



Product Information  
Version 1.0

## **ZEISS Stemi 508**

Your Apochromatic Stereo Microscope with 8:1 Zoom  
for Excellent Image Contrast and Color Accuracy



We make it visible.

## Your Apochromatic Stereo Microscope with 8:1 Zoom for Excellent Image Contrast and Color Accuracy

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Stemi 508 is compact, reliable and equipped with optics and mechanics designed for heavy workloads. With the large 36 mm object field you always keep the overview of your sample. The 8:1 zoom then allows to bring details up to 50× magnification. You even have larger samples? Add interchangeable optics and observe an area of up to 122 mm, making Stemi 508 a top performer in its class. Stemi 508 offers better ergonomics than any other Greenough-type stereo microscope: The low viewing angle of 35° lets you keep a relaxed posture even after hours of work.

With Stemi 508 you observe and document your samples exactly as they are: rich in detail, sharp in focus and free from distortion or color fringes. Stemi 508 is your robust all-rounder for everyday lab work and industrial inspections: accurate, ergonomic – and always easy to use.



# Simpler. More Intelligent. More Integrated.

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## Large 8:1 Zoom with Apochromatic Correction

Stemi 508's apochromatic zoom optics and efficient stray light suppression give you a crisp three-dimensional image. You visualize your objects distortion-free and without color fringes, in fields of view up to 122 mm. The large 8:1 zoom lets you observe even minute structures in high contrast. Select from a range of apochromatic front optics and eyepieces to reach any magnification between 2x and 250x. Double your resolution or enjoy large working distances up to 287 mm without compromising optical quality – it's your choice.

## Precise Mechanics for Heavy Workloads

Stemi 508 is designed for heavy workloads, using durable and reliable mechanics. Its precise zoom adjustment ensures a well-balanced 3D impression: enjoy relaxed stereo viewing without eye-strain. Whether you zoom continuously variable or in reproducible mode activating click stops – the image stays sharply focused over the whole magnification range. You often work on the microscope for long hours and appreciate a comfortable posture. The low viewing angle of 35° makes Stemi 508 more ergonomic than any other Greenough-type stereo microscope.

## Created for All Your Applications

Choose from a wide range of different stands and accessories to get exactly what you need for your application. From compact stands to flexible and stable boom stands, from basic transmitted light to polarization contrast. Whether your object needs special illumination or simply the brightest light, you have various light guides to choose from. Position your specimen precisely by adding a gliding, tilting or rotating polarization stage. With Stemi 508 doc, there's always a c-mount adapter for ZEISS Axiocam cameras – interchangeable, to adapt any SLR camera or camcorder.



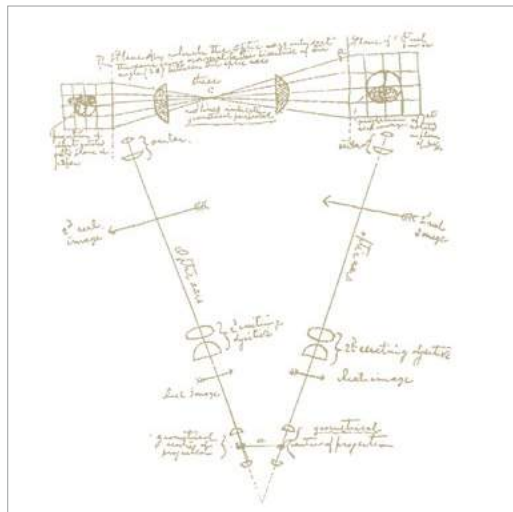
# Your Insight into the Technology Behind It

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## Greenough Stereoscopic Design

The basic idea behind a stereoscopic microscope is simple. It was formulated in 1896 by the biologist Horatio S. Greenough, who wanted to see small biologic samples magnified, but with the same quality as with unaided eyes. In other words, in three dimensions and with all the depth information he needed to understand the irregular shape of his specimen intuitively. He reckoned you could build a microscope with two separate beam paths facing the object from two directions, exactly as human eyes do when observing a small object at a distance of 250 mm. The brain would fuse the two images together and produce a spatial image of the object with a high degree of depth perception. This thinking led to the first factory-produced stereo microscope being developed by ZEISS.

Stemi 508 is a Greenough-type stereo microscope, utilizing long working distances for easy specimen handling and large fields of view. It is compact, rugged, simple to use, and easy to maintain ... and so typically employed for heavy workload applications, such as printed circuit board inspection, dissecting biological specimens, or similar routine tasks.



Hand drawing by Horatio S. Greenough (1896), leading to the world's first industrially-manufactured stereo microscope.



Stemi 508 is a Greenough type stereo microscope with twin body tubes, inclined by  $11^\circ$  – featuring a powerful 8:1 zoom



Beam path of a Greenough type stereo microscope

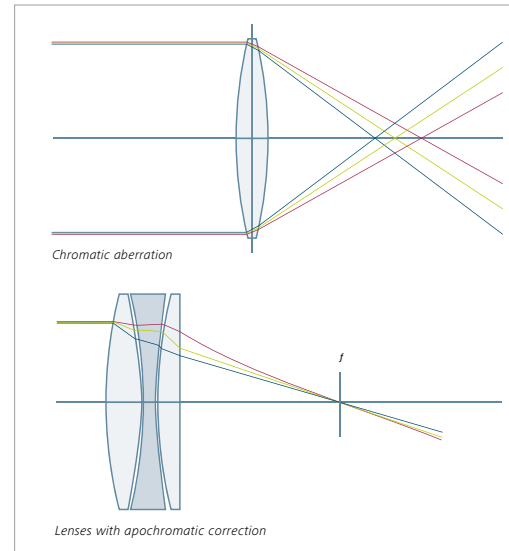


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## **Apochromatic Optics for Images Free of Color-fringes**

Producing microscopes with pre-calculated optical characteristics based on Abbe's calculation was already a huge step for ZEISS. But, especially working with large apertures Abbe recognized aberrations he called "chromatic differences of spherical aberrations" caused by the optical quality of the glass. As a result, different colors of light focus at different distances from the objective lens. Observed through a microscope objects appear to have colored fringes. It was already known that chromatic aberrations can be reduced by combining glasses with differing dispersion, eg achromatic doublets made of crown and flint glass. But to further increase the degree of chromatic correction, a larger number of lenses and optical glasses with special dispersive properties were needed. With the development of new optical glasses by Otto Schott, the production of apochromatic lenses by Carl Zeiss based on the calculation of Ernst Abbe could be commercialized. Apochromatic lenses correct the lens error for three colors (red, green and blue) of the visual spectrum by bringing the three wavelengths into focus in the same plane. Apochromatic objectives therefore produce images which are sharper and more brilliant. Therefore apochromatic objectives are favourable, whenever image quality is of importance doing evaluations and documentation.



### **1886**

First apochromatic microscope lens, a color-corrected objective lens for three wavelengths based on the calculations of Ernst Abbe. The foundation for this achievement was in part the concerted attempts by Abbe and Schott to improve optical glass.

