

Living up to Life

ryf ag  Ryf AG
Bettlachstrasse 2
2540 Grenchen
tel. 032 654 21 00
fax 032 654 21 09
www.ryfag.ch


MICROSYSTEMS



Leica StereoZoom[®] line

Complete solutions for industry, laboratory and training

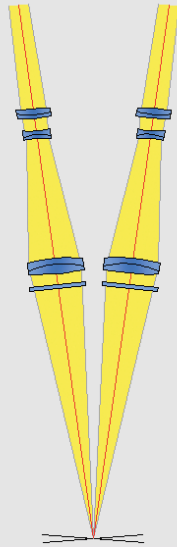
Leica StereoZoom® – The lean line

Proven, compact, low-cost

For decades, microscopes and systems from Leica Microsystems have been highly regarded by technology companies and scientists worldwide. Innovative, high-quality, and precisely manufactured instruments offer our customers a technological edge, increased performance capacity, and greater success in their work.

Optical system in the Greenough

design The Leica StereoZoom® line consists of two beam paths convergent by 12°. The advantage: A lean configuration with low footprint for work on bonders and machines, lots of space for tools, unobstructed view of the object field. In the Leica StereoZoom® line, the optimum corrected center of the objective is used for the image. Result: Superior optical performance; large, level, and undistorted fields of view; and chromatically optimized, high-contrast images.



StereoZoom® – The complete line for all applications

In six models and a rich assortment of accessories, you are choosing optimum performance for solving current and future tasks.

The application areas of the StereoZoom® line extend from quality inspection during manufacturing and assembly, OEM integration and training, to advanced observation and documentation for R&D.

The StereoZoom® models Leica S4 E, S6 E, S6, S6 D and S8 APO are in a patented, antistatic housing environment.

The electrostatically dissipative version, the Leica S6 T Terminator, was developed for inspecting highly sensitive electronic components.



Leica S4 E and S6 / S6 E

Manual material control with the best optics and high ergonomics

The following four optics carriers are optimized for visual, three-dimensional inspection for different applications and requirements. Find the right instrument for you using the specifications:

LEICA S4 E WITH ZOOM 4.8:1

- › **Magnification 6.3x–30x**
- › Working distance 110 mm
- › Object field diameter 36.5 mm*
- › 38° ergonomic viewing angle
- › ErgoObjectives for variable viewing height, magnification, working distance
- › Antistatic
- › Cost-effective, expandable
- › **Powerful for implementation in assembly and in schools**

LEICA S6 E WITH ZOOM 6.3:1

- › Magnification 6.3x–40x
- › Working distance 110 mm
- › Object field diameter 36.5 mm*
- › 38° ergonomic viewing angle
- › **Adjustable zoom limits**
- › ErgoObjectives for variable viewing height, magnification, working distance
- › Antistatic
- › **High productivity for routine tasks**

LEICA S6 WITH 6.3:1 ZOOM AND 60° VIEWING ANGLE

- › Magnification 6.3x–40x
- › Working distance 110 mm
- › Object field diameter 36.5 mm*
- › **Ergonomic 60° viewing angle on the inclined stereomicroscope**
- › Adjustable zoom limits
- › ErgoObjectives for variable viewing height, magnification, working distance
- › Antistatic
- › **Ideal for inclined integration in machines**

LEICA S6 T TERMINATOR WITH 6.3:1 ZOOM

- › Magnification 6.3x–40x
- › Working distance 110 mm
- › Object field diameter 36.5 mm*
- › 38° ergonomic viewing angle
- › **Electro-dissipative surface for optimum protection against ESD**
- › Adjustable zoom limits
- › ErgoObjectives for variable viewing height, magnification, working distance
- › **Voltage dissipation for sensitive electronics areas**

* Standard configuration without additional objective / with 10x eyepiece

1) Leica S4 E with standard base
 2) Leica S6 E with standard base
 3) Leica S6 with carriers for the adaption to the OEM device
 4) Leica S6 T complete with voltage dissipation base



1



2



3



4

Leica S6 D and S8 APO

Digital documentation and the highest image fidelity

Alongside the three-dimensional visual viewing of the specimens with the stereomicroscope, documentation is ever more important. The Leica S6 D and S8 APO models have an integrated documentation output for connection to a digital microscope camera. The beam path switches between 100% visual and 100% documentation. With it, 100% of the light reaches the camera; this leads to higher image repetition rates and thus to better image results.

