Leica LED3000 / Leica LED5000
User Manual

Leica
MICROSYSTEMS

Contents

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General Instructions

General Instructions

Safety concept

Before using your microscope for the first time, please read the “Safety concept“ brochure included with your instrument. It contains additional information about handling and care.

Use in clean rooms

Leica LED illuminators can be used in clean rooms with limitations.

Cleaning

- Do not use any unsuitable cleaning agents, chemicals or techniques for cleaning.
- Never use chemicals to clean colored surfaces or accessories with rubberized parts. This could damage the surfaces, and specimens could be contaminated by abraded particles.
- In most cases, we can provide special solutions on request. Some products can be modified, and we can offer other accessories for use in clean rooms.

Servicing

- Repairs may only be carried out by Leica Microsystems-trained service technicians. Only original Leica Microsystems spare parts may be used.

Responsibilities of person in charge of instrument

- Ensure that the Leica LED illuminator is operated, maintained and repaired by authorized and trained personnel only.

Important Safety Notes

Instructions for use

The Leica LED3000 and Leica LED5000 illuminators can be configured within the Leica product range in a wide variety of ways. Informationen zu den einzelnen Systemkomponenten entnehmen Sie bitte der interaktiven CD-ROM mit sämtlichen relevanten Gebrauchsanweisungen in weiteren Sprachen. Sie muss sorgfältig aufbewahrt werden und dem Benutzer zur Verfügung stehen. Gebrauchsanweisungen und Updates stehen auch auf unserer Homepage www.leica-microsystems.com zum Herunterladen und Ausdrucken zur Verfügung.

This User Manual describes the special functions of the Leica LED3000 and Leica LED5000 illuminators and contains important instructions for their operational safety, maintenance, and accessories.

The "Safety Concept" booklet contains additional safety information regarding the service work, requirements and the handling of the illuminators, electrical and other accessories, and general safety instructions.

You can combine individual system articles with articles from external suppliers (e.g. cold light sources, etc.). Please read the User Manual and the safety instructions from the supplier.

Before installing, operating or using the instruments, read the user manuals listed above. In particular, please follow all safety instructions.

To maintain the unit in its original condition and to ensure safe operation, the user must follow the instructions and warnings contained in these user manuals.

The microscope illumination is in the exempt group (risk group 0) according to EN 62471:2008 when used according to its intended use.

⚠ Never look directly into the LED beam of the illumination equipment – either with or without optical instruments – as this increases the risk class. Failure to observe this notice poses a risk of eye damage.

⚠ Safety note for the Leica LED5000 NVI: The Leica LED5000 NVI illuminator is extremely bright. In accordance with EN 62471:2008 this illuminator is assigned to risk group 2. Particularly with this illuminator, make sure that you never directly look into the LED because there is a risk of eye damage.

Symbols Used

Warning! Safety hazard!

This symbol indicates especially important information that is mandatory to read and observe.

Failure to comply can cause the following:

- Hazards to personnel
- Functional disturbances or damaged instruments

Warning of hazardous electrical voltage

This symbol indicates information that must be read and observed.

Failure to comply can cause the following:

- Hazards to personnel
- Functional disturbances or damaged instruments

Danger due to hot surface

This symbol warns against touching hot surfaces, e.g. those of light bulbs.

Important information

This symbol indicates additional information or explanations that are intended to provide clarity.

Safety Instructions

Description

- The Leica LED3000 and Leica LED5000 illuminators are supplements for Leica stereomicroscopes of the S series (Leica S4; Leica S6; Leica S8 Apo); M series (Leica M50, Leica M60, Leica M80) and DMS series (Leica DMS300 and Leica DMS1000). Illumination by power LEDs ensures ideal light conditions and is used in a wide variety of applications.

Intended use

- Refer to "Safety Concept" booklet

Non-intended use

- Refer to "Safety Concept" booklet

Never use the Leica LED3000 and LED5000 illuminators and its components for IvD / IvF and/or medical applications, since they are not intended for these.

The instruments and accessories described in this User Manual have been tested for safety and potential hazards. The responsible Leica affiliate must be consulted whenever the instrument is altered, modified or used in conjunction with non-Leica components that are outside of the scope of this manual!

Unauthorized alterations to the instrument or noncompliant use shall void all rights to any warranty claims.

Place of use

- Refer to "Safety Concept" booklet
- Electrical components must be placed at least 10 cm away from the wall and from flammable substances.
- Avoid large temperature fluctuations, direct sunlight and vibrations. These conditions can distort measurements and micrographic images.
- In warm and warm-damp climatic zones, the individual components require special care in order to prevent the build-up of fungus.

Responsibilities of person in charge of instrument

- Refer to "Safety Concept" booklet

Ensure that:

- The Leica LED3000 and LED5000 illuminators and accessories are operated, maintained and repaired by authorized and trained personnel only.
- All operators have read, understood and observe this User Manual, and particularly the safety regulations.

Safety Instructions (Continued)

Repairs, service work

- Refer to "Safety Concept" booklet
- Only original Leica Microsystems spare parts may be used.
- Before opening the instruments, switch off the power and unplug the power cable.
- Avoid contact with powered electrical circuits, which can lead to injury.

Transport

- Use the original packaging for shipping or transporting the individual modules of the Leica LED3000 and LED5000 illuminators and the accessory components.
- In order to prevent damage from vibrations, disassemble all moving parts that (according to the user manual) can be assembled and disassembled by the customer and pack them separately.

Integration in third-party products

- Refer to "Safety Concept" booklet

Disposal

- Refer to "Safety Concept" booklet

Legal regulations

- Refer to "Safety Concept" booklet

EC Declaration of Conformity

- Refer to "Safety Concept" booklet

Health risks

Workplaces with microscopes facilitate and improve the viewing task, but they also impose high demands on the eyes and holding muscles of the user. Depending on the duration of uninterrupted work, asthenopia and musculoskeletal problems may occur. For this reason, appropriate measures for reduction of the workload must be taken:

- Optimal arrangement of workplace, work assignments and work flow (changing tasks frequently).
- Thorough training of the personnel, giving consideration to ergonomic and organizational aspects.

The ergonomic design of the Leica LED3000 and LED5000 illuminators aims to limit the strain on the user to the lowest possible level.

About Leica LED Illuminators

LED: Illuminant With a Future

Congratulations on purchasing your LED illuminator from Leica Microsystems. You have made an excellent choice: You will enjoy the high quality and well-conceived operation for a long time to come and it will provide the best possible lighting for your work – regardless of the type of specimen you would like to examine.

All of the Leica LED illuminators offer a great number of advantages you will not want to do without:

- Constant color temperature (daylight) throughout the entire lifecycle
- Extremely long service life of up to 50 000 hours
- Absolutely maintenance-free; no lamp replacement required
- Depending on the illuminator, individual segments can be switched on or off independently from one another so that different illumination scenarios are possible.
- It is controlled either on the instrument, via the Leica SmartTouch panel or via the Leica Application Suite software.
- Extremely low power consumption at high light efficiency

The Leica LED illuminators work seamlessly with all Leica stereomicroscopes.

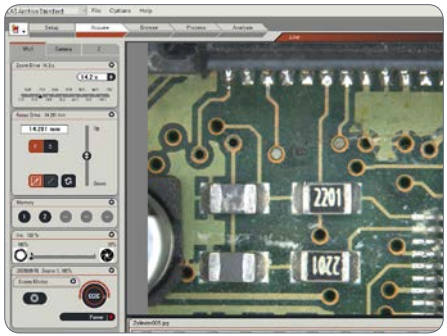
Using the Leica Application Suite software (LAS), users can control, save, and later call up scenarios with different microscope and light settings at the touch of a button.

We wish you great joy and success with your new LED illuminator by Leica Microsystems!

Control via LAS and Leica SmartTouch

Each Leica LED illuminator can also be controlled via the Leica Application Suite (LAS) or the Leica SmartTouch control unit.

Leica Application Suite (LAS)



The PC-based LAS software allows users to integrate each Leica LED illuminator into the workflow. Control the intensity of the illumination and the desired illumination scenario from your computer. Stored scenarios can be called up at any time at the touch of a button so that you can be assured that you will have consistent conditions for your experiments.

For information on how to control the LED illuminator via LAS, refer to the user manual for the LAS software.

Leica SmartTouch

All Leica LED illuminators can also be used with the Leica SmartTouch control unit. Exactly as is the case with LAS, the illuminator can be switched on and off or the brightness can be adjusted. Moreover, you can access one of the preset illumination scenarios with a single tap. All settings can be saved and retrieved later at the touch of a button.

The instructions for controlling the illuminator using Leica SmartTouch can be found in this User Manual.

Leica SmartTouch

“Power PLUS function“ of the Illuminators

The Leica LED3000 and Leica LED5000 illuminators must be switched on separately, after the microscopy system is switched on. If the illuminator is to switch on automatically, the “Power PLUS function“ must be activated. The illuminator is automatically switched on if the illuminator is powered (e.g. by means of the CAN bus of the focusing column).

The following illuminators are equipped with “Power PLUS function”:

- Leica LED3000 RL
- Leica LED5000 RL
- Leica LED3000 SLI
- Leica LED5000 SLI
- Leica LED3000 NVI
- Leica LED5000 CXI
- Leica LED5000 NVI
- Leica LED5000 HDI

Activating and deactivating the “Power PLUS function”

To activate the “Power PLUS function,” keep the plus button ⊕ of the illuminator pressed while you connect the illuminator with the AC plug. The illuminator **flashes quickly three times**, showing that the function was activated.

To deactivate the “Power PLUS function,” keep the minus button ⊖ of the illuminator pressed, while you connect the illuminator with the AC plug. The illuminator **flashes quickly two times**, showing that the function was deactivated.

The function is deactivated in the factory condition.

Leica LED3000 RL

About the Leica LED3000 RL

The Leica LED3000 RL ("Ring Light") generates a very bright and homogenous incident light. The ring illuminator illuminates the specimen with 24 LEDs that can be switched on or off together or in various combinations.

The Leica LED 3000 RL can be used with any objectives that have an outer diameter of 58 mm. The supported working distance is between 60 mm and 150 mm.

Controls

It is controlled using either the integrated keypad or via the Leica Application Suite (LAS) or the Leica SmartTouch.

LAS and the Leica SmartTouch enable you to create fully reproducible illumination scenarios and automatically toggle between them. For additional information on controlling the illuminator via LAS, please refer to the LAS online help.

Leica LED3000 RL: Assembly

Required tools

- None

Installing the Leica LED3000 RL

1. Connect the Leica CAN bus cable included to the Leica LED3000 RL.

2. Place the Leica LED3000 RL on the objective from below and tighten the locking screw.

Connection and power supply

The Leica LED3000 RL can be used directly with the electronic focusing column. The power is then supplied via the CTL2 connection. In addition, the communication between LAS or the Leica SmartTouch is transferred via the same connection.

If you work with the manual focusing column without integrated electronics, the Leica LED3000 RL must be supplied with power via the external power supply unit (not included in the scope of delivery). Moreover, the illuminator cannot be controlled via the Leica Application Suite in this case.