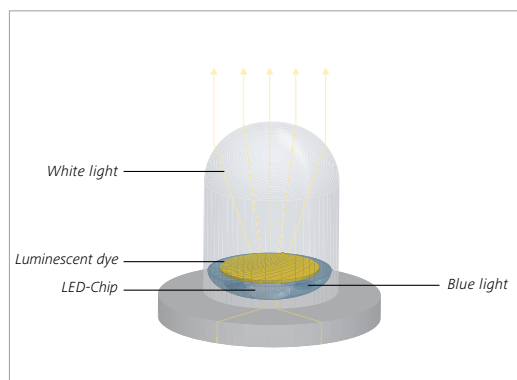


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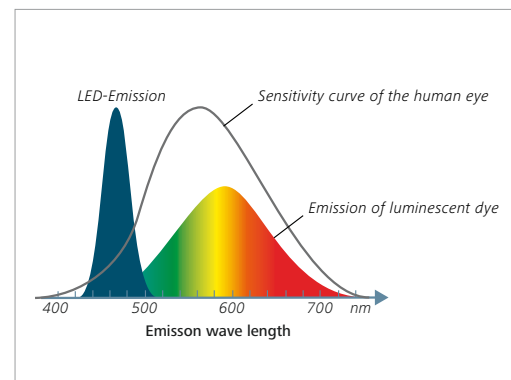
## White LEDs Replace Halogen Light for Microscopy Lighting

LEDs – light emitting diodes – are semiconductor diodes that emit visible light when a forward electric current is applied. The color of the light is nearly monochromatic and determined by the semiconductor material. To produce white light, blue LED chips are combined with different phosphors that convert a fraction of the blue light to longer wavelengths. The resulting LEDs show a broad, continuous emission spectrum. Given their excellent properties, white LEDs have largely replaced halogen lamps as standard illumination in stereo microscopy: White LEDs can be perfectly integrated into microscope stands since they are compact, maintenance-free and noiseless, and they don't generate vibration either. Since it doesn't contain any infrared or ultraviolet parts,

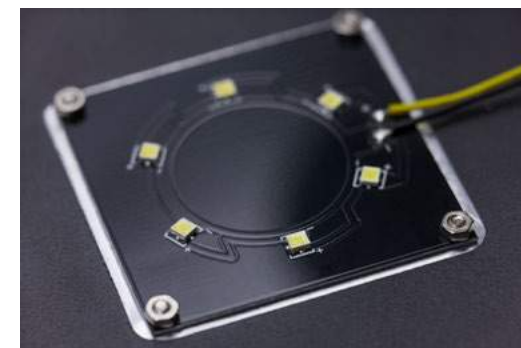


Typical design of white LEDs: a blue LED chip is coated with yellow phosphors that partly converts the blue light to longer wavelengths.

bright light of daylight quality (CCT 5000 – 6000 K) contrasts your objects in a gentle way. White LEDs rarely ever fail. Instead, their lifetime is defined by “lumen maintenance”, which is the operating time until the initial light output has degraded to 70%. At ZEISS we specify 25,000 hours equivalent over 12 years (a 5 day week, 8 hours per day). White LEDs are energy saving – their luminous efficiency already reaches fluorescent tubes – and convince with very short switch-on times. Even in the most intense fiber optic cold light sources, innovative high power LED packages have replaced 150 W and 250 W haloreflexor bulbs. In addition our CL 4500 LED features excellent color rendering index 90.



Spectral distribution of a phosphor-based white LED: blue LED light combines with a broadband phosphor spectrum.



The flat transmitted light unit in stand K EDU is powered by six white High Brightness LEDs. The LEDs are directly mounted on a printed circuit board. Its black color gives the dark background needed for transmitted light darkfield contrast.

# Expand Your Possibilities

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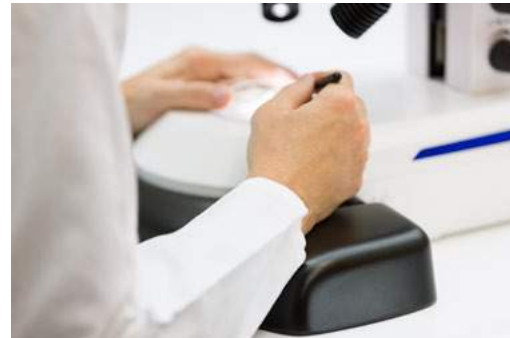
## Stand K – Compact. All-in-one. Including Illumination.



Workspace is limited in your lab or quality department. And you usually stow away your systems and set them up again. You often work with untrained or multiple users. In all these ways, the stand K line is made for you. With its small footprint and integrated LED illumination, a K stand turns your Stemi 508 into a compact all-in-one device that's easy-to-use and quick to pack up and reinstall wherever it's needed. To ensure the integrated LED illumination is optimized to your application range, choose from different stand versions and reflected light modules to configure your Stemi 508. All illuminations of stands K use intense white LEDs that are long life, maintenance-free and of daylight quality.



Stand K EDU is the smart choice for classroom environments with its flat transmitted light unit for bright- and darkfield. Add a single reflected light spot illuminator. Study, observe and determine your specimen in strong 3D contrast.



Stand K LAB's mirror-based transmitted light with the tiltable and shiftable mirror features brightfield, one-sided darkfield and oblique light – plus qualitative polarization contrast as an option. Add the ergonomic hand rest for extended sessions and the double arm gooseneck LED illumination for reflected light.



Stand K MAT optimizes your Stemi 508 for quality inspection or small parts assembly with reflected light control and ESD features. Add the segmentable ringlight, switch the setting from full circle to half or quarter circle mode, and push a key to change the light direction. You'll find scratches and defects without moving your object.

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## Stand N – Sophisticated Stand. Stages. Intense Fiber Optics.



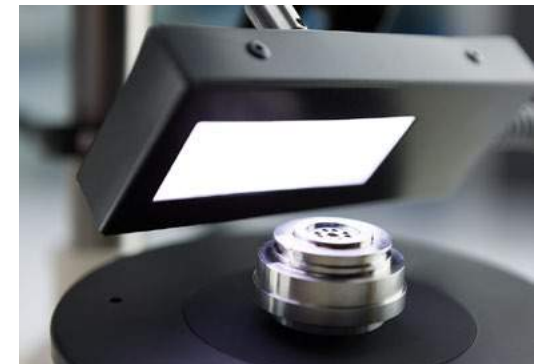
Stemi 508 is a high quality stereo microscope with a large zoom range, and excellent optics and mechanics – a sophisticated instrument that's equal to the most demanding tasks in failure analysis and industrial inspection. Stand N is equipped with a large stand base, 350 or 450 mm high column and Stemi carrier for precise focusing. It's ideal for specimens with a large footprint or increased height such as big machine or mechanical parts, or large PCBs. To tilt, move or rotate your specimen in a defined manner and finely adjust it, Stemi 508 offers ball-and-socket, gliding and rotating polarization stages. The CL 4500 LED fiber optic cold light source delivers the most intensive white LED light without infrared parts. This is optimal for color critical applications – daylight quality, with the same bright as a 150 W halogen lamp and excellent color rendering (CRI 90). Take advantage of a large range of light guides for special illumination contrasts: ring-lights for shadow-free bright- or darkfield illumination, single and dual spots for distinct shadow effects, line light for grazing light, diffuse illuminations for avoiding hotspots. Add polarization equipment to eliminate reflections.



