

# Oxion Inverso

for life science

## HIGHLIGHTS

- Life Science applications
- Observation of tissue cultures, living cells
- Brightfield, phase contrast and fluorescence
- Long working distance IOS plan achromatic objectives
- Revolving quintuple nosepiece
- 5 W LED transmitted illumination
- 100 W mercury vapor lamp for fluorescence
- 10 years warranty



● OX.2053-PLPH

## TECHNICAL SPECIFICATIONS

### EYEPIECES

Pair of DIN HWF plan 10x/22 mm eyepieces

### HEAD

- Trinocular 45° inclined tubes with extended low and high positions for eyepieces
- One diopter adjustment on left eyepiece
- Interpupillary distance of 54 to 75 mm
- Trinocular head with 0-100 % positions

### NOSEPIECES

Revolving quintuple nosepiece on ball-bearings

### OBJECTIVES FOR BRIGHTFIELD

(models OX.2003-PL and OX.2053-PL)

- Infinity color corrected long working distance plan 10x/0.25, 20x/0.40, 40x/0.60 IOS objectives
- An optional 60x/0.70 IOS objective is also available

### OBJECTIVES FOR PHASE CONTRAST

(models OX.2003-PLPH and OX.2053-PLPH)

Infinity color corrected long working distance plan phase 10x/0.25, 20x/0.40, 40x/0.60 IOS objectives

(Photo: OX.9190 Slider with 4x/10x and 20x/40x phase contrast annuli)

### OBJECTIVES FOR BRIGHTFIELD AND FLUORESCENCE MICROSCOPY

(models OX.2253-PLF and OX.2453-PLF)

- Infinity color corrected long working distance plan Fluorex 10x/0.30, 20x/0.45, 40x/0.65 IOS objectives
- An optional plan Fluorex 60x/0.75 IOS objective is also available

### BRIGHTFIELD OX.2003-PL / OX.2053-PL

488 (h) x 231 (w) x 555 mm (d) | 12.0 kg

### PHASE CONTRAST OX.2203-PLPH / OX.2253-PLPH

488 (h) x 231 (w) x (d) 555 mm (d) | 12.0 kg

### OBJECTIVES FOR PHASE CONTRAST AND FLUORESCENCE MICROSCOPY

(models OX.2253-PLPHF and OX.2453-PLPHF)

Infinity color corrected long working distance plan fluorex 10x/0.30 and plan phase fluorex 20x/0.45 and 540x/0.65 IOS objectives

All objectives corrected for 1.2 mm thickness

All optics are anti-fungus treated and anti-reflection coated for maximum light throughput

### STAGE

Stage 250 x 230 mm equipped with a coaxial mechanical 120 x 78 mm X-Y stage, delivered with:

- metallic insert for Ø 35 mm cell culture dish dishes
- 76 x 26 mm slide holder
- glass insert with hole
- optional universal cell culture dish holder

(Photo: OX.9599 Universal cell structure dish holder)



● OX.9190



● OX.9599

## CONDENSER

- N.A. 0.30 condenser with iris diaphragm. Working distance 72 mm
- The models for the phase contrast OX.2003-PLPH, OX.2053-PLPH, OX.2253-PLPH and OX.2453-PLPH are delivered with a slider with 4x/10x and 20x/40x pre-centered phase rings

## FOCUSING ADJUSTMENT

Coaxial 25 mm coarse and fine adjustments, 2  $\mu$ m precision and with friction adjustment

## ILLUMINATION

- Transmitted 5 W LED Intensity adjustable with internal 100-240 V power supply. Fuse holder 3.15 A / 250 V
- The fluorescence models are equipped with a reflected 100 W HBO mercury vapor light source with external 100-240 V power supply, fuse holder 3.15 A / 250 V, UV protection shield

## LED ILLUMINATION FOR FLUORESCENCE

Two LED sources for fluorescence are available for 4 or 9 excitation wavelengths. See our products LE.6400-OX and LE.6900

