

# **VWR® FOR MICROSCOPY**

VisiScope® microscopes incorporating the latest technology for all applications in education, research and industry

VisiLight® cold light sources

VisiCam® image capture including tablet camera

Cleaning and maintenance kits plus accessories

Your first choice for microscopy



## **VWR® FOR MICROSCOPY**

It doesn't matter if you're using microscopes to train the scientists of the future, pushing back the boundaries in research or striving for consistency in industry – everything you need is here.

You'll notice several things about the VWR range of products for microscopy:

**Choice** – extensive range plus a large selection of accessories

#### Performance -

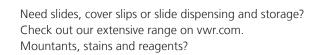
market leading consistency and reliability backed up with warranties that run to many years Value for money – well built products that last and don't cost a fortune to buy

## **Sustainability:**

- Very low energy consumption 3 W only
- Several models offer an environmentally advantageous solar power source as an accessory
- LED lifetime is 50 000 h compared to only 1500 h of an ordinary halogen lamp

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Request your copy of the VWR chemicals catalogue that has a section dedicated to microscopy reagents. Contact your local sales office or request one at vwr.com.



## VisiScope® microscopes

- Revolutionary powerful P-LED3 and P-LED8 illumination systems: P-LED3 light for the 200, 300 and 500 series microscopes is comparable to a 50 W halogen bulb, while the P-LED8 for the IT 404 - IT 405 microscopes is comparable to a 100 W halogen bulb.
- Ready to use microscopes conform to european norm EUP 2005/32/EC, choice of achromatic or plan achromatic objectives plus traceability: Double quality control with controller initial and barcode on the packaging - quality test certificate included
- Monocular
- Bi & trinocular
- Digital
- Phase contrast
- Polarising
- Fluorescence
- Brightfield
- Meteallurgical
- Inverted
- Stereo & stereo zoom

All models supplied with cables/adaptors and dust cover as standard

#### **Education microscopes**

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## VisiScope® ML & BL 100 series microscopes

#### **Heads**

- Monocular observation head, 30° inclined and 360° rotatable
- Binocular observation head, 30° inclined and 360° rotatable
- Interpupillary adjustment 48 75 mm
- Diopter adjustment on the left eyepiece

## **Focusing**

- Coaxial coarse and fine focusing mechanism (graduation: 0,002 mm) with limit stop to prevent contact between objective and specimen
- Adjustable tension of coarse focusing knob

#### **Specimen stages**

- Double layer mechanical stage, 125x116 mm, 76x30 mm XY movement range (not ML 103 or POL)
- Specimen holder for one slide
- Vernier scale on the two axes, accuracy:
   0,1 mm
- ML 103: Plain stage, 125x120 mm and sample clips
- ML 103 POL: Rotatable round stage, 120 mm diameter

#### Illumination

- Light source: White LED with adjustable intensity
- LED power: 1 W; colour temperature: 6300 K; LED average lifetime approx. 50 000 h
- Internal rechargeable battery on "R" models (allowing field use)
- Automatic Light Control (ALC): Light level is adjusted by the microscope in order to maintain the same level as the one chosen by the user, (e.g. aperture of the diaphragm changes, another objective is inserted, sample opacity, etc)
- External power supply: 100/240 V, 50/60 Hz; output: 5 V, 500 mA

## Condenser

- Abbe condenser: 1,2 N.A., pre-centred (except ML 103)
- ML 103: Abbe condenser 0,65 N.A. fixed pre-centred
- ML 103 POL: 1,2 N.A. fixed condenser

## Advanced biological microscopes for students

The monocular and binocular 100 series microscopes have been designed to fulfil all the requirements of an educational laboratory. They give students a pleasant and effective introduction to the world of microscopy. The quality of the optics, mechanical reliability and excellent price/quality ratio rank these instruments at the top of their category.

Model	Description
ML 103	Monocular microscope, 400x, plain stage with 2 clips
ML 114	Monocular microscope, 600x, mechanical stage
ML 124	Monocular microscope, 1000x, mechanical stage
ML124 R	Monocular microscope, 1000x, mechanical stage with 1 W LED & rechargeable battery
ML 124 ALC	Monocular microscope, 1000x, mechanical stage with automatic light control
BL 114	Binocular microscope, 600x, mechanical stage
BL 124	Binocular microscope, 1000x, mechanical stage
BL 124 R	Binocular microscope, 1000x, mechanical stage with 1 W LED & rechargeable battery
BL 124 ALC	Binocular microscope, 1000x, mechanical stage with automatic light control
ML 103 POL	Monocular polarising microscope, 400x, round stage
BL 103 POL	Binocular polarising microscope, 400x, round stage
DML 103	Monocular 1,3 MP digital microscope, 400x, mechanical stage, 2,0 USB port
DBL 124	Binocular 3,14 MP digital microscope, 1000x, mechanical stage, 2,0 USB port



## **Polarising microscopes**

Designed for simple polarisation analysis. Available in monocular and binocular versions. Both models are equipped with a swing-out polariser and slide-out analyser as well as a rotating stage. ML 103 POL and BL 103 POL are suitable for common observations with polarised light in the educational field.

### **Biological digital microscopes**

DML 103 and DBL 124 digital biological microscopes have a built-in camera which offers the best solution for secondary school students. Their main strengths are their optical and mechanical qualities plus their particularly rich set-up which consists of a mechanical stage with coaxial knobs and a set of high quality achromatic objectives



Model	Head	Eyepiece	Objectives	Stage	Condenser	Focusing system	Illumination system
ML 103	Monocular	WF 10x/18 mm	Achromatic 4x/10x/40x	Plain stage, 125x120 mm with sample clips	0,65 N.A. fixed with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
ML 114	Monocular	WF 10x/18 mm	Achromatic 4x/10x/40x/60x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
ML 124	Monocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
ML 124 R	Monocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with rechargeable battery
ML 124 ALC	Monocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply & automatic light control
BL 114	Binocular	WF 10x/18 mm	Achromatic 4x/10x/40x/60x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
BL 124	Binocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
BL 124 R	Binocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with rechargeable battery
BL 124 ALC	Binocular	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply & automatic light control
ML/BL 103 POL	ML 103 POL: Monocular BL 103 POL: Binocular	WF 10x/18 mm	Achromatic 4x/10x/40x	Rotatable stage, 120 mm diameter	1,2 N.A. fixed with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply. Rotatable swing-out polariser & slide-out analyser
DML 103*	Monocular with built-in 1,3 MP digital camera	WF 10x/18 mm	Achromatic 4x/10x/40x	Plain stage, 125x116 mm with sample clips	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply
DBL 124*	Binocular with built-in 3,14 MP digital camera	WF 10x/18 mm	Achromatic 4x/10x/40x/100x	Mechanical stage, 125x116 mm with specimen holder	1,2 N.A. with diaphragm	Coaxial coarse and fine focusing mechanism with limit stop	1 W LED with external power supply

<sup>\*</sup>Software: Windows XP, Vista, Win 7 and 8.

## Ordering information

	C + N
Description	Cat. No.
ML 103 monocular microscope with 3 objectives (4x, 10x, 40x), plain stage with sample clips and LED illumination	630-1550
ML 114 monocular microscope with 4 objectives (4x, 10x, 40x, 60x), mechanical stage and LED illumination	630-1551
ML 124 monocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage and LED illumination	630-1552
ML 124 R monocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage and 1 W LED and rechargeable battery	630-1924
ML 124 ALC monocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage, LED illumination with automatic light control system	630-1925
BL 114 binocular microscope with 4 objectives (4x, 10x, 40x, 60x), mechanical stage and LED illumination	630-1553
BL 124 binocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage and LED illumination	630-1554
BL 124 R binocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage with 1 W LED and rechargeable battery	630-1526
BL 124 ALC binocular microscope with 4 objectives (4x, 10x, 40x, 100x), mechanical stage, LED illumination with automatic light control system	630-1927
ML 103 POL polarising monocular microscope, WF 10x/18 mm with 3 objectives (4x, 10x, 40x), rotating stage, analyser plus polarising mechanical stage and LED illumination	630-1555
BL 103 POL polarising binocular microscope, WF 10x/18 mm with 3 objectives (4x, 10x, 40x), rotating stage, analyser plus polarising mechanical stage and LED illumination	630-1802
DML 103 monocular digital microscope with 3 objectives (4x, 10x, 40x), 1,3 MP digital camera and LED illumination	630-1556
DBL 124 binocular digital microscope with 4 objectives (4x, 10x, 40x, 100x), 3,14 MP digital camera and LED illumination	630-1623

## Accessories

Description	Cat. No.
Achromatic objective 4x/0,10 for series 100 & 200 microscopes	630-1628
Achromatic objective 10x/0,25 for series 100 & 200 microscopes	630-1629
Achromatic objective 20x/0,40 for series 100 & 200 microscopes	630-1630
Achromatic objective 40x/0,65 for series 100 & 200 microscopes	630-1631
Achromatic objective 60x/0,85 for series 100 & 200 microscopes	630-1632
Achromatic objective 100x/1,25 (oil) for series 100 & 200 microscopes	630-1633
Attachable mechanical stage for series 100 microscopes	630-1634
Cleaning kit	630-2081
Dust cover, type 3 for series 100 & 200 microscopes	630-1636
Eyepiece, H 5x for series 100 & 200 microscopes	630-1624
Eyepiece, WF 10x/18 mm for series 100 & 200 microscopes	630-1625
Eyepiece, WF 16x/12 mm for series 100 & 200 microscopes	630-1626
Eyepiece micrometric, WF 10x/18 mm for series 100 & 200 microscopes	630-1627
Polarising set (filters only) for series 100 microscopes	630-1635
Solar battery pack	630-1637
Immersion oil, 8 ml	630-1808

## VisiScope® ML, BL and TL 200 series microscopes

#### **Optical system**

This has been developed for demanding users. It consists of high quality components which guarantee high image contrast and excellent optical resolution. Optical components have been anti-mould treated.

