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Leica E Series

Technical information

Leica
MICROSYSTEMS

Leica E Series – Features, specifications

| Stereomicroscope | Leica ES2 | Leica EZ4 10× | Leica EZ4 16× |
|--|--|--|--|
| Type of microscope | 10° Greenough | 10° Greenough | 10° Greenough |
| Optical system | parfocal | parfocal | parfocal |
| Magnification changer | 2-level, 3:1 | zoom 4.4:1 | zoom 4.4:1 |
| Eyepieces for spectacle wearers | 10×/20 fixed | 10×/20 fixed | 16×/15 fixed |
| Diopter correction | – | – | – |
| Viewing angle | 60° | 60° | 60° |
| Working distance | 100mm | 100mm | 100mm |
| Magnification range | 10×/30× | 8× to 35× | 12.8× to 56× |
| Maximum resolution | 159 Lp/mm | 170 Lp/mm | 170 Lp/mm |
| Maximum numerical aperture | 0.053 nA | 0.057 nA | 0.057 nA |
| Object field diameter | 20mm / 6.7mm | 5.7 to 25mm | 4.3 to 18.8mm |
| Eyecups | replaceable | replaceable | replaceable |
| Interpupillary distance | 50 to 75mm | 50 to 75mm | 50 to 75mm |
| Beam path | 100% visual | 100% visual | 100% visual |
| Focusing drive | Individually adjustable ease of movement, 75mm travel | Individually adjustable ease of movement, 75mm travel | Individually adjustable ease of movement, 75mm travel |
| Grip | integrated | integrated | integrated |
| Illumination system | | | |
| LED incident light and transmitted light | integrated, independent or combined | integrated, independent or combined, dimmable | integrated, independent or combined, dimmable |
| Control | On/off switch | membrane switch | membrane switch |
| Incident light method | angled incident light with three upper LEDs | choice of 3 methods: maximum intensity with 5 LEDs, angled incident light with LEDs, side light with 3 LEDs (patent pending) | choice of 3 methods: maximum intensity with 5 LEDs, angled incident light with LEDs, side light with 3 LEDs (patent pending) |
| Dimmer | – | yes, for incident and transmitted light | yes, for incident and transmitted light |
| Auto OFF | – | after 60 minutes | after 60 minutes |
| LED service life | approx. 25 000 hours | approx. 25 000 hours | approx. 25 000 hours |
| Light quality | homogeneous daylight, free of UV and IR | homogeneous daylight, free of UV and IR | homogeneous daylight, free of UV and IR |
| Maintenance | maintenance-free | maintenance-free | maintenance-free |
| Power supply | universal from 100V to 240V, voltage-sensitive, integrated | universal from 100V to 240V, voltage-sensitive, integrated | universal from 100V to 240V, voltage-sensitive, integrated |
| Digital camera | | | |
| Camera | – | – | – |
| Output | – | – | – |
| Analog video port | – | – | – |
| Integrated slot | – | – | – |
| Recording | – | – | – |
| Software | – | – | – |
| Accessories | | | |
| Measurement graticule/ stage micrometer | – | – | – |
| Other | | | |
| Dimensions and weights | 3.82kg, 180 × 255 × 365 | 3.8kg, 180 × 255 × 365 | 3.8kg, 180 × 255 × 365 |
| Ambient conditions, operation | +10°C to +40°C / rel. hum. to 35°C: 75% / atmospheric pressure 700 to 1060 hPa / storage: 20°C to 55°C | | |
| Storage and transport | –20°C to + 52°C / rel. hum. 10 – 95% (non-condensing) / atmospheric pressure 500 to 1200 hPa | | |
| Standards | CE Certified Europe / CSA Canadian Standards Association (USA, Canada) | | |