Connection to the electronic focusing column

1. Connect the Leica LED3000 RL to the focusing column via the CTL2 port.

Leica LED3000 RL: Assembly (Continued)

Power supply when using the manual focusing column

1. Connect the external power supply unit (10 450 266) to the Leica LED3000 RL.

Installing optional accessories

- The optional diffuser is attached and screwed in below the ring illuminator.

- The optional polarization set (polarizer and analyzer) is attached and screwed in below the ring illuminator.

- You can screw the polarization set into place firmly using the small metal plate provided.

Leica LED3000 RL: Use

⚠ The light of the Leica LED3000 RL can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

Using the keypad

- Use the ⏻ key to switch the Leica LED3000 RL illuminator on or off.
- Use the ⊕ and ⊖ keys to adjust the brightness in 10 increments.
- Touch either of the two keys to adjust the quantity of light in small increments.
- Hold the key pressed to change the quantity of light more quickly.

The illumination scenarios

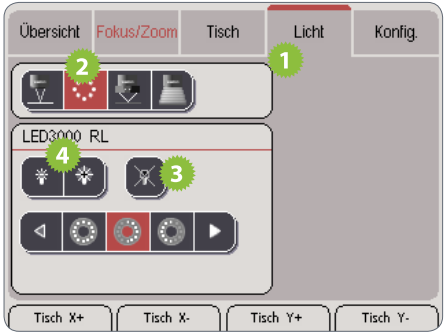
You can switch between different illumination scenarios (full ring, half ring, quarter rings, opposite quarter rings) using the ⌖ key. The active illuminator segments are displayed on the front control panel field by means of LEDs.

Use the ⊗ and ⊗ keys to rotate the active segments clockwise or counterclockwise.

Leica LED3000 RL and Leica SmartTouch

Using the Leica SmartTouch, you can control both the brightness and various illumination scenarios for the Leica LED3000 RL.

Adjusting the illumination

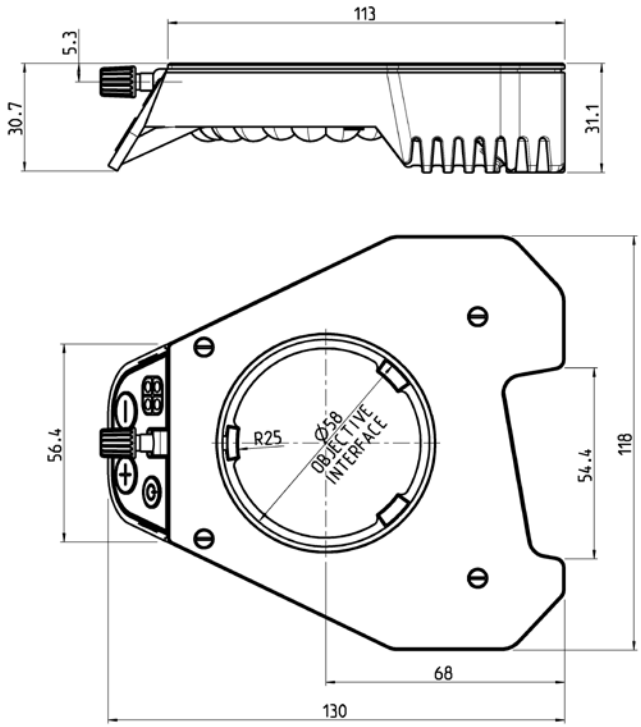


1. Touch the “Light“ tab.
2. In the upper area, touch the symbol for the Leica LED3000 RL.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.
5. Touch one of the symbols for the illumination scenarios to adjust the lighting to your needs.

You cannot modify the default illumination scenarios.

Leica LED3000 RL: Dimensional Drawings

Leica LED3000 RL (dimensions in mm)



Leica LED5000 RL

About the Leica LED5000 RL

Use

The Leica LED5000 RL (“Ring Light”) generates a very bright and homogenous incident light. It has a diameter of 80 mm and illuminates the specimen with 40 LEDs that can be switched on and off all together or in various combinations.

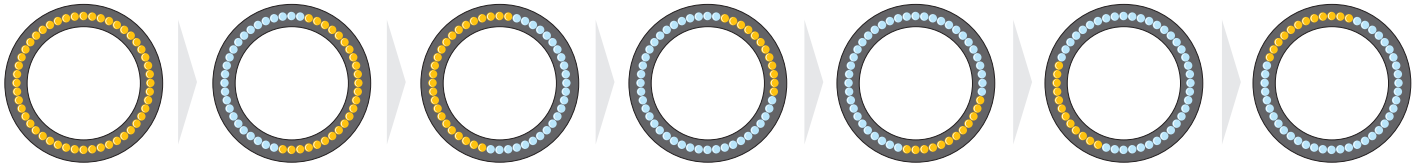
The recommended working distance is between 50 mm and 80 mm.

Controls

It is controlled using either the integrated keyboard keypad or via Leica Application Suite (LAS) or the Leica SmartTouch control unit.

LAS enables you to create fully reproducible illumination scenarios and automatically toggle between them.

For additional information, refer to the LAS online help.



Leica LED5000 RL: Assembly

Required tools

- None

The Leica LED5000 RL is installed on the objective using a single screw. It has been optimized for a working distance between 50 mm and 80 mm.

Constraints

The Leica LED5000 RL can be used only in conjunction with the planapochromat 1× and planapochromat 0.63× objectives. With all other objectives, the working distance is too low for adequate illumination.

The ring illuminator cannot be used together with the objective nosepiece.

Assembly

1. Connect the Leica CAN bus cable provided to the ring illuminator.

2. Place the Leica LED5000 RL against the objective from below, push it up as far as it will go and screw it into place.

3. Plug the other end of the cable into an available CTL2 socket on the column.

Continued on next page.

Leica LED5000 RL: Assembly (Continued)

If you work with the manual focusing column without integrated electronics, the Leica LED5000 RL must be supplied with power via an external power supply unit (not included in the delivery package). Moreover, the illuminator cannot be controlled via Leica Application Suite in this case.

For optimum accessibility of the specimen, the ring illuminator should be installed with the cable facing backwards. However, it is also possible to turn the ring illuminator sideways, for example if simultaneously using the Leica LED5000 MCI system illuminator. In this case, the ring illuminator cannot be connected directly to the Leica LED5000 MCI.

Leica LED5000 RL: Installing Optional Accessories

Installing optional accessories

- You can screw the optional polarization set into place firmly using the metal plate provided.

- The optional polarization set (polarizer and analyzer) is attached and screwed in below the ring illuminator.

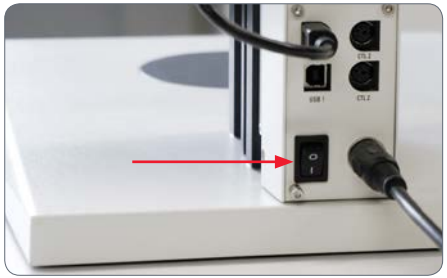
- The optional diffuser is attached and screwed in below the ring illuminator.

Leica LED5000 RL: Use

⚠ The light of the Leica LED5000 RL can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

Switching on the focus column

1. Switch on the focus column using the power switch on the rear in order to supply the Leica LED5000 RL with current.



Using the front keypad

- Use the ⏻ key to switch the illuminator on or off.
- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments.
- Tap the ⊕ or ⊖ key briefly to adjust the intensity in small increments. Hold one of the keys to change the intensity more quickly.

Using the side keypad

- Use the ⋘ and ⋙ keys to toggle between the illuminator segments.
- Use the ⊛ key to toggle between the following illuminator segments: full ring, half ring (left–right), half ring (front–rear), quarter ring, opposite quarter rings, eighth ring.
- Use the ⋘ and ⋙ keys to rotate the active segments clockwise or counterclockwise.

Leica LED5000 RL: Use (Continued)

- If you press ⊗ or ⊗ for approx. 2 seconds, the segments rotate automatically until you press one of these keys again. If you change the segment using the ⊕ key, the automatic changeover is kept. Pressing ⊗ or ⊗ briefly stops the changeover.

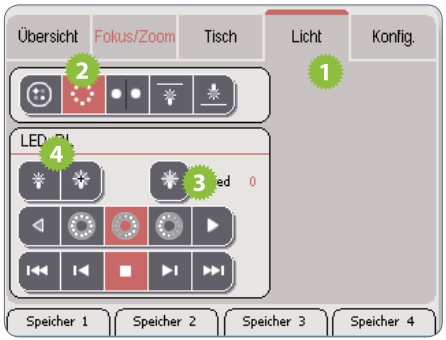
- Press and hold the ⊕ key for approx. 2 seconds to switch on the full ring of the ring illuminator.

The active illuminator segments are indicated on the front control panel by 8 LEDs arranged around the on/off key.

Leica LED5000 RL and Leica SmartTouch

Using the Leica SmartTouch control unit, you can control both the brightness and various illumination scenarios for the Leica LED5000 RL (“Ring Light”).

Adjusting the illumination

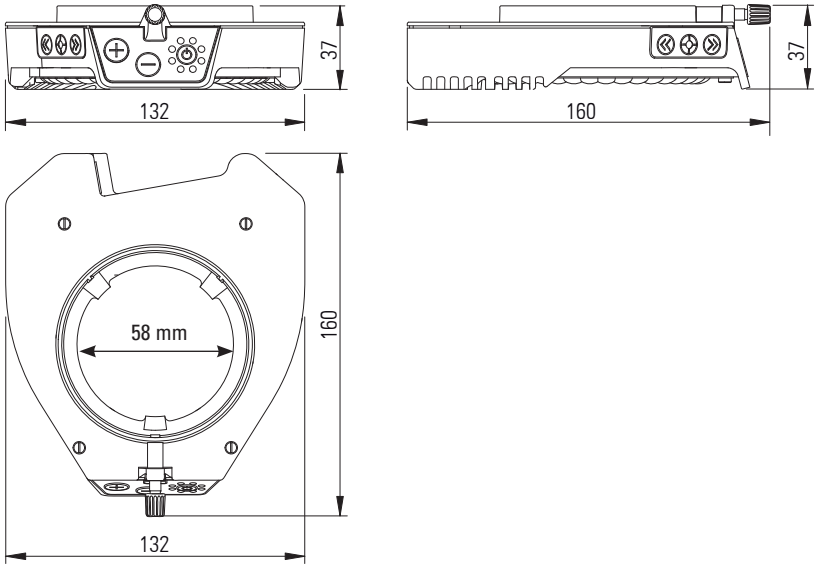


1. Touch the “Light” tab.
2. In the upper area, touch the symbol for the Leica LED5000 RL.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.
5. Touch one of the symbols for the illumination scenarios to adjust the lighting to your needs.

You cannot modify the default illumination scenarios.

Leica LED5000 RL: Dimensional Drawings

Leica LED5000 RL (dimensions in mm)



Leica LED3000 NVI

About the Leica LED3000 NVI

Leica LED3000 NVI –
The vertical LED light solution

Unlike coaxial illumination, the Leica LED3000 NVI also works for uneven specimens and specimens that have weak reflection. It is ideally suited for viewing recesses and bores. Minimized shadows caused by tools also contribute to an easier and more pleasing work experience with the microscope.

Leica LED3000 NVI: Assembly

Required tools

- None

The Leica LED3000 NVI can be used with any objectives that have an outer diameter of 58 mm.

The supported working distance is between 60 mm and 150 mm.

