

(unit: mm)



IXplore TIRF basic configuration

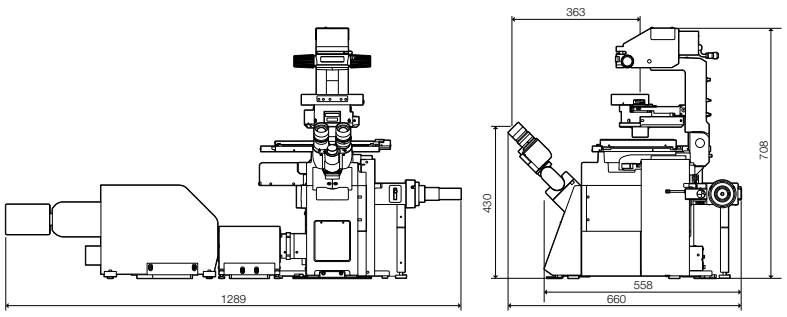
(unit: mm)



IXplore Spin/SpinSR basic configuration

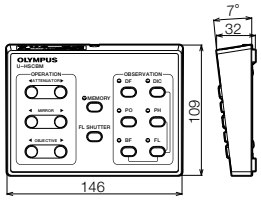
(unit: mm)

IX83P2ZF + CSUW1-T1S/CSUW1-T2S/CSUW1-T1SR/CSUW1-T2SR/CSUW1-T2SSR + SD-MGCA

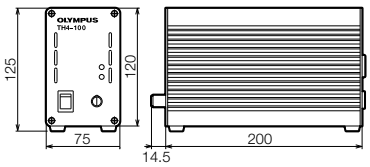


Hand Switch

(unit: mm)



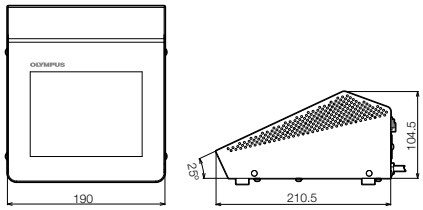
Power Supply Unit for 100 W Halogen Lamp



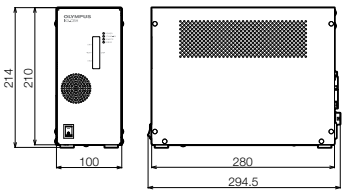
Voltage/Electrical Current
AC 100–120 V; 50/60 Hz; 1.8 A

Touch Panel Controller

(unit: mm)