| Stereomicroscope | Leica EZ4, open | Leica EZ4 D 10x |
|---|--|--|
| Type of microscope | 10° Greenough | 10° Greenough |
| Optical system | parfocal | parfocal |
| Magnification changer | zoom 4.4:1 | zoom 4.4:1 |
| Eyepieces for spectacle wearers | replaceable, fixed or adjustable: 10×/20, 16×/16, 20×/12 not suitable for spectacle wearers | 10×/20 fixed |
| Diopter correction | from +5 to –5 (adjustable eyepieces) | – |
| Viewing angle | 60° | 60° |
| Working distance | 100mm | 100mm |
| Magnification range | depending on eyepieces used: 8× to 70× | 8× to 35× |
| Maximum resolution | 170 Lp/mm | 170 Lp/mm |
| Maximum numerical aperture | 0.057 nA | 0.057 nA |
| Object field diameter | depending on eyepieces used: 3.4 to 25mm | 5.7 to 25mm |
| Eyecups | replaceable | replaceable |
| Interpupillary distance | 50 to 75mm | 50 to 75mm |
| Beam path | 100% visual | 50% visual and 50% video/photo |
| Focusing drive | individually adjustable ease of movement, 75mm travel | individually adjustable ease of movement, 75mm travel |
| Grip | integrated | integrated |
| Illumination system | | |
| LED incident light and transmitted light | integrated, independent or combined, dimnable | integrated, independent or combined, dimnable |
| Control | membrane switch | membrane switch |
| Incident light method | choice of 3 methods: maximum intensity with 5 LEDs, angled incident light with LEDs, side light with 3 LEDs (patent pending) | choice of 3 methods: maximum intensity with 5 LEDs, angled incident light with LEDs, side light with 3 LEDs (patent pending) |
| Dimmer | yes, for incident and transmitted light | yes, for incident and transmitted light |
| Auto OFF | after 60 minutes | after 60 minutes |
| LED service life | approx. 25 000 hours | approx. 25 000 hours |
| Light quality | homogeneous daylight, free of UV and IR | homogeneous daylight, free of UV and IR |
| Maintenance | maintenance-free | maintenance-free |
| Power supply | universal from 100V to 240V, voltage-sensitive, integrated | universal from 100V to 240V, voltage-sensitive, integrated |
| Digital camera | | |
| Camera | optional: Leica DC150 with adapter | integrated, 3.0 megapixel CMOS |
| Output | – | USB 2.0 |
| Analog video port | – | RCA, video, composite for projector, monitor, video recorder for SD (Secure Digital) cards |
| Integrated slot | – | integrated button for image recording |
| Recording | – | software for PC and MAC |
| Software | – | |
| Accessories | | |
| Measurement graticule/ stage micrometer | for length measurements, for use with adjustable eyepieces | – |
| Other | | |
| Dimensions and weights | 3.64kg, 180 × 255 × 365 | 4.17kg, 180 × 255 × 365 |
| Ambient conditions, operation | 10°C to 40°C / rel. hum. to 35°C: 75% / atmospheric pressure 700 to 1060 hPa / storage: 20°C to 55°C | |
| Storage and transport | –20°C to + 52°C / rel. hum. 10 – 95% (non-condensing) / atmospheric pressure 500 to 1200 hPa | |
| Standards | CE Certified Europe / CSA Canadian Standards Association (USA, Canada) | |

Leica E Series – Optical data

| ES2 (10 447 202) | | | | EZ4 (10 447 197) and EZ4 D with 10× eyepieces (10 447 200) | | | |
|------------------|-----------------------------------|---------------------|----------------------|--|-----------------------------------|---------------------|----------------------|
| Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm | Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm |
| 10×/20 | 10 | 10× | 20 | 10×/20 | 8 | 8× | 25 |
| | 30 | 30× | 6.7 | | 10 | 10× | 20 |
| | | | 12.5 | | 12.5× | 16 | |
| | | | 16 | | 16× | 12.5 | |
| | | | 20 | | 20× | 10 | |
| | | | 25 | | 25× | 8 | |
| | | | 30 | | 30× | 6.7 | |
| | | | 35 | | 35× | 5.7 | |