Leica S8 APO – the high-powered model of the Leica StereoZoom® line.

The one-of-a-kind StereoZoom® Leica S8 APO was the first stereomicroscope on the market with a completely apochromatically corrected Greenough system. In this product class, this always means an unrivaled image color and contrast reproduction.

The instrument offers a resolution of 600 lp/mm (approx. 1.67 micrometers) and a maximum magnification of 640×. Never before were Greenough stereomicroscopes with such high performance available at such an affordable price.

LEICA S6 D WITH DOCUMENTATION PORT*

- › Magnification 6.3×–40×
- › Working distance 110 mm
- › Object field diameter 36.5 mm
- › 38° ergonomic viewing angle
- › Adjustable zoom limits
- › ErgoObjectives for variable viewing height, magnification, working distance
- › Antistatic
- › **Documentation port for digital microscope cameras****

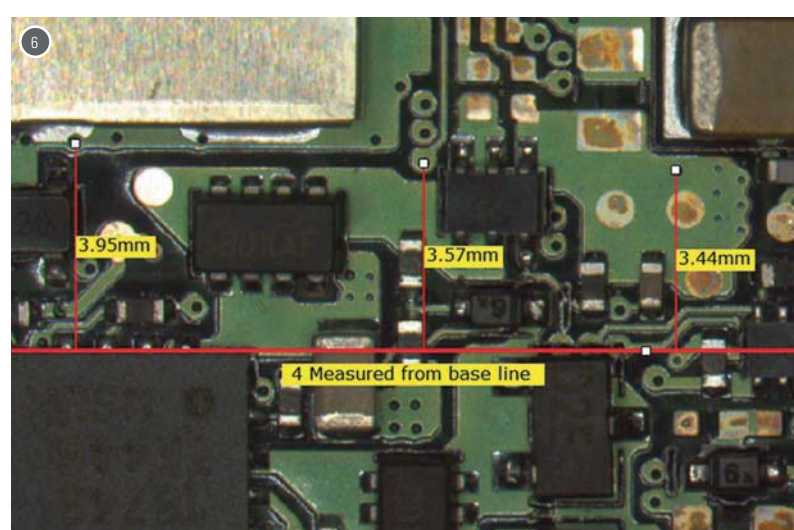
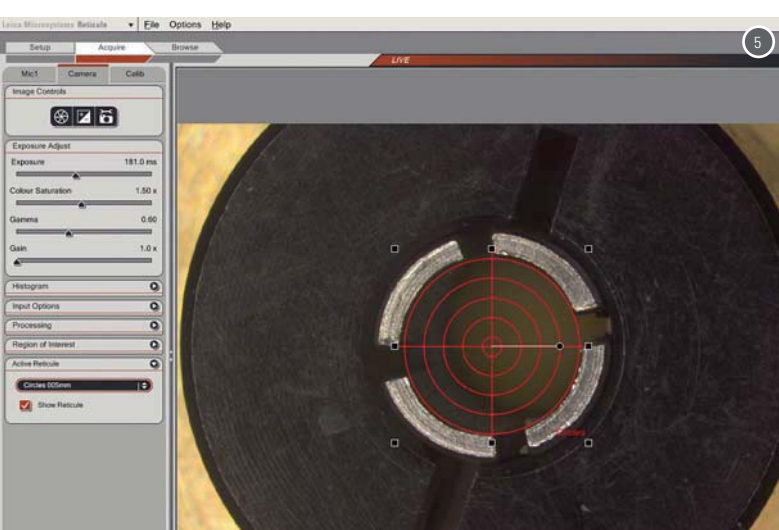
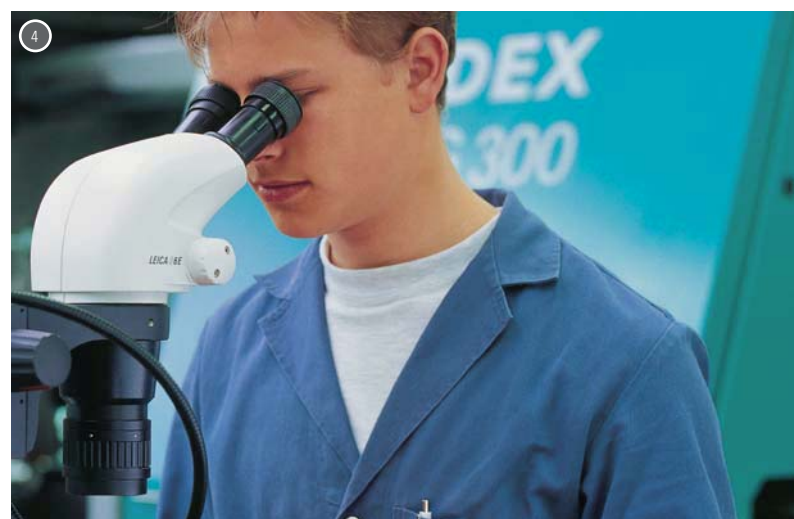
LEICA S8 APO WITH APOCHROMATIC ZOOM 8:1