Control Box



Voltage/Electrical Current
AC 100–120/220–240 V; 50/60 Hz; 4.6 A/2.8 A

Microscope Specifications

		IXplore Standard			IXplore Pro, Live, TIRF, Spin, SpinSR
Microscope frame	Frame	IX73 (IX73P2F)			IX83 (IX83P2ZF)
	Model	Manual	Coded	Semi-motorization	Full-motorization
	Observation methods	BF, PH, DIC, FL			BF, PH, DIC, FL, TIRF, CF (Spin/SpinSR only), SR (SpinSR only)
	Optical system	UIS2 optical system			
	Revolving nosepiece	Coded sextuple revolving nosepiece (DIC slider attachable)*, simple waterproof structure		Motorized sextuple revolving nosepiece (DIC slider attachable), simple waterproof structure	
	Focus	Stroke: 10 mm			Stroke: 10.5 mm Minimum increment: 0.01µm Maximum nosepiece movement speed: 3 mm/s
	Intermediate port	2 ports			
	Light path selection	Manual 0:100/50:50/100:0 (Left side port: BI port)			Motorized 0:100/50:50/100:0 (Left side port: BI port)
	Transmitted illumination pillar	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	Widefield tilting binocular, 10X eyepieces, field number 22			
	Controller	–	Control box for coded function	Control box for motorized function, hand switch	Control box, touch panel controller, motorized Z controller
Transmitted Köhler illumination	Halogen	12 V, 100 W halogen bulb (pre-centered)			
	LED	High color reproductive LED light source			
Stage	Ultrasonic scanning stage	Stage stroke: X: 114 mm × Y: 75 mm, maximum stage movement speed: 20 mm/s, motorized XY controler and control box inculded			
	Mechanical stage with right handle	Stage stroke: X: 114 mm × Y: 75 mm, stage position locking function			
	Mechanical stage with left short handle	Stage stroke: X: 114 mm × Y: 75 mm, stage position locking function			
Condenser	Motorized long working distance universal	W.D. 27 mm, NA 0.55, motorized turret with 7 position slots for optical devices (3 positions for ø30 mm and 4 positions for ø38 mm), motorized aperture and polarizer			
	Long working distance universal	W.D. 27 mm, NA 0.55, manual turret with 5 positions for optical devices (3 positions for ø30 mm and 2 position for ø38 mm)			
	Ultra-long working distance	W.D. 73.3 mm, NA 0.3, manual turret with 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	Motorized fluorescence mirror turret	Motorized turret with 8 positions, built-in shutter, simple waterproof structure			
	Coded fluorescence mirror turret	Coded 8-position turret*1, built-in shutter, simple waterproof structure			–
Fluorescence light source	Light source*2	LED and LDP light source			
	100 W mercury	100 W mercury apo lamp housing and transformer			
Focus compensator	Z-drift compensator*3	–			Offset method (focus search, one-shot focus, continuous focus), class 1 laser product
Operating environment	Indoor use Ambient temperature: 5 ºC to 40 ºC (41 ºF to 104 ºF) Maximum relative humidity: 80% for temperatures up to 31 ºC (88 ºF), decreasing linearly through 70% at 34 ºC (93 ºF), 60% at 37 ºC (99 ºF), to 50% relative humidity at 40 ºC (104 ºF) Supply voltage fluctuations: Not to exceed ± 10% of the normal voltage				

BF: Brightfield, PH: Phase Contrast, DIC: Differential Interference Contrast, TIRF: Total Internal Reflection Fluorescence, FL: Fluorescence, CF: Confocal, SR: Super Resolution