## **Objectives**

Achromatic, E-plan achromatic and IOS (E-plan achromatic, infinity corrected objectives).

#### **Stand**

The stands' modern, ergonomic design make them easy to carry thanks to the large opening at the back of the microscope.

#### **Mechanics**

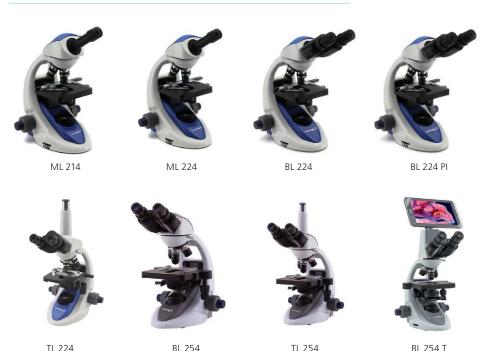
Moving parts are manufactured using computerised tooling, reducing manufacturing tolerance and increasing the reliability of the instrument. Strict controls on materials and production processes are optimised by established ISO 9001:2008 quality systems.

#### Illumination

The P-LED powered illumination system comes with adjustable intensity. The light is comparable to light generated by a 30 - 35 W halogen bulb but with a colour temperature of 6300 K.

Perfect fusion between years of experience in the microscopy field and a refined design study. This series represents the best in quality, reliability and innovation. Two innovative digital models (BL 224 T and BL 254 T) are equipped with integrated camera and removable 8" tablet. Suitable for routine microscopy with an ergonomic design for comfortable long-term use

Model	Description
ML 224	Monocular microscope, 1000x
ML 214	Monocular microscope, 600x
BL 224	Binocular microscope, 1000x
TL 224	Trinocular microscope, 1000x
BL 214	Binocular microscope, 600x
BL 224 PI	Binocular microscope, 1000x, IOS
BL 254	Binocular microscope, 1000x with plan achromatic objectives
TL 254	Trinocular microscope 1000x with plan achromatic objectives
BL 224 T	Binocular microscope, 1000x with intergrated camera and tablet PC
BL 254 T	Binocular microscope, 1000x with plan achromatic objectives with integrated camera and tablet PC



Model	Head	Eyepiece	Nosepiece	Objectives	Stage	Focusing	Condenser	Power supply
ML 224	Monocular, 360° rotating, 30° inclined	WF 10x/18 mm	Quadruple, reversed	Achromatic 4x/0,10, 10x/0,25, 40x/0,65, 100x/1,25	Double layer, 125x115 mm with XY 70x30 mm moving range	Coaxial coarse and fine focusing	1,25 N.A. Abbe type with adjustable height and iris diaphragm	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output
ML 214	Monocular, 360° rotating, 30° inclined	WF 10x/18 mm	Quadruple, reversed	Achromatic 4x/0,10, 10x/0,25, 40x/0,65, 60x/0,85	Double layer, 125x115 mm with XY 70x30 mm moving range	Coaxial coarse and fine focusing	1,25 N.A. Abbe type with adjustable height and iris diaphragm	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output
BL 214	Binocular, 360° rotating, 30° inclined with adjustable interpupillary distance and dioptric compensation	WF 10x/18 mm	Quadruple, reversed	Achromatic 4x/0,10, 10x/0,25, 40x/0,65, 60x/0.85	Double layer, 125x115 mm with XY 70x30 mm moving range	Coaxial coarse and fine focusing	1,25 N.A. Abbe type with adjustable height and iris diaphragm	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output
BL/TL 224 & BL 224 T	Binocular/trinocular, 360° rotating, 30° inclined with adjustable interpupillary distance and dioptric compensation	WF 10x/18 mm	Quadruple, reversed	Achromatic 4x/0,10, 10x/0,25, 40x/0,65, 100x/1.25	Double layer, 125x115 mm with XY 70x30 mm moving range	Coaxial coarse and fine focusing	1,25 N.A. Abbe type with adjustable height and iris diaphragm	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output
BL 224 PI	Binocular, 360° rotating, 30° inclined with adjustable interpupillary distance and dioptric compensation	WF 10x/18 mm	Quadruple, reversed	Infinity corrected IOS E-plan achromatic 4x/0,10, 10x/0,25, 40x/0,65, 100x/1,25	Double layer, 125x115 mm with XY 70x30 mm moving range	Coaxial coarse and fine focusing	1,25 N.A. Abbe type with adjustable height and iris diaphragm	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output
BL/TL 254 & BL 254 T	Binocular/trinocular, 360° rotating, 30° inclined with adjustable interpupillary distance and dioptric compensation	WF 10x/20 mm	Quadruple, reversed	E-plan achromatic 4x/0,10, 10x/0,25, 40x/0,65, 100x/1,25	Double layer, 150x133 mm with XY 75x50 mm moving range with innovative belt drive system	Coaxial coarse and fine focusing	1,25 NA Abbe condenser, sliding in, centrable, up-down adjustment by rack and pinion	100 - 240 V, 50 - 60 Hz external power adapter 6 Vdc output



Camera and Tablet PC specification for digital microscopes BL 224 T and BL 254 T	
Camera	CMOS camera with 3.14 MegaPixels; Auto white balance, gain control, back light, exposure USB 2,0 signal output, calibration slide, VisiCam software
Tablet PC	Multilanguage LED 8" IPS Multi Touch Screen, Windows 8.1
Input/output ports	Micro USB-B- Microphone, micro SD card reader, Micro HDMI, head-phone
Storage:	Hdd 32GB

## **Ordering information**

3	
Description	Cat. No.
ML 224 monocular microscope with 4 objectives (4x, 10x, 40x, 100x)	630-1557
ML 214 monocular microscope with 4 objectives (4x, 10x, 40x, 60x)	630-1558
BL 224 binocular microscope with 4 objectives (4x, 10x, 40x, 100x)	630-1559
BL 224 T binocular microscope with 4 objectives (4x, 10x, 40x, 100x), integrated camera and Tablet PC	630-2532
TL 224 trinocular microscopes with 4 objective (4x, 10x, 40x, 100x)	630-1859
BL 214 binocular microscope with 4 objectives (4x, 10x, 40x, 60x)	630-1560
BL 224 PI binocular microscope with 4 plan achromatic IOS objectives (4x, 10x, 40x, 100x)	630-1562
BL 254 binocular microscope with 4 plan achromatic objectives (4x, 10x, 40x, 100x)	630-1928
BL 254 T binocular microscope with 4 plan achromatic objectives (4x, 10x, 40x, 100x), integrated camera and Tablet PC	630-2533
TL 254 binocular microscope with 4 plan achromatic objectives (4x, 10x, 40x, 100x)	630-1929

## Accessories for microscopes ML / BL 214 and 224



BL 214

Description	Cat. No.
Achromatic objective 4x/0,10 for series 100 & 200 microscopes	630-1628
Achromatic objective 10x/0,25 for series 100 & 200 microscopes	630-1629
Achromatic objective 20x/0,40 for series 100 & 200 microscopes	630-1630
Achromatic objective 40x/0,65 for series 100 & 200 microscopes	630-1631
Achromatic objective 60x/0,85 for series 100 & 200 microscopes	630-1632
Achromatic objective 100x/1,25 (oil) for series 100 & 200 microscopes	630-1633
CCD camera adapter, 0,5x for TL 224 microscopes	630-1644
Dust cover, type 3 for series 100 & 200 microscopes	630-1636
Eyepiece H 5x for series 100 & 200 microscopes	630-1624
Eyepiece WF 10x/18 mm for series 100 & 200 microscopes	630-1625
Eyepiece WF 16x/12 mm for series 100 & 200 microscopes	630-1626
Eyepiece micrometric WF 10x/18 mm for series 100 & 200 microscopes	630-1627
Photo tube adapter with APS-C sensor for reflex cameras used with series 200, 300, 500 & inverted microscopes	630-1645
Polarising set (filters only) for series 200 microscopes	630-1638
Solar battery pack	630-1637
Immersion oil, 8 ml	630-1808
Objective IOS plan achromatic 4x for BL 224 PI microscopes only	630-1639
Objective IOS plan achromatic 10x BL 224 PI microscopes only	630-1640
Objective IOS plan achromatic 20x for BL 224 PI microscopes only	630-1641
Objective IOS plan achromatic 40x for BL 224 PI microscopes only	630-1642
Objective IOS plan achromatic 100x BL 224 PI microscopes only	630-1643