## FILTERS FOR PHASE CONTRAST MODELS

Interference filter 550 nm green and blue filter, 45 mm diameter

## STANDARD FLUORESCENCE FILTERS

(for fluorescence models)

The fluorescence models OX.2253-PLF and OX.2253-PLPH are standard supplied with two filter sets for excitation:

- in the blue spectrum, OX.9745, EX465-495 (BP) DM505 (LP) EM515-555 (BP)
- in the green spectrum, OX.9746, EX540-580 (BP) DM600 (LP) EM605-665 (BP)

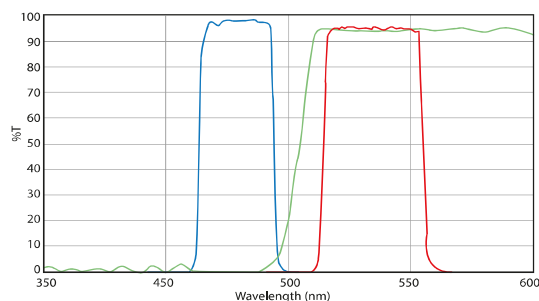
The fluorescence models OX.2453-PLF and OX.2453-PLPH equipped with a 4 positions filter rail equipped with three standard filter sets for excitation:

- in the blue spectrum, OX.9745, EX465-495 (BP) DM505 (LP) EM515-555 (BP)
- in the green spectrum, OX.9746, EX540-580 (BP) DM600 (LP) EM605-665 (BP)
- in the UV spectrum, OX.9747, EX361-389 (BP) D415 (LP) EM435-485 (BP)



● LE.6400-OX/LE.6900

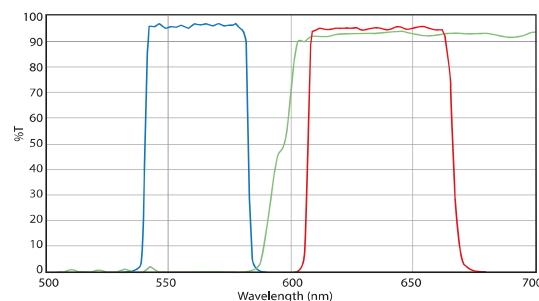
## STANDARD GENERAL PURPOSE FLUORESCENCE FILTER SETS



### OX.9745 Blue excitation 465-495 nm

FITC EX465-495 (BP) DM505 (LP) EM515-555 (BP)

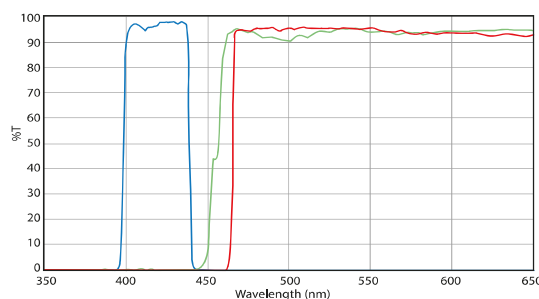
Also suitable for: Acridine Orange + DNA, Alexa Fluor 488™, Atto 488, Azami Green, BODIPY FL/pH7.2, Calcein, Calcium Green™-1, Cy2™, DIO, DyLight 488, EGFP, Emerald GFP, FAM, FITC, Fluo-4, GFP LysoTracker Green/pH 5.2, MitoTracker Green FM/MeOH, mWasabi, Oregon Green™ 488, SYBR® Green I, SYTO 9/DNA, ZsGreen



### OX.9746 Green excitation 540-580 nm

Texas Red / mCherry / Alexa Fluor 594 EX540-580 (BP) DM600 (LP) EM605-665 (BP)