*1Control box is required for the coded function

*2 LED and LDP light source (U-LGPS) is a Class 1 laser product

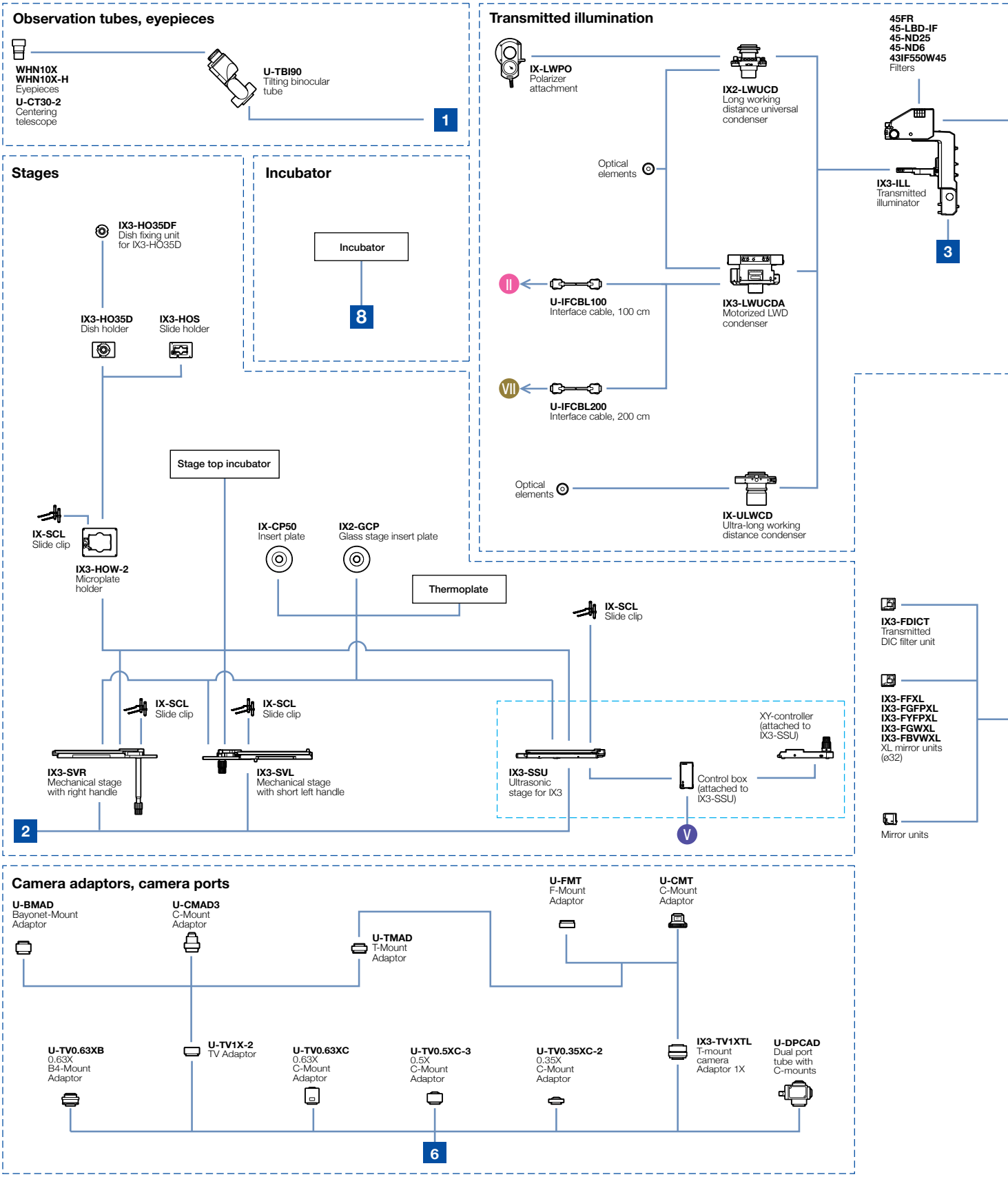
*3 Z-drift compensator (TruFocus system) is a Class 1 laser product