## Accessories for microscopes BL / TL 254 and 384



BL 224 T

Description	Cat. No.
Eyepiece WF 10x/20 mm for 254 & 384 series	630-2000
Eyepiece WF 15x for 254 & 384 series	630-2001
Eyepiece WF 20x for 254 & 384 series microscopes	630-2002
Micrometer eyepiece WF 10x/20 mm for 254 & 384 series microscopes	630-2003
Micrometric slide 26x76 mm, range 1 mm, div. 0,01 mm	630-1650
Objective 4x/0,10 E-plan 254 & 384 series microscopes	630-2004
Objective 10x/0,25 E-plan for254 & 384 series microscopes	630-2005
Objective 20x/0,40 E-plan for 254 & 384 series microscopes	630-2006
Objective 40x/0,65 E-plan for 254 & 384 series microscopes	630-2007
Objective 60x/0,80 E-plan for 254 & 384 series microscopes	630-2008
Objective 100x/1,25 E-plan (oil) for 254 & 384 series microscopes	630-2009
Polarising set (filters only) for 254 & 384 series microscopes	630-2010
Rotating table for polarising set for 254 & 384 series microscopes	630-2011
Solar battery pack	630-1637
Photo tube adapter for APS-C sensor	630-1645
CCD camera adapter 0,45x	630-1644
Cleaning and maintenance kit	630-2081
Immersion oil, 8 ml	630-1808

## VisiScope® BL & TL 384 series binocular and trinocular microscopes

#### **Optical system and objectives**

Provided (depending on model) with two different types of optical system; standard 160 mm and infinity corrected system (IOS). In both cases the field diameter of the eyepieces is 20 mm.

#### **Stand**

Modern and ergonomic, the stand is made of die-cast aluminium. Coarse and fine focusing (graduation: 0,002 mm) with coaxial control knobs. Adjustable focusing tension and limit stop.

#### Head

Available in binocular or trinocular versions. The heads are equipped with interpupillary distance control (55 - 75 mm) as well as dioptric compensation. All heads are 360° rotatable and 30° inclined.

#### Illumination

The illuminating system consists of a P-LED3 light source with adjustable brightness control equivalent to a 50 W halogen bulb.

### **Special versions**

- Polarising models: TL 384 POL, LED power 3,6 W, comparable to a 50 W halogen bulb
- Fluorescence models T / TL 384 FL: LED transmitted light
- Epi-fluorescence models: High power white LED for model TL 384 FL and HBO 100 W high pressure mercury bulb for model T 384 FL
- Metallurgical models: TL 384 M: LED transmitted and incident light

#### **Automatic Light Control (ALC)**

Light levels for the BL 384 binocular microscopes are adjusted by the microscope in order to maintain the same level as the one chosen by the user, (e.g. aperture of the diaphragm changes, another objective is inserted or change of the sample opacity).

#### Condenser

A sliding in 1,25 N.A Abbe type condenser is included which can be centred through a double control system and height adjusted. The condenser is fitted with an iris diaphragm that can be adjusted to improve contrast.

### Advanced biological microscopes

This series represents the right balance between price and quality. Thanks to its wide range of models it can be used both in advanced teaching situations and laboratories. Professional users will certainly value the technical features of the series which make these high quality microscopes robust and reliable. The ten models in this series feature achromatic, plan achromatic, infinity corrected (IOS) plan achromatic and phase contrast objectives.

#### Polarising, fluorescence and metalurgical microscopes

Special versions of the 384 series have been developed for:

- Polarisation: Dye-cast frame, highly stable and ergonomic, for transmitted light observation
- Fluorescence: Dye-cast frame, highly stable and ergonomic, for transmitted light and fluorescence reflected light observation
- Metallurgical: Dye-cast frame, highly stable and ergonomic, for transmitted light and incident light observation

Model	Description
BL 384 P	Binocular microscope, E-plan achromatic objectives & automatic light control system
TL 384 P	Trinocular microscope, E-plan achromatic objectives
BL 384 PI	Binocular microscope, IOS E-plan achromatic objectives & automatic light control system
TL 384 PI	Trinocular microscope, IOS E-plan achromatic objectives
BL 384 PH	Binocular microscope, plan achromatic phase contrast objectives & automatic light control system
TL 384 PH	Trinocular microscope, plan achromatic phase contrast objectives
TL 384 POL	Trinocular polarisation microscope with IOS E-plan achromatic objectives, strain-free
T 384 FL	Trinocular fluorescence micrcoscope with mercury bulb
TL 384 FL	Trinocular fluorescence micrcoscope with LED
TL 384 M	Trinocular metallurgical microscope with IOS plan achromatic MET objectives



TL 384 PI

TL 384 POL

BI 384 PI









TL 384 FL TL384 PH T384 FL TL 384 M

Model	Head	Eyepiece	Objectives	Nosepiece	Stage	Focusing	Condenser	Illumination system
BL 384 P	Binocular 360° rotating, 30° inclined	WF 10x/20 mm	E-plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine system, with limit stop	Sliding in 1,25 N.A. Abbe type, with centring system	P-LED <sup>3</sup> , with Automatic Light Control
TL 384 P	Trinocular 360° rotating, 30° inclined	WF 10x/20 mm	E-plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine system, with limit stop	Sliding in 1,25 N.A. Abbe type, with centring system	P-LED <sup>3</sup> , with manual brightness control
BL 384 PI	Binocular 360° rotating, 30° inclined	WF 10x/20 mm	IOS E-plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 216x150 mm, moving range 78x54 mm, belt drive in X direction	Coaxial coarse and fine system, with limit stop	Sliding in 1,25 N.A. Abbe type, with centring system	P-LED <sup>3</sup> , with Automatic Light Control
TL 384 PI	Trinocular 360° rotating, 30° inclined	WF 10x/20 mm	IOS E-plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 216x150 mm, moving range 78x54 mm, belt drive in X direction	Coaxial coarse and fine system, with limit stop	Sliding in 1,25 N.A., Abbe type, with centring system	P-LED <sup>3</sup> , with manual brightness control

Model	Head	Eyepiece	Objectives	Nosepiece	Stage	Focusing	Condenser	Illumination system
BL 384 PH	Binocular 360° rotating, 30° inclined	WF 10x/20 mm	4x, 10xPH, 40xPH, 100xPH (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine focusing, with limit stop	Phase contrast (10x, 20x, 40x, 100) with darkfield (dry) and brightfield	P-LED <sup>3</sup> , with Automatic Light Control
TL 384 PH	Trinocular 360° rotating, 30° inclined	WF 10x/20 mm	4x, 10xPH, 40xPH, 100xPH (oil)	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 160x140 mm, moving range 78x54 mm	Coaxial coarse and fine focusing, with limit stop	Phase contrast (10x, 20x, 40x, 100) with darkfield (dry) and brightfield	P-LED <sup>3</sup> , with manual brightness control
TL 384 POL*	Trinocular polarisation 360° rotating, 30° inclined	WF 10x/20 mm, one eyepiece with cross hair	IOS E-plan (strain-free) 4x/0,10, 10x/0,25, 40x/0,65, 60x/0,80	4 positions with centring mechanism for all objectives	160 mm dia.; 360° rotating with stop knob and 0,1° Vernier	Coaxial coarse and fine	N.A. 1,25, with iris diaphragm, focusable and centrable. With rotating polariser filter	P-LED <sup>3</sup> , with manual brightness control
T 384 FL	Trinocular fluorescence 360° rotating, 30° inclined	WF 10x/20 mm	IOS E-plan 4x/0,10, 10x/0,25, 20x/0,40, 40x/0,65, 100x/1,25 (oil)	Quintuple revolving nosepiece, rotation on ball bearings	Double layer mechanical sliding stage, 216x150 mm, moving range 78x54 mm. Belt drive in X direction	Coaxial coarse and fine	Abbe condenser, N.A. 1,25 with centring system	Transmitted light: P-LED³, with manual brightness control. Epi-fluorescence: HBO 100 W high pressure mercury bulb
TL 384 FL	Trinocular fluorescence 360° rotating, 30° inclined	WF 10x/20 mm	IOS E-plan 4x/0,10, 10x/0,25, 20x/0.40, 40x/0,65, and plan 50x/0,75 (no cover slide)	Quintuple revolving nosepiece, rotation on ball bearings	Double layer mechanical sliding stage, 216x150 mm, moving range 78x54 mm. Belt-drive in X direction	Coaxial coarse and fine	Abbe, N.A. 1,25 with centring system 0,3 mm (no cover slide)	Transmitted light: P-LED³, with manual brightness control. Epi-fluorescence: High power white LED (for B and G filter sets)
TL 384 M	Trinocular metallurgical 360° rotating, 30° inclined	WF 10x/20 mm	Plan IOS MET (no cover slide) 4x/0,10, 10x/0,25, 20x/0,40, 50x/0,75	Quintuple nosepiece, reversed	Double layer mechanical sliding stage, 216x150 mm, moving range 78x54 mm. Beltdrive in X direction. Glass insert for sample support	Coaxial coarse and fine	Abbe, sliding-in, N.A. 1,25 with centring system	Transmitted light: P-LED³, with manual brightness control

 $<sup>{}^{\</sup>star}\text{Bertrand lens and polarisation attachment: Swing-out type with centring mechanism for observation in conoscopy/orthoscopy.}$ Rotatable analyser from 0 to 90° with graduated scale. Tint plates included: 1° order red ( $\lambda$ ),  $\lambda$ /4, quartz wedge.