| EZ4 with 16× eyepieces (10 447 198) | | | | EZ4 without eyepieces (10 447 199) + eyepieces 10×/20 | | | |
|-------------------------------------|-----------------------------------|---------------------|----------------------|---|-----------------------------------|---------------------|----------------------|
| Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm | Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm |
| 16×/15 | 13 | 12.8× | 18.8 | 10×/20 | 0.8 | 8× | 25 |
| | 16 | 16× | 15 | | 1 | 10× | 20 |
| | 20 | 20× | 12 | | 1.25 | 12.5× | 16 |
| | 25 | 25.6× | 9.4 | | 1.6 | 16× | 12.5 |
| | 32 | 32× | 7.5 | | 2 | 20× | 10 |
| | 40 | 40× | 6 | | 2.5 | 25× | 8 |
| | 50 | 48× | 5 | | 3 | 30× | 6.7 |
| | 56 | 56× | 4.3 | | 3.5 | 35× | 5.7 |

| EZ4 without eyepieces (10 447 199) + eyepieces 16×/16 | | | | EZ4 without eyepieces (10 447 199) + eyepieces 20×/12 | | | |
|---|-----------------------------------|---------------------|----------------------|---|-----------------------------------|---------------------|----------------------|
| Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm | Eyepieces | Position at magnification-changer | Magnification total | Object field Ø in mm |
| 16×/16 | 0.8 | 12.8× | 20 | 20×/12 | 0.8 | 16× | 15 |
| | 1 | 16× | 16 | | 1 | 20× | 12 |
| | 1.25 | 20× | 12.8 | | 1.25 | 25× | 9.6 |
| | 1.6 | 25.6× | 10 | | 1.6 | 32× | 7.5 |
| | 2 | 32× | 8 | | 2 | 40× | 6 |
| | 2.5 | 40× | 6.4 | | 2.5 | 50× | 4.8 |
| | 3 | 48× | 5.3 | | 3 | 60× | 4 |
| | 3.5 | 56× | 4.6 | | 3.5 | 70× | 3.4 |

Leica E Series Assembly – diagram



Leica ES2 (10×)
10 447 202



Leica EZ4 (10×)
10 447 197



Leica EZ4 (16×)
10 447 198



Leica EZ4
10 447 199



Leica EZ4 D (10×)
10 447 200

Leica DC150 camera



Low eyepoint eyepieces:

Eyepieces, fixed:
10×/20 (10 447 281)
16×/16 (10 447 132)
20×/12 (10 447 134)

Eyepieces, adjustable:
10×/20 (10 447 282)
16×/16 (10 447 133)
20×/12 (10 447 135)

High eyepoint eyepieces:

Eyepieces, fixed:
10×/20B (10 447 278)
16×/15B (10 447 138)

Eyepieces, adjustable:
10×/20B (10 447 280)
16×/15B (10 447 139)

Leica E Series – Standard delivery

E Series stereomicroscopes

- 10 447 202 Leica ES2 with 10× eyepieces, 2 step stereomicroscope (3:1) 10× and 30× magnification, 60° eyetube angle, 100 mm working distance, high eyepoint eyepieces, integrated LED illumination for incident and transmitted light, power supply 100 – 240V
- 10 447 197 Leica EZ4 with 10× eyepieces, 4.4:1 zoom ratio, magnification from 8–35×, 60° eyetube angle, 100mm working distance, high eyepoint eyepieces, integrated LED illumination for incident and transmitted light, power supply 100 – 240V
- 10 447 198 Leica EZ4 with 16× eyepieces, 4.4:1 zoom ratio, magnification from 12.8–56×, 60° eyetube angle, 100mm working distance, high eyepoint eyepieces, integrated LED illumination for incident and transmitted light, power supply 100 – 240V
- 10 447 199 Leica EZ4 without eyepieces 4.4:1 zoom ratio, 60° eyetube angle, 100mm working distance, integrated LED illumination for incident and transmitted light, power supply 100 – 240V
- 10 447 200 Leica EZ4 D with 10× eyepieces, 4.4:1 zoom ratio, magnification from 8–35×, 60° eyetube angle, 100mm working distance, high eyepoint eyepieces, integrated CMOS camera 3.0 Megapixel, USB2, PAL/NTSC, integrated LED illumination for incident and transmitted light, power supply 100 – 240V

