



# Leica LED3000 / LED5000

The system solution for integrated incident-light illumination in stereomicroscopy

Living up to Life

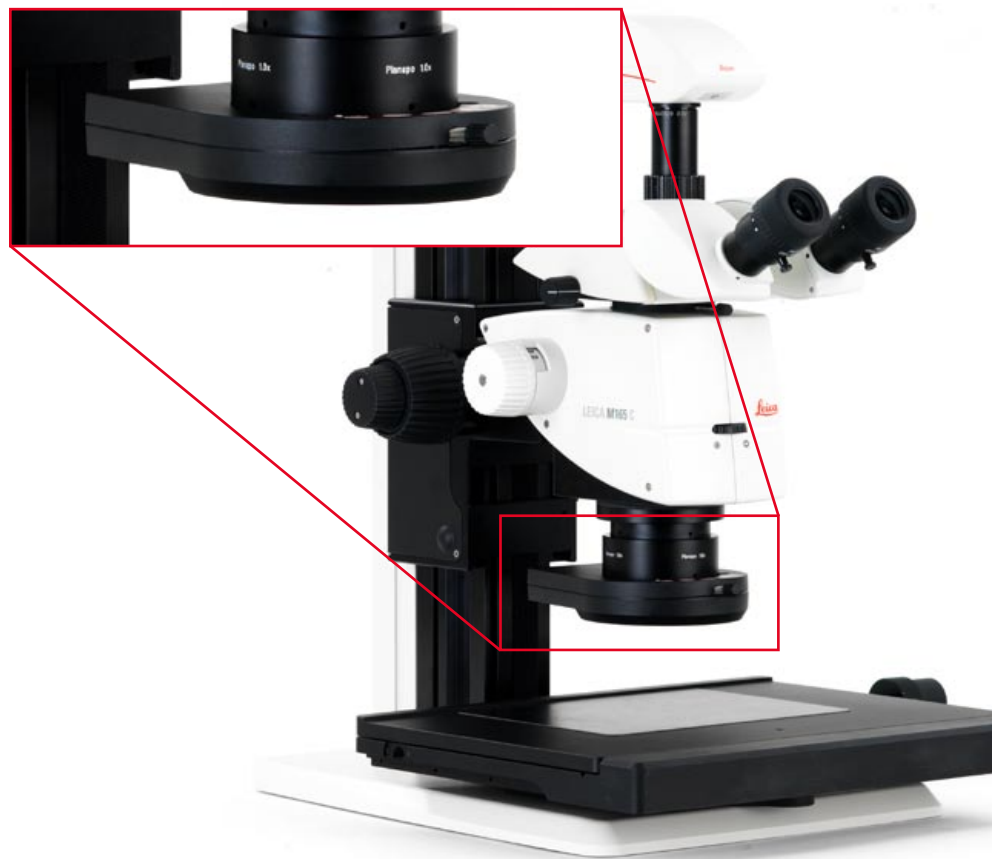
**Leica**  
MICROSYSTEMS

# Leica LED5000 RL

## The Universal Ring Illuminator

The Leica LED5000 RL ringlight illuminates your specimens very brightly with 48 LEDs and simultaneously provides uniform light. This makes the Leica LED5000 RL a universal illumination solution for various application areas. Conveniently adjustable segments (full, half, quarter ring) are used to gain additional data about the specimen without having to move it. The controls (brightness and segment controls) can be comfortably accessed on the ring illuminator itself and allow fatigue-free work for hours.

- Very uniform illumination of the specimen
- Brightness comparable to 150 watt halogen illumination
- Extra information gained by adjustable segments
- Optional control via the Leica Application Suite (LAS)
- Reproducible illumination settings