Installing the Leica LED3000 NVI

1. Connect the CTL2 cable provided to the Leica LED3000 NVI.

2. Connect the illuminator to the focusing column via the CTL2 connection if the focusing column is equipped with integrated electronics.

Alternative installation for manual columns

1. Connect the external power supply unit (10 450 266) to the Leica LED3000 NVI.

2. Place the Leica LED3000 NVI on the objective from below and tighten the locking screw.

Leica LED3000 NVI: Assembly (Continued)

⚠ Ensure that the locking screw of the illuminator and the locking screw of the optics carrier are on a straight line, as otherwise image shading may occur.

Leica LED3000 NVI: Use

The intensity of the illuminator can be adjusted in 10 increments.

The control can also be controlled via Leica Application Suite (LAS) or the Leica SmartTouch.

The supported working distance is between 60 mm and 150 mm.

When pressing the keys, hold the keypad between your thumb and index finger. Avoid tapping the keypad with just one finger if possible.

Use

The light of the Leica LED3000 NVI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

1. Switch on the illuminator by briefly pressing the ⏻ (ON/OFF) key.

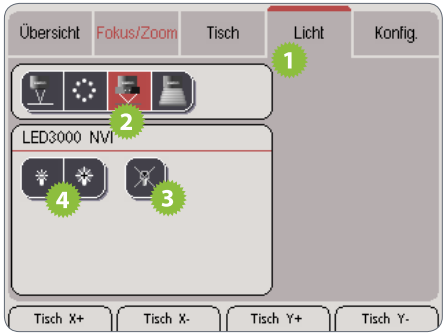
The green LED on the upper left corner now lights up.

2. Adjust the brightness by briefly pressing the ⊕ or ⊖ keys.

3. Switch off the illuminator by briefly pressing the ⏻ key.

Leica LED3000 NVI and Leica SmartTouch

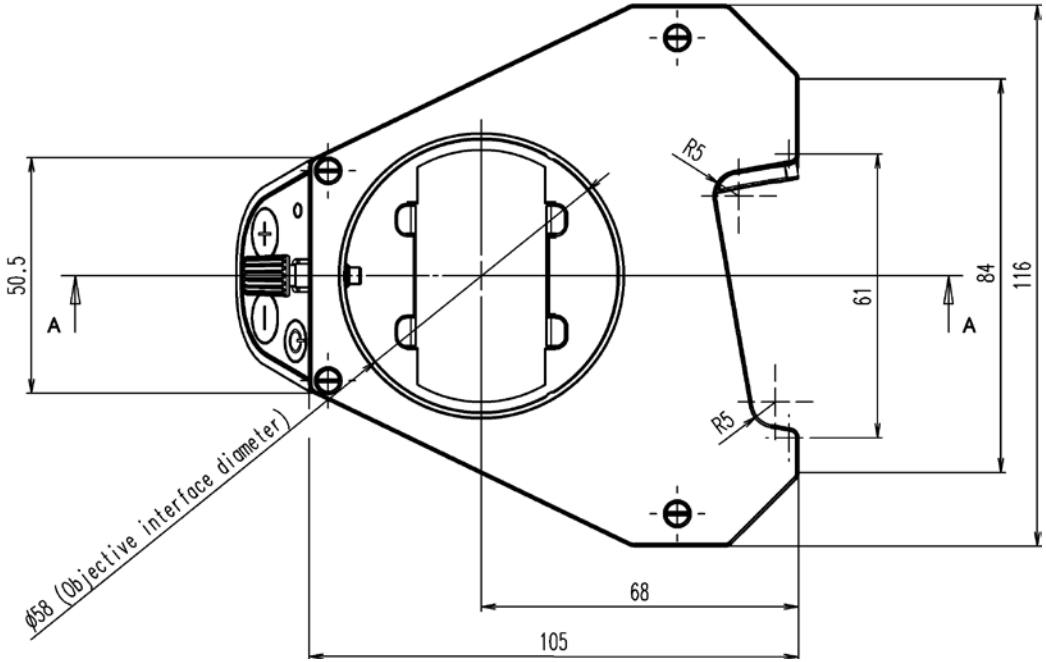
Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol of the Leica LED3000 NVI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

Leica LED3000 NVI: Dimensional Drawings

Leica LED3000 NVI (dimensions in mm)



Leica LED5000 NVI

About the Leica LED5000 NVI

Leica LED5000 NVI – The vertical LED light for high-performance and routine microscopes
The Leica LED5000 NVI induces an illuminator that lies very close to the optical beam path of the microscope being used. Because of this, products with indentations can be ideally illuminated. The extremely high power of the Leica LED5000 NVI makes it possible to brightly illuminate structures, even in deep bores. In combination with the Leica M50 / Leica M60 and Leica M80 stereomicroscopes, the illuminator replaces the Leica M651. By means of the integrated filter holder, commercially available filters can be used and the color temperature can be adapted both to corresponding to the application and to the practices of the user. This also induces the familiar color temperature of the Leica M651. Reflections on the metallic surfaces can be effectively reduced using the optional available polarization set.

If the Leica LED5000 NVI with a high-performance stereomicroscope (Leica M125 / Leica M165 /Leica M205) is used in combination with a 1.6× or 2.0× objective, the illuminator allows for an ideal illumination of the product, even with very low working distances between product and objective.

Controls

It is controlled using either the integrated keypad or via Leica Application Suite (LAS) or the Leica SmartTouch control unit.

LAS enables you to configure fully reproducible illumination settings that are saved with the image data. For additional information, refer to the LAS online help.

Use

The light of the Leica LED5000 NVI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! To reduce harmful glare, the Leica LED5000 NVI was equipped with a delayed increase of brightness to the previously used level. Avoid looking directly into the LEDs.

Leica LED5000 NVI: Assembly on Routine Stereomicroscopes (Leica M50 / Leica M60 / Leica M80)

Required tools

- Allen key M4 for assembly on the focusing column

Assembly of the Leica LED5000 NVI (10 450 658)

1. In the factory configuration, the Leica LED5000 NVI is already installed with the extension plate (for assembly on the focusing column).

2. The adapter for fastening the microscope must show the mark Ⅰ on the top. If the adapter has the Ⅱ mark on at the top, remove the adapter and subsequently install it with the correct mark Ⅰ on the top of the Leica LED5000 NVI.
3. Make sure that the adapter for fastening the microscope is at the correct position. To assemble a Leica M50 / Leica M60, the holder must be in the lower position. In the higher position for a Leica M80. (If necessary, detach and fasten the microscope carrier with an Allen key M4).

Leica LED5000 NVI: Assembly on Routine Stereomicroscopes (Leica M50 / Leica M60 / Leica M80) (Continued)

4. Fasten the Leica LED5000 NVI to the column using the M5 screw.

5. Set the optics carrier in the microscope carrier and tighten the positioning screw.

6 Push the tube into the dovetail ring of the optics carrier and rotate it slightly in both directions until the positioning screw meshes with the guide groove. While holding the tube only slightly, carefully tighten the positioning screw. It is automatically brought to the correct position.

Leica LED5000 NVI: Assembly on Routine Stereomicroscopes (Leica M50 / Leica M60 / Leica M80) (Continued)

7. If the focusing column is equipped with integrated electronics, connect the Leica LED5000 NVI to the focusing column via the CTL2 connection. Alternative installation for manual columns: Connect the external power supply unit (10 450 266) to the Leica LED5000 NVI.

8. Screw the objective to the Leica LED5000 NVI from below.

Lists of recommended objectives that can be used with the Leica LED5000 NVI without additional adapters:

10 411 597 Achromatic objective f=100 mm
10 441 787 Achromatic objective f=150 mm
10 431 692 Achromatic objective f=175 mm
10 382 162 Achromatic objective f=200 mm
10 382 172 Achromatic objective f=400 mm
10 450 027 Planapochromatic objective 0.63×
10 450 028 Planapochromatic objective 1.0×
10 450 029 Planapochromatic objective 1.6×
10 450 030 Planapochromatic objective 2.0×

Additional objectives can be used by means of adapters. However, loss of optical quality does need to be expected (e.g. vignetting, color seams, reflections etc.).

Leica LED5000 NVI: Assembly on Routine Stereomicroscopes (Leica M50 / Leica M60 / Leica M80) (Continued)

If you work with the standard achromatic objectives of the M series instruments (Leica M50 / Leica M60 / Leica M80), the illuminated surface will be smaller than the object field when in the low zoom range (up to a zoom position of 1.25×). This is due to the small diameter of the objectives and is not a malfunction. To prevent this effect, we recommended using the objectives listed above.

Leica LED5000 NVI: Assembly on High-Performance Stereomicroscopes (Leica M125 / Leica M165 / Leica M205)

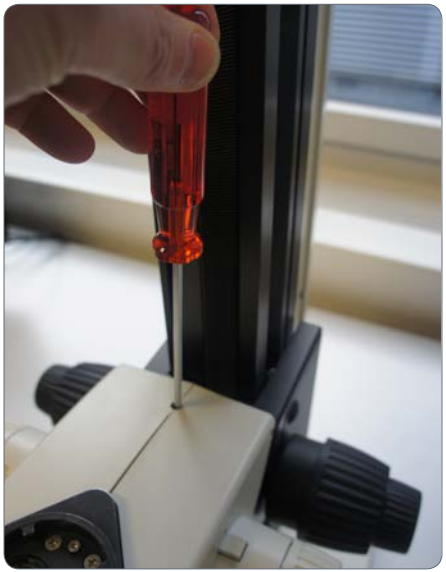
Assembly of the Leica LED5000 NVI (10 450 659)

1. The Leica LED5000 NVI in factory configuration is already assembled with the extension plate (for assembly on manual and motorized focusing columns) at the factory.
2. Place the Leica LED5000 NVI on the focusing column so that the screw fits into the thread provided and the lug fits into the groove.
3 Press the Leica LED5000 NVI backwards to the focusing column and screw it in place using an Allen key M4.

Leica LED5000 NVI: Assembly on High-Performance Stereomicroscopes (Leica M125 / Leica M165 / Leica M205) (Continued)

4. Unscrew the three Phillips screws on the objective mount of the optics carrier and remove the spacer ring.

5. Set the optics carrier on the adapter of the Leica LED5000 NVI and tighten it with an Allen key M4.



6. Install the remaining microscope components (tube, ergonomic accessories, camera etc.) according to the corresponding user manuals.

7. If the focusing column is equipped with integrated electronics, connect the Leica LED5000 NVI to the focusing column via the CTL2 connection. Alternative installation for manual columns: Connect the external power supply unit (10 450 266) to the Leica LED5000 NVI.

Leica LED5000 NVI: Assembly on High-Performance Stereomicroscopes (Leica M125 / Leica M165 / Leica M205) (Continued)

8. Screw the objective to the Leica LED5000 NVI from below.

Lists of recommended objectives that can be used with the Leica LED5000 NVI without additional adapters:

10 411 597 Achromatic objective f=100 mm
10 441 787 Achromatic objective f=150 mm
10 431 692 Achromatic objective f=175 mm
10 382 162 Achromatic objective f=200 mm
10 382 172 Achromatic objective f=400 mm
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10 450 028 Planapochromatic objective 1.0×
10 450 029 Planapochromatic objective 1.6×
10 450 030 Planapochromatic objective 2.0×

Additional objectives can be used by means of adapters. However, loss of optical quality does need to be expected (e.g. vignetting, color seams, reflections etc.).