- › **Magnification 10×-80×**
- › Working distance 75 mm
- › Object field diameter 23 mm
- › 38° ergonomic viewing angle
- › **Apochromatic optical system**
- › **Maximum resolution 600 lp/mm (2.0× planapochromatic)**
- › Adjustable zoom limits
- › Antistatic
- › Documentation connection for digital microscope cameras**
- › Cost-effective high-performance stereomicroscope

* Optical / technical specifications such as Leica S6 E

** Switchable 100% visual (both beam paths) or
1 channel camera / 1 channel eyepiece

1) Leica S6 D with standard base
2) Leica S8 APO with standard base
3) Leica S6 D with Leica digital camera
4) Use of a Leica S series instrument in industry
5) Leica LAS, camera range
6) Leica LAS, measurement module „Interactive Measurement“



The Best Choice for the Long Term

Ergonomics at the workstation / long service life under heavy use

The large object field of the StereoZoom® line provides a clear, sharp image. With it, inspecting even the finest details is not perceived as arduous by users. The standard Leica S4 E and S6 models offer the largest object field diameter, at 36.5 mm, in their product class, which guarantees faster and better object inspection.

ErgoObjectives with variable working distance

In the Leica S4 E and the S6 models, a fatigue-free head posture is guaranteed: With the Ergo objective 0.6×–0.75× with variable working distance of 77–137 mm and 0.7×–1.0× with variable working distance of 48–98 mm, magnification, working distance and simultaneously also the viewing height can be adjusted finely and without time-consuming objective changes.

For repetitive inspections at identical magnification, the zoom range can be individually limited on the Leica S6 models and with Leica S8 APO. Focus and zoom are moved smoothly and precisely, and the controls provide a good, comfortable grip. A convenient feature: Large zoom buttons! The focus drive's ease of movement can be set according to personal preference. For applications that require a lateral working position, the stereomicroscope can be laterally rotated 360°.

ONLY THE LEICA STEREOZOOM® LINE OFFERS THIS

- › Largest object field diameter of 36.5 mm
- › Alternative versions with 38° and 60° viewing angles
- › ErgoObjectives for ergonomic, comfortable viewing
- › Terminator version with dissipative plastic
- › 40× eyepieces for eyeglass wearers
- › Leica S8 APO with apochromatic Greenough optical system

USER COMFORT & PRODUCTIVITY

- › S series: Best overview, large object field and faster handling through the lowest magnification of its class
- › Excellent access to the specimen, with 110 mm working distance.
- › The best ergonomics through a wide range of eyepieces and additional objectives

- 1) Leica S4 E with Ergo objective, adapted to female user of medium height
- 2) Leica S4 E with Ergo objective, adapted to a tall user
- 3) Ergonomic operating buttons: anti-skid, with adjustable stop
- 4) Adjusting the focusing resistance
- 5) Lots of room to maneuver thanks to the 110 mm working distance
- 6) Large overview thanks to the 36.5 mm object field



Illumination with system

Modern Leica LED illuminators for different applications

With the **Leica LED3000** series, Leica Microsystems offers a wide spectrum of special LED illuminators for the Leica StereoZoom® line of routine stereomicroscopes. What illumination is optimum depends, aside from the composition of the specimen, also on the information that is to be gained. Depending on the application and task, only the correct illumination provides the desired results. With a lifetime of over 50,000 hours, maintenance costs and downtime shrink to a minimum.