## **Ordering information**

<b>Description</b>	Cat. No.
BL 384 P binocular microscope with 4 E-plan achromatic objectives (4x, 10x, 40x, 100x) & automatic light control system	630-1930
TL 384 P trinocular microscope with 4 E-plan achromatic objectives (4x, 10x, 40x, 100x)	630-1931
BL 384 PI binocular microscope with 4 IOS E-plan objectives (4x, 10x, 40x, 100x) & automatic light control system	630-1932
TL 384 PI trinocular microscope with 4 IOS E-plan objectives (4x, 10x, 40x, 100x)	630-1933
BL 384 PH binocular microscope with 4 plan objectives (4x, 10x, 40x, 100x) & automatic light control system	630-1934
TL 384 PH trinocular microscope with 4 plan objectives (4x, 10x Ph, 40x Ph, 100x Ph)	630-1935
TL 384 POL trinocular polarising microscope with 4 IOS E-plan objectives (4x, 10x, 20x, 40x, 100x)	630-1936
T 384 FL trinocular fluorescent microscope with 5 IOS E-plan objectives (4x, 10x, 20x, 40x, 100x)	630-1937
TL 384 FL trinocular fluorescent microscope with 5 IOS E-plan objectives (4x, 10x, 20x, 40x and plan 50x)	630-1938
TL 384 M trinocular metallurgical microscope with 4 IOS plan MET objectives (4x, 10x, 20x, 50x)	630-1939

## Accessories for microscopes BL / TL 384

Description	Cat. No.
Eyepiece WF 10x/20 mm for 254 & 384 series	630-2000
Eyepiece WF 15x for 254 & 384 series	630-2001
Eyepiece WF 20x for 254 & 384 series microscopes	630-2002
Micrometer eyepiece WF 10x/20 mm for 254 & 384 series microscopes	630-2003
Micrometric slide 26x76 mm, range 1 mm, div. 0,01 mm	630-1650
Objective 4x/0,10 E-plan 254 & 384 series microscopes	630-2004
Objective 10x/0,25 E-plan for254 & 384 series microscopes	630-2005
Objective 20x/0,40 E-plan for 254 & 384 series microscopes	630-2006
Objective 40x/0,65 E-plan for 254 & 384 series microscopes	630-2007
Objective 60x/0,80 E-plan for 254 & 384 series microscopes	630-2008
Objective 100x/1,25 E-plan (oil) for 254 & 384 series microscopes	630-2009
Objective 10x/0,25 plan for phase contrast	630-2050
Objective 40x/0,65 plan for phase contrast	630-2052
Objective 100x/1,25 (oil) plan for phase contrast	630-2053
Objective 10x/0,25 IOS plan for phase contrast	630-2054
Objective 20x/0,40 IOS plan for phase contrast	630-2055
Objective 40x/0,65 IOS plan for phase contrast	630-2056
Objective 100x/1,25 (oil) IOS plan for phase contrast	630-2057
Objective 60x/0,80 IOS E-plan	630-2049
Complete phase contrast set with plan objectives 10x, 40x, 100x, with darkfield condenser for dry objectives	630-2058
Complete phase contrast set with IOS plan objectives 10x, 20x, 40x, 100x, with darkfield condenser for dry objectives	630-2059
Darkfield condenser for dry objectives	630-2060
Heating stage with digital temperature controller	630-2061
Rotating table for polarising set for 254 & 384 series microscopes	630-2011
Photo tube adapter for APS-C sensor	630-1645
CCD camera adapter 0,5x	630-1644
Cleaning and maintenance kit	630-2081
High pressure mercury bulb for fluorescence	630-2158
Objective E-plan IOS 4x	630-1639
Objective E-plan IOS 10x	630-1640
Objective E-plan IOS 20x	630-1641
Objective E-plan IOS 40x	630-1642
Objective E-plan IOS 100x	630-1643
Objective plan IOS MET 50x/0,75	630-2159
Objective plan IOS MET 4x/0,10	630-2160
Objective plan IOS MET 10x/0,25	630-2161
Objective plan IOS MET 20x/0,40	630-2162
Polarising set of filters for 300 series microscopes	603-2285
Objective with iris diaphragm for darkfield PL 100x (oil)	630-1668
Solar battery pack	630-1637



## **Optical system and objectives**

Plan achromatic 160 mm infnity corrected objectives on InfniFix models. Plan achromatic infnity corrected objectives on all IOS models.

#### **Stand**

Modern design with accessible and ergonomic controls.

#### Head

The wide 22 mm feld of view and high-point eyepieces allow for hours of use without eye fatigue.

## Illumination system

Microscopes are equipped with a P-LED illuminator which allows for light intensive applications, such as phase contrast or darkfeld, without the need for complex active cooling, keeping electrical consumption at low levels.

#### Condenser

Two types of swing-out condensers are available (depending on the model):

- 0,10/1,20 N.A. for better performance with high magnification
- 0,22/0,90 N.A. for better performance with low magnifications (pathology)

#### Specimen stage

Generous sized double layer stage, suitable for two specimen slides, completes the instrument. 175x145 mm, XY range: 76x51 mm. These microscopes have been designed for the best performance in routine laboratory use. Two different optical systems are available (InfiniFix and IOS).

InfiniFix models use a true infinity corrected optical path, implemented with standard 160 mm objectives.

IOS "Infinity Optical System". All 500 series IOS models are equipped with true infinity corrected objectives.

Model	Description
BL 524 P	Binocular microscope, plan achromatic InfiniFix objectives
TL 524 P	Trinocular microscope, plan achromatic InfiniFix objectives
BL 524 PI	Binocular microscope, IOS plan achromatic objectives
TL 524 PI	Trinocular microscope, IOS plan achromatic objectives
BL 524 PH	Binocular microscope, plan achromatic phase contrast objectives
TL 524 PH	Trinocular microscope, plan achromatic phase contrast objectives



Model	Optical system	Head	Eyepiece	Objectives	Nosepiece	Stage	Focusing	Condenser	Illumination system
BL 524 P	InfiniFix	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	Swing-out 1,2 N.A., centrable	P-LED <sup>3</sup> illuminator
TL 524 P	InfiniFix	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	Swing-out 1,2 N.A., centrable	P-LED <sup>3</sup> illuminator
BL 524 PI	IOS	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Infinity plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	Swing-out 0,90 N.A., Centrable	P-LED <sup>3</sup> illuminator
TL 524 PI	IOS	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Infinity plan achromatic 4x, 10x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	Swing-out 0,90 N.A., Centrable	P-LED <sup>3</sup> illuminator

# **VWR FOR MICROSCOPY**

Model	Optical system	Head	Eyepiece	Objectives	Nosepiece	Stage	Focusing	Condenser	Illumination system
BL 524 PH	InfiniFix	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Plan achromatic for phase contrast 10x, 20x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	<ul> <li>PH condenser 1,25 N.A.</li> <li>Brightfield swing-out 1,2 N.A.</li> <li>Both with centring system</li> </ul>	P-LED <sup>3</sup> illuminator
TL 524 PH	InfiniFix	Binocular 360° rotating 30° inclined	Widefield 10x/22 mm	Plan achromatic for phase contrast 10x, 20x, 40x, 100x (oil)	Quintuple reversed	2-layer mechanical sliding stage, 175x145 mm	Coaxial coarse and fine control knobs	<ul> <li>PH condenser 1,25 N.A.</li> <li>Brightfield swing-out 1,2 N.A.</li> <li>Both with centring system</li> </ul>	P-LED <sup>3</sup> illuminator

## Ordering information

Description	Cat. No.
BL 524 P binocular microscope, 4 plan achromatic InfiniFix objectives (4x,10x, 40x, 100x)	630-1569
TL 524 P trinocular microscope, 4 plan achromatic InfiniFix objectives (4x,10x, 40x, 100x)	630-1570
BL 524 PI binocular microscope, 4 IOS plan achromatic objectives (4x,10x, 40x, 100x)	630-1571
TL 524 PI trinocular microscope, 4 IOS plan achromatic objectives (4x,10x, 40x, 100x)	630-1572
BL 524 PH binocular microscope, WF 10x/22 mm, 4 phase contrast objectives (10x, 20x, 40x, 100x)	630-1573
TL 524 PH trinocular microscope, WF 10x/22 mm, 4 phase contrast objectives (10x, 20x, 40x, 100x)	630-1574