Leica LED5000 NVI: Installing Optional Accessories

Polarization set

The Leica LED5000 NVI can be equipped with an optional polarization set. Using the polarization set, reflections can be reduced on metallic surfaces, for example.

1. The polarizer is inserted into the filter insert on the bottom of the Leica LED5000 NVI.

2. The analyzer is installed between the tube and optics carrier. To do so, remove the tube from the optics carrier. Place the analyzer on the optics carrier and then install the tube. Fasten the components by tightening the positioning screws.

3. To generate the desired polarization effect, rotate the rotary disk of the analyzer until the desired image quality is reached.

Leica LED5000 NVI: Installing Optional Accessories (Continued)

Filter inserts

The Leica LED5000 NVI is supplied with a filter holder as a standard feature. Commercially available filters of size 1/2“ can be used. Make sure that the filters being used are sufficiently temperature-resistant, so they are not damaged by the high-energy illumination. Additional empty filter inserts (10 725 035) can be purchased as spare parts.

1. To disassemble the filter holder, push the filter holder approx. 1 cm to the side and remove the holder downwards out of the Leica LED5000 NVI. The filter holder is assembled in the reverse order of steps.

Leica LED5000 NVI: Use

The intensity of the illuminator can be adjusted in 10 increments.

The control can also be controlled via Leica Application Suite (LAS) or the Leica SmartTouch.

Use

The light of the Leica LED5000 NVI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! To avoid glare, the Leica LED5000 NVI was equipped with a delayed raise to the previously used brightness level. Avoid looking directly into the LEDs.

1. Switch on the illuminator by briefly pressing the ⏻ (ON/OFF) key.

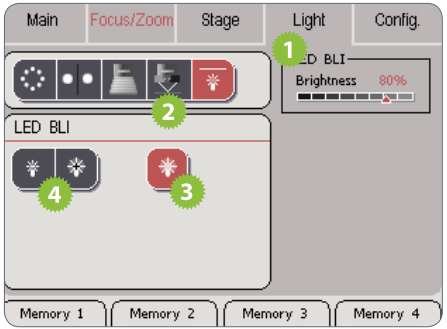
The white LED above the symbol now lights up.

2. Adjust the brightness by briefly pressing the ⊕ or ⊖ keys.

3. Switch off the illuminator by briefly pressing the ⏻ key.

Leica LED5000 NVI and Leica SmartTouch

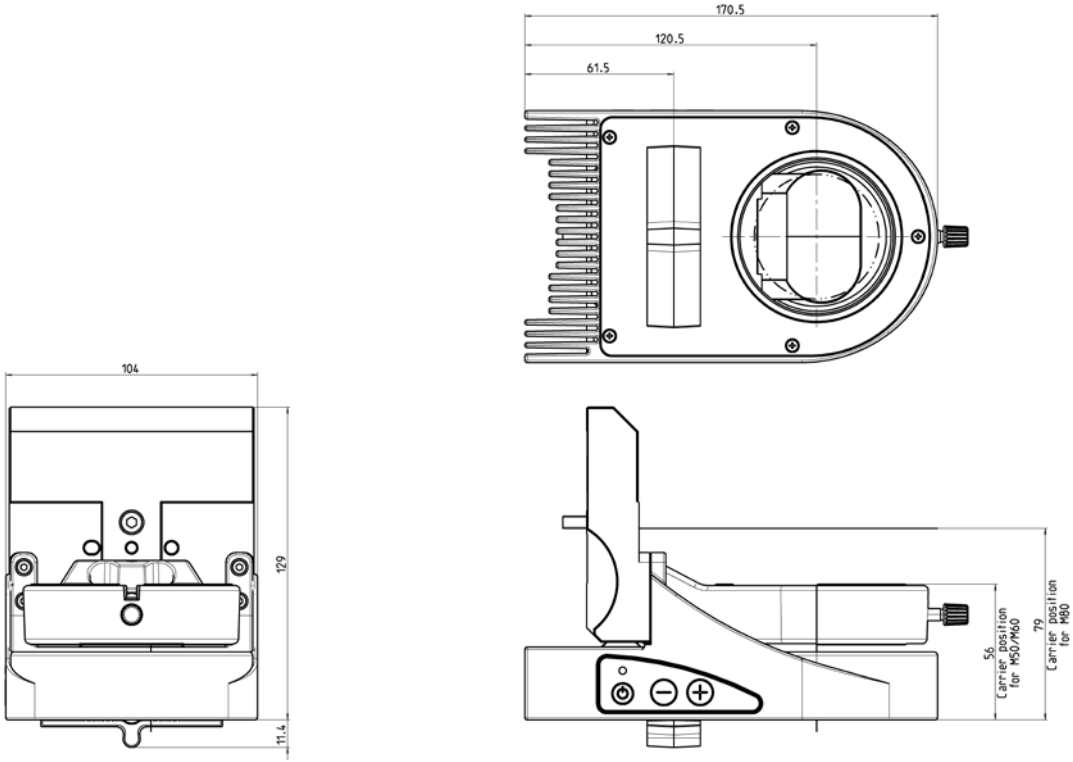
Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol of the Leica LED5000 NVI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

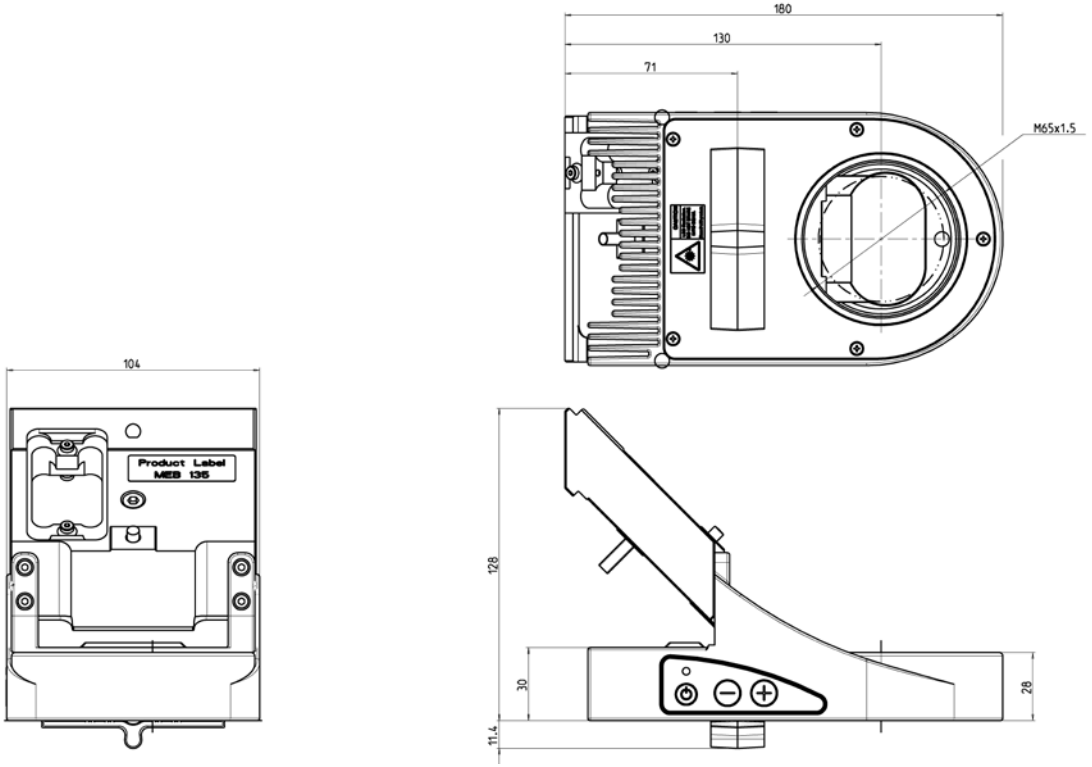
Leica LED5000 NVI: Dimensional Drawings

Leica LED5000 NVI for Routine Stereomicroscopes (dimensions in mm)



Leica LED5000 NVI: Dimensional Drawings (Continued)

Leica LED5000 NVI for High-Performance Stereomicroscopes (dimensions in mm)



Leica LED3000 MCI

About the Leica LED3000 MCI

Use

Using the Leica LED3000 MCI (for "**M**ulti-**C**ontrast-**I**llumination"), reproducible incident light settings with different contrast can be generated. Both illuminator arcs with the integrated LED spotlights can be moved into the desired position depending on the configuration (microscope and objective).

Leica LED3000 MCI: Assembly

Scope of delivery

The Leica LED3000 MCI consists of 2 parts:

- Illumination unit with 2 guide rods and integrated illuminator arc
- Control box

Required tools

- Allen key provided

Installation on the illumination unit

1. Slide the illumination unit laterally across the microscope carrier.

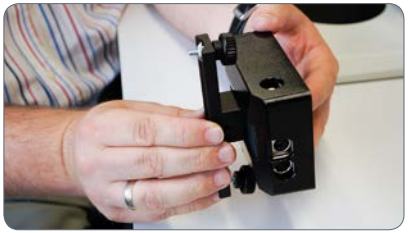
2. Fasten the illumination unit from above on the carrier using the two provided screws.

3. Install the optics carrier.

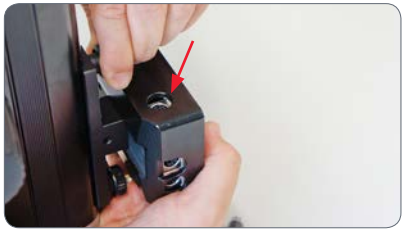
Leica LED3000 MCI: Assembly (Continued)

Installing the control box on routine focus columns

1. Screw the control box 10 450 570 to the adapter.



2. Install the adapter to the rear side of the focusing column. In doing so, the height can be adapted to your wishes. The individual connection for the operating elements must point upwards.



Leica LED3000 MCI: Assembly (Continued)

Connecting the illumination unit to the control box

1. Connect the left cable of the illumination unit to the lower left port of the control box.

2. Connect the right cable of the illumination unit to the lower right port of the control box.

3. Connect the cable of the illumination unit to the upper port of the control box.

Leica LED3000 MCI: Assembly (Continued)

Power supply (ext. power supply unit)

1. Connect the Leica CAN bus plug of the external power supply to an available CTL2 connection on the spot illuminator.

The Leica LED3000 MCI cannot be controlled using Leica Application Suite.

The external power supply is not included in the standard delivery of the spot illuminator.

The Leica LED3000 MCI has a second CTL2 connection. You can connect a second Leica LED illuminator (RL, NVI or CXI) to this port.

The Leica LED3000 MCI cannot be connected to a column with integrated electronics, as the two components are mechanically incompatible.