Eyepieces for EZ4 with open tubes

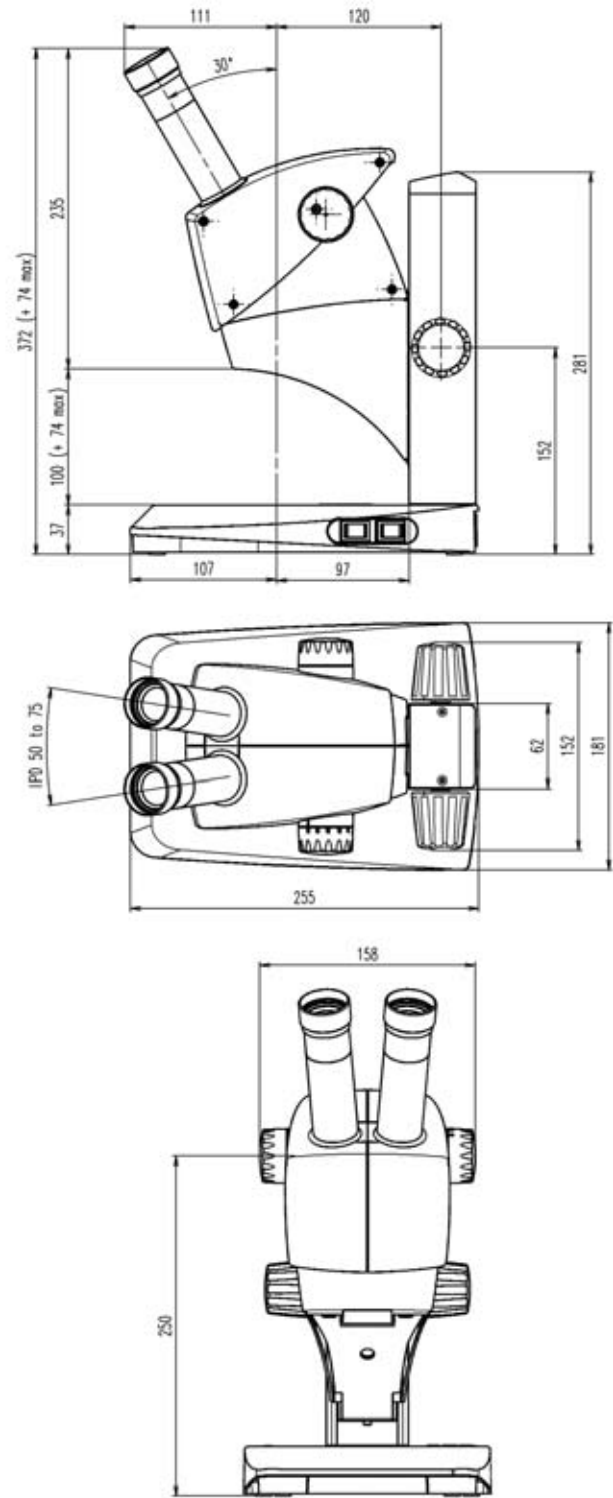
- 10 447 281 Eyepiece 10×/20, fixed, E Series
- 10 447 282 Eyepiece 10×/20, adjustable, E Series
- 10 447 132 Eyepiece 16×/16, fixed, S and E Series
- 10 447 133 Eyepiece 16×/16, adjustable, S and E Series
- 10 447 134 Eyepiece 20×/12, fixed, S and E Series
- 10 447 135 Eyepiece 20×/12, adjustable, S and E Series
- 10 447 278 Eyepiece 10×/20B, for spectacle wearers
- 10 447 280 Eyepiece 10×/20B, adjustable, for spectacle wearers
- 10 447 138 Eyepiece 16×/15B, for spectacle wearers
- 10 447 139 Eyepiece 16×/15B, adjustable, for spectacle wearers