## Accessories

	6 · 11
Description	Cat. No.
Cleaning kit	630-2081
Darkfield condenser for dry objectives	630-1741
Dust cover type 5	630-1750
Eyepiece EW F10x/22 mm	630-1695
Eyepiece WF 15x/16 mm	630-1696
Eyepiece micrometer EWF 10x/22 mm	630-1697
Eye cup (pair)	630-1756
Frosted glass filter, 45 mm diameter	630-1755
Objective plan achromatic 4x/0,10	630-1704
Objective plan achromatic 10x/0,25	630-1705
Objective plan achromatic 20x/0,40	630-1706
Objective plan achromatic 40x/0,65	630-1707
Objective plan achromatic 60x/0,80	630-1709
Objective plan achromatic 100x/1,25 (oil)	630-1721
Objective IOS plan achromatic 4x/0,10	630-1722
Objective IOS plan achromatic 10x/0,25	630-1723
Objective IOS plan achromatic 20x/0,40	630-1727
Objective IOS plan achromatic 40x/0,65	630-1728
Objective IOS plan achromatic 60x/0,80	630-1729
Objective IOS plan achromatic 100x/1,25 (oil)	630-1730
Objective plan achromatic for phase contrast 10x/0,25	630-1731
Objective plan achromatic for phase contrast 20x/0,40	630-1732
Objective plan achromatic for phase contrast 40x/0,65	630-1733
Objective plan achromatic for phase contrast 100x/1,25 (oil)	630-1734
Objective IOS plan achromatic for phase contrast 10x/0,25	630-1735
Objective IOS plan achromatic for phase contrast 20x/0,40	630-1736
Objective IOS plan achromatic for phase contrast 40x/0,65	630-1737
Objective IOS plan achromatic for phase contrast 100x/1,25 (oil)	630-1738
Photo tube adapter with APS-C sensor for reflex cameras used with series 200, 300, 500 and inverted microscopes	630-1645
CCD camera adapter with 1/3" sensors	630-1748
CCD camera adapter with 1/2" sensors	630-1749
Filter, blue, 45 mm diameter	630-1752
Filter, green, 45 mm diameter	630-1753
Filter, yellow, 45 mm diameter	630-1754
Heating stage, with digital temperature controller	630-1694
Immersion oil, 8 ml	630-1808

## VisiScope® trinocular research microscopes TL 824 BF / TL 824 PH

#### **Optical system**

The 800 series offers the highest category of optical equipment with a guarantee of sharp and clear views in any situation. TL 824 is built on an IOS Infinity Corrected optical system, which gives both top notch optical performances and the ability to extend your instrument with a broad range of accessories.

#### Microscope stand

Innovative, modern stand which allows the users to work comfortably with easy coaxial macro and micrometric focusing.

#### Head

Available in trinocular versions, 360° rotating, 30° inclined with WF 10x/22 mm eyepieces. Diopter adjustment on left eyepiece. Interpupillary adjustment: 55 - 75 mm.

#### Illumination

P-LED3 illumination with adjustable intensity is the best solution to have very intense pure white light, even at higher magnification and optimum power efficiency given by a solid state source.

#### **Observation modes:**

- Brightfield for model TL 824 BF
- Brightfield, darkfield and phase contrast for model TL 824 PH

As a flagship instrument, the TL 824 originates from customers most demanding feedback and needs. Its modularity and versatility will allow you to find the perfect place in any clinical or basic research laboratory. All controls are easily accessible and comfortable over extended periods of observation. If you search

for our best solution to your present and future professional needs, TL 824 is the answer.

P-LED3 illumination gives very intense pure white light, even at higher magnification plus optimum power efficiency is available via a solid state





#### **Technical specifications**

Model	Nosepiece	Objectives	Stage	Focusing	Condenser	Power supply
TL 824 BF	Sextuple revolving nosepiece, rotation on ball bearings.	IOS plan 4x, N.A. 0,10/10x, N.A. 0,25/20x, N.A. 0,40/40x, N.A. 0,65/60x, N.A. 0,65/60x, N.A. 1,25	Double layer mechanical stage with coaxial translation knobs, with belt drive movement. Dimensions 243x160 mm. Translation X: 100 mm, Y: 60 mm. Vernier scale 0,1 mm on both X and Y.	Coaxial coarse and fine focusing mechanism (graduated, 0,002 mm) with upper stop, to prevent the contact between objective and specimen. Adjustable tension of coarse focusing knob. Right fine focus knob "flat type" (for use with fingertip).	Swing-out type N.A. 0,9 with centring system	High efficiency pure white P-LED³. Light intensity control using a knob on left side of the frame. LED power: 3,6 W (comparable to a 50 W halogen bulb). Colour temperature: 6300 K.
TL 824 PH	Sextuple revolving nosepiece, rotation on ball bearings.	IOS plan 4x/0,10/10x PH/0,25/20x PH/0,40/40x PH/0,65/100x PH/1,25	Double layer mechanical stage with coaxial translation knobs, with belt drive movement. Dimensions 243x160 mm. Translation X: 100 mm, Y: 60 mm. Vernier scale 0,1 mm on both X and Y.	Coaxial coarse and fine focusing mechanism (graduated, 0,002 mm) with upper stop, to prevent the contact between objective and specimen. Adjustable tension of coarse focusing knob. Right fine focus knob "flat type" (for use with fingertip).	Phase contrast condenser (for objectives 10x, 20x, 40x, 100x) with brightfield and darkfield positions	High efficiency pure white P-LED³ Light intensity control using a knob on left side of the frame. LED power: 3,6 W (comparable to a 50 W halogen bulb). Colour temperature: 6300 K.

### **Ordering information**

Description	Cat. No.
TL 824 BF brightfield trinocular microscope	630-1940
TL 824 PH phase contrast trinocular microscope	630-1941

## Eyepieces, objectives and accessories for VisiScope® 824 series

Description	Cat. No.
WF 10x/22 mm eyepiece (pair)	630-1967
WF 15x/16 mm	630-1969
4x IOS plan objective, for 800 BF series microscopes only	630-1970
10x IOS plan objective, for 800 BF series microscopes only	630-1971
20x IOS plan objective, for 800 BF series microscopes only	630-1972
40x IOS plan objective, for 800 BF series microscopes only	630-1973
60x IOS plan objective, for 800 BF series microscopes only	630-1974
100x IOS plan objective, for 800 BF series microscopes only	630-1975
10x IOS plan objective, for phase contrast, for 800 PH series microscopes only	630-1976
20x IOS plan objective, for phase contrast, for 800 PH series microscopes only	630-1977
40x IOS plan objective, for phase contrast, for 800 PH series microscopes only	630-1978
100x IOS plan objective, for phase contrast, for 800 PH series microscopes only	630-1979
Heating stage	630-1980

Description	Cat. No.
Centering telescope for phase contrast	630-1981
Micrometric slide, 26x76 mm, range 1 mm, div. 0,01 mm	630-1650
Polarising set (filters only)	630-1982
Lambda filter for polarising set	630-1983
Eyecup (pair)	630-1756
Photo tube adapter for full frame SLR camera	630-1746
Photo tube adapter for APS-C SLR camera	630-1645
Photo tube adapter for DIGI digital camera series	630-1747
CCD camera adapter for 1/3" sensor	630-1748
CCD camera adapter for 1/2" sensor	630-1749
Photo tube adapter for full frame SLR camera	630-1746
Cleaning and maintenance kit	630-2081
Eyepiece WF 10x/ 22 mm	630-2163
Filter, green, 45 mm diameter	630-1753

## VisiScope® IT 404 & 405 inverted microscopes

## **Ergonomic**

Every control is easy to reach and every component has been designed with ease of use in mind. Focusing and specimen movement controls allow the wrists to rest on the bench. Light intensity adjustment is placed very close to the focusing knobs. The specimen stage is fitted with a special glass insert that allows you to see the objectives for immediate identification of the magnification set-up. An optional ergo head allows compensation for operator height.

## **Efficiency**

Plan achromatic, infinity corrected optics, bright P-LED8 illuminator, phase contrast set, holders for specimen slides, flasks, Petri dishes and trinocular head for photo/video applications. These are the features of these models a powerful, complete and innovative instrument, designed to set a reference standard for routine and advanced tissue culture.

#### **User comfort**

The 22 mm extra widefield optics are pleasant to use minimising operator stress. The special eyepieces are designed for eyeglass wearers. Long working distance condenser, numerical aperture 0,30, working distance 72 mm. The condenser can be removed in order to increase the working distance to 150 m.

#### A complete solution for your brightfield observations

All included and in the right place - this is the philosophy underlying this instrument. The IT 404/IT 404E inverted microscope is equipped with a full set of objectives that covers most standard applications. A mechanical stage is included along with 4 objectives (4x and 40x for brightfield; 10x and 20x for phase contrast). The IT 405 inverted microscope is equipped with 3x IOS plan achromatic phase contrast objectives (10x, 20x and 40x)



Component	Description
Optical system	Infinity corrected IOS, 45 mm parfocality distance - field number 22 mm.
Head	IT 404: Trinocular: 30° inclined, 360° rotating. Interpupillary distance: 48 - 75 mm. Adjustable dioptric compensation. Ergonomic height compensation. IT 404 E: 0 - 30° ergonomic head with side photo tube.
Eyepieces	Extra widefield 10x/22 mm, high-point.
Nosepiece	5 positions, with bi-directional rotation on ball bearings and click stop.
Objectives	IT 404 / IT 404 E Long working distance (LWD) infinity corrected (IOS) plan achromatic: 4x/0,10 (working distance 18 mm), phase contrast 10x/0,25 (working distance 10 mm), phase contrast 20x/0,40 (working distance 5,1 mm), 40x/0,60 (working distance 2,6 mm), corrected for 1,2 mm cover glass. IT 405 Long working distance (LWD) infinity corrected (IOS) plan achromatic: Phase contrast 10x/0,25 (working distance 7,94 mm), phase contrast 20x/0,40 (working distance 7,66 mm), phase contrast 40x/0,60 (working distance 3,71 mm), corrected for 1,2 mm cover glass.
Specimen stage	Size: 250x230 mm. Translator with lowered ergonomic coaxial controls. X-Y translation: 119x70 mm. Interchangeable inserts for specimen slides, Petri dishes and flasks.
Focusing system	Macro and micrometric regulation with coaxial knobs on both sides of the stand. Adjustable tension.
Condenser	Long working distance condenser, numerical aperture 0,30, working distance 72 mm. The condenser can be removed in order to increase the working distance to 150 mm.
Illumination system	P-LED8 system, with adjustable intensity filter, phase ring holder and aperture diaphragm.