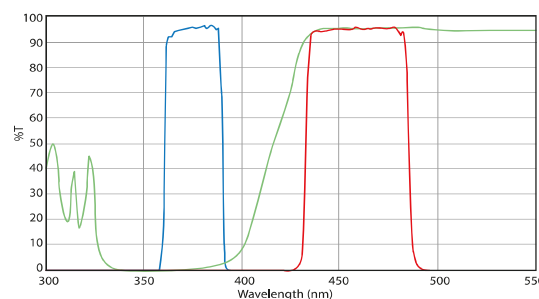
Also suitable for: Alexa Fluor 568™, Alexa Fluor 594™, CAL Fluor® Red 610, Cy3.5™, DyLight 594, FusionRed, Killer Red, mCherry, MitoTracker Red/MeOH, mKate2, mRFP1, ReAsH-CCPGCC, Rhodamine Red™-X, ROX, Sulforhodamine 101, Texas Red®, Texas Red®-X, X-rhod-1/Ca2+



### OX.9747 UV excitation 361-381 nm

DAPI / Hoechst / Alexa Fluor 350 EX361-389 (BP) D415 (LP) EM435-485 (BP)

Also suitable for: Alexa Fluor 350™, Biosearch Blue, Coumarin, DAPI, DyLight 350, Hoechst 33258, LysoTracker Blue/MeOH



### OX.9748 Violet excitation 361-389 nm

UV / DAPI Longpass, Calcofluor White EX415-445 (BP) DM455 (LP) EM465-495 (LP)

**PACKAGE CONTENT**

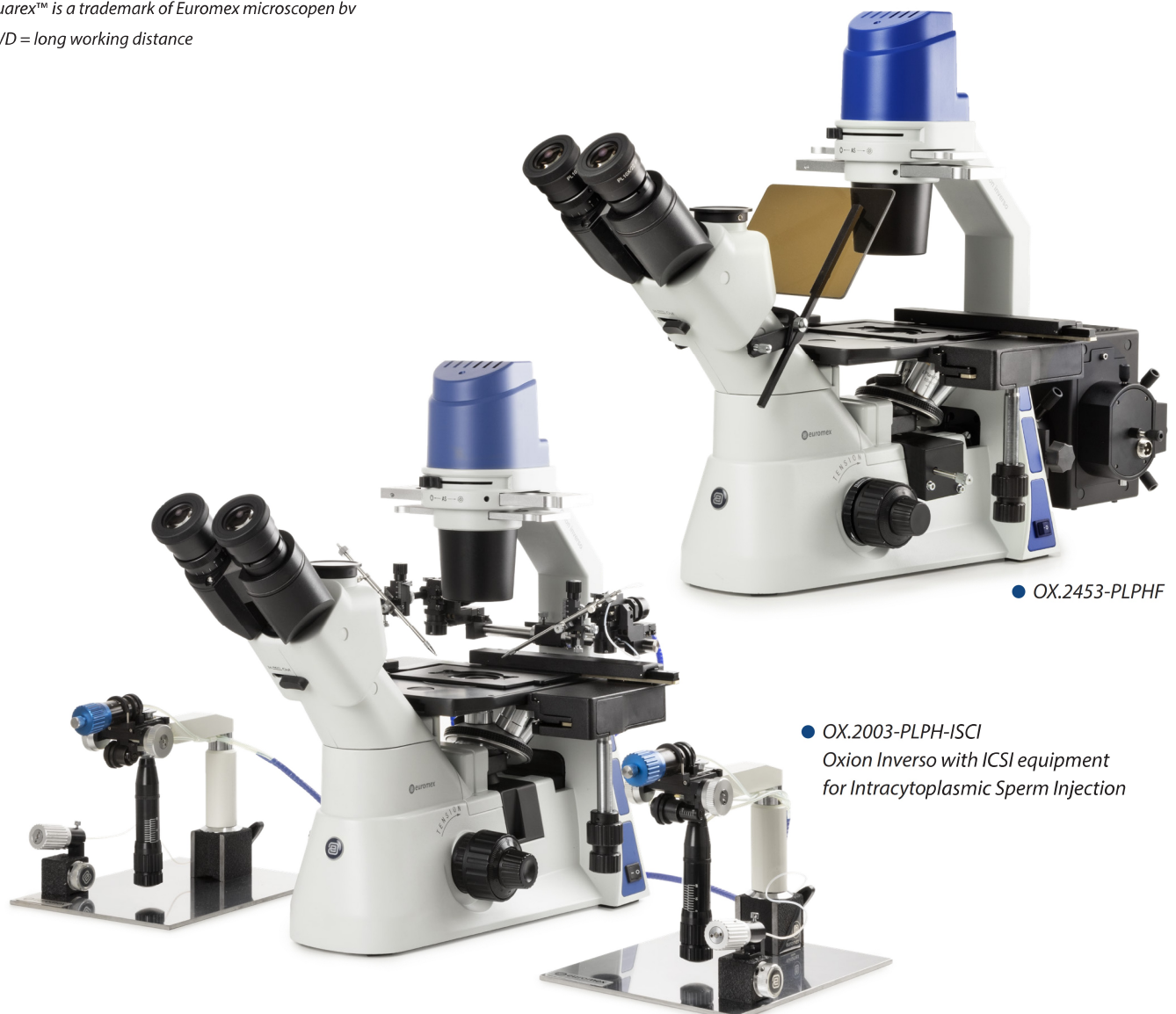
- Supplied with power cord, dust cover and user manual
- Phase contrast models are supplied with green filter and alignment telescope. Microscope supplied in a transport case