Accessories for measurements with adjustable eyepieces

- 10 446 447 Graticule 10mm / 0.1mm, S Series
- 10 446 448 Graticule 5mm / 0.1mm, S Series
- 10 446 449 Graticule 5mm / 0.05mm
- 10 446 450 Crosshair graticule
- 10 447 000 Graticule, 100 graduations / 0.002"
- 10 447 001 Graticule, 100 graduations / 0.001"
- 10 447 002 Graticule, 150 graduations / 0.0005"
- 10 310 345 Stage micrometer 50mm, 0.1 / 0.01mm graduation
- 10 447 037 Stage micrometer 1", 0.001" graduation
- 10 447 477 Soft carrying case
- 10 447 496 Leica ETB (Educational Tool Box): Educational CD-Rom, Cleaning-Set, Poster of an E-Series-Stereomicroscope

Leica ES2 dimensions

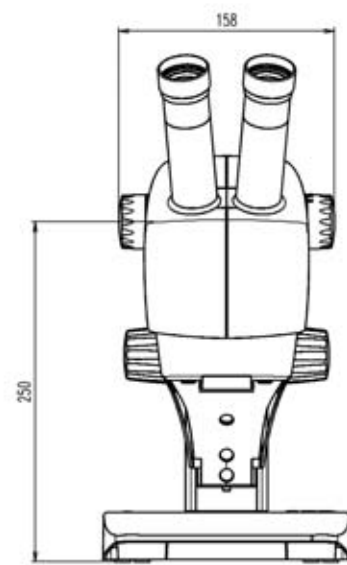
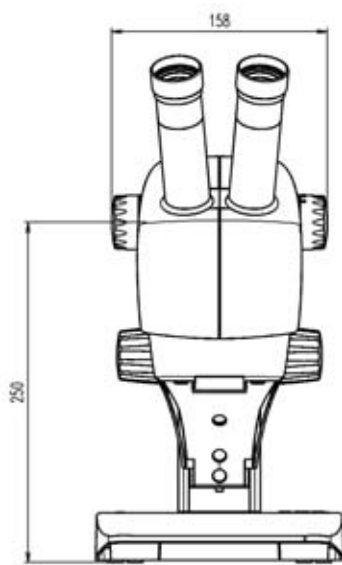
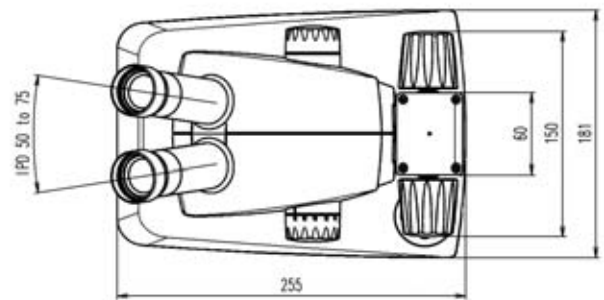
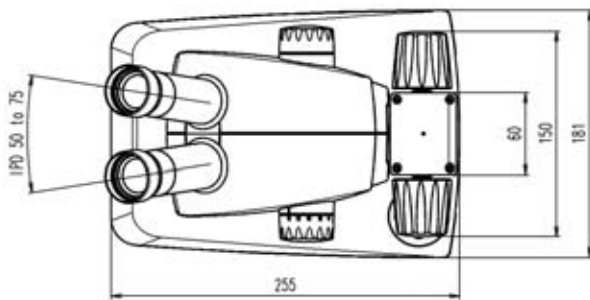
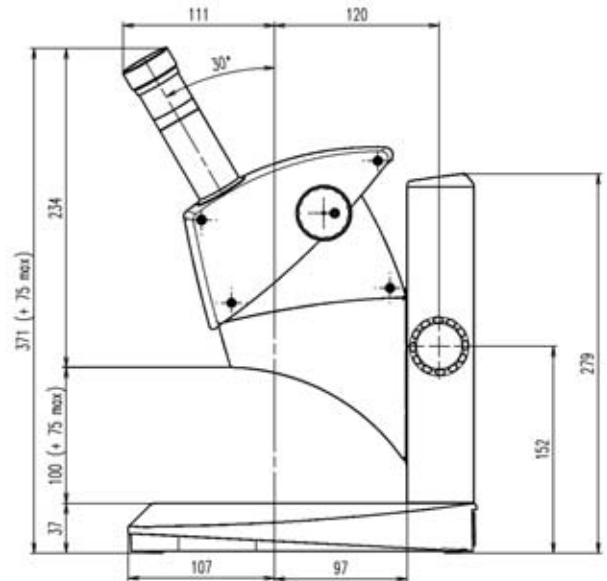
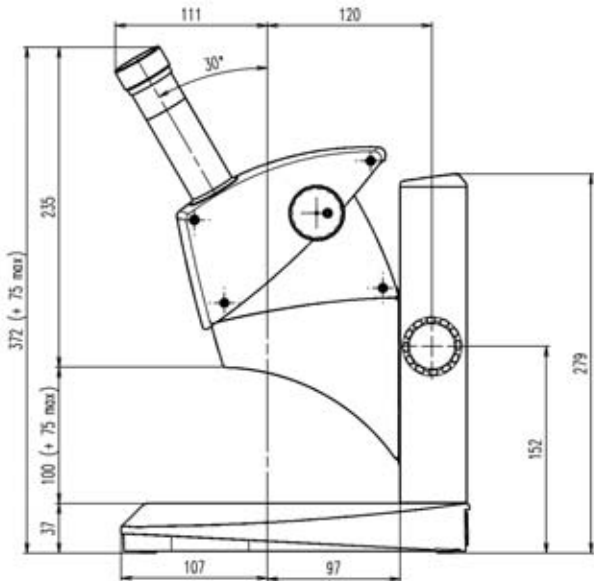
Measurements in mm