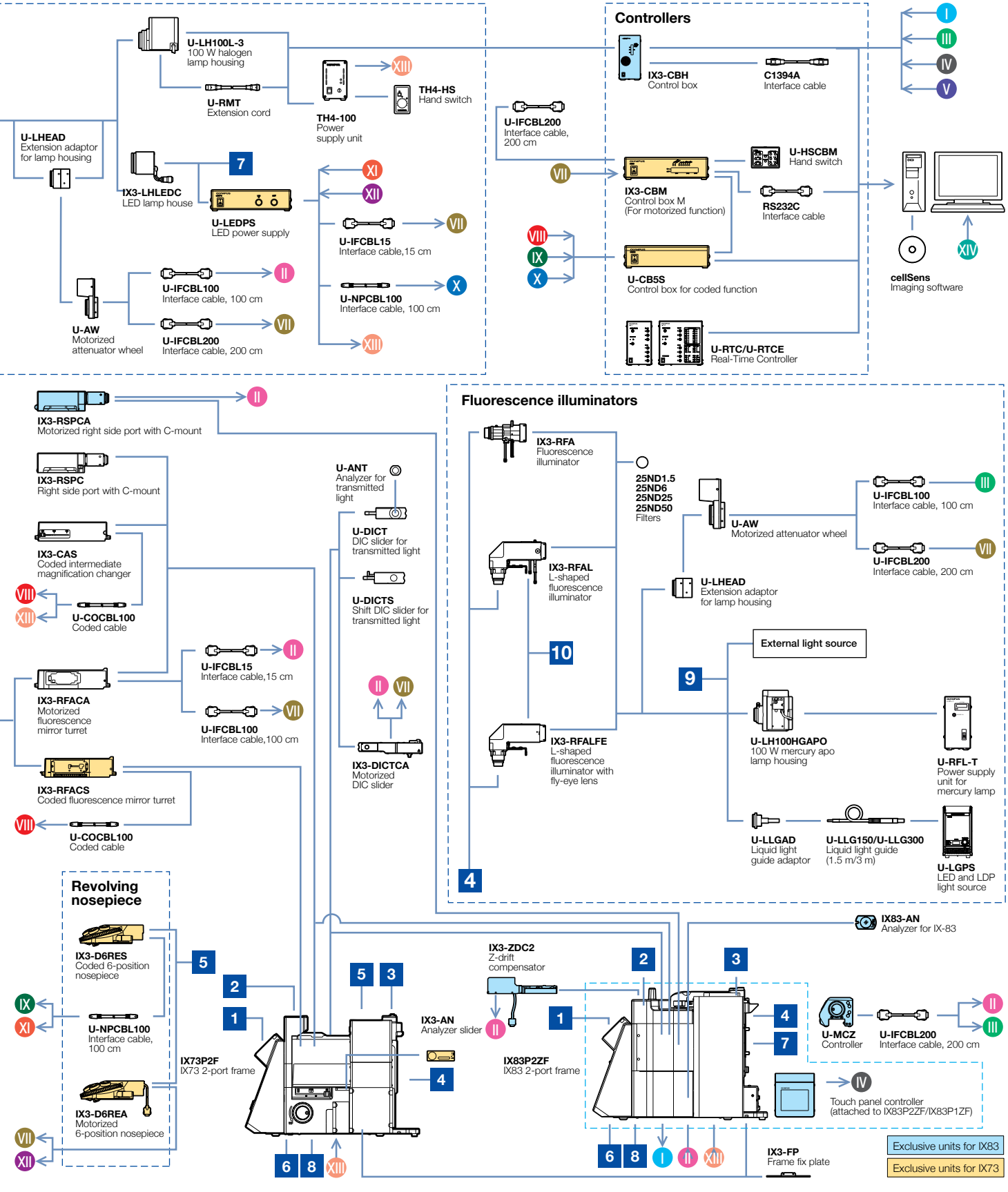
			IXplore Spin*1	IXplore SpinSR
Laser lines			405 nm: 50 mW, 445 nm: 75 mW, 488 nm: 100 mW, 514 nm: 40 mW, 561 nm: 100 mW, 640 nm: 100 mW	
Laser combiner			Main combiner: 405 nm, 488 nm, 561 nm, 640 nm + 1 line (445 nm or 514 nm) Sub combiner: 445 nm, 514 nm 2x Interlock shutter available	
Laser light control			Direct modulation by U-RTCE, ultra-fast ON/OFF control and intensity modulation with individual laser lines, continuously variable (0%−100%, 1% increments)	
Scanner	Yokogawa CSU-W1	Disk unit	Single 50 µm pinhole disk	SoRa disk or 50 µm pinhole disk maximally 2 disks selectable
		Camera port	1 or 2 camera model	1 or 2 camera model*2
	Super-resolution imaging	Acquisition speed (Max.)	-	5 ms/f
		Optical zoom	-	3.2x
		Optical resolution*3	-	SoRa disk: 110 nm 50 µm pinhole disk: 120 nm
		Objective field number	-	5.9
	Regular confocal imaging	Acquisition speed (Max.)	5 ms/f	
		Optical zoom	1x	
		Objective field number	18.8	
	Dichromatic mirror		3 position (motorized slider)	
	Filter wheel (emission)		10 position (motorized wheel)	
Imaging sensor			HAMAMATSU ORCA Flash 4.0 V3 (CameraLink)	
Objectives for super resolution			-	UPLSAPO60XS2, UPLSAPO100XS, UPLAPO60XOHR, UPLAPO100XOHR, UPLXAPO60XO, UPLXAPO100XO, PLAPON60XOSC2
Super-resolution adaptor			Confocal/super-resolution lightpath changer (motorized)	
Imaging software	cellSens Dimension		Multidimensional acquisition and analysis	
			-	Super-resolution imaging module