#### **Ordering information**

Description	Cat. No.
IT 404 inverted microscope with IOS objectives PL 4x, PH 10x, PH 20x, PL 40x	630-1575
IT 404 E ergo inverted microscope with ergonomic head	630-2079
IT 405 inverted microscope for phase contrast observation with IOS plan achromatic phase contrast objectives 10x, 20x, 40x	630-2080

#### **Accessories**

Description	Cat. No.
Photo tube adapter for SLR full frame sensor SLR cameras	630-1767
Dust cover type 7	630-1769
Eyepiece EWF 10x/22 mm	630-1759
Eyepiece micrometer EWF 10x/22 mm	630-1760
Objective LWD IOS plan achromatic 4x/0,10 (WD 18 mm)	630-1761
Objective LWD IOS plan achromatic phase contrast 10x/0,25 (WD 10 mm)	630-1762
Objective LWD IOS plan achromatic phase contrast 20x/0,40 (WD 5,1 mm)	630-1763
Objective LWD IOS plan achromatic 40x/0,60 (WD 2,6 mm)	630-1764
Objective LWD IOS plan achromatic for phase contrast 40x	630-1765
Phase ring 40x	630-1766
CCD camera adapter for inverted microscope IT 404	630-1768
Photo tube adapter for APS-C sensor	630-1645
Eyepiece wf 10x/22mm for serie 800	630-2163
Micrometer eyepiece wf10x/22mm 0.1mm div	630-1968

Description	Cat. No.
Slide micrometer 26x76mm div.0.01mm h1mm	630-1650
Objective ios lwd plan 4x/0.10 achrom.	630-2164
Objective ios lwd plan 10x/0.25 achrom.	630-2165
Objective ios lwd plan 20x/0.40 achrom.	630-2166
Objective ios lwd plan 40x/0.60 achrom.	630-2167
Objective ios lwd plan 60x/0.70 achrom.	630-2168
Cutt-off filter infrared	630-2169
Photo adapter for reflex camera	630-2170
Camera adapter ccd 1/3"	630-1891
Camera adapter ccd 1/2"	630-1892
Adapter universal for cameras	630-2172
Dust cover type 7 for it 404	630-1769
Phototube adapter for aps-c sensor	630-1645

## VisiScope® SZB & SZT 200 series stereo microscopes

#### **Heads**

Binocular, 360° rotating and 45° inclined.

## Interpupillary distance

Adjustable between 51 and 75 mm.

#### **Eyepieces**

WF 10x/20 mm. STB 250: Dioptric compensation adjustable on left eyepiece tubes. SZB 250: Dioptric compensation adjustable on both eyepiece

#### **Specimen stage**

Fitted with a semi-transparent disc for transmitted light with specimen clips.

### **Objectives**

STB 250: With double magnification (2x - 4x) selectable by rotating the lens unit. Working distance 80 mm. SZB 250: Continuous zoom 0,7x - 4,5x (6,43:1 zoom factor). Working distance: 85 mm.

#### **Stand**

Fixed arm type with focusing mechanism.

## **Focusing**

Rack and pinion controlled by a pair of knobs placed on both sides of the stand.

## Illumination

Double adjustable illuminator for incident and transmitted light fitted with two high efficiency LED light sources. The angle of the incident illuminator is adjustable. Voltage: 110/240 V.

Two models which have been designed for end users who need professional quality at a low cost.





STB 250

SZB 250

## **Technical specifications**

Model	Description
STB 250	Binocular, selectable magnification
SZB 250	Binocular, zoom magnification

## **Ordering information**

Description	Cat. No.
STB 250 binocular stereo microscope WF 10x/20 mm with selectable objectives 2x - 4x	630-1576
SZB 250 binocular stereo microscope WF 10x/20 mm with zoom objectives 0,7x - 4,5x	630-1577

#### **Accessories**

Description	Cat. No.
Auxiliary lens 0,5x for SZB 250 (WD 170 mm)	630-1775
Auxiliary lens 1,5x for SZB 250 (WD 42 mm)	630-1776
Eyepieces WF 5x/22 mm	630-1770
Eyepieces WF 10x/20 mm	630-1771
Eyepieces WF 15x/15 mm	630-1772
Eyepieces WF 20x/10 mm	630-1773
Eyepiece micrometric WF 10x/20 mm	630-1774
Eye cups (pair)	630-1777
Dust cover	630-1778
Microscope cleaning kit	630-2081

## VisiScope® SZB & SZT 300 series stereo microscopes

#### Heads

Binocular and trinocular, 360° rotating and 45° inclined.

## Interpupillary distance

Adjustable between 51 and 75 mm.

## **Dioptric compensation**

On both eyepiece tubes.

#### **Eyepieces**

EWF 10x/20 mm.

#### **Objectives**

Parfocal achromatic zoom 0,7x - 4,5x (6,428:1 zoom factor).

#### **Specimen stage**

Fitted with a black/white disc, specimen clips and a frosted disc for transmitted light.

#### **Focusing**

Rack and pinion mechanism controlled by a pair of knobs placed on both sides of the stand.

#### **Stands**

SZB/SZT pillar stand: diameter: 30 mm and 25 cm high. Base: 26x20x6 cm. Overhanging stand: 42 cm high, 23x23 cm base and 45 cm horizontal arm length. SZBL/SZTL pillar models: 32 mm and 31,5 cm high. Base: 27x21x3 cm.

#### Illumination

Double adjustable incident and transmitted light, fitted with two 12 V/15 W halogen bulbs. The angle of the incident illumination is adjustable. Models SZBL/SZTL are equipped with double high power LEDs.

## Advanced stereo microscopes designed for teachers and for laboratory and industry applications.

Their optical and mechanical qualities place them at the top of their category and the price/quality ratio is excellent. The four models share the same optical system consisting of binocular and trinocular heads with zoom objectives. Several accessories provide an ample choice of configurations and applications.

Model	Description
SZB 350	Binocular with pillar stand, halogen lamp
SZBL 350	Binocular with pillar stand, LED
SZT 350	Trinocular with pillar stand, halogen lamp
SZTL 350	Trinocular with pillar stand, LED
SZB 350 OH	Binocular with overhanging stand
SZT 350 OH	Trinocular with overhanging stand







SZTL 350



SZB 350 OH



SZT 350 OH

Model	Head	Eyepieces	Objectives	Working distance	Stand	Illumination
SZB 350	Binocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Pillar	Incident and transmitted 12 V/15 W halogen
SZBL 350	Binocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Pillar	Incident: High power single P-LED. Transmitted: LED diffusing disc
SZT 350	Trinocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Pillar	Incident and transmitted 12 V/15 W halogen
SZTL 350	Trinocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Pillar	Incident: High power single P-LED. Transmitted: LED diffusing disc
SZB 350 OH	Binocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Overhanging	Without illuminator
SZT 350 OH	Trinocular	EWF 10x/20 mm	0,7 - 4,5x zoom	100 mm	Overhanging	Without illuminator



Description	Cat. No.
SZB 350 binocular stereo microscope, incident and transmitted halogen illumination	630-1578
SZBL 350 binocular stereo microscope, LED illumination	630-1942
SZT 350 trinocular stereo microscope, incident and transmitted halogen illumination	630-1580
SZTL 350 trinocular stereo microscope, LED illumination	630-1943
SZB 350 OH overhead binocular stereo microscope, boom stand	630-1583
SZT 350 OH overhead trinocular stereo microscope, boom stand	630-1584

#### Accessories

Description	Cat. No.
Auxiliary lens 0,5x (WD 165 mm)	630-1783
Auxiliary lens 0,75x (WD 117 mm)	630-1784
Auxiliary lens 1,5x (WD 47 mm)	630-1785
Auxiliary lens 2x (WD 26 mm)	630-1786
Camera adapter for full frame sensor cameras	630-1791
Reflex camera adapter	630-1801
CCD camera adapter (for 1/3" sensors)	630-1792
CCD camera adapter (for 1/2" sensors)	630-1793
Darkfield condenser	630-1788
Dust cover type 13	630-1799
Eyepieces WF 10x/20 mm	630-1779
Eyepieces WF 15x/15 mm	630-1780
Eyepieces WF 20x/10 mm	630-1781
Eyepiece micrometric WF 10x/20 mm	630-1782
Eye cups, (pair) for series 300 stereo microscopes	630-1794
Glass stage, type 2, diameter 95 mm	630-1796
Halogen bulb, 12 V/15 W	630-1797
Halogen bulb, 12 V/15 W, with dichroic mirror	630-1798
Heating stage with digital temperature controller	630-1800
Moving stage	630-1790
Polarising set (filters and rotating stage)	630-1787
Sample clip	630-1789
White/black object plate, type 2, diameter 95 mm	630-1795



## Microscope cleaning and maintenance set Cat. No. 630-2081, includes:

- Lens cleaning liquid
- 5 cotton sticks
- Anti-static cloth 18x15 cm
- 2 Smart Wipes
- Air pump

Solar battery pack SBP 10 for LED microscopes Cat. No. 630-1637:

**Battery:** Polymer lithium-ion Capacity: 2600 mAh

**Input (micro USB port)** 5 Vdc

Charging time (through USB): About 5 hours

Output (USB port): 5,5 Vdc/1 A **Solar panel power:** 0,7 W max.