*Inspect holes, threads and deepenings with vertical illuminator S. Its 45° mirror can be adjusted to avoid vignetting.*



*Line light S provides a homogeneous carpet of grazing light. Use it to contrast surface structures of large flat specimens with strong shadows.*



*The diffuse face light S provides a soft light that prevents any strong reflections. Ideal for inspecting and imaging shiny surfaces.*

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## Boom Stands – Stable, Flexible, with Large Operating Range.



There are various types of three-dimensional objects in stereo microscopy, and the applications are yet more diverse: customers often ask for different object details, even when looking at the same specimen. Your objects may be much larger than the footprint of any desktop stand. Or you may have to find and investigate a small specimen in a very large area of interest. Or you may be sharing your Stemi 508 with several colleagues and need to swing your microscope quickly and flexibly between workplaces. You could be, for example, a veterinary surgeon, forensic specialist, restorer, archeologist or dental technician: your applications will need a large boom stand. Big stands with extension arms make it easy to move your Stemi 508 to any point in a large operating range. It always remains stable enough to observe small object details in a smooth, steady image. Choose the cost-effective boom stand A with a single extension arm. Or the stable and easy-to-move ball-bearing boom stand SDA with a double extension arm. Or the spring-balanced tilting arm stand U, well balanced in height and flexible enough to adjust to each point in a large specimen volume. You will also need a large, free working distance, thus we recommend Stemi 508 with front optics 0.3x, 0.4x or variable front lens.



*The ball bearing horizontal arm of the double arm boom stand SDA ensures a large travel range and feather-light movement. Focus your specimen by turning the variable front lens instead of using the drive of your Stemi carrier.*



*Specimens with a maximum height difference of 143 mm can be focused ...*



*... without changing the actual viewing height of your Stemi 508. You profit from better ergonomics.*

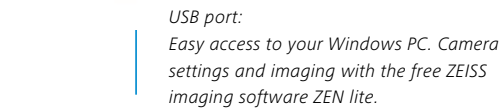
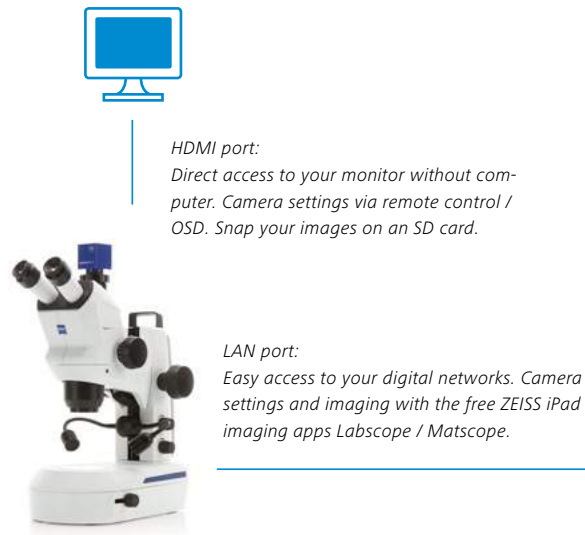


# Expand Your Possibilities

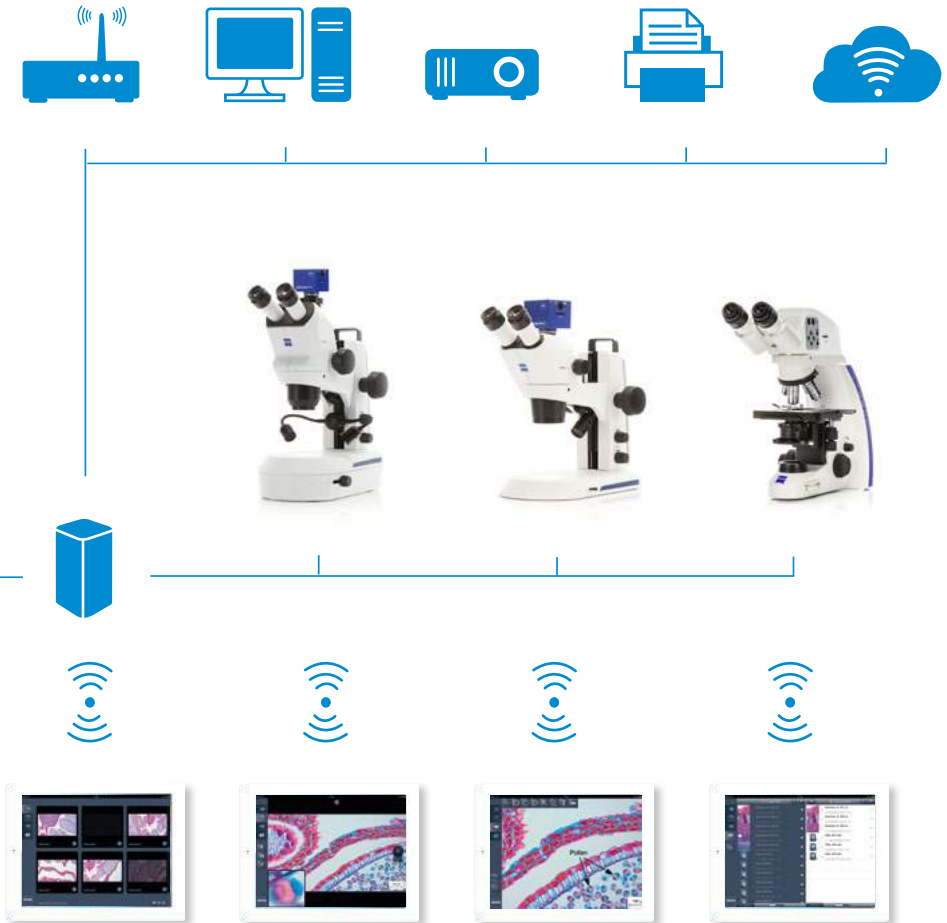
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## Document and archive your results.

And share the images throughout your digital network.  
It's full of possibilities.



Use Stemi 508 with ZEISS Axiocam ERc 5s and take advantage of its various interfaces to display the live window and snap your images.



Connect several Stemi 508s and additional ZEISS microscopes to the same router and set up your own digital network. Simultaneously observe the live images of all connected microscopes on each iPad in the net. It's easy to snap, edit and archive the individual images on your local server with the iPad imaging app Labscope.

# Tailored Precisely to Your Applications

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| Typical Applications, Typical Samples                                     | Task  | ZEISS Stemi 508 Offers   |
|---|---|--|
| Carry out advanced laboratory work in ...<br><b>Developmental Biology</b> | Observe development and growth of model organisms like spider crabs, chicken, mouse or zebra fish. Evaluate, sort, select or dissect eggs, larvae or embryos and use micromanipulators for injection. Document your results and prepare your samples for fluorescence imaging with light or confocal microscopes. | <ul style="list-style-type: none"> <li>■ Stemi 508 with 8:1 zoom delivers a high contrast stereoscopic image without color fringes or distortion. For relaxed stereoscopic viewing without eyestrain. The viewing angle of 35° provides an ergonomic sitting posture.</li> <li>■ To reduce work space requirements use compact stand K LAB with mirror-based transmitted light unit. It delivers crisp or homogeneous brightfield, darkfield and oblique light. The latter is needed to contrast uncolored specimen like <i>C. Elegans</i>. To prepare samples in reflected light, integrate the double spot gooseneck.</li> <li>■ For longer dissections the optional hand rest supports both of your hands.</li> <li>■ When working with several petri dishes in parallel, you have the advantage of a large sample space and excellent oblique contrast by using stand N and fiberoptic transmitted light unit.</li> <li>■ To investigate dark specimens, cold light source CL 4500 LED delivers intensive light of daylight quality with a very good color rendering.</li> <li>■ Document highly resolved images using Stemi 508 doc with a ZEISS Axiocam microscope camera. To optimize transmission, 100% light is switched between right eyepath and camera.</li> </ul> |
| <b>Botany</b>   | Observe changes in plant organs, parasitic or physiological plant diseases or root development  |  |
| <b>Entomology</b>   | You observe, document and identify insects, sometimes in the field – for example, to map biotopes.  |  |
| <b>Marine Biology</b>   | Observe conditions of life or reproduction of fish.   |  |
| <b>Parasitology</b>   | Detect and identify spread of parasites.  |  |
| <b>Geology, Paleontology</b>  | Collect and investigate assemblages of fossil foraminifera to determine the age of rock.  |  |

