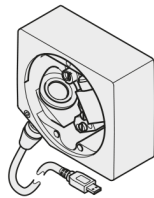
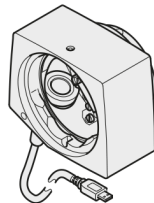


SL Imaging Solution

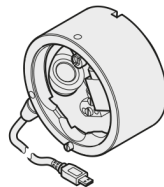
Documentation set



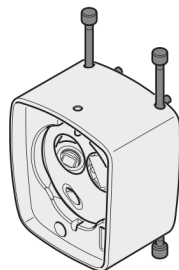
SL cam compact
SL 115 Classic



SL cam compact
SL 120/130



SL cam compact
SL 220



SL cam compact
SL 800



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1 Notes on the instructions for use

1.1 Product name

In these instructions for use, SL Imaging Solution is referred to as "system".

1.2 Scope of application

In combination with the ZESS slit lamps, SL Imaging Solution allows the user to capture images and record videos for documentation purposes.

The present instructions for use apply to the components of SL Imaging Solution in combination with one of the slit lamps SL 115 Classic, SL 120, SL 130, SL 220 or SL 800.

- SL cam compact (adapter with integrated digital camera)
 - for SL 115 Classic
 - for SL 120/SL 130
 - for SL 220
 - for SL 800
- SL Workstation
- SL Imaging Software
- Wide-field illumination (optional)
- Joystick cover (for SL 800) or foot switch (for SL 115 Classic, SL 120, SL 130, SL 220) for image documentation

1.3 Purpose and storage of the documentation

These instructions for use explain the safety features, functions and the performance parameters of the system. They are a guide for safe operation and specify the measures for maintenance and repair of the system.

The correct operation of the system is vital for safe and successful operation.

- ▶ Read these instructions for use before starting and using the system.
- ▶ Keep the instructions for use where they are accessible at all times for all users.
- ▶ Pass the instructions for use on to the next owner of the system.

1.4 Questions and comments

- ▶ If you have any questions or comments concerning these instructions for use or the system, please contact ZEISS Service.

You can find the ZEISS contact partner for your country on the following website: www.zeiss.com/med

1.5 Conventions in this document

Certain types of information are specially marked in this document for better recognition.

1.5.1 Conventions in all text areas

- This is a list.
 - This is a second level list.

This is a cross-reference: Questions and comments [▶ 8].

This is **highlighted text**.

This is `software code or program text`.

Names of software dialogs, fields or menus, and software messages are marked by quotation marks:

- "View" menu.
- "Do you want to save the settings?"

The steps in menu and file paths are separated by slashes:

- "File / Save as"
- "My documents / Documents"

Keys, buttons, knobs, levers and other operating controls are marked by square brackets:

- [START] key
- [Next] button

1.5.2 Conventions in a course of action

WARNING!

This is warning information about hazards that can cause death or severe injuries if not avoided.

The warning message names the possible consequences.

- ▶ This is a measure with which hazards can be prevented.

CAUTION!

This is warning information about hazards that can cause injuries if not avoided.

The warning message names the possible consequences.

- ▶ This is a measure with which hazards can be prevented.

NOTE

This is warning information about hazards that can cause property damages if not avoided.

The warning message names the possible consequences.

▶ This is a measure with which hazards can be prevented.

☑ This is a requirement that must be met before the start of a sequence of actions.

1. This is a command.

2. **CAUTION! This is a warning message about hazards that can occur during a single action.** This is a command.

⇒ This is the result of a sequence of actions.

1.6 Applicable documents

Please observe also the instructions for use of the relevant slit lamp and any additional components and accessory used with this system.

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2 Safety notes

2.1 Intended user profile

This system may only be installed, operated, used and maintained by persons who have been properly trained or who have the required knowledge and experience to do so. Please also adhere to the national qualification guidelines applicable in your country.

Persons who operate the system must have knowledge of basic ophthalmic examination and diagnosis methods as well as of ophthalmic optics. This includes, among others, persons belonging to the following occupational groups or their national equivalents:

- Ophthalmologist
- Optometrist
- Optician

2.2 Intended field of application

This system may be set up, operated and used only for the intended use and in accordance with local country-specific regulations, generally accepted engineering standards and occupational safety and accident prevention regulations.

2.2.1 Intended use

SL Imaging Solution is an accessory for ZEISS slit lamps, which allows the user to capture images and record videos for documentation purposes.

2.3 Responsibilities and duties of the responsible organization

Operating personnel

The system may only be operated by instructed and trained personnel.

- ▶ Ensure that the operating personnel have been trained and instructed.
- ▶ Ensure that the operating personnel have read and understood the instructions for use.
- ▶ Ensure that operating personnel have been trained to handle sensitive patient data in a responsible manner.
- ▶ The instructions for use should be readily accessible to the operating personnel at all times.
- ▶ To facilitate access for all operating personnel: If necessary, request further copies of the instructions for use from ZEISS.
- ▶ Define the required skills for handling the system and provide information on who is authorized for which activities.
- ▶ Define rules for reporting errors and damage, and provide information on this (see Notification to manufacturers and authorities [▶ 13]).
- ▶ Regularly check compliance with the national laws and regulations concerning accident prevention and occupational health.