Leica LED3000 MCI: Use

⚠ The light of the LED3000 MCI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

Using the keypad

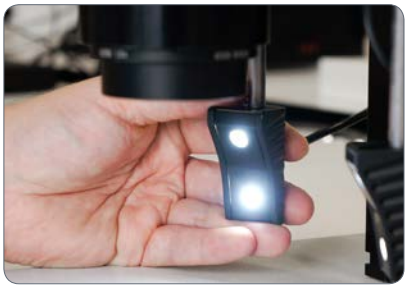
- Use the ⏻ key to switch the illuminator on or off.
- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments.
- Tap the ⊕ or ⊖ key briefly to adjust the intensity in small increments. Hold one of the keys to change the intensity more quickly.
- Touch the ⊛ key to switch between the scenarios.
- Touch the ⊗ or ⊗ key to switch within the scenario.
- Press and hold the ⊗ or ⊗ key for approx. 2 seconds so that the spotlights change automatically. Press either of the keys again to shut off the automatic changeover.
- Press and hold the ⊛ key for approx. 2 seconds to switch on all 4 LED spotlights.

Leica LED3000 MCI: Height Adjustment of the Illuminators

Height adjustment

1. Focus on a specimen (or the black/white plate).

2. Move the two columns until you obtain the desired contrast (illuminator arc approx. 10–20 mm above the specimen).

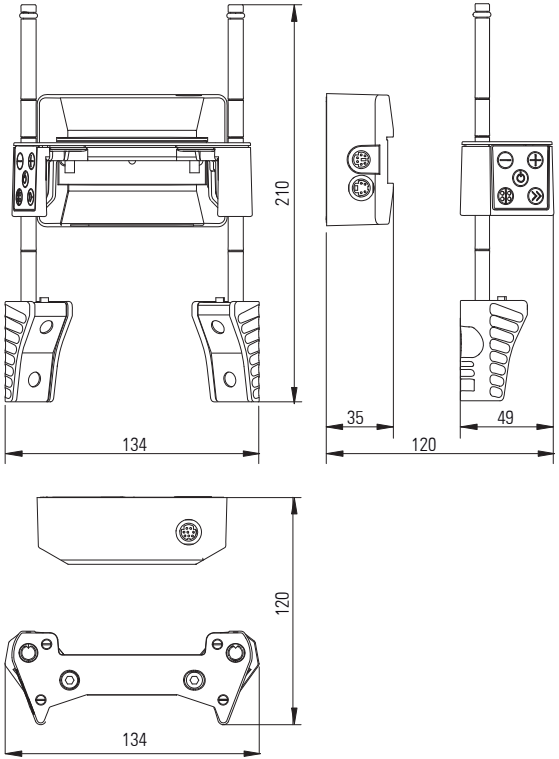


3. For a reproducible setting, move the two columns to the nearest notch. Write down this position.

If you are focusing on the black/white plate, position the two illuminator arcs approx. 10–20 mm above the plate. This will provide you with optimum illumination settings.

Leica LED3000 MCI: Dimensional Drawings

Leica LED3000 MCI (dimensions in mm)



Leica LED5000 MCI

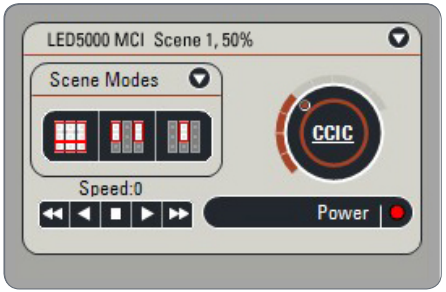
About the Leica LED5000 MCI

Leica LED5000 MCI –
The expert for oblique illumination

The Leica LED5000 MCI (for "**M**ulti-**C**ontrast-**I**llumination") 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. In contrast to the goose-neck illuminator, the settings of the Leica LED5000 MCI are fully reproducible.

Advantages

- 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
- Optimum access to specimen



Of course, the Leica LED5000 MCI can also be controlled by the LAS (Leica Application Suite) software.

Leica LED5000 MCI: Assembly

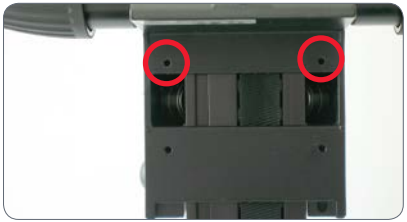
The Leica LED5000 MCI (for "**M**ulti **C**ontrast **I**llumination") is installed using two screws. For optimum accessibility, the optics carrier should be removed during assembly.

Constraints

The Leica LED5000 MCI cannot be used together with the objective nosepiece.

Assembly

1. Hold the Leica LED5000 MCI with one hand and tightly screw the retaining stirrups on both top holes on the drive housing.



2. Connect the Leica CAN bus cable provided to either of the two sockets. (The flat part of the plug must be facing downwards.)

3. Plug the other end of the cable into an available "CTL2" socket on the column.

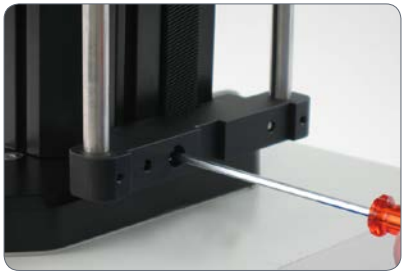
Leica LED5000 MCI: Alternative Assembly

Under certain circumstances, the light source must not be moved along with the optics carrier. A typical example is multi-focus images in which the Z-stack changes while the angle of incidence of the light must remain the same. For such purposes, the Leica LED5000 MCI is directly fastened to the column.

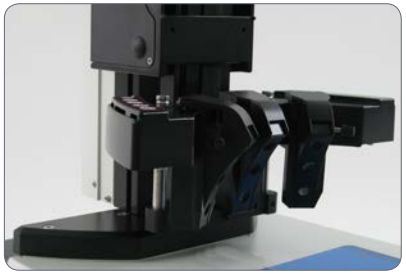
Installation on the column

1. Pull the retaining stirrup out of the Leica LED5000 MCI.

2. Screw the retaining stirrup into the column at the notch using the single screw. If you tighten the screw, the retaining stirrup is automatically moved into the correct position.



3. Push the Leica LED5000 MCI onto the retaining stirrup.



Leica LED5000 MCI: Use

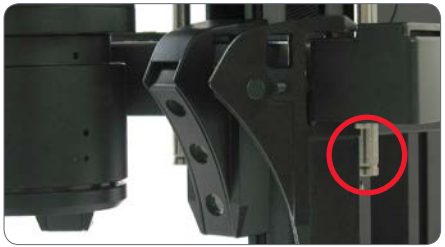
Preparation

Hold the Leica LED5000 MCI with both hands and pull it downwards until it clicks into place on the bottom end of the guide rods. Make sure that the black plastic screw is installed for securing on the left or right guide rod (see figure).

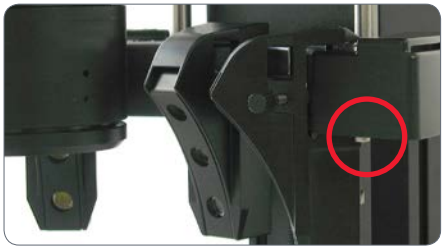
In this position, you always have the same contrast with identical illumination. This guarantees the reproducibility of an experiment.

If using the AX carrier, use the upper engaging position of the retaining stirrup.

The light of the Leica LED5000 MCI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.



Installed too high



Optimum height

Contact with the base

If the optics carriers are accidentally lowered too far, contact between the base and MCI may result. A safety mechanism in the linkage ensures that, in this case, the MCI is automatically pushed upwards to prevent the possibility of damage.

- Be sure not to place any specimens directly beneath the MCI.
- After the optics carrier is lifted, put the MCI back into the original position.

Leica LED5000 MCI: Use (Continued)

Using the keypad

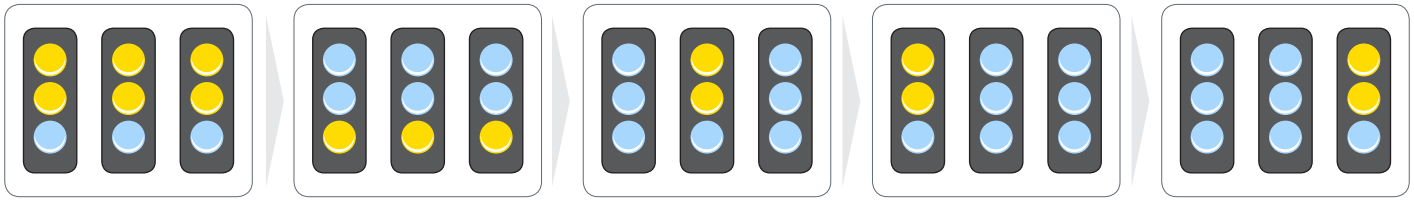
- Use the ⏻ key to switch the illuminator on or off.
- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments. Tap either of the two keys to adjust the intensity in small increments. Hold a key to change the intensity more quickly.

The illumination scenarios

Use the ⏪ and ⏩ keys to toggle between the scenarios shown below.

Maximum brightness

For temperature reasons it is not possible to switch on all nine LEDs simultaneously. Therefore, to provide bright overall illumination, the top two rows are activated. The bottom row primarily provides contrast.

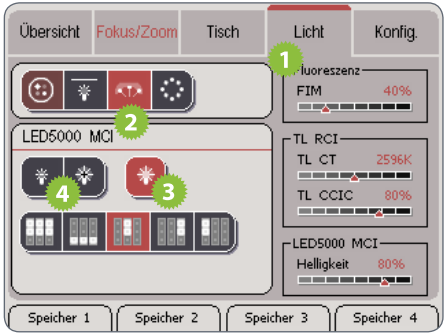


Maximum brightness *Maximum contrast* *Point illumination from the rear* *Point illumination from the left* *Point illumination from the right*

Leica LED5000 MCI and Leica SmartTouch

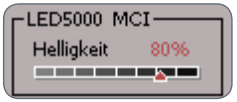
Using the Leica SmartTouch, you can control both the brightness and various illumination scenarios on the Leica LED5000 MCI.

Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol for the Leica LED5000 MCI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

The selected brightness is shown on the right side of the display.

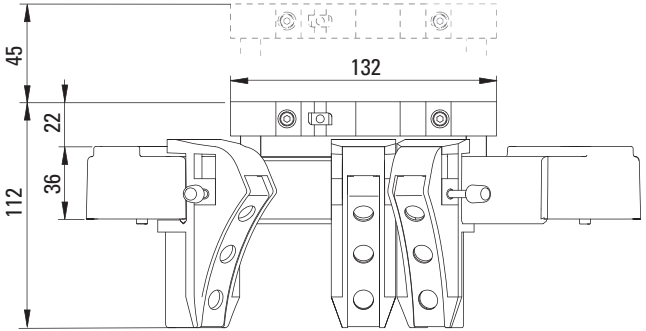


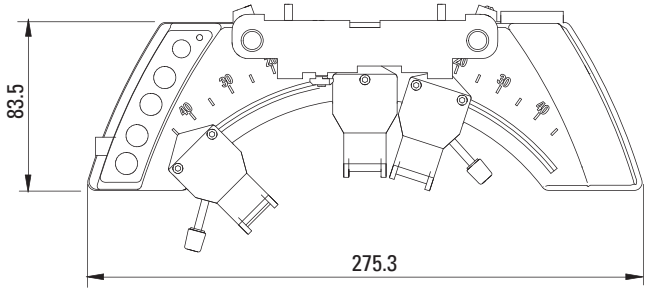
5. Touch one of the symbols for the illumination scenarios to adjust the lighting to your needs.