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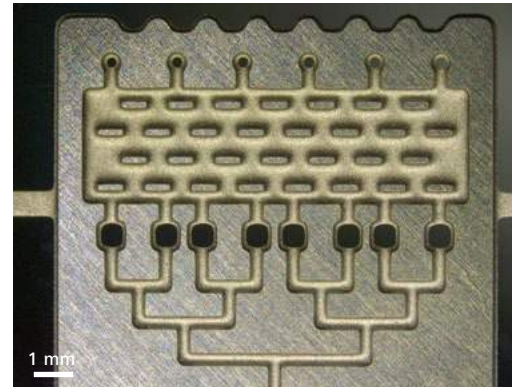
| Typical Applications, Typical Samples | Task  | ZEISS Stemi 508 Offers   |
|---------------------------------------|---|--|
| PCB Inspection                        | Check PCBs in the quality lab. Look for improper quality of contacts, engraving or wiring, metal or processing residues, and faulty solder joints. Document your results.   | <ul style="list-style-type: none"> <li>■ Compact stand K MAT with segmentable ringlight is the right solution for limited space. Document your results with Axiocam 105 with 5 Megapixel resolution.</li> </ul>  |
| Failure Search and Analysis           | Search for reasons of faulty circuits and report your failure analysis.   | <ul style="list-style-type: none"> <li>■ Use the 10 zoom click stops of Stemi 508 to reproduce your magnification easily.</li> <li>■ To inspect and document shiny metal parts without strong reflections, create diffuse light using fiber optic diffusor S, diffuse face light S or the fluorescent tube ring light. Use a ball-and-socket stage to tilt the specimen in a defined way.</li> </ul> |
| Diamond Industry                      | Evaluate quality of diamonds by visual inspection, find inclusions and impurities.  | <ul style="list-style-type: none"> <li>■ Enjoy the large zoom range, high resolution, impressive image contrast and excellent color correction of Stemi 508.</li> </ul>  |
| Medical Devices                       | Assemble small part components of watches, e.g. minute wheels, springs, cocks, bridges, pinions, bell and ratchet wheel screws, dial, mainspring, bolt and shoulder screws. |  |
| Sensor Manufacturing                  | Centre and align optical sensors or optical fibers.   |  |
| Clocks and Watches                    | Assemble small part components of watches, e.g. minute wheels, springs, cocks, bridges, pinions, bell and ratchet wheel screws, dial, mainspring, bolt and shoulder screws. | <ul style="list-style-type: none"> <li>■ Zoom from the whole watch in the overview up to the 8 times magnified detail.</li> <li>■ During a long day, enjoy relaxed viewing with Stemi 508 and precise mechanics made for extensive use.</li> </ul>   |
| Printing and Engraving                | Evaluate the surface quality of paper or engravings under grazing light.  | <ul style="list-style-type: none"> <li>■ Stemi 508 offers fiber optic line light S for intensive grazing light with strong shadow effects. To see scratches on polished surfaces, use fiber optic darkfield ringlight. Use gliding stage S or stand base 300 with mechanical xy stage to screen the specimen in comfort.</li> </ul>  |
| Minted Coin and Medal Manufacturing   | Inspect for scratches on proof quality silver coins.  |  |
| Forensics                             | Analyze ammunition parts, tool marks, documents, fibers, coatings, glass, textiles or hair.   | <ul style="list-style-type: none"> <li>■ The apochromatic color correction of Stemi 508 with interchangeable front optics is essential.</li> <li>■ Achieve optimal contrast with the good color rendering of CL 4500 LED and the range of fiber optic light guides.</li> </ul>   |
| Art Restoration                       | Analyze, restore, clean and conserve paintings, sculptures and other works of art, analyzing layer by layer and identifying the material.                                   | <ul style="list-style-type: none"> <li>■ Use flexible tilting arm stand U or stable ball bearing stand SDA, along with shadow-free fiber optic ring light. Get the benefit of Stemi 508's excellent image contrast and large field of vision.</li> </ul>   |

# ZEISS Stemi 508 at Work

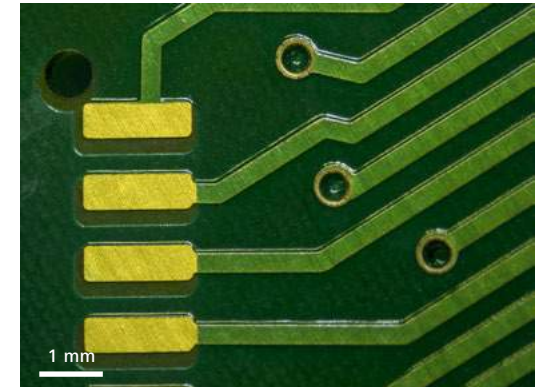
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High brightness LED, chip, bond wires and packaging, Spot K LED, oblique reflected light, zoom 1.25x



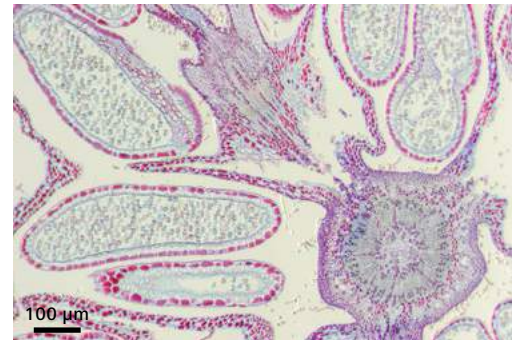
Microfluid device, ringlight, zoom 0.8x



Printed circuit board, ringlight, quarter circle mode, reflected light brightfield, zoom 1.25x



Powdery mildew (sawadaea) on Norway maple, cleistothecia, Spot K LED, reflected light darkfield, zoom 2.0x



Hazelnut (corylus), transmitted light brightfield, zoom 5.0x



Royal fern, sori and sporangia, Spot K LED, oblique light, zoom 0.63x, front optics 5 Apo 0.63x

# Your Flexible Choice of Components

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## 1 Microscopes

- Stemi 508 (binocular, incl. eyepieces 10×/23 Br. foc)
- Stemi 508 doc (phototube 100%, right path, incl. eyepieces 10×/23 Br. foc, interchangeable camera adapter 0.5×)