*1 IXplore Spin system does not have the super-resolution function but can be upgraded to IXplore SpinSR.
*2 Restrictions dependent on disk unit combinations.
*3 Typical experimental FWHM values with UPLSAPO100XS at 488 nm excitation. SoRa disk with 40 nm diameter beads and 50 µm pinhole disk with 100 nm diameter beads.

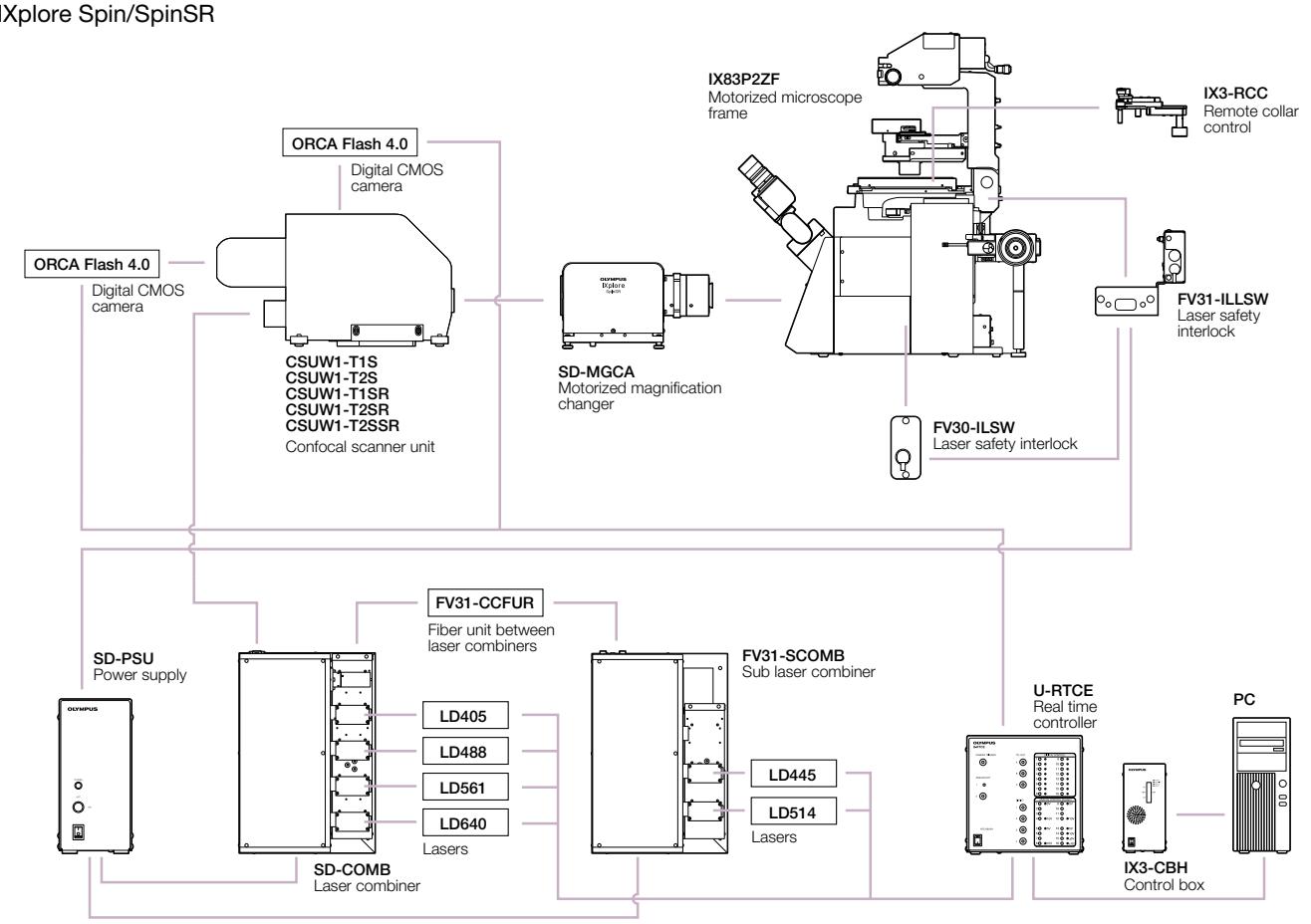
IXplore Spin and IXplore SpinSR systems are not available in some areas.