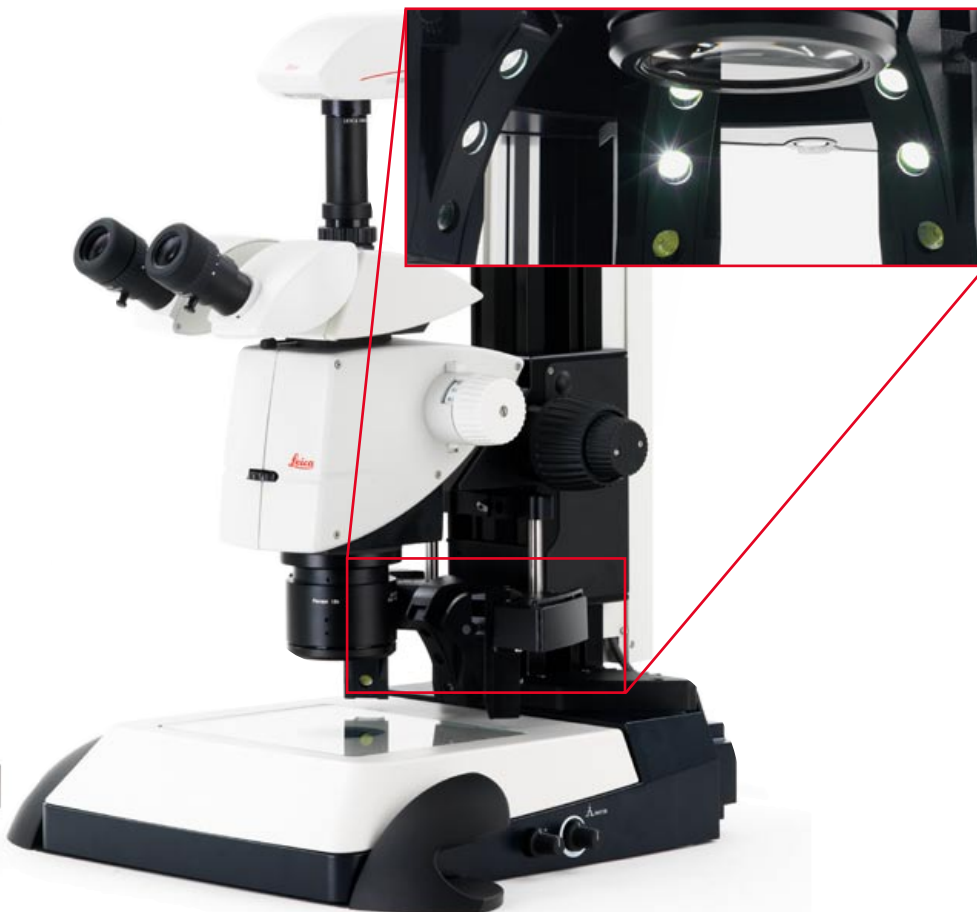


# Leica LED5000 MCI™

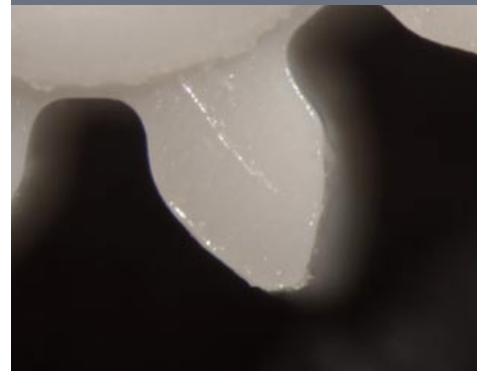
## The Expert for Oblique Illumination

The Leica LED5000 MCI™ (Multi Contrast Illumination) is a one-of-a-kind lighting solution for applications in which, until now, goose-neck illuminators had been used. The flat angle of the oblique incident light creates a particularly high contrast for viewing the specimen, allowing the user to detect minute unevenness and faults, e.g. scratches and dust particles (see image). In contrast to the goose-neck illuminator, the settings of the LED5000 MCI™ are fully reproducible:

- Nine high-performance LEDs from different angles and directions
- High contrast allows users to discover fine structures on the specimen
- Illumination angle of 15–40°
- Reproducible illumination settings
- Optional control via the Leica Application Suite (LAS)
- Optimum access to specimen



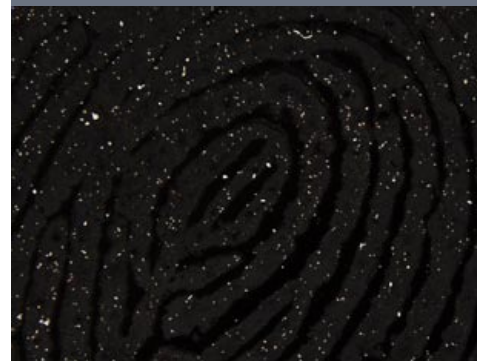
Leica LED5000 MCI™: Plastic gearwheel illuminated with the left illuminator arc