## 2 Interchangeable Optics

- Eyepieces: PL 10×/23 Br. foc (included), PL 16×/16 Br. foc, W 25×/10 foc
- Front optics: 0.3×, 0.4×, Apo 0.63×, Apo 1.5×, Apo 2.0×, variable front optic 0.3×-0.5×
- Accessories: eyepiece reticles, 60N adapter for SLR and video cameras

## 3 Illumination

- LED illuminators to stands K: spot, double spot gooseneck, segmentable ringlight,
- Flat or mirror-based transmitted light stands
- Controller K for standalone use of ringlight K
- Fiberoptic cold light sources CL 4500 LED and CL 1500 Hal with spot, annular ring, linear, vertical, diffuse and area illuminators, fiber optic transmitted light unit
- High brightness LED spots and annular ring-lights with segmenting function
- Polarization equipment for reflected and transmitted light

## Illumination Techniques

- Reflected and transmitted light: brightfield, darkfield, polarization, oblique light

## 4 Stands

- Space saving table top stand K
- Stand K EDU with reflected light (= RL) LED electronics and flat transmitted light unit
- Stand K LAB with RL LED electronics and mirror-based transmitted light unit
- Stand K MAT with RL LED electronics and ESD features (antistatic)
- Large table top stand N
- Stable stand system 300 with C/F drive
- Boom stands A and SDA, tilting arm stand U

## 5 Accessories

- Mechanical, gliding, ball/socket and rotating stages, ergo hand rest for stand K LAB