MODELS	LWD Plan 10x/20x/40x objectives	LWD Plan phase 10x/20x/40x objectives	LWD Plan Fluorex 10x/20x/40x objectives	LWD Plan Fluorex 10x and plan phase fluorex 20x/40x objectives	2 position filter block	4 position filter block	Mechanical stage	ICSI equipment
OX.2003-PL	•							
OX.2053-PL	•						•	
OX.2003-PLPH		•						
<b>OX.2053-PLPH</b>		•					•	
OX.2053-PLPH-ICSI		•						•
OX.2253-PLF			•		•		•	
OX.2453-PLF			•			•	•	
OX.2253-PLPHF				•	•		•	
OX.2453-PLPHF				•		•	•	

Fluorex™ objectives are made of low-absorption glass for fluorescence applications

Fluorex™ is a trademark of Euromex microscopen bv

LWD = long working distance



● OX.2453-PLPHF

● OX.2003-PLPH-ICSI  
Oxion Inverso with ICSI equipment  
for Intracytoplasmic Sperm Injection

## ISCI (Intracytoplasmic Sperm Injection) set for Oxion Inverso

### TECHNICAL SPECIFICATIONS

- Perfect for inexperienced users in need of training practice as well as for professionals
- Complete manual system
- Large movement range
- Easy micropipette position at each time 'Manual Home Position'
- Adjustable micropipette holder angle between 20° and 40°
- Micropipette holder fixing knob reduces vibration and easy handling of the sperm
- Easy installation and service
- 3D Hydraulic Manipulation Joysticks for smooth movement
- Pneumatic Air Injector for ICSI and HOLDING
- No service required for injector
- Identical sensitive injectors on both sides and interchangeable
- Top quality for affordable price
- Medical Device CE mark
- Movement Range: X/Y/Z: 20 mm each, 1 mm for one complete turn of the handle
- Optional heating stage with controller

### ISCI SET

Set includes two 3D hydraulic joysticks, two pipette setup mechanisms, one connection bar with moving handle, two air injectors with tubing and pen type micromanipulation, pipette holder, two metal plates for injectors, one set of Allen wrenches, one ruler for mechanic home position adjustment. Unit is packed in a solid carry case