Leica LED5000 MCI™: The material fault is made visible with the right illuminator arc



Leica LED5000 MCI™: Fingerprint on a CD in oblique light



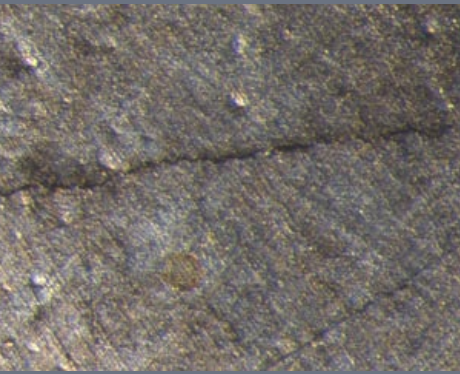
Leica LED5000 MCI™: The same specimen in flat incident light. Clearly visible: dust particles

# Leica LED5000 CXI™

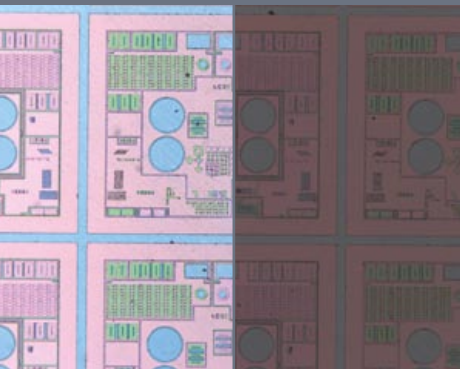
## The Coaxial LED Light

The new Leica LED5000 CXI™ is a coaxial illuminator that combines the benefits of LED technology within the smallest space: long service life, bright illumination in natural light quality, plus integration into the Leica LAS software and fully reproducible illumination settings.

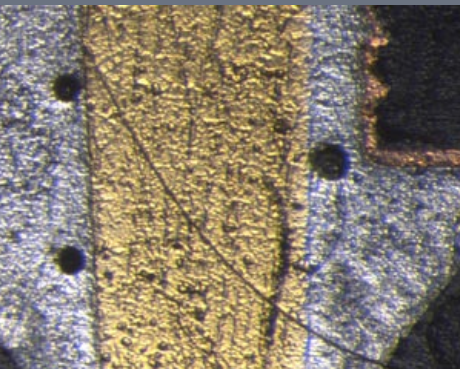
- Ideal for flat, reflective or polished specimens
- Significantly brighter illumination than comparable 150 watt halogen lamps
- No quarter-wave plate required for stereo viewing
- Brightness control directly on the illumination unit
- Optional control via the Leica Application Suite (LAS)



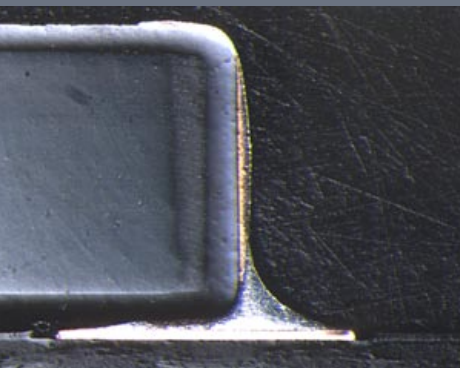
Leica LED5000 CXI™: Stress crack in cross-section of a screw head



Detail view of a wafer – on the left with the Leica LED5000 CXI™, on the right with a 150 watt halogen lamp



Leica LED5000 CXI™: Trapped air bubbles in the cross-section of a soldered joint



Leica LED5000 CXI™: Cross-section through an electronic component including solder contact



# Leica LED3000 NVI™

## The Vertical LED Light Solution

Unlike coaxial illumination, the LED3000 NVI™ also works for uneven specimens and specimens that have weak reflection. It is used mainly for viewing indentations and bores (see figures on the right).