Complete the following checks before using the system:

- Visual inspection of the system and its accessories for damage, as well as legibility of markings and labels
- Functional check of all switches, buttons, connectors and indicator lamps

Data security

The manufacturer advises that the data security of exported patient data is the responsibility of the responsible organization (responsibility for data protection). For the secure export of sensitive patient data within the user network, the manufacturer recommends the following:

- protect the network against unauthorized use and configure the firewall.
- install an anti-virus program together with the SL Imaging Software.
- regularly update the network protection.
- protect the PC against unauthorized use.

The manufacturer explicitly advises that the transmission of sensitive patient data by e-mail poses a risk to data protection. It is recommended to transmit digital data encrypted and using a tunneled system.

Service life

The development, production and maintenance of the system, together with associated risks, are based on an expected service life of eight years, assuming that the system is operated and maintained as prescribed in these instructions for use.

Modifications to the system

This declaration shall be rendered invalid if changes are made to the product without the manufacturer's authorization. Modifications to the system or failure to follow the manufacturer's instructions may substantially reduce the expected service life and significantly increase the risks associated with the use of this system and are thus not permitted.

Accessories and additional equipment

- ▶ If you want to connect accessories or additional equipment other than those described in these instructions for use to the system: Contact your ZEISS representative [▶ 8].

Additional equipment connected to medical electrical equipment must demonstrably comply with the applicable IEC or ISO standards (e.g. IEC 60950-1 for data processing equipment).

Furthermore all configurations must comply with the normative requirements for medical systems (see IEC 60601-1-1 or section 16 of IEC 60601-1).

If you connect additional devices to medical electrical systems, you are a system configurer and are thus responsible for ensuring that the system complies with the normative requirements for systems.

2.3.1 Notification to manufacturers and authorities

In member states of the European Union, the responsible organization or person must report serious incidents to his competent authority. In all other countries, comparable rules apply where national legislation so requires.

2.4 Responsibilities and duties of the user

Electrical safety

- ▶ Switch the system off every time before disconnecting it from the power supply, or if you are not going to use the system for any length of time.
- ▶ Also switch off the system and disconnect it from the power supply before cleaning surfaces or accessories with a damp cloth.
- ▶ Use only cables and plugs which are in perfect working condition.
- ▶ Connect the system only to a power supply that corresponds to the values specified on the rating plate.
- ▶ Never pull the cable to disconnect the plug.
- ▶ Do not use multiple sockets.
- ▶ Do not use extension cables.
- ▶ Observe the instructions regarding electromagnetic compatibility (EMC).
- ▶ Set the system up so that the power cable can be disconnected from the power supply quickly and without any supplementary means.
- ▶ Connect the system components using the power supply cables intended for each component. If the system is mounted on an instrument table qualified by Carl Zeiss Meditec, only the slit lamp will be powered through this table. SL Workstation or the customer PC must be connected via a separate socket. If using a table not approved by Carl Zeiss Meditec AG, the user is solely responsible for ensuring the electrical safety of the system components.
- ▶ Perform the electrical installation in conformance to IEC 60364-7-710 or the applicable national regulations. This includes the integration of a ground fault circuit interrupter (GFCI).
- ▶ Do not touch the patient and the connections of the system components simultaneously.

The interior of the system components contains freely accessible live components. If you remove the housings, you are exposed to the risk of an electric shock.

- ▶ Do not open any components of the system.

Ambient conditions

- ▶ Make sure that the installation requirements and the operation of the system meet the following requirements:
 - Low vibration
 - Clean environment
 - Avoid extreme mechanical loads
- ▶ Do not operate or store the supplied devices in environmental conditions other than those prescribed.
- ▶ Do not operate the components contained in the delivery package
 - on easily inflammable materials,
 - in explosion risk areas (e.g. combustible mixture of anesthetic, cleaning or disinfecting agents with air, oxygen or nitrous oxide).
- ▶ Do not use or store components of the system in damp spaces. Prevent dripping, surging or spraying water in the vicinity of components.
- ▶ Please ensure that no liquid is permitted to penetrate into the components of the system.
- ▶ Protect all optical exits against contamination and avoid touching optical exits.

Decommissioning

- ▶ If one of the following events should occur, disconnect the cable from the power supply, label the system clearly as being out of service and report the problem to the ZEISS Service:
 - Electric shock
 - Penetration of substances
 - Frequently occurring error messages
 - Faults that cannot be remedied based on the information provided in these instructions for use

If the sensor for laterality detection is defective, the right/left labeling of image data may be incorrect. In this case, inform ZEISS Service about the problem and check the right/left labeling of image data.

Symbols and labels

- ▶ Comply with the symbols and labels attached to the system.

Transport

- ▶ Transport the components of the system only in original packaging or special return packaging.
- ▶ Contact your dealer or ZEISS Service.

2.5 Electromagnetic compatibility

Observe the instructions regarding electromagnetic compatibility (EMC) in the instructions for use of the slit lamps. Ensure that optional accessories in the field of information technology (e.g. customer PCs or printers) comply with the requirements of Class B conforming to CISPR 32.