LEICA LED3000 RL

The compact Leica LED3000 RL ring illuminator uses the latest generation of LEDs and an additional LED objective specially developed by Leica Microsystems. This increases the **brightness** and **homogeneity** of the illumination. Conveniently adjustable segments are used to gain new data about the specimen without moving it.

LEICA LED3000 SLI™

The double-armed **gooseneck** with integrated LED spotlights can be put into any position – outstretched for very flat **oblique light** (side light) for strong shading, up to high-angle incident light with minimal shading. The control for the light intensity is located on a separate gooseneck for ergonomic positioning.

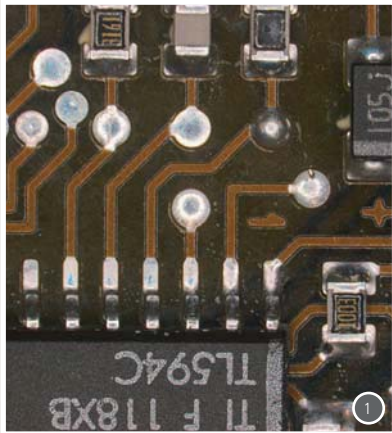
LEICA LED3000 MCI™

For Leica LED3000 MCI™ illumination, the flat angle of the oblique incident light creates a particularly **high contrast** for viewing the specimen: The **finest unevenness** and defects are visible this way, such as scratches and dust particles. The settings are fully reproducible.

LEICA LED3000 NVI™

The LED3000 NVI™ illumination is primarily used for viewing **recesses and bores**, since the light falls **nearly vertically** onto the specimen. Unlike coaxial illumination, the LED3000 NVI™ is also suited for uneven specimens and specimens that have no reflections.

- 1) Leica LED3000 LED ring illuminator
- 2) Leica LED3000 SLI™ gooseneck
- 3) Leica LED3000 MCI™ oblique light
- 4) Leica LED3000 NVI™ vertical illuminator



The modular illumination

External cold-light source and compact stand with modern LED technology

Leica KL300 LED

The Leica KL300 LED is equipped with direct current (DC) and emits neutral, white light. This provides for the flicker-free illumination that is required for digital imaging applications. An additional advantage is that the color temperature remains constant if the brightness changes.

The Leica KL300 LED provides simple operation combined with an excellent cost-to-performance ratio.

ADVANTAGES / APPLICATION AREAS

- › External cold light source
- › Flicker-free illumination thanks to DC supply
- › 50,000 operating hours reduce service/repair costs
- › Up to 80 % energy savings in comparison to halogen light
- › Daylight-like color temperature of 5,600 K
- › Excellent price/performance ratio
- › Output corresponds to a 20-watt halogen lamp
- › Light guiding technology for high illumination intensity on small spaces
- › Simple operation

Leica LED2000 / LED2500

The compact LED stands Leica LED2000 and LED2500 likewise use the most modern LED technology.

The built-in 4-point ringlight is intended for incident light applications, and it provides for a uniform, brightly illuminated area, while the adjustable 3-point oblique illumination can provide higher contrast as needed.

The Leica LED2500 stand offers additional transmitted light that can be used together or separately. The homogeneous, active light field, with a diameter of 60 mm, is especially suited for inspections with low magnification and with large object fields.

ADVANTAGES / APPLICATION AREAS

- › Flicker-free illumination thanks to DC supply
- › 25,000 operating hours without changing the bulb reduces service/repair costs
- › Up to 80 % energy savings in comparison to halogen light
- › Daylight-like color temperature of 6,500 K
- › 4-point ring illuminator for bright, uniform illumination
- › 3-point oblique illumination for higher contrast
- › Insensitive membrane keyboard
- › Control in 10 brightness levels

- 1) Leica KL300 LED with two-armed universal light guide
- 2) Leica KL300 LED with two-armed gooseneck
- 3) Leica KL300 LED with coaxial lighting
- 4) Leica KL300 LED with vertical illumination
- 5) Leica KL300 LED with LED2000 base
- 6) Leica KL300 LED with LED2500 base



The basis of the instruments

Small and medium incident light base, swing-arm and flex-arm stand

The small incident-light stand is best suited for limited workspace conditions. It is available in „antistatic“ and „dissipative“ versions. The medium incident-light stand provides for increased stability and the use of the 500 mm focusing column. With the optional coarse/fine adjustment, even in high magnification levels, the correct focus point is found.