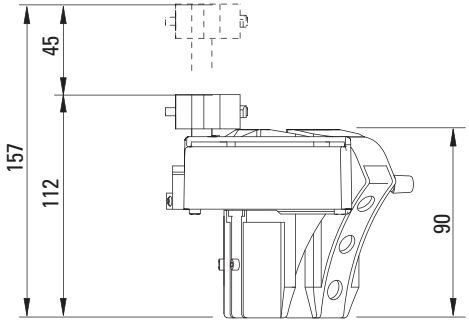
You cannot modify the default illumination scenarios.

Leica LED5000 MCI: Dimensional Drawings

Leica LED5000 MCI (dimensions in mm)







Leica LED5000 CXI

About the Leica LED5000 CXI

Leica LED5000 CXI –
The coaxial LED light solution

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.

The Leica LED5000 CXI is ideally suited for illuminating flat, reflective or polished specimens. It offers substantially brighter illumination than comparable 150 watt halogen lamps.

Use with the microscope carrier AX

If the microscope carrier AX is used in the vertical position, a quarter-wave plate is necessary:

1. Fasten the quarter-wave plate to the objective using the clamping screw.

2. Rotate the quarter-wave plate upwards using the knurled ring until the desired effect is attained.

Use with the Leica M205 C / Leica M205 A stereomicroscope

If the Leica LED5000 CXI illuminator is used with the Leica M205 C or Leica M205 A, ensure that an AX microscope carrier is used. The carrier must be in position (M205) during assembly.

In order to achieve uniform illumination in "stereo viewing", the AX carrier must be moved to the right as far as it will go. This position deviates from the default stereo position by 2 mm.

Leica LED5000 CXI: Assembly

Required tools

- None

Installing the Leica LED5000 CXI

1. Connect the Leica LED5000 CXI to the focusing column via the CTL2 connection if the focusing column is equipped with integrated electronics.

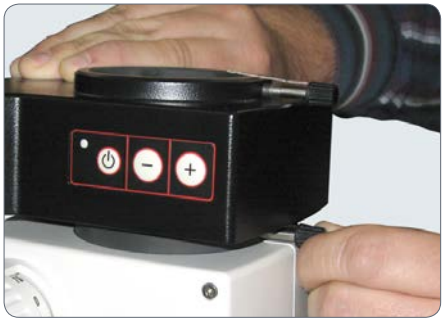
Alternative installation for manual columns

1. Connect the external power supply unit (10 450 266) to the Leica LED5000 CXI.

2. Unscrew the positioning screw and remove the protective cover.

Leica LED5000 CXI: Assembly (Continued)

3. Place the Leica LED5000 CXI on the optics carrier and tighten the positioning screw.



4. Push the tube (for example, the inclined binocular tube) into the dovetail ring and rotate it slightly in both directions until the positioning screw meshes with the guide groove.

5. While holding the tube only slightly, carefully tighten the positioning screw. It is automatically brought to the correct position.

Leica LED5000 CXI: Use

The intensity of the illuminator can be adjusted in 10 increments.

The Leica LED5000 CXI can also be controlled via the Leica Application Suite (LAS) or the Leica SmartTouch.

Using the Leica LED5000 CXI results in an increased magnification level of 1.5×.

Depending on the components used, different intensities of vignetting may occur at low magnification. Vignetting is normal and not a malfunction.

Use

The light of the Leica LED5000 CXI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

1. Switch on the illuminator by briefly pressing the ⏻ (ON/OFF) key.

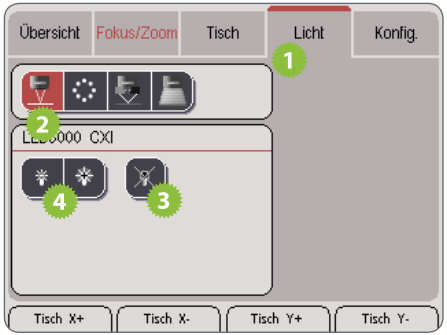
The green LED on the upper left corner now lights up.

2. Adjust the brightness by briefly pressing the ⊕ or ⊖ keys.

3. Switch off the illuminator by briefly pressing the ⏻ key.

Leica LED5000 CXI and Leica SmartTouch

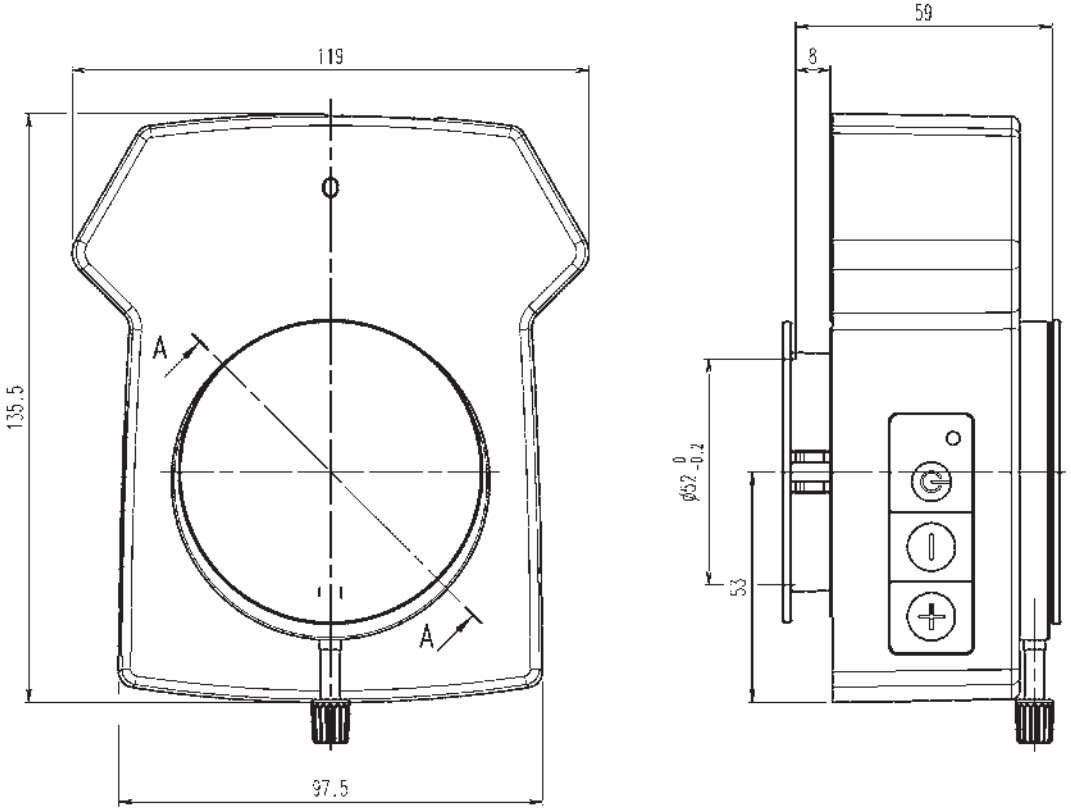
Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol of the Leica LED5000 CXI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

Leica LED5000 CXI: Dimensional Drawings

Leica LED5000 CXI (dimensions in mm)



Leica LED3000 BLI

About the Leica LED3000 BLI

The Leica LED3000 BLI (for "**B**ack **L**ight **I**llumination") is suitable as a transmitted light illuminator for use in baseplates that do not have back light functions. Since the Leica LED3000 BLI is not permanently assembled on the base, it can be used very flexibly when needed. Due to the large, level surface, large products can be studied. With the inductive button, the Leica LED3000 BLI can be switched on and off and the brightness can be adjusted in 10 increments.

Leica LED3000 BLI: Assembly and "Standalone" Mode

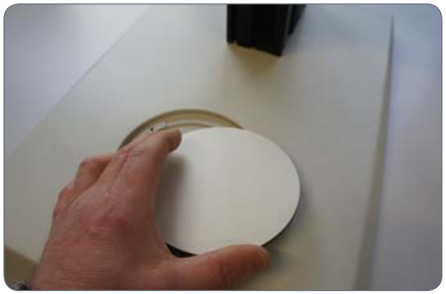
Standard delivery of the Leica LED3000 BLI

- Leica LED3000 BLI illumination unit
- 4 Screw-on rubber feet for using the Leica LED3000 BLI on flat substrates
- CAN-bus cable (50 cm)
- Cleaning cloth for cleaning the Leica LED3000 BLI

Required tools

- None

1. To use the Leica LED3000 BLI on the microscope bases, remove the 120 mm insert from the base.



Leica LED3000 BLI: Assembly and "Standalone" Mode (Continued)

2. Insert the Leica LED3000 BLI into the opening of the baseplate. When positioned correctly, all four silicone feet rest level on the baseplate and are centered with the optics in the baseplate indentation. (The rubber feet that are included in the standard delivery are not necessary for use on a baseplate.)

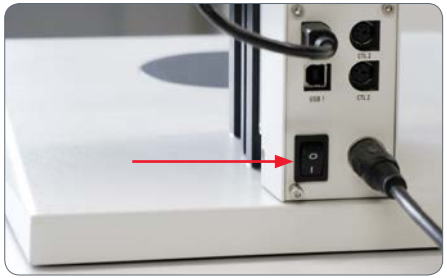
If the Leica LED3000 BLI is used without a baseplate, install the 4 provided rubber feet on the corners of the bottom of the baseplate and position the Leica LED3000 BLI on a flat and clean surface.

3. The power is supplied to the Leica LED3000 BLI via the power supply of a CTL bus by focusing columns or via an external power supply. To connect a focusing column to the Leica LED3000 BLI, use the provided CAN bus cable. Alternatively, the Leica LED3000 BLI can be powered by an external power supply (10 450 266).

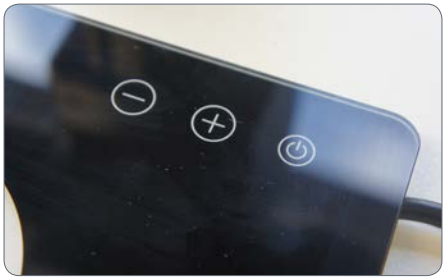
Leica LED3000 BLI: Use

Switching on the focusing column

1. Switch on the focusing column using the power switch on the rear in order to supply the Leica LED3000 BLI with current.

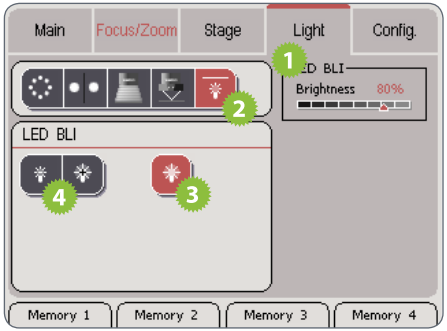


- Use the ⏻ key to switch the illuminator on or off.
- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments.
- Tap the ⊕ or ⊖ key briefly to adjust the intensity in small increments. Hold one of the keys to change the intensity more quickly.