### HEATING STAGE

- Heating glass stage for Euromex microscope stage with 110 mm circular hole
- The glass plate fits the circular opening of the X-Y stage and enables a flat glass object-plate with constant temperature
- Aluminium frame for superior resistance and flatness
- Glass thickness 0.5 mm. Plate diameter 110 mm



ISCI set (detail) ●

### CONTROLLER

- 2-Channel Temperature Controller with touchscreen interface
- One controller can control up to two devices
- External temperature sensor (included) and self calibration routines allows easy calibration of the heating devices
- On-board data logging allows to record temperature as a function of time and to log calibration events and alarms
- The password protected controller is equipped with routines to re-calibrate the sensors against certified thermometers

### FEATURES

- Temperature range: from ambient to 60°C
- Temperature accuracy on specimen:  $\pm 0.3^{\circ}\text{C}$
- 4.3" touch screen interface
- External Temperature sensor
- On-board Data logging to USB drive
- Alarm buzzer and External Alarm Connector
- One controller can control up to two devices
- Self calibration routines enable high temperature accuracy

## ACCESSORIES AND SPARE PARTS

### EYEPIECES

- OX.6010** HWF 10x/22 mm eyepiece
- OX.6015** HWF 15x/16 mm eyepiece
- OX.6110** HWF 10x/22 mm eyepiece with micrometer reticule
- OX.6099** Pair of eyecups

### OBJECTIVES FOR BRIGHT FIELD MICROSCOPY FOR INVERTED MODELS (\*)

- OX.8304** Plan LWD 4x/0.13 infinity corrected IOS objective, working distance 11 mm
- OX.8310** Plan LWD 10x/0.25 infinity corrected IOS objective, working distance 7.45 mm
- OX.8320** Plan LWD 20x/0.40 infinity corrected IOS objective, working distance 6.92 mm
- OX.8340** Plan LWD 40x/0.65 infinity corrected IOS objective, working distance 2.74 mm
- OX.8360** Plan LWD 60x/0.70 infinity corrected IOS objective, working distance 1.28 mm

### OBJECTIVES FOR BRIGHT FIELD AND FLUORESCENCE MICROSCOPY FOR INVERTED MODELS (\*)

- OX.8604** Plan fluarex LWD 4x/0.13 infinity corrected IOS objective, working distance 18.95 mm
- OX.8610** Plan fluarex LWD 10x/0.30 infinity corrected IOS objective, working distance 7.27 mm
- OX.8620** Plan fluarex LWD 20x/0.45 infinity corrected IOS objective, working distance 6.03 mm
- OX.8640** Plan fluarex LWD 40x/0.65 infinity corrected IOS objective, working distance 1.79 mm
- OX.8660** Plan fluarex LWD 60x/0.75 infinity corrected IOS objective, working distance 1.28 mm

### OBJECTIVES FOR PHASE CONTRAST (\*\*) MICROSCOPY FOR INVERTED MODELS (\*)

- OX.8404** Plan phase LWD 4x/0.13 infinity corrected IOS objective, working distance 10.75 mm (\*)
- OX.8410** Plan phase LWD 10x/0.25 infinity corrected IOS objective, working distance 7.45 mm (\*)
- OX.8420** Plan phase LWD 20x/0.40 infinity corrected IOS objective, working distance 6.92 mm (\*)
- OX.8440** Plan phase LWD 40x/0.65 infinity corrected IOS objective, working distance 2.74 mm (\*)

### OBJECTIVES FOR FLUORESCENCE AND PHASE CONTRAST (\*\*) MICROSCOPY FOR INVERTED MODELS (\*)

- OX.8720** Plan phase fluarex LWD 20x/0.45 infinity corrected IOS objective. Working distance 6.12 mm (\*)
- OX.8740** Plan phase fluarex LWD 40x/0.65 infinity corrected IOS objective. Working distance 1.79 mm (\*)