10 447 202 Leica ES2

Leica EZ4 dimensions

Measurements in mm

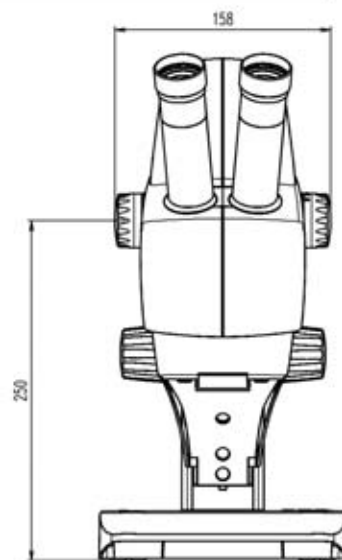
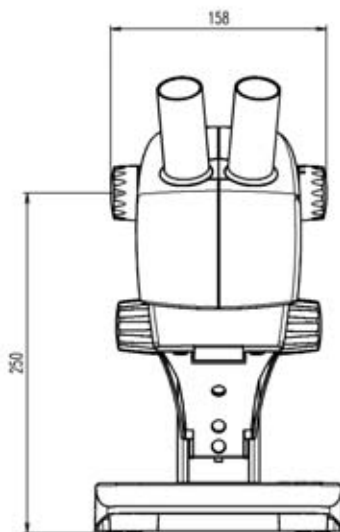
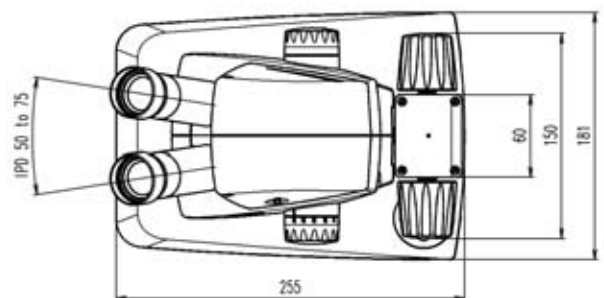
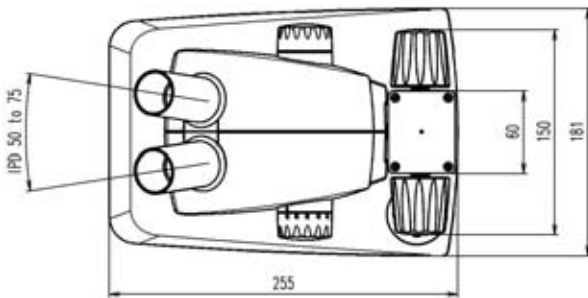
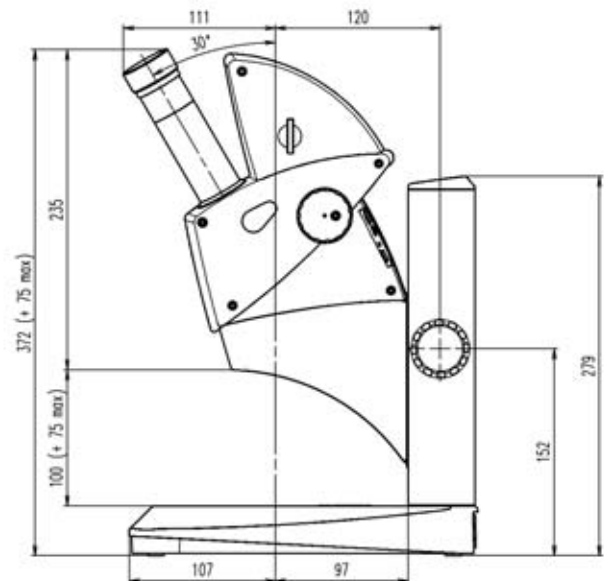
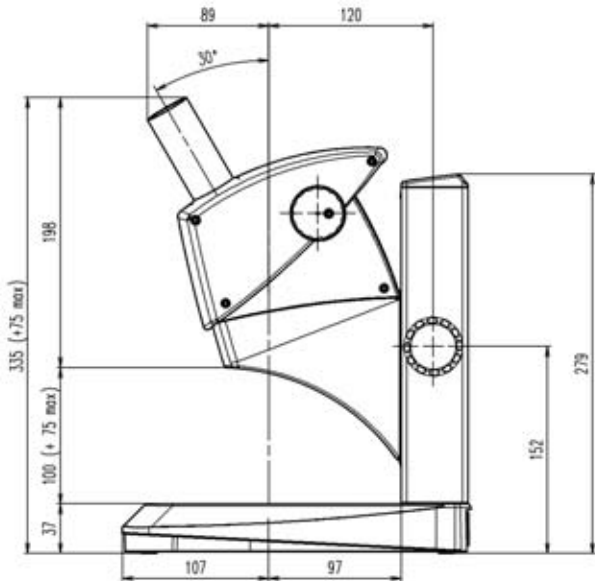


10 447 197 Leica EZ4 with 10x eyepieces

10 447 198 Leica EZ4 with 16x eyepieces

Leica EZ4 D dimensions

Measurements in mm



10 447 199 Leica EZ4 without eyepieces

10 447 200 Leica EZ4 D (with 10x eyepieces and integrated digital camera)

Information material

Stereomicroscopes, zoom systems and accessories

All brochures available in German, English, French, Spanish, Italian.