## 6 Software

- ZEN lite imaging software
- Labscope/Matscope iPad imaging apps

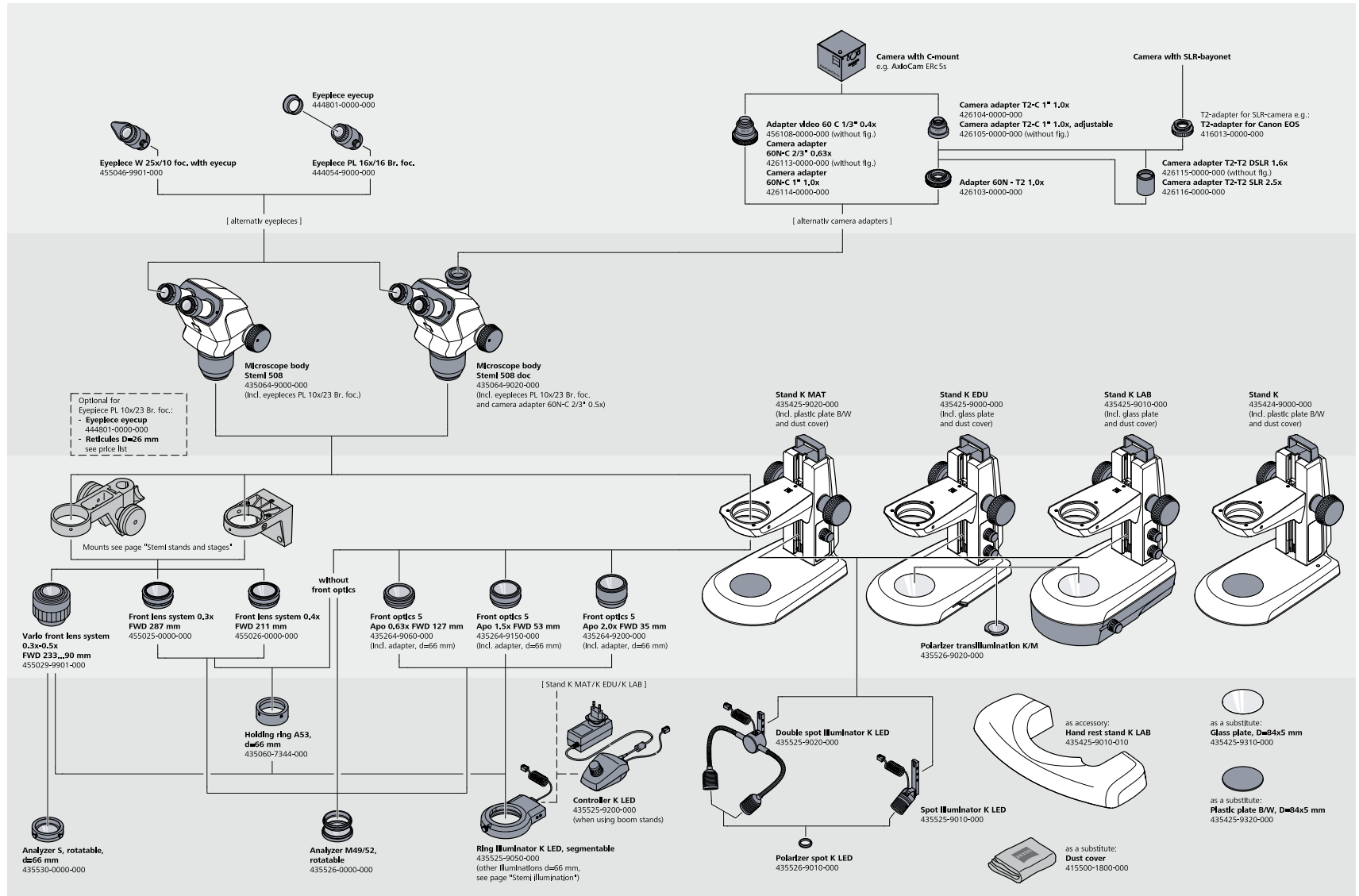
## 7 Recommended Cameras

- Axiocam ERc 5s
- Axiocam 105 color
- Axiocam ICc 1
- Axiocam ICc 5



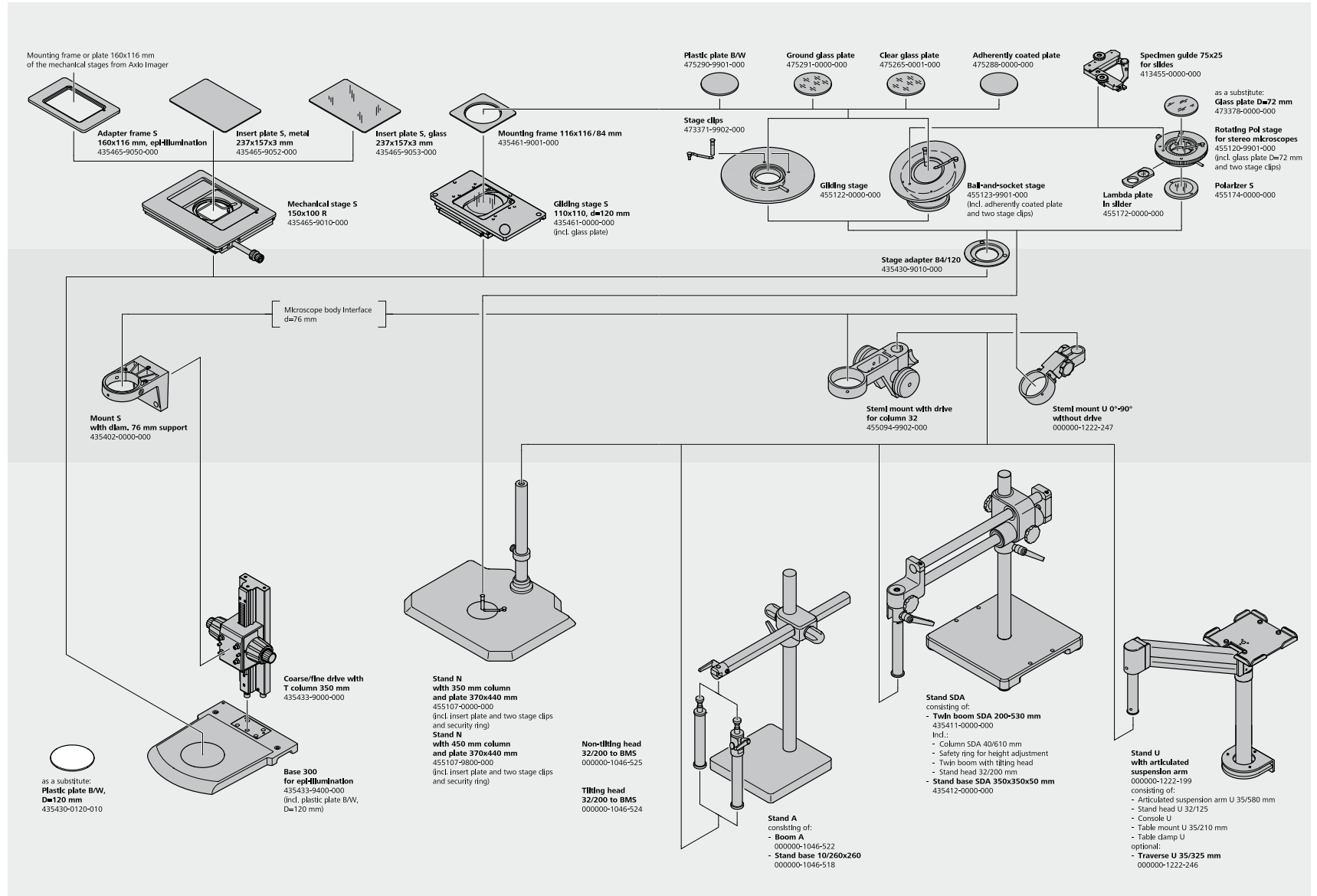
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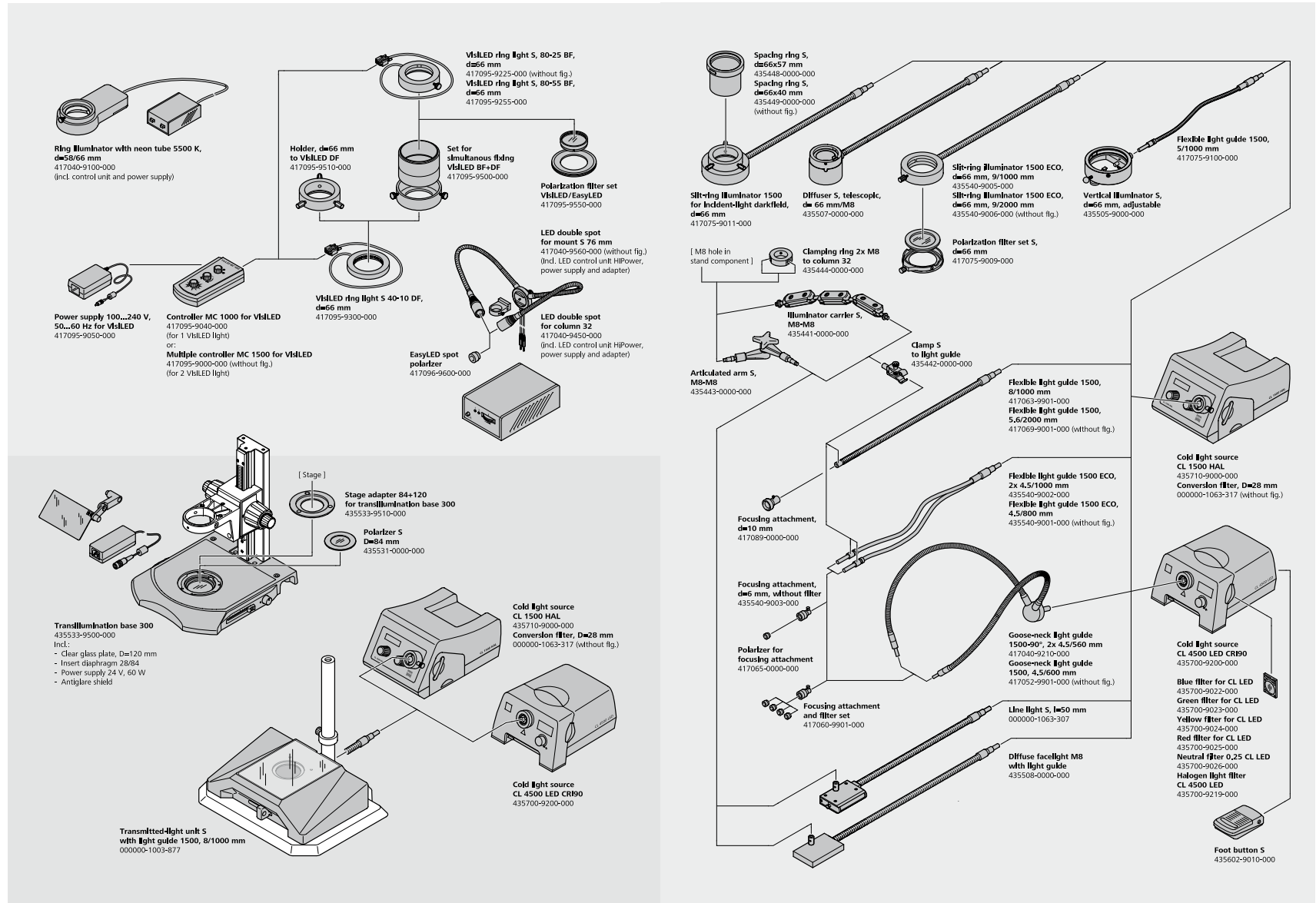
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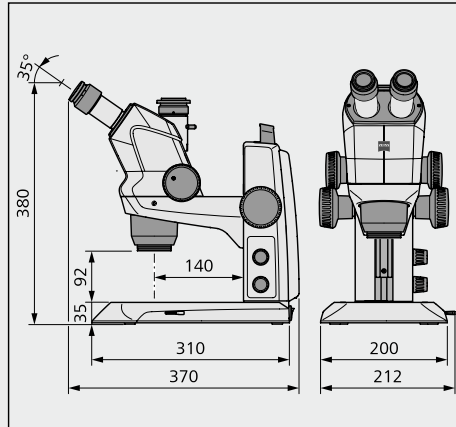
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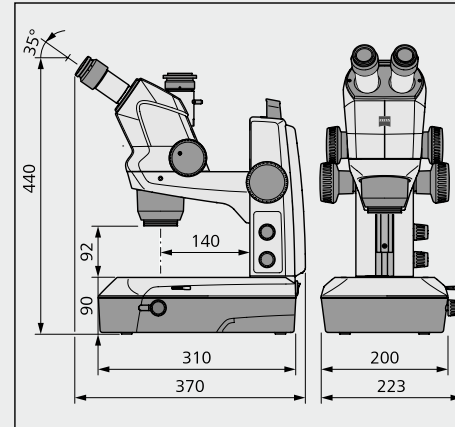


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Stemi 508 doc with Stand K EDU