Leica LED3000 BLI and Leica SmartTouch

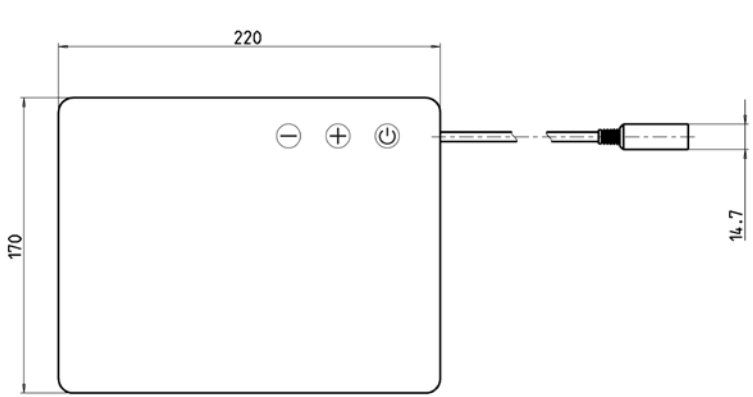
Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol of the Leica LED3000 BLI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

Leica LED3000 BLI: Dimensional Drawings

Leica LED3000 BLI (dimensions in mm)



Leica LED5000 HDI

About the Leica LED5000 HDI

The Leica LED5000 HDI (for "**H**igh **D**iffuse **I**llumination") is a newly-designed, innovative high-output illuminator. Its soft light reduces reflection on highly reflective specimens and prevents stray light.

The Leica LED5000 HDI consists of a flexible plastic dome. It houses two independent LED rings that can be controlled individually.

It is controlled using either the integrated keypad or via the Leica Application Suite (LAS) or the Leica SmartTouch.

The Leica LED5000 HDI is installed on the objective using a single screw. The working distance has been optimized for a height between 60 and 70 mm.

Constraints

The Leica LED5000 HDI can only be used with objectives that have an outer diameter of 80 mm.

The Leica LED5000 HDI has been optimized for the planapochromat 1× and planapochromat 0.63×.

Control via Leica Application Suite

The Leica LED5000 HDI illuminator has been supported since LAS version 3.6.

LAS enables you to create fully reproducible illumination scenarios and automatically toggle between them. For additional information, refer to the LAS online help.

Leica LED5000 HDI: Assembly

Connection

1. Connect the Leica CAN bus cable to the illuminator. The flat part of the plug must be facing upwards.

2. In an in-focus state, slide the illuminator over the objective until it can no longer touch the baseplate when folded down and screw it into place. When doing so, the control panel field should be facing the user.

3. Plug the other end of the cable into one of the two “CTL2“ sockets on the rear side of the focusing column.

Depending on the height of the specimen to be examined, the Leica LED5000 HDI can be installed a bit higher or lower along the objective.

Leica LED5000 HDI: Illumination Scenarios

Using the keypad

- Use the ⏻ key to switch the illuminator on or off.

- Use the ⏢ key to switch between the three illumination modes: Both LED rings active > Top LED ring active > Bottom LED ring active

- If both LED rings are active, only the brightness of the top ring can be changed. Depending on the specimen and requirements, it is thus possible to attain balanced brightness conditions for both rings.

- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments. Tap either of the two keys to adjust the intensity in small increments. Hold a key to change the intensity more quickly.

The illumination scenarios

The flexible plastic shielding is the central feature of the Leica LED5000 HDI. It allows two illuminator operating modes.

Switch between the two modes by moving the plastic shielding up or down using the two tabs on the left and right of the metal ring.

Thanks to the high flexibility, it is also possible to just fold up or down one side.

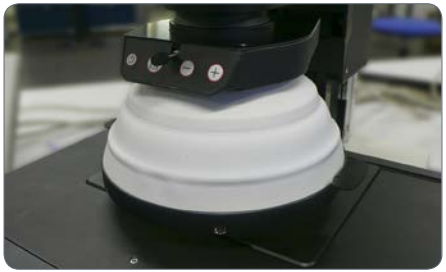
Leica LED5000 HDI: Illumination Scenarios (Continued)

⚠ The use of flexible plastic eliminates "hard collisions" with specimens to a large extent. For very sensitive specimens, however, even the weight of the illuminator itself can cause damage.

⚠ The Leica LED5000 HDI illuminator is not suitable for inspecting ESD-sensitive assemblies, components or parts.

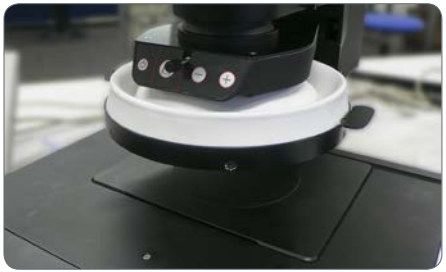
1. Dome folded down

In this mode, the Leica LED5000 HDI is particularly powerful. Homogeneity is at the highest level and the stray light from outside is blocked.



2. Dome folded up

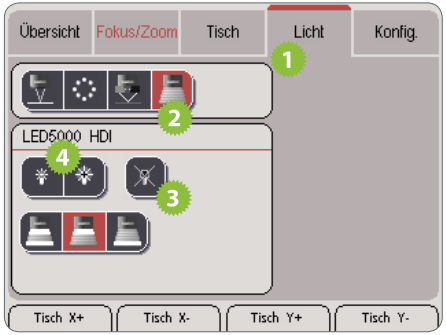
This mode allows continued access to the specimen for additional setup. This mode also ensures illumination with minimal reflections.



Leica LED5000 HDI and Leica SmartTouch

Using the Leica SmartTouch, you can control both the brightness and various illumination scenarios for the Leica LED5000 HDI.

Adjusting the illumination

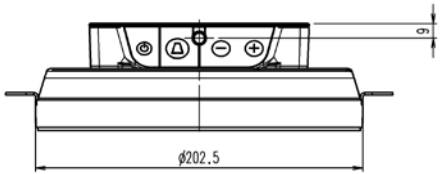


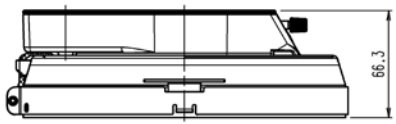
1. Touch the "Light" tab.
2. In the upper area, touch the symbol for the Leica LED5000 HDI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.
5. Touch one of the symbols for the light settings to adjust the lighting to your needs.

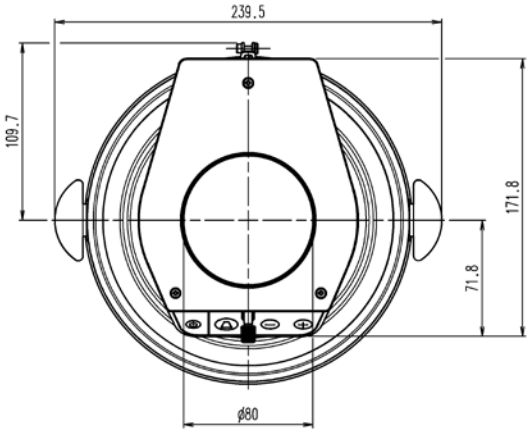
Leica LED5000 HDI: Dimensional Drawings

Leica LED5000 HDI (dimensions in mm)

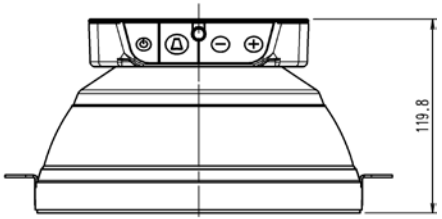
folded dome







unfolded dome



Leica LED3000 DI

About the Leica LED3000 DI

The Leica LED3000 DI (für "**D**iffuse **I**llumination") is an illuminator that generates a diffuse light. It consists of an illumination screen that reflects the light in different directions. The diffuse features of the light source can enable a shadow-free illumination of the products, which is a particular advantage for documentation purposes.

Due to the flexible arm, the Leica LED3000 DI can easily be installed as an additional, mobile light source, for example, on a ring light illuminator. If needed, the Leica LED3000 DI can easily be positioned between the objective and the product. Its design ensures that accessibility to the product remains sufficient.

For higher-value tasks, it is recommend to use the Leica LED5000 HDI, which induces an even higher diffused light with minor shadowing.

It is controlled using either the integrated keypad on the flexible arm, via the Leica Application Suite (LAS) or the Leica SmartTouch.

Leica LED3000 DI: Assembly

Required tools

- None

Installation on routine focusing columns

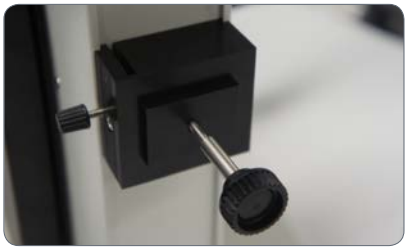
1. Screw the adapter 10 450 570 to the rear side of the column.

2. Install the Leica LED3000 DI to the adapter on the rear side of the focusing column. In doing so, the height can be adapted to your requirements.

Leica LED3000 DI: Assembly (Continued)

Installation on high-performance focusing columns

1. Screw the adapter 10 450 205 to the focusing column.



2. Install the Leica LED3000 DI on the adapter on the rear side of the focusing column. In doing so, the height can be adapted to your requirements.

Installation on older stereomicroscopes

In their factory condition, older stereomicroscopes do not fulfill the mechanical requirements for installing the Leica LED3000 DI on the column. This gap is closed by the adapter 10 450 549, which is installed between the base stand and the focusing column.

1. Screw the adapter 10 450 549 to the Leica LED3000 DI.

2. Detach the baseplate from the focusing column.

3. Install the adapter between the baseplate and focusing column.

4. Fasten the baseplate using the focusing column. If necessary, do so using the longer screws supplied with the adapter.

In this installation variant, the height cannot be adapted.

Leica LED3000 DI: Power Supply

Focusing columns with integrated electronics

1. Connect the provided Leica CAN-bus cable to the Leica LED3000 DI using a free CTL2 socket.

2. Plug the other end of the cable into an available CTL2 socket on the focusing column.

Power supply via external power supply unit

1. Connect the Leica CAN-bus plug of the external power supply to the Leica LED3000 DI with the CTL2 socket.

The external power supply (10 450 266) is not in the standard delivery of the Leica LED3000 DI.

Leica LED3000 DI: Use

Positioning of the illumination screen

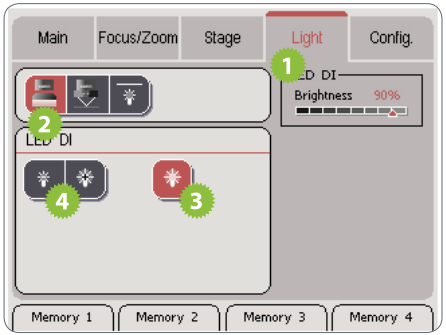
The position of the illumination screen of the Leica LED3000 DI can be individually positioned over the product due to the flexible gooseneck. When not using the illuminator, this can easily be swung to the side without removing it from the microscope.

Positioning of the keypad

The flexible gooseneck allows you to move the keypad into any position desired. This makes handling of the system more ergonomic, while repetitive steps are also optimized by the more efficient movements.