System Diagram




Controllers
U-LH100L-3
100 W halogen lamp housing
U-RMT
Extension cord
TH4-100
Power supply unit
TH4-HS
Hand switch
U-LHEAD
Extension adaptor for lamp housing
IX3-LHLEDC
LED lamp house
U-LEDPS
LED power supply
U-IFCBL15
Interface cable,15 cm
U-NPCBL100
Interface cable, 100 cm
U-AW
Motorized attenuator wheel
U-IFCBL100
Interface cable, 100 cm
U-IFCBL200
Interface cable, 200 cm
U-IFCBL200
Interface cable, 200 cm
IX3-CBH
Control box
C1394A
Interface cable
U-HSCBM
Hand switch
IX3-CBM
Control box M
(For motorized function)
RS232C
Interface cable
U-CB5S
Control box for coded function
U-RTC/U-RTCE
Real-Time Controller
cellSens
Imaging software
IX3-RSPCA
Motorized right side port with C-mount
IX3-RSPC
Right side port with C-mount
IX3-CAS
Coded intermediate magnification changer
U-COCBL100
Coded cable
IX3-RFACA
Motorized fluorescence mirror turret
U-IFCBL15
Interface cable,15 cm
U-IFCBL100
Interface cable,100 cm
IX3-RFACS
Coded fluorescence mirror turret
U-COCBL100
Coded cable
U-ANT
Analyzer for transmitted light
U-DICT
DIC slider for transmitted light
U-DICTS
Shift DIC slider for transmitted light
IX3-DICTCA
Motorized DIC slider
Fluorescence illuminators
IX3-RFA
Fluorescence illuminator
25ND1.5
25ND6
25ND25
25ND50
Filters
U-AW
Motorized attenuator wheel
U-IFCBL100
Interface cable, 100 cm
U-IFCBL200
Interface cable, 200 cm
IX3-RFAL
L-shaped fluorescence illuminator
U-LHEAD
Extension adaptor for lamp housing
External light source
IX3-RFALFE
L-shaped fluorescence illuminator with fly-eye lens
U-LH100HGAPO
100 W mercury apo lamp housing
U-RFL-T
Power supply unit for mercury lamp
U-LLGAD
Liquid light guide adaptor
U-LLG150/U-LLG300
Liquid light guide (1.5 m/3 m)
U-LGPS
LED and LDP light source
Revolving nosepiece
IX3-D6RES
Coded 6-position nosepiece
U-NPCBL100
Interface cable, 100 cm
IX3-D6REA
Motorized 6-position nosepiece
IX73P2F
IX73 2-port frame
IX3-AN
Analyzer slider
IX3-ZDC2
Z-drift compensator
IX83P2ZF
IX83 2-port frame
IX83-AN
Analyzer for IX-83
U-MCZ
Controller
U-IFCBL200
Interface cable, 200 cm
Touch panel controller
(attached to IX83P2ZF/IX83P1ZF)
IX3-FP
Frame fix plate
Exclusive units for IX83
Exclusive units for IX73

IXplore Spin/SpinSR



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