Inspection of larger workpieces

If large workpieces are examined, a standard base with a focusing column is no longer sufficient. Leica Microsystems offers a complete series of different swing-arm stands – from small, simple swing-arm stands to large, heavy stands for more comfort, convenience and stability for this purpose.

The flex-arm stand provides the highest freedom of movement. With it, the stereomicroscope can quickly and easily be moved to the desired position over the specimen. More information on these stand variants can be found in the separate brochure that can be obtained at www.leica-microsystems.com.



Leica S6 E with flex-arm stand



View with challenging specimens

Transmitted light base for the Leica StereoZoom® line

Alongside the large field of incident light applications, there is a wide variety of uses for transmitted light bases. Translucent specimens in industrial production, examinations of laboratory specimens or the observation of, say, biological specimens in a school; anywhere where light can reach the specimen being examined, one of the Leica TL bases can bring completely new insights to light. The extensive range of specially matched accessories such as the Leica MATS thermal stage or the different specimen holders is very helpful in this.

LEICA SUB-BASE FOR TRANSMITTED LIGHT

The Leica sub-base for transmitted light is the **cost-effective extension** for the small incident light base of the Leica StereoZoom® line. It allows the uncomplicated use of an external light source for transmitted light applications.

LEICA TL3000 ST

The Leica TL3000 ST is the right choice for quick, intuitive operation, with its integrated halogen illumination and automatically updated path-folding mirror. Therefore, it is particularly useful in laboratories with frequent changes of users.

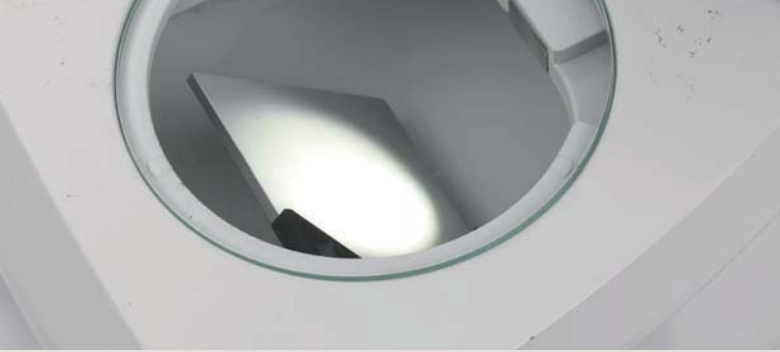
LEICA TL4000 RC / RCI™

The Leica TL4000 RC and RCI are particularly suited for nearly transparent specimens such as oocytes or diatoms. Alongside **bright field and dark field**, they also have **Rottermann Contrast™** and with it can show even **the finest structures** in transmitted light. Optionally, an external light source (RC) can serve as illumination, or you can use the integrated halogen illumination (RCI™).

LEICA TL5000 ERGO

The **flat, ergonomic design**, the constant color temperature of the **powerful LED light source** and the **fully automated controllability** through the Leica Application Suite are only some of the many advantages of the latest Leica TL base. Despite all this, the Leica TL5000 Ergo, through automatic update of many parameters, remains easy to operate – and also 100 % ergonomic.

- 1) Leica sub-base for transmitted light with enlarged detail of the path-folding mirror
- 2) Leica TL3000 ST transmitted light base with easy-to-replace halogen lamp
- 3) Leica TL4000 RC with enlarged detail of the operating buttons of the Rottermann Contrast™
- 4) Leica TL5000 ERGO with enlarged detail of the automated shutters



Accessories for every situation

Whether cup stage or oblique observation adapter: Leica Microsystems has the right accessories

Leica microscopes are known worldwide for their optical quality and mechanical reliability. Alongside these critical requirements for the best results, the right accessories play an important role. Using many small helpers and special solutions, the Leica StereoZoom® line is a valued, if not even indispensable, tool in the daily workflow.

LEICA CUP STAGE

With the cup stage, you can easily tilt and rotate your specimens to the side to make even difficult-to-access areas visible.

LEICA OBLIQUE LIGHT ADAPTER

With the attachment for vertical and oblique observation, you can view areas on your workpiece at a 45° angle. In this way, features such as soldered joints can be more easily assessed with 360° rotation.