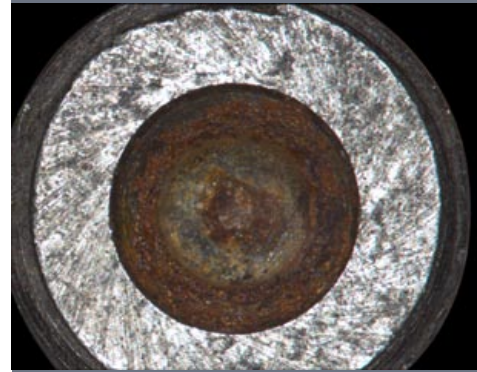
- Ideal for viewing indentations and bores
- Significantly brighter illumination than comparable 150 watt halogen lamps
- Simple operation through minimized shadows caused by tools
- Even illumination through 2-point illumination
- Compact design – great accessibility of the specimen
- Optional control via the Leica Application Suite (LAS)



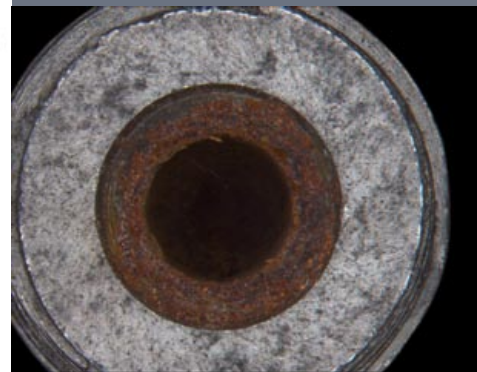
Leica LED3000 NVI™: A look into a USB plug



Detail of an injection nozzle – on the left: with Leica LED3000 NVI™, on the right with conventional ring illuminator



Leica LED3000 NVI™: The recess of a tool is illuminated all the way to its bottom (center of the image)



Illumination with conventional ring illuminator: the tool's recess is not illuminated and thus cannot be examined



# The Leica System Principle

## Benefits of LEDs

- Long service life (up to 50,000 h)
- No lamp replacement necessary
- Up to 90% lower power consumption
- Color-neutral display of the specimen
- Constant color temperature, even for different brightness levels
- Operation without fan
- Flicker-free light through DC components
- Insensitive to voltage fluctuations in the power supply

## Benefits of the Leica LED family

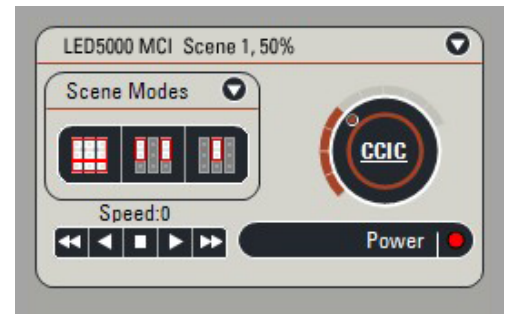
- Controls on the instrument
- Insensitive membrane keyboard
- Easy installation
- No additional control units required
- Integration into LAS software
- Reproducible settings
- Illumination setting is saved with the image
- Easy access to the specimen through compact illumination design
- Saving space at the workstation

In the Leica LED5000/LED3000 family, the complete illumination system is integrated into the overall Leica system. Focusing columns with integrated electronics bundle and process all digital signals and send them to the Leica Application Suite (LAS) software. All data is read out by the software, saved with the captured image and can be recalled at any time. Recurring experiments can be reproduced in the future with just a few mouse clicks.

Various illumination scenarios can be selected in the Leica LAS (e.g. two LED arcs of the LED5000 MCI™). Next, you can select the speed at which the illuminator switches between the scenarios. The specimen is then automatically illuminated from different perspectives.



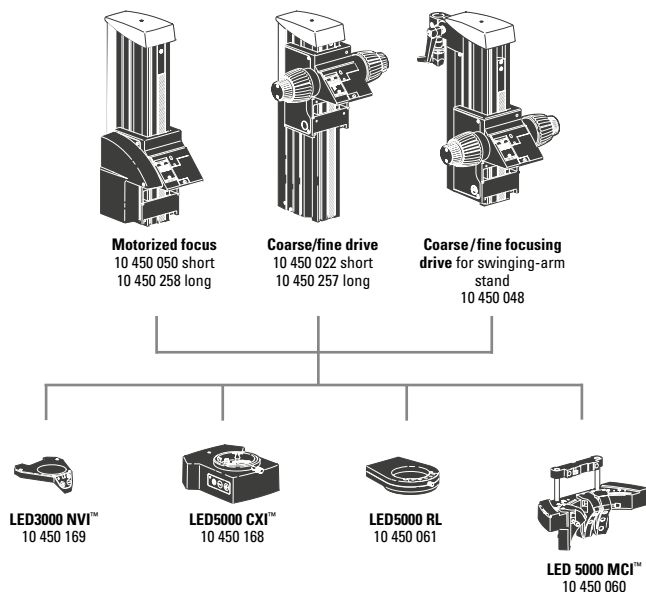
Controlling an image acquisition in the Leica Application Suite