### STANDARD GENERAL PURPOSE FLUORESCENCE FILTER SETS:

- OX.9745** Fluorescence filter block for Blue excitation EX465-495 (BP) DM505 (LP) EM515-558 (BP)
- OX.9746** Fluorescence filter block for Green excitation EX540-580 (BP) DM600 (LP) EM605-665 (BP)
- OX.9747** Fluorescence filter block for UV excitation EX361-381 (BP) D415 (LP) EM435-495 (BP)
- OX.9748** Fluorescence filter block for Violet excitation EX415-445 (BP) DM455 (LP) EM465 (BP)

### ALL MODELS

- OX.9149** Telescope for phase contrast alignment
- OX.9190** Slider with 4x/10x and 20x/40x phase contrast annuli
- OX.9500** Mechanical coaxial X-Y 120 x 78 mm stage
- OX.9506** Transparent glass insert with hole
- OX.9512** Insert with 76 x 26 mm slide holder and Ø 54 mm cell culture dish holder
- OX.9535** Metal insert for Ø35 mm cell culture dish holder
- OX.9550** Stage extension plate
- OX.9599** Universal cell culture dish holder
- OX.9985** 5 W NeoLED™ replacement unit

### FOR TRANSMITTED ILLUMINATION:

- OX.9700** Blue filter
- OX.9702** Green filter
- OX.9703** IR cut-off filter
- OX.9749** Empty Filter block
- OX.9753** Filter block rail, 3 positions
- OX.9754** Filter block rail, 4 positions
- OX.9810** CS/C mount with 1.0x objective
- OX.9833** C-mount adapter with 0.33x objective for Oxion microscopes and 1/3" cameras
- OX.9850** C-mount adapter with 0.5x objective for Oxion and Oxion Inverso microscopes and 1/2" cameras
- AE.5120-2** Standard 23,2 mm tube for 31 mm diameter photo port for Oxion upright microscopes and all Oxion Inverso microscopes
- AE.5130** Universal SLR camera adapter with 2x projection lens for 23.2 mm tubes. Need T2 adapter and AE.5120
- AE.5025** T2 adapter for Nikon D digital SLR cameras
- AE.5040** T2 adapter for Canon EOS digital SLR cameras
- AE.3199** Glass fuses 3.15 A 250 V packed, per 10 pieces
- PB.5155** Microscope slides 76 x 26 mm, ground edges, 50 pieces

(\*) All objectives corrected for 1 mm cover glass thickness. All optical parts are anti-fungus treated

(\*\*) Phase contrast objectives require slider with phase contrast annuli OX.9163

## ACCESSORIES AND SPARE PARTS

- PB.5165** Cover glasses 18 x 18 mm, thickness 0.13 - 0.17 mm, 100 pieces
- PB.5168** Cover glasses 22 x 22 mm, thickness 0.13 - 0.17 mm, 100 pieces
- PB.5245** Lens cleaning paper, 100 sheets per pack
- PB.5255** Immersion oil, n = 1.515 (25 ml)
- PB.5274** Isopropyl alcohol 99% (200 ml)
- PB.5275** Cleaning kit: lens cleaning fluid, lint free lens tissue, brush, air blower, cotton swabs

## OPTIMIZED FLUORESCENCE FILTERS SETS:

**OX.9750.39001**

Filter set EX435 (BP20) DM455 (LP) EM480 (BP30) AmCyan, Atto 425, Cerulean, CFP, ECFP fluorophore. Needs empty filter block (OX.9749)

**OX.9750.39002**

Filter set EX480 (BP30) DM505(LP) EM535 (BP40) Acridine Orange + DNA, Alexa Fluor 488™, Atto 488, Azami Green, BODIPY FL/pH7.2, Calcein, Calcium Green™-1, Cy2™, DiO, DyLight 488, EGFP, Emerald GFP, FAM, FITC, Fluo-4, GFP, LysoTracker Green/pH 5.2, MitoTracker Green, FM/MeOH, mWasabi, Oregon Green™ 488, SYBR® Green I, SYTO 9/DNA, ZsGreen fluorophore. Needs empty filter block (OX.9749)