LEICA GLIDING STAGE

At high magnification levels, it is difficult to position the specimen. The gliding stage helps you to move the desired detail accurately into the field of view with a slow, uniform lateral movement.

LEICA RETICULES

Reticules that are inserted directly in the eyepiece are suitable for manual measuring.



Technical data

All specifications at a glance

Optics carrier	Leica S4 E Greenough	Leica S6 E Greenough	Leica S6 Greenough	Leica S6 T Greenough	Leica S6 D Greenough	Leica S8 APO Greenough apochromatic
Zoom	4.8:1	6.3:1	6.3:1	6.3:1	6.3:1	8:1
Viewing angle	38°	38°	60°	38°	38°	38°
Magnification*	6.3x-30x	6.3x-40x	6.3x-40x	6.3x-40x	6.3x-40x	10x-80x
Max. resolution**	372 lp/mm	432 lp/mm	432 lp/mm	432 lp/mm	432 lp/mm	600 lp/mm
Max. numerical aperture**	0.124	0.144	0.144	0.144	0.144	0.2
Working distance*	110 mm					75 mm
Object field*	36.5 mm					23 mm
Adjustable zoom constraints	–	2	2	2	2	2
Documentation tube					Yes	Yes
Standard objectives	Achromatic objectives 0.32x, 0.5x, 0.63x, 0.75x, 1.6x, 2.0x					Apochromats 0.63x, 1.6x, 2.0x Achromatic objective 0.32x
ErgoObjective™	0.6x–0.75x/ 77–137 mm, 0.7x–1.0x/48–98 mm					
Adjustable objectives	0.3x–0.4x/ 200–350 mm					
ESD protection	antistatic	antistatic	antistatic	Terminator	antistatic	antistatic
Eyepieces (with / without glasses)	10x, 16x, 20x, 25x, 40x, fixed and adjustable (including attachable, soft eyecups)					
Illuminators	Integrated and external LED illuminators, integrated and external halogen illuminators					

* with standard equipment: without additional objective / 10x eyepieces

** with 2.0x additional objective

The „StereoZoom® – Technical Information“ brochure contains detailed technical information and figures on the Leica StereoZoom® line

Quality with future

At Leica Microsystems, every stereomicroscope and each individual component is manufactured and calibrated under the strictest manufacturing tolerances and environmental requirements, with the greatest possible care. Naturally, the products of the StereoZoom® line pass all quality and functional tests according to ISO 9001 and ISO 14001.

- 1) Leica cup stage
- 2) Leica gliding stage
- 3) Leica oblique light adapter
- 4) Leica reticule

The statement by Ernst Leitz in 1907, “*With the User, For the User,*” describes the fruitful collaboration with end users and driving force of innovation at Leica Microsystems. We have developed five brand values to live up to this tradition: Pioneering, High-end Quality, Team Spirit, Dedication to Science, and Continuous Improvement. For us, living up to these values means: **Living up to Life.**

Leica Microsystems operates globally in four divisions, where we rank with the market leaders.

LIFE SCIENCE DIVISION

The Leica Microsystems Life Science Division supports the imaging needs of the scientific community with advanced innovation and technical expertise for the visualization, measurement, and analysis of microstructures. Our strong focus on understanding scientific applications puts Leica Microsystems’ customers at the leading edge of science.

INDUSTRY DIVISION

The Leica Microsystems Industry Division’s focus is to support customers’ pursuit of the highest quality end result. Leica Microsystems provide the best and most innovative imaging systems to see, measure, and analyze the microstructures in routine and research industrial applications, materials science, quality control, forensic science investigation, and educational applications.

BIOSYSTEMS DIVISION

The Leica Microsystems Biosystems Division brings histopathology labs and researchers the highest-quality, most comprehensive product range. From patient to pathologist, the range includes the ideal product for each histology step and high-productivity workflow solutions for the entire lab. With complete histology systems featuring innovative automation and Novocastra™ reagents, Leica Microsystems creates better patient care through rapid turnaround, diagnostic confidence, and close customer collaboration.

MEDICAL DIVISION

The Leica Microsystems Medical Division’s focus is to partner with and support surgeons and their care of patients with the highest-quality, most innovative surgical microscope technology today and into the future.