Leica LED3000 DI and Leica SmartTouch

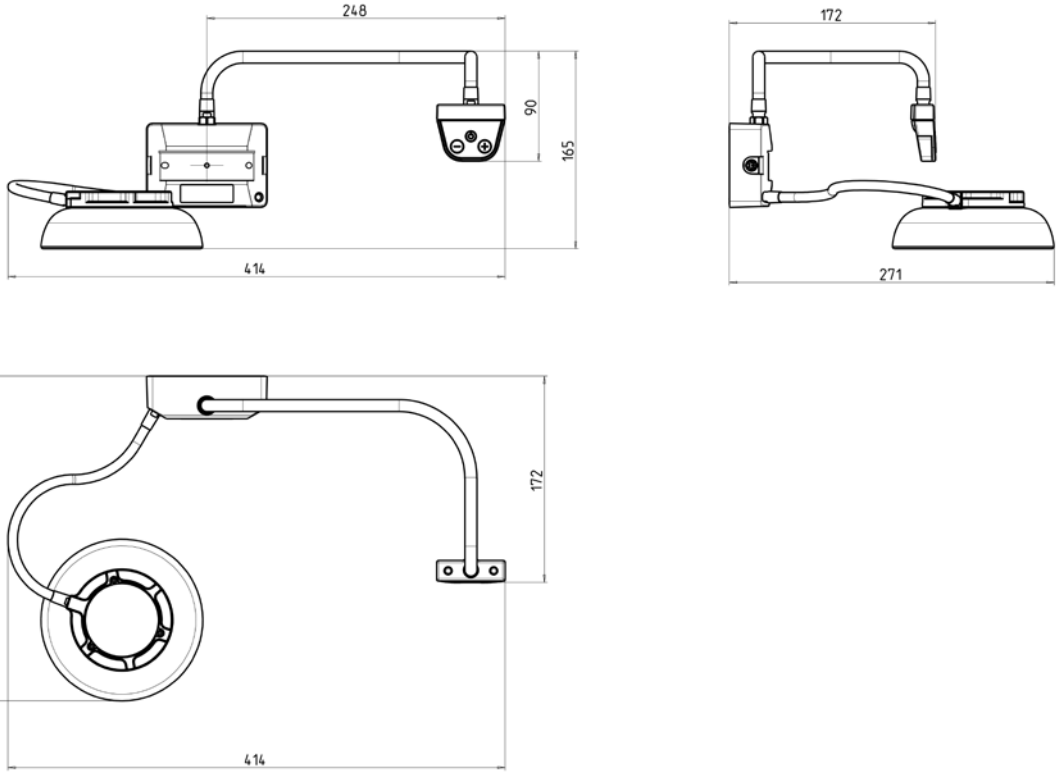
Adjusting the illumination



1. Touch the "Light" tab.
2. In the upper area, touch the symbol of the Leica LED3000 DI.
3. Switch on the illuminator.
4. Touch the lamp symbols to adjust the intensity of the light.

Leica LED3000 DI: Dimensional Drawings

Leica LED3000 DI (dimensions in mm)



Leica LED3000 SLI / Leica LED5000 SLI

About the Leica LED3000 SLI / Leica LED5000 SLI

Use

Using the Leica LED3000 SLI (for "**S**pot-**L**ight-**I**llumination") and the Leica LED5000 SLI, versatile incident light settings with different contrast can be generated.

The double-armed gooseneck with integrated LED spotlights can be put into any desired position for the desired contrast – everything from outstretched for very flat oblique light (side light) for strong shading up to high-angle incident light with minimal shading. For maximum brightness the compact LED spotlights can be positioned very close to the specimen.

Controls

It is controlled using either the integrated keypad on the third gooseneck, via Leica Application Suite (LAS) or the Leica SmartTouch control unit.

LAS enables you to create fully reproducible illumination scenarios and automatically toggle between them. For additional information, refer to the LAS online help.

One-of-a-kind operating concept

The control for the illumination is located on a separate gooseneck. This allows for ergonomic positioning depending on the user's preferences.

The difference

The two spot illuminators differ only in the length of the goosenecks:
Leica LED3000 SLI = 300 mm
Leica LED5000 SLI = 500 mm

Thus the Leica LED3000 SLI is suitable for small, compact equipment configurations in the routine stereomicroscopy area. The Leica LED5000 SLI, on the other hand, is used with high-performance stereomicroscopes, for example with transmitted light stands.

For the sake of simplicity, the designation "Leica LEDx000 SLI" will be used on the following pages when the description pertains to both models.

Leica LEDx000 SLI: Assembly

Assembly

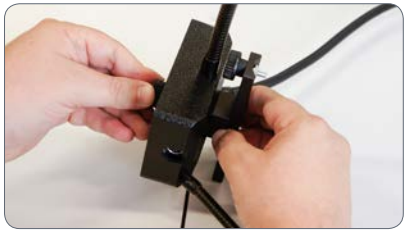
The spot illuminator is installed on the focusing columns using an adapter.

Required tools

- Allen key provided

Installation on routine focusing columns

1. Screw the spot illuminator to the adapter 10 450 570.



2. Install the adapter to the rear side of the focusing column. In doing so, the height can be adapted to your requirements.

Leica LEDx000 SLI: Assembly (Continued)

Installation on high-performance focusing columns

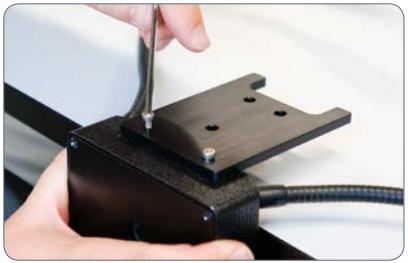
1. Screw the spot illuminator to the adapter 10 450 205.

2. Install the adapter to the rear side of the focusing column. In doing so, the height can be adapted to your requirements.

Installation on older stereomicroscopes

In their factory condition, older stereomicroscopes do not fulfill the mechanical requirements for installing the spot illuminator on the column. This gap is closed by the adapter 10 450 549, which is installed between the base stand and the focusing column.

1. Screw the adapter to the spot illuminator.



2. Detach the baseplate from the focusing column.

Continued on next page.

Leica LEDx000 SLI: Assembly (Continued)

3. Install the adapter between the baseplate and focusing column.

4. Fasten the baseplate using the focusing column. If necessary, do so using the longer screws supplied with the adapter.

In this installation variant, the height cannot be adapted.

The spot illuminator can be used in conjunction with the objective nosepiece.

Leica LEDx000 SLI: Power Supply

Focusing columns with integrated electronics

1. Connect the Leica CAN bus cable provided to an available CTL2 socket on the spot illuminator.

2. Plug the other end of the cable into an available CTL2 socket on the focusing column.

Power supply via external power supply unit

1. Connect the Leica CAN bus plug of the external power supply to an available CTL2 socket on the spot illuminator.

The external power supply is not included in the standard delivery of the spot illuminator.

Second CTL2 socket

The spot illuminator has a second CTL2 socket to which an additional Leica LED illuminator (RL, NVI or CXI) can be connected.

Leica LEDx000 SLI: Use

The light of the Leica LEDx000 SLI can be very bright. Therefore, always switch on the illuminator *before* you look through the eyepieces! Avoid looking directly into the LEDs.

Positioning the keypad

The flexible gooseneck allows you to move the keypad into any position desired. This makes handling of the system more ergonomic, while repetitive steps are also optimized by the more efficient movements.

Using the keypad

- Use the ⏻ key to switch the illuminator on or off.
- Use the ⊕ or ⊖ keys to adjust the brightness in 10 increments.
- Tap the ⊕ or ⊖ key briefly to adjust the intensity in small increments. Hold one of the two keys to change the intensity more quickly.
- Touch the ⌖ key to reach single spot mode.
- If only one spotlight is active, you can enable both spotlights using the ⌖ key.
- Press and hold the ⌖ key for approx. 2 seconds so that the spotlights change automatically. Press the key again to disable to automatic changeover.

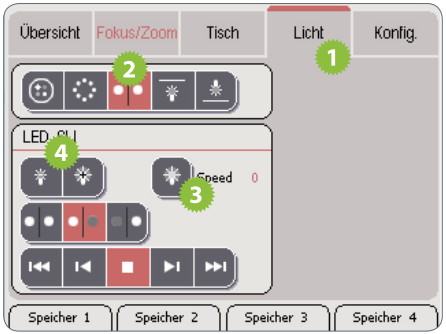
Diffusers

Your spot illuminator is supplied with 2 silver diffusers. These can be unscrewed from the LED spotlight if necessary in order to generate a more strongly focused light.

Leica LEDx000 SLI: Use with Leica SmartTouch

Using the Leica SmartTouch control unit, you can control both the brightness and various illumination scenarios for the spot illuminator.

Adjusting the illumination



1. Touch the "Light" tab.

2. In the upper area, touch the symbol for the Leica LED SLI.

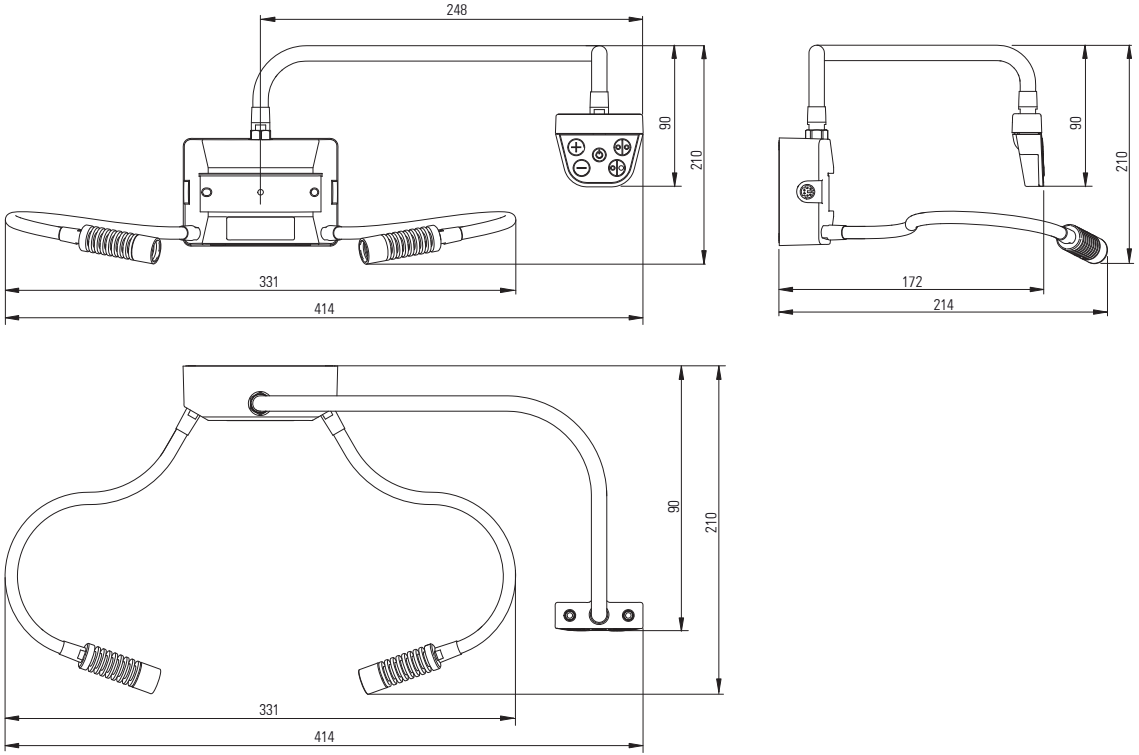
3. Switch on the illuminator.

4. Touch the lamp symbols to adjust the intensity of the light.

5. Touch one of the symbols for the illumination scenarios to adjust the lighting to your needs.

Leica LEDx000 SLI: Dimensional Drawings

Leica LEDx000 SLI (dimensions in mm)



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