Stemi 508 doc with Stand K LAB

| ZEISS Stemi 508 |          | PL 10x23 Br Foc     |           |                   |      | PL 16x16 Br Foc     |           |                   |      | PL 25x10 Foc        |           |                   |     |
|-----------------|----------|---------------------|-----------|-------------------|------|---------------------|-----------|-------------------|------|---------------------|-----------|-------------------|-----|
| Front Optics    | FWD      | Total Magnification |           | Object Field [mm] |      | Total Magnification |           | Object Field [mm] |      | Total Magnification |           | Object Field [mm] |     |
|                 |          | Min. Zoom           | Max. Zoom |                   |      | Min. Zoom           | Max. Zoom |                   |      | Min. Zoom           | Max. Zoom |                   |     |
| 0.3             | 287      | 1.9                 | 15.0      | 122.7             | 15.3 | 3.0                 | 24.0      | 85.3              | 10.7 | 4.7                 | 37.5      | 53.3              | 6.7 |
| 0.4             | 211      | 2.5                 | 20.0      | 92.0              | 11.5 | 4.0                 | 32.0      | 64.0              | 8.0  | 6.3                 | 50.0      | 40.0              | 5.0 |
| 0.3 – 0.5       | 233 – 90 | 1.9                 | 25.0      | 122.7             | 9.2  | 3.0                 | 40.0      | 85.3              | 6.4  | 4.7                 | 62.5      | 53.3              | 4.0 |
| 0.63            | 127      | 3.9                 | 31.5      | 58.4              | 7.3  | 6.3                 | 50.4      | 40.6              | 5.1  | 9.8                 | 78.8      | 25.4              | 3.2 |
| 1X (without FO) | 92       | 6.3                 | 50.0      | 36.8              | 4.6  | 10.0                | 80.0      | 25.6              | 3.2  | 15.6                | 125.0     | 16.0              | 2.0 |
| 1.5             | 53       | 9.4                 | 75.0      | 24.5              | 3.1  | 15.0                | 120.0     | 17.1              | 2.1  | 23.4                | 187.5     | 10.7              | 1.3 |
| 2.0             | 35       | 12.5                | 100.0     | 18.4              | 2.3  | 20.0                | 160.0     | 12.8              | 1.6  | 31.3                | 250.0     | 8.0               | 1.0 |

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| Overall  |   |
|--|---|
| Type of Microscope   | Stereo microscope, Greenough design   |
| Design Principle   | Two zoom systems, tilted by the stereo angle  |
| Stereoscopic View  | Threedimensional observation through eyepieces  |
| Apochromatic Corrected Zoom and Front Optics                       | Image free of color fringes in complete magnification range   |
| Optical Data Basic System (Eyepieces 10x, No Front Optics)         |   |
| Magnification Range  | 6.3x – 50x  |
| Free working Distance  | 92 mm   |
| Maximum Resolution   | 225 Lp/mm – 2.2 µm  |
| Maximum Object Field Diameter                                      | 37 mm   |
| Optical Data with Interchangeable Optics (Eyepieces, Front Optics) |   |
| Accessible Magnification Range                                     | 1.9x – 250x   |
| Free Working Distances   | 35 – 287 mm   |
| Maximum Resolution   | 450 Lp/mm – 1.1 µm  |
| Maximum Object Field Diameter                                      | 123 mm  |
| Microscope Bodies  |   |
| Manual Zoom, Zoom Range  | 8:1 (0.63x...5.0x)  |
| Quality of Zoom Optics   | Distortion free, excellent contrast, apochromatic corrected   |
| Parfocality of Zoom Optics   | Object remains focused while zooming  |
| Ergonomic Viewing Angle  | 35°   |
| Adjustment of Interocular Distance                                 | 55 – 75 mm  |
| Zoom Click Stops   | 10 positions, 0.63x, 0.8x, 1x, 1.25x, 1.6x, 2x, 2.5x, 3.2x, 4x, 5x, can be activated by choice                                    |
| Maximum Field Number   | 23 mm   |
| Documentation Features Stemi 508 doc                               | Photoport with 100% switch between right eyepath and camera, incl. interchangeable 60N camera adapter 0,5x with c-mount interface |
| Interfaces to Adapt  |   |
| Front Optics and Dust Protection Glass                             | M50   |
| Eyepieces  | d = 30 mm   |
| Stemi Mounts   | d = 76 mm   |
| Illuminators   | d = 53 mm; Illuminators d = 66 mm via clamp ring d53/66 (optional)  |
| Incl. Eyepieces 10x/23 Br. Foc and dust protection glass           |   |



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| Compact Stand System K  |  |
|---|--|
| <b>Stand Base</b>   | W200xD310xH35 mm (K Lab: H90 mm)   |
| <b>Working Surface</b>  | W160xD195 mm   |
| <b>Column with Stemi Mount, Handle and Focus Drive, Friction Adjustable</b>   |  |
| ▪ Height  | 250 mm   |
| ▪ Lifting range   | 145 mm   |
| ▪ Interface to microscope   | d = 76 mm  |
| ▪ Load capacity of Stemi mount  | 5 Kg   |
| <b>Interfaces for Stages</b>  | d = 84 mm  |
| <b>Interface for TL Polarizer</b>   | d = 45 mm  |
| Interface for LED Spot K and Double Spot K  |  |
| Incl. Glass Plate or bw Plate D = 84x5 mm, Dust Cover   |  |
| Stands K, Separate Versions   |  |
| Stand K mechanical stand without electronics with 2x M8 interface for supporting arms of fiberoptic light guides                        |  |
| Stand K MAT with reflected light LED electronics and ESD features (antistatic surface resistance)                                       |  |
| Stand K EDU with reflected/transmitted light LED electronics and built-in flat transillumination unit (brightfield/darkfield)           |  |
| Stand K LAB with reflected/transmitted light LED electronics and built-in mirror transillumination unit (brightfield/darkfield/oblique) |  |
| <b>Electronic features of stand K EDU/LAB/MAT:</b>  |  |
| ▪ Separate control knobs for reflected / transmitted light (on/off/dimming)   |  |
| ▪ Integrated power unit, easily changeable  | 12V DC 24W/100...240V AC/50...60Hz   |
| Optical Specifications K LED Illuminations (For Stands K EDU/MAT/LAB)   |  |
| <b>Color Temperature</b>  | Typ. 5600 K  |
| <b>Lifetime (Lumen Maintenance)</b>   | Typ. 25000 h (operation time until the light intensity degraded to 70% of initial value) |
| <b>LED Spot K, Height Adjustable, Zoomable</b>  | Brightness max typ. 30000 lx (object field center, LED spot mounted to stand K)          |
| <b>LED Double Spot With Goosenecks, Self Carrying</b>   | Brightness max. typ 90000 lx (object field center, double spot mounted to stand K)       |
| <b>Segmentable Ringlight K</b>  | Brightness max. typ 55000 lx (mounted to Stemi 305 body, object focused)                 |
| ▪ Working distance  | 50 mm – 300 mm. (also suitable for front optics 2.0x, when shifted upwards)              |
| <b>Built-in transmitted Light LED Illuminations:</b>  |  |
| ▪ Flat transillumination unit (stand K EDU)   | Brightness max typ. 20000 lx (brightfield)   |
| ▪ Mirror transillumination unit (stand K LAB)   | Variable contrasting by rotatable and slidable mirror, brightness max typ. 25000 lx      |