NOTE

The properties of the device determined by emissions permit its use in industrial areas and in hospitals (CISPR 11, Class A). If used in a residential area (for which Class B usually is required as per CISPR 11), the device may not provide the necessary protection with regard to radio frequency communication services. The user may have to take corrective measures such as moving or realigning the device.

Emitted interference	Standard	Compliance
Conducted emission	CISPR 11	Group 1, Class B
Radiated emission (for SL Imaging Solution in combination with SL 115 Classic oder SL 800)	CISPR 11	Group 1, Class A
Radiated emission (for SL Imaging Solution in combination with SL 120, SL 130 oder SL 220)	CISPR 11	Group 1, Class B
Harmonic emissions	IEC 61000-3-2	Class A
Voltage fluctuations/flicker emissions	IEC 61000-3-3	Complies

2.6 Risk due to optical radiation (when using the wide-field illumination)

The wide-field illumination is a group 2 device according to ISO 15004-2 / ANSI Z80.36.

The light emitted by this device is potentially hazardous. The longer the duration of exposure, the greater the risk of ocular damage. Exposure to light from this device when operated at maximum intensity will exceed the safety guideline for the aphakic eye after 34 min.

When the wide-field illumination is used in conjunction with a slit lamp, the permissible examination times specified in the instructions for use of the slit lamp in use must be observed.

Because prolonged intense light exposure can damage the retina, the use of the device for ocular examination should not be unnecessarily prolonged, and the brightness setting should not exceed what is needed to provide clear visualization of the target structures.

Some groups of people will be at greater risk due to anatomical conditions (e.g. infants, aphakes and persons with diseased eyes). The risk may also be increased if the patient being examined has recently had any exposure to light (e.g. an eye examination or treatment).

2.7 Software installation and integration into a network

The SL Imaging Software in connection with the used PC (customer PC or SL Workstation) can be included into an Ethernet network to perform the following applications:

- Print
- DICOM export
- PDF file export to a shared network drive

Use the optional ZEISS network isolator or a network isolator with at least 4 kV isolating voltage when connecting the PC to a LAN. Connect the PC only to private networks which are protected from public networks (the internet) by a firewall which meets the latest technical requirements!

Connecting the PC to an IT network that includes other devices could lead to unforeseen risks for patients, users and third parties. The responsible organization should determine, analyze, evaluate and manage these risks by taking appropriate measures. (IEC 80001-1:2010 includes instructions on addressing these risks.)

Similarly, subsequent changes to the IT network can lead to new risks and therefore require additional analysis:

- Changes to the IT network configuration
 - Connecting additional elements in the IT network
 - Removal of elements from the IT network
 - Updates or upgrades of devices that are connected to the IT network
-
- ▶ The configuration and network settings should only be changed by a network administrator with experience.
 - ▶ Protect your PC against unauthorized use.
 - ▶ Install anti-virus software, configure the firewall and secure the network against unauthorized access.
 - ▶ Observe these instructions for use or the operating instructions supplied by the manufacturer for the customer PC.

The SL Imaging Software has not been tested in combination with the software on the customer PC. Therefore, disturbances cannot be excluded.

2.8 Maintenance measures

Maintenance procedures (maintenance and repairs) which are not specified in these instructions for use may only be carried out by persons authorized by Carl Zeiss Meditec and solely according to the service instructions issued by Carl Zeiss Meditec. For planning and implementing these maintenance and care procedures please contact ZEISS Service or your local dealer.

3 Description of the device

3.1 Package check list






















The scope of delivery of the SL Imaging Solution depends on the individual order.






- SL cam compact
 - Camera connection cable
 - Joystick cover or optional foot switch for image documentation
 - Mounting accessories
- SL Workstation - Panel PC (optional)
 - Power supply unit
 - Bracket for power supply unit
 - Power supply cable
- Wide-field illumination (optional)
- SL Imaging Software
- Documentation set

Depending on your order, additional optional components and accessories may also be included in the delivery package.














3.2 System labels

SL cam compact

Labels	Explanation
 <p>Carl Zeiss Meditec AG Goeschwitzer Strasse 51-52 07745 Jena, Germany SL cam compact - SL 800 REF 2328-858 SN XXXXXXXX</p>	SL cam compact type label
	 Manufacturer
	 Date of manufacture
	 Catalogue number / part number
	 Serial No.
 <p>Carl Zeiss Meditec AG Goeschwitzer Strasse 51-52 07745 Jena, Germany SL cam compact-SL120/130 REF 2352-901 SN XXXXXXXX</p>	SL cam compact - SL 120/130 type label
	 Manufacturer
	 Date of manufacture
	 Catalogue number / part number
	 Serial No.
 <p>Carl Zeiss Meditec AG Goeschwitzer Strasse 51-52 07745 Jena, Germany SL cam compact - SL 115 REF 2352-902 SN XXXXXXXX</p>	SL cam compact - SL 115 type label
	 Manufacturer
	 Date of manufacture
	 Catalogue number / part number
	 Serial No.
 <p>Carl Zeiss