Solar panel output current: 80 mA (at 1000 W/m2 light)

Working temperature -10 ~ +55 °C



**Objectives**: Achromatic, plan achromatic, infinity plan achromatic, phase contrast (interchangeable within a series) except 160 mm and infinity.







**Polarising set**: A set of filters is available tailored to each microscope.

## **Camera adaptors**: Photo tubes and C-mount.



VisiScope Model	Tablet Visicam TC100	VisiCam® HDMI Pro	Digi	VisiCam <sup>®</sup> 1.3 & 2 - Moticam 1, 1 SP, 2 - (1/4" and 1/3" sensors)	Moticam 3, 5 & 10, VisiCam® 3.0, 5.0 & TC 10	Reflex camera with APS sensor	Reflex cameras with full frame sensor/35 mm SLR cameras
TL 224 (trinocular head)	Ready to use -	630-1644	Ready to use	630-1644	630-1644	630-1645	630-1645
TL 254 (trinocular head)	Ready to use - free to move 360o	630-1644	Ready to use	630-1644	630-1644	630-1645	630-1645
TL 384 P, TL 384 PI, TL 38 4PH, TL 384 POL, T 384 FL TL 384 FL and TL 384 M (trinocular head)	Ready to use -	630-1644	Ready to use	630-1644	630-1644	630-1645	630-1645
TL 524 P, TL 524 PI, TL 524 PH (trinocular head)	630-1747	630-1749	630-1747	630-1748	630-1749	630-1747 + 630-1645	630-1746
TL 82 4BF, TL 824 PH (trinocular head)	630-1747	630-1747 + 630-1644	630-1747	630-1748	630-1749	630-1747 + 630-1645	630-1747 + 630-1645
IT series							
IT 404 (Trinocular head)	Ready to use -	630-1644	Ready to use	630-1768	630-1768	630-1645	630-1767
IT 405 (Trinocular head)	630-2172	630-1892	630-2172	630-1891	630-1892	630-2172 + 630-1645	630-2170
IT 404 E (Trinocular connection)	Ready to use -	630-1644	Ready to use	630-1644 + 630-2412	630-1644 + 630-2412	630-1645	630-1767
350 series							
SZT 350, SZTL 350 and SZT 350 OH (trinocular head)	Ready to use -	630-1644		630-1792	630-1793	630-1801 + 630-2412	630-1791



## **Wooden transport cases**

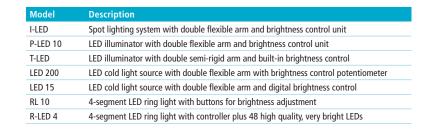
Two models available for upright and stereo microscopes.

Description	LxWxH (cm)	Cat. No.
Wooden box with sliding front cover for series 100, 200 and stereo 200 microscopes	27x27x46	630-1809
Wooden box with lock for series 300, 500 and stereo 300 microscopes	34x27x46	630-1810



## VisiLight® cold light sources

VWR LED cold light sources offer several lighting possibilities for stereomicroscopy: LED illuminators (2 arms), LED generator with 2-arm gooseneck and ring light sources.





### **LED illuminating systems**

Specially designed illuminating system for various applications in industry and science. Modern LED technology makes this product a professional and efficient alternative to conventional halogen illuminating systems. The high power LEDs have an average lifespan of about 50 000 operating hours. The light intensity can be continuously adjusted with a brightness control system. I-LED models can be fixed on a stand, or on a microscope stand.



# **LED cold light sources**

VisiLight® LED cold light sources are cost efficient and an energy saving alternative to conventional cold light sources in transferring a larger part of the energy to visible light with an extremely long lifetime of around 50 000 working hours.



## **LED ring lights**

RL 10 with intensity light control and R-LED 4-ring light

- 4-segment LED ring light with 48 high quality very bright LEDs
- Power saving and eco friendly lighting system: 7 W only
- Adaptable with reducing rings to diameters up to 50 mm
- Infinitely variable and well balanced brightness control between 0 and 100% with control box
- · Homogeneous, flicker-free lighting
- Wide range of accessories:
  - Diffuser
  - · Polarisation filter set
  - · Adapter rings



## **Technical specifications**

Model	Description	Power consumption	Illumination at 10 cm	Colour temperature
I-LED	LED lighting system	2x 3 W	-	-
P-LED 10	LED illuminator	-	170 000 Lux	Pure white, 6300 K
T-LED*	LED illuminator	2x 3 W	-	Pure white, 6000 K
LED 200	Cold light source	14 W LED	70 000 Lux	Pure white, 6300 K
LED 15	Cold light source	12 W LED	-	6000 K
RL 10	4-segment ring light illuminator	-	30 000 Lux	Pure white, 6300 K
R-LED 4	4-segment ring light	-	-	7000 K

### **Ordering information**

Description	Cat. No.
I-LED 2 spot lighting system with double flexible arm and brightness control unit, EU-plug	631-1755
I-LED 2 spot lighting system with double flexible arm and brightness control unit, UK-plug	631-1774
Holder with base plate for I-LED 2, 330x220 mm, 200 mm holder	631-1770
T-LED 2-arm LED illuminator including LED modules, pure white spot	631-0995
P-LED 10 dual arm flexible LED illumination	631-1086
LED 200 cold light source with 2 flexible arms	631-1085
LED 15 cold light source including 2 fibre optic light guides	631-1038
RL 10 ring light with brightness control system and 60 mm adapter	631-1087
R-LED 4 segment ring light with 48 LED's, neutral white	631-0993
Ring light adapter, Ø 50 mm for R-LED 4	631-1779
Ring light adapter, Ø 58 mm for R-LED 4	631-1782
Ring light adapter, Ø 60 mm for R-LED 4	631-0955
Ring light adapter, Ø 62 mm for R-LED 4	631-0956



## **Digital camera VisiCam® Pro HDMI**

High performance full HD HDMI camera for video and photo applications.

VisiCam® Pro HDMI offers the highest quality images through a simple connection to projector, TV monitor or PC monitor. It provides live video images in high definition (full HD 1080 p), the ability to record photos and videos directly on a 2 GB SD card (included) or connected to a PC, to exploit the full potential of the "IsView" software.

The VisiCam® Pro HDMI digital camera is supplied with a 6 Mpixels sensor, 2 GB internal memory, C-mount connection and dual USB/HDMI port.

The best solution for various applications such as in the education field, industrial quality control and all laboratories.

Sensor	1 - 2,8" Sony Cmos
Resolution	3264x1836 (6 MP)
Key features	On/off, image capture, video capture, set-up, automatic white balance & zoom
External ports	HDMI, USB, Micro SD
HDMI resolution	Yes
Software	VISIONlite <sup>™</sup> , IsView
HDMI features	7 programmable lines (vertical/horizontal). Black/ white. Contrasts sharpness, saturation, brightness gamma & image mirror
C-mount	Yes
Optical adapter	None
Adapters for stereo microscopes	None
Calibration slide	76x24 mm micrometric
ptical adapter dapters for stereo microscopes	gamma & image mirror  Yes  None  None

## **Ordering information**

Description	Cat. No.
VisiCam® Pro HDMI digital camera with 2 GB Micro SD (max. 4 GB supported), Micro SD reader, HDMI cable,	630-2175
USB cable, CD Rom, VISIONlite™ and IsView software	



## **Visicam digital cameras**

Model	Description
MC-280	Eyepiece camera
VisiCam® 1,3	1,3 MP camera
VisiCam® 3	3 MP camera
VisiCam® 5	5 MP camera
VisiCam® 10	10 MP camera

VisiCam® digital cameras are high resolution colour instruments with a 2,0 USB interface and large image sensor for a large field of view. These features allow capture of high quality images and videos. The VisiCam® analyser software provides most standard functions for image analysis in microscopy such as marking, counting, measuring, storage, auto/manual white balance and objectives calibration.

- Capture format: .JPG, .PNG, .TIF, .TGA, .PCX, .JP2, .JPC, .PGX, .RAS, .PNM
- Compatible with Windows® XP, Windows® Vista and Windows® 7 Supplied with a 0,5× magnification eyepiece adapter, calibration slide, VisiCam® analyser software and drivers.

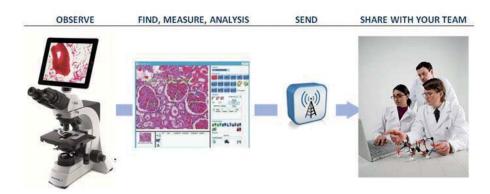
The tablet camera can capture, store, analyse and transmit every image. It can be used in chemistry, geology, the electronic industry, research universities and production quality control. This stand-alone system can save space on your bench with a modern capture system.