**OX.9750.39003**

Filter set EX495 (BP20) DM515 (LP) EM540 (BP30) Alexa Fluor 514™, Citrine, EYFP/pH 7, F/AsH-CCPFCC, mCitrine, Oregon Green™ 514, Rhodamine 123, Topaz. Needs empty filter block (OX.9749)

**OX.9750.39004**

Filter set EX540 (BP25) DM565 (LP) EM605 (BP55) Alexa Fluor 546™, Alexa Fluor 555™, Atto 550, CAL Fluor® Red 590, Cy3™, Dil, DsRed, DyLight 549, MitoTracker Orange/MeOH, Resorufin, Rhod-2, TagRFP, TAMRA tdTomato, Tetramethylrhodamine isothiocyanate, TRITC. Needs empty filter block (OX.9749)

**OX.9750.39005**

Filter set EX540 (BP25) DM565 (LP) EM 620 (BP60) TRITC-red-shifted, Ethidium homidimer-1/DNA, Propidium Iodide. Needs empty filter block (OX.9749)

**OX.9750.39007**

Filter set EX620 (BP50) DM655 (LP) EM 690 (BP50) Alexa Fluor 647™, Allophycocyanin (APC), Atto 647N, Cy5™, DiD, Draq5, DyLight 649 MitoTracker Deep Red 633/MeOH, Nile Blue, Quasar® 670, SYTO® 60, TO-PRO™-3. Needs empty filter block (OX.9749)

**OX.9750.39008**

Filter set EX420 (BP40) DM455 (LP) EM 535 (BP40) Lucifer Yellow/Tetracycline/AlexaFluor 430. Needs empty filter block (OX.9749)

**OX.9750.39009**

Filter set EX480 (BP30) DM505 (LP) EM 620 (BP60) for Acridine Orange + RNA, Di-8-ANEPPS non-ratiometric, DiA, Ethidium Bromide, FM™ 1-43, LysoTracker Yellow HCK-123, Pulsar™ 650. Needs empty filter block (OX.9749)

*On request, the microscope can also be equipped with more specific, optimized and application related fluorescence filters sets*

## OPTIMIZED PREMIUM FLUORESCENCE FILTERS SETS:

**OX.9750.0401**

Premium filter set EX440 (BP21), DM455 (LP), EM480 (BP30) for CFP, Cerulean, CyPet, SpectrumAqua. Needs empty filter block (OX.9749)

**OX.9750.0403**

Premium filter set EX380 (BP50), DM410 (LP), EM450 (BP60) for BFP, BFP2, DAPI, Alexa Fluor 350, Hoechst 33342 & 33258, BFP. Needs empty filter block (OX.9749)

**OX.9750.0404**

Premium filter set EX470 (BP40), DM500 (LP), EM535 (BP50) for Alexa Fluor 488, CoralHue Azami Green, Cy2, eGFP, FITC, GFP (sapphire), Emerald. Needs empty filter block (OX.9749)

**OX.9750.0407**

Premium filter set EX635 (BP30), DM660 (LP), EM710 (BP80) Cy5, Alexa Fluor 647. Also compatible with TO-PRO-3, TOTO-3, Kodak, X-Sight 650. Needs empty filter block (OX.9749)

**OS.9750.0412**

Premium filter set EX500 (BP25), DM252 (LP), EM545 (BP35) Acridine Orange (+DNA), Rhodamine Green, CL NERF, (hi pH), YFP. Also compatible with Alexa Fluor 532. Needs empty filter block (OX.9749)

**OX.9750.0414**

Premium filter set EX560 (BP55), DM505 (LP), EM645 (BP75) Texas Red, Texas Red-X, CryptoLight CF-6. Also compatible with Cy3.5, HcRed, mRaspberry, MitoTracker Red. Needs empty filter block (OX.9749)