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## Stands N

|                        |                           |
|------------------------|---------------------------|
| Large Stand Base       | W440xD370                 |
| Column Height/Diameter | 350 or 450 mm / d = 32 mm |
| Interface for Stages   | d = 84 mm                 |

Incl. black/white plate d = 84 mm and security ring

Additionally needed: Stemi mount for column 32 with drive

### Stages for Interface d = 84 mm

Gliding stage  $\pm 20$  mm, rotatable, d = 84 mm

Ball-and-socket stage  $\pm 30^\circ$ , rotatable, d = 84 mm

Rotating Pol stage for stereomicroscopes, with interfaces for polarizer and Lambda plate

## Boom Stands

### Single Arm Boom Stand A

|  |                       |
|--|-----------------------|
| ■ Stand base dimensions/weight             | W260xD260xH20 / 13 kg |
| ■ Boom length / diameter                   | 600 mm / d = 37 mm    |
| ■ Working radius (incl. stemi mount)       | max. 615 mm           |
| ■ Tilting or non-tilting head, height/diam | 200 mm / d = 32 mm    |

### Double Arm Boom Stand SDA

|   |                       |
|---|-----------------------|
| ■ Stand base dimensions/weight                    | W350xD350xH50 / 31 kg |
| ■ Double arm boom stand, ball-bearing, length     | 670 mm                |
| ■ Working radius (incl. stemi mount)              | max. 695 mm           |
| ■ Tilting head integrated, column height/diameter | 200 mm / d = 32 mm    |

### Tilting Arm Stand U with Articulated Suspension Arm

|  |  |
|--|--|
| ■ Arm length / lifting range / load capacity | 580 mm / 500 mm / 2 ... 4,8 kg           |
| ■ Working radius (incl. Stemi mount)         | 735 mm, 1060 mm with traverse S (option) |
| ■ Table clamp for tables thickness           | 5 ... 75 mm                              |
| ■ Stand head length / diameter               | 100 mm / d = 32 mm                       |

Additionally needed for all boom stands: Stemi mount for column 32 with drive or Stemi mount 0–90° without drive

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| Fiber optic Illuminations  |   |
|--|---|
| Cold Light Source  | CL 4500 LED CRI90   |
| Light Engine   | High power LED engine   |
| Light Flux @ 9 mm Fiber Output Diameter  | Max. 450 lm at the output of a fiberoptic ringlight (active fiber bundle diameter 9 mm) |
| Color Temperature  | Typ. 5400 K   |
| Color Rendering Index  | >90   |
| LED Lifetime (Lumen Maintenance)   | Average duration  |
| Light Guide Sensor   | Auto on/off   |
| 2 Pos. Filter Slider   | 2 filters and free opening  |
| Wide-range Supply  | Max. 50 W   |
| Flicker free light, silent axial fan, 2.5 mm phone socket for foot button S          |   |
| Cold Light Source CL 1500 HAL  |   |
| Light Engine   | 150 W halogen reflector lamp  |
| Light Flux   | Max. 600 lm at the output of a fiberoptic ringlight (active fiber bundle diameter 9 mm) |
| LCD Display  | Brightness/color temperature/ power-on hours  |
| Bulb Lifetime at 80% Dimming (450 lm)  | Typ 150 h   |
| Filter Slider  | One filter d = 28 mm and free opening   |
| Wide-range Supply For Flicker Free Light, Silent Axial Fan                           | Max. 180 W  |
| Light Guides   |   |
| One- and Two Branch Flexible Arm Spot Light Guides (Need Additional Supporting Arms) | Oblique light; crisp 3d impression by distinct shadows                                  |
| One- And Two Branch Gooseneck Spot Light Guides                                      | Oblique light; crisp 3d impression by distinct shadows                                  |
| Annular Ring Illuminators D = 66 mm for Brightfield                                  | Shadow free illumination  |
| Annular Ring Illuminators D = 66 mm for Darkfield                                    | Shadow free illumination  |
| Line Light 50 mm   | For homogeneous grazing light   |
| Vertical Illuminator   | For illumination of deepenings  |
| Diffusor S   | Shadow free all sided soft light, "cloudy day illuminator"; avoid glare                 |
| Diffuse Area Light   | One sided "soft" illumination; avoid glare but create certain shadows                   |
| Illumination Accessories   |   |
| Focusing Optics for Spot Light Guides  | Increase brightness   |
| Polarizing Equipment for Spots and Ringlights  | Reduce reflections  |

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| <b>Ambient Conditions</b>  |  |
|--|--|
| <b>Storage (in Packaging)</b>  |  |
| Permissible Ambient Temperature                                      | +10 to +40 °C  |
| Permissible Humidity   | Max. 75 % to +35 °C (without condensation)                                 |
| <b>Transportation (in Packaging)</b>                                 |  |
| Permissible Ambient Temperature                                      | -40 to +70 °C  |
| <b>Operation</b>   |  |
| Permissible Ambient Temperature                                      | +10 to +40 °C  |
| Permissible Humidity   | Max. 75 %  |
| Air Pressure   | 800 hPa to 1060 hPa  |
| Degree of Pollution  | 2  |
| Area of Use  | Closed spaces  |
| Max. Altitude  | Max. 2000 m  |
| <b>Operational Data – Power Supply, Microscope, Controller K LED</b> |  |
| Protection Class   | II   |
| Protection Type  | IP 20  |
| Electrical Safety  | Acc. to DIN EN 61010-1 (IEC 61010-1) allowing for CSA and UL specification |
| Degree of Pollution  | 2  |
| Overvoltage Category   | 2  |
| Power Supply   | 100 to 240 V ±10 %   |
| Converting the line voltage is not necessary!                        |  |
| Power Frequency  | 50 Hz – 60 Hz  |
| Power Consumption: Stage Power Supply with Microscope                | Max. 40 VA   |
| Output Power Supply Microscope and Controller K LED                  | 12 V DC, max. 2 A  |
| Input Output Power Supply Microscope and Controller K LED            | 100 – 240 V, 50 – 60 Hz, max. 0.55 A                                       |

# Count on Service in the True Sense of the Word

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Because the ZEISS microscope system is one of your most important tools, we make sure it is always ready to perform. What's more, we'll see to it that you are employing all the options that get the best from your microscope. You can choose from a range of service products, each delivered by highly qualified ZEISS specialists who will support you long beyond the purchase of your system. Our aim is to enable you to experience those special moments that inspire your work.

## **Repair. Maintain. Optimize.**

Attain maximum uptime with your microscope. A ZEISS Protect Service Agreement lets you budget for operating costs, all the while reducing costly downtime and achieving the best results through the improved performance of your system. Choose from service agreements designed to give you a range of options and control levels. We'll work with you to select the service program that addresses your system needs and usage requirements, in line with your organization's standard practices.

Our service on-demand also brings you distinct advantages. ZEISS service staff will analyze issues at hand and resolve them – whether using remote maintenance software or working on site.

## **Enhance Your Microscope System.**

Your ZEISS microscope system is designed for a variety of updates: open interfaces allow you to maintain a high technological level at all times. As a result you'll work more efficiently now, while extending the productive lifetime of your microscope as new update possibilities come on stream.



*Profit from the optimized performance of your microscope system with services from ZEISS – now and for years to come.*

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