- CMOS sensor camera
- Resolution of 5 MP (2592×1936)

#### **Ordering information**

Description	Cat. No.
MC-280 eyepiece camera, 330 000 pixels	611-2257
VisiCam® 1,3 / 1,3 MP camera	630-1030
VisiCam® 3, 3 MP camera	630-1031
VisiCam® 5, 5 MP camera	630-1032
VisiCam® 10, 10 MP camera	630-1484
Adapter for VisiScope® series 200 and 300 trinocular microscopes	630-1644
Adapter for VisiCam® 3,5/10 and tablet camera for series 500 trinocular microscopes	630-1749
Adapter for VisiScope® series 300 trinocular stereo microscopes	630-1793
Adapter for inverted microscopes	630-1768

# VisiCam® TC 10 and TC 100 tablet cameras Wi-Fi connected system with large LED display



- Can be installed on almost any trinocular microscope with the correct C-mount adapter
- Stand-alone system of high resolution (5 MP) camera plus tablet with professional imaging software
- User friendly just plug, observe, capture, send and share
- Save space on your bench with a High-Tech capture system
- Connectable to video projectors using a HDMI cable

## **Technical specifications**

Model	TC 101	TC 100
Optical system	CMOS sensor ½, 5", 5 MP (2592x1936)	
Format	720 P x 15 FPS	
White balance	Manual / Automatic / Preset	Continuous auto
Pixel size	2,2x2,2 µm	
Optical connection	Universal C-mount	
Operating system	Android 2.3	Windows 8.1, 32 bit
CPU	1,2 GHz (ARM Cortex A8 Core). RAM: 1 GB DDR3	Intel atom Z3735F, Quad core (4 core)
Storage capacity	8 GB expandable via SD card	Ddd 32 GB
Network	Wi-Fi, Bluetooth	Wireless IEEE 802.11a/b/g/n, Bluetooth 4.0
LCD / LED resolution	TC 10: 1024x768 pixels	TC 100: 1280x800 pixels, 16 , 16/10 (WXGA)
Interfaces	Mini USB 2.0, HDMI, card slot, 3,5 mm standard stereo earphone slot	Micro USB, microphone, micro SD card reader, micro HDMI, headphone port
Imaging software	Live display, image capture, video recording, image size, clor enhancement, brightness gain, data export to pdf or excel formats.	
Video formats	MPEG-2, MPEG-4, DIVx, MJPEG, VC1	
Image formats / battery life	JPEG, GIF, BMP, PNG / 10 h	JPEG, GIF, BMP, PNG / lithium-ion battery, 2x cell // 9 h
Applications	Browser, calculator, calendar, camera, clock and email	
Monitor	TC 10: LED display 9,7" touch screen capacitive multi-points TC 100: LED display 10,1", IPS multi-touch screen	
Power supply	100 – 240 V, DC 5 V, 2000 mA with EU and UK plugs	

## **Ordering information**

Description	Cat. No.
Visicam® TC 10 Tablet Camera - includes power supply, software for capture and image analysis, USB cable and user manual microscopes	630-1858
VisiCam® Tablet Camera TC 100 - includes power supply, software for capture and image analysis, USB and OTG cables plus user manual.  No adpater required to connect TC 100 on VisiScope® 384 , IT 404 and stereo microscopes 350	630-2174
Adapter to connect TC 100 to IT 405 trinocular microscopes	630-2172
Adapter to connect TC 10 on VisiScope® series 300 & 384 trinocular microscopes	630-1644
Adapter to connect TC 100 on VisiScope® series 500 trinocular microscopes	630-1747
Adapter to connect TC 10 to series 500 trinocular microscopes	630-1749
Adapter to connect TC 10 to VisiScope® series 350 trinocular stereo microscopes	630-1793
Adapter for trinocular Motic microscope BA 210	630-1503
2 m full size HDMI (19 pin HDMI Type A)	630-1888
Calibration slide	630-1123









#### Austria

VWR International GmbH Graumanngasse 7 1150 Vienna Tel.: +43 1 97 002 0 Fax: +43 1 97 002 600

E-mail: info@at.vwr.com

#### **Belgium**

VWR International bvba Researchpark Haasrode 2020 Geldenaaksebaan 464 3001 Leuven Tel.: 016 385 011 Fax: 016 385 385 E-mail: customerservice@be.vwr.com

#### **Czech Republic**

VWR International s. r. o. Veetee Business Park Pražská 442 CZ - 281 67 Stříbrná Skalice Tel.: +420 321 570 321 Fax: +420 321 570 320 E-mail: info@cz.vwr.com

#### **Denmark**

VWR - Bie & Berntsen Transformervej 8 2730 Herlev Tel.: 43 86 87 88 Fax: 43 86 87 90 E-mail: info@dk.vwr.com

### **Finland**

VWR International Oy Valimotie 9 00380 Helsinki Tel.: 09 80 45 51 Fax: 09 80 45 52 00 E-mail: info@fi.vwr.com

#### **France**

VWR International S.A.S. Le Périgares – Bâtiment B 201, rue Carnot 94126 Fontenay-sous-Bois cedex Tel.: 0 825 02 30 30 (0,15 € TTC/min) Fax: 0 825 02 30 35 (0,15 € TTC/min) E-mail: info@fr.vwr.com

#### Germany

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#### **Ireland / Northern Ireland**

VWR International Ltd / VWR International (Northern Ireland) Ltd Orion Business Campus Northwest Business Park Ballycoolin Dublin 15 Tel.: 01 88 22 222 Fax: 01 88 22 333

#### Italy

VWR International PBI S.r.l. Via San Giusto 85 20153 Milano (MI) Tel.: 02-3320311/02-487791 Fax: 800 152999/02-40090010 E-mail: info@it.vwr.com

F-mail: sales@ie vwr.com

#### **The Netherlands**

VWR International B.V. Postbus 8198 1005 AD Amsterdam Tel.: 020 4808 400 Fax: 020 4808 480 E-mail: info@nl.vwr.com

#### Norway

VWR International AS Haavard Martinsens vei 30 0978 Oslo Tel.: 02290 Fax: 815 00 940 E-mail: info@no.vwr.com

#### **Poland**

VWR International Sp. z o.o. Limbowa 5 80-175 Gdansk Tel.: 058 32 38 200 do 204 Fax. 058 32 38 205 E-mail: info@pl.vwr.com

#### **Portugal**

VWR International -Material de Laboratório, Lda Edifício Neopark Av. Tomás Ribeiro, 43- 3 D 2790-221 Carnaxide Tel.: 21 3600 770 Fax: 21 3600 798/9 E-mail: info@pt.vwr.com

#### **Spain**

VWR International Eurolab S.L.
C/ Tecnología 5-17
A-7 Llinars Park
08450 - Llinars del Vallès
Barcelona
Tel.: 902 222 897
Fax: 902 430 657
F-mail: info@es ywr.com

#### Sweden

VWR International AB Fagerstagatan 18a 163 94 Stockholm Tel.: 08 621 34 00 Fax: 08 621 34 66

E-mail: kundservice@se.vwr.com

#### **Switzerland**

VWR International GmbH Lerzenstrasse 16/18 8953 Dietikon Tel.: 044 745 13 13 Fax: 044 745 13 10 E-mail: info@ch.vwr.com

#### Turkey

Pro Lab Laboratuar Teknolojileri Ltd.Şti. a VWR International Company Orta Mah. Cemal Gürsel Caddesi Ördekcioglu Işmerkezi No.32/1 34896 Pendik - Istanbul Tel.: +90216 598 2900 Fax: +90216 598 2907 E-mail: info@pro-lab.com.tr

#### UK

VWR International Ltd Customer Service Centre Hunter Boulevard - Magna Park Lutterworth Leicestershire LE17 4XN Tel.: 0800 22 33 44 Fax: 01455 55 85 86 E-mail: uksales@uk.vwr.com

#### **Australia**

VWR International, Pty Ltd. Unit 1/31 Archimedes Place Murarrie, Queensland 4172 Tel.: 1300 727 696 Fax: 1300 135 123

#### China

VWR (Shanghai) Co., Ltd Rm.219 No. 2100, Dongming Road Pudong New District Shanghai 200126 Tel.:+86-21-5898 6888 Fax:+86-21-5855 8801 E-mail: info\_china@vwr.com

#### India

VWR Lab Products Private Limited 135/12, Brigade Towers, 2nd Floor Front wing, Brigade Road, Bengaluru, India – 560 025 Tel.: +91-80-41117125/26 (Bengaluru) Tel.: +91-2522-647911/922 (Mumbai) Fax: +91-80-41117120 E-mail: vwr\_india@vwr.com

#### **New Zealand**

Global Science - A VWR Company 241 Bush Road Albany 0632, Auckland Tel.: 0800 734 100 Fax: 0800 999 002 E-mail: sales@globalscience.co.nz

#### **Singapore**

VWR Singapore Pte Ltd 18 Gul Drive Singapore 629468 Tel.: +65 6505 0760 Fax: +65 6264 3780 E-mail: sales@sg.vwr.com

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