For M and S series stereomicroscopes, manuals are available in German, English, French, Spanish, Italian, Danish, Swedish, Dutch, Finnish, Greek, Portuguese, Estonian, Latvian, Lithuanian, Polish, Czech, Slovenian, Hungarian, Slovak

Please visit our website: www.leica-microsystems.com

There you will find the latest information and updates as well as numerous examples of practical application for our stereomicroscopes in industry and life science. You can also view, print and save any brochures and the latest manuals.

| | |
|---|----------|
| Stereomicroscope Leica MS5, MZ6 | M1-141-0 |
| Stereomicroscope Leica MZ7 _s | M1-175-0 |
| Stereomicroscope Leica MZ9 _s | M1-195-0 |
| Stereomicroscope Leica MZ12 _s | M1-125-0 |
| Stereomicroscopes Leica MZ16 A and MZ16 A | M1-116-0 |
| Fluorescence stereomicroscope Leica MZ16 F | M1-116-8 |
| Motorized fluorescence stereomicroscope Leica MZ16 FA | M1-116-5 |
| Leica FluoCombi III™ for Leica fluorescence stereomicroscopes | M1-166-2 |
| Leica StereoZoom® Greenough stereomicroscopes | M1-188-0 |
| Leica S8 APO StereoZoom®, natural science | M1-188-3 |
| Leica S8 APO StereoZoom®, technology | M1-188-4 |
| Zoom systems Leica Z6 APO and Z16 APO | M1-416-0 |
| Motorized zoom systems Leica Z6 APO A & Z16 APO A | M1-417-0 |
| Leica MacroFluo™ fluorescence macroscope | M1-416-2 |
| Swing-arm stands | M1-217-1 |
| Leica stereomicroscopy bases with Rottermann Contrast™ technology | M1-218-0 |
| Leica MATS heating stages | M1-227-0 |
| Leica L2 cold-light source | M1-288-0 |
| Leica L5 FL cold-light fluorescence system | M1-205-1 |
| Leica ErgoModules® | M1-215-2 |
| Leica IC A video module for Leica M stereomicroscopes | M1-393-1 |
| Leica ICC A video module for Leica M stereomicroscopes | M1-393-2 |
| Leica MPS30 photoautomat | M1-330-0 |
| Leica MPS60 photoautomat | M1-360-0 |
| Leica colposcope | M1-280-0 |

Digital cameras & image processing/analysis software

| | |
|--|----------|
| Leica ICD integrated digital camera | M1-393-4 |
| 3D display system: Leica IC 3D, StereoExplorer, ASD-3D-display | M1-525-5 |
| Leica DFC280 FireWire color camera system | M1-398-2 |
| Leica DFC300 FX FireWire color camera system | M1-398-1 |
| Leica DFC340 FX FireWire monochrome | M1-399-3 |
| Leica DFC350 FX FireWire monochrome camera system | M1-397-8 |
| Leica DFC420 FireWire color camera system | M1-399-5 |
| Leica DFC490 High-performance FireWire camera system | M1-399-4 |
| Leica DFC500 High-performance FireWire camera system | M1-399-2 |
| Leica DC150 Digital camera system | M1-398-4 |
| Leica IM1000 Image Manager image management system | M1-502-0 |
| Leica QWin for quantitative microscopy | M1-511-0 |
| Leica Q550MW LAS Image Overlay | M1-555-0 |
| LAS Multifocus | M1-525-1 |
| LAS Reticule | M1-525-2 |
| LAS Multitime | M1-525-3 |
| LAS Multistep | M1-525-4 |
| LAS Interactive Measurement | M1-525-5 |
| LAS Extended Annotation | M1-525-6 |
| | M1-525-7 |

 www.leica-microsystems.com/stereomicroscopy


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