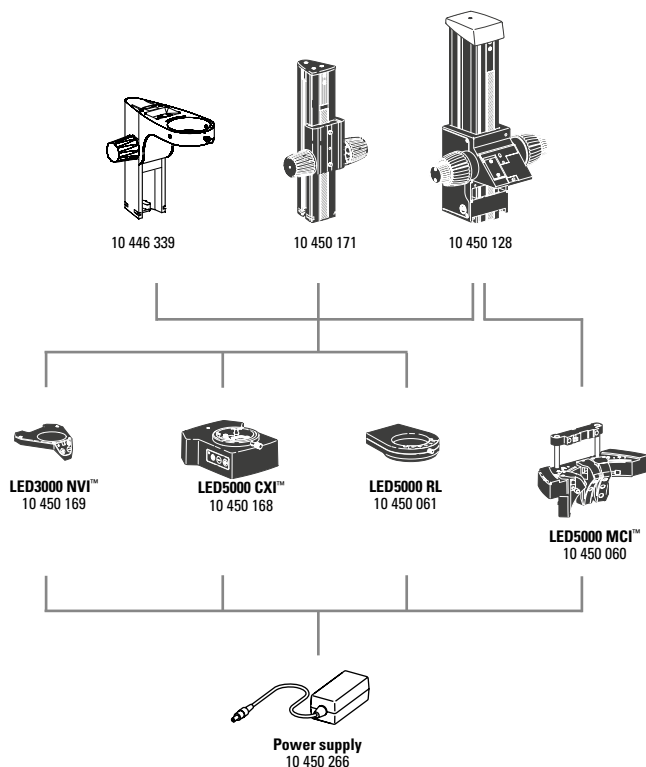
Control panel for controlling illumination scenarios

# Assembly Diagram

Direct connection of the LED5000/3000 illuminator to the focusing columns with integrated electronics:



For manual stereomicroscopes, a separate power supply unit for supplying power to the illumination components is available:



## Article descriptions

- 10 450 060 LED5000 MCI™ (Multi Contrast Illumination): three adjustable illuminator arcs, each with three LEDs, for complete integration in the stereomicroscope; with Leica LAS, fully reproducible modes including automatic replacement of multiple illumination scenarios
- 10 450 061 LED5000 RL – ring illuminator with Ø80 mm and 48 LEDs for complete integration in the stereomicroscope; with LAS, fully reproducible modes including automatic replacement of multiple illumination scenarios, optimized for working distances of 50–80 mm
- 10 450 168 LED5000 CXI™ – coaxial incident-light illumination with integrated LED illumination for M-Series, with CTL2 connection and cable, opt. magnification factor 1.5×, can be controlled via LAS
- 10 450 169 LED3000 NVI™ – vertical illuminator for use with objectives with Ø58 mm, optimized for working distances of 60–120 mm, can be controlled via Leica LAS
- 10 450 266 Power supply unit for LED3000/LED5000
- 10 450 022 Focusing drive, coarse/fine with 420 mm profile column
- 10 450 257 Focusing drive, coarse/fine with 620 mm profile column
- 10 450 050 Motorized focus with 420 mm profile column
- 10 450 258 Motorized focus with 620 mm profile column
- 10 450 048 Focusing drive, coarse/fine for swinging-arm stand
- 10 450 128 Focusing drive, coarse/fine for Leica M125
- 10 446 339 Focusing drive with integrated microscope carrier
- 10 450 171 Coarse focusing drive with 300 mm profile column
- 10 450 267 RLA 80/66 Ring illuminator adapter for LED5000 RL for objectives with Ø66 mm

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Canada:	Richmond Hill/Ontario	Tel. +1 905 762 2000	Fax +1 905 762 8937
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Sweden:	Kista	Tel. +46 8 625 45 45	Fax +46 8 625 45 10
Switzerland:	Heerbrugg	Tel. +41 71 726 34 34	Fax +41 71 726 34 44
United Kingdom:	Milton Keynes	Tel. +44 1908 246 246	Fax +44 1908 609 992
USA:	Bannockburn/Illinois	Tel. +1 847 405 0123	Fax +1 847 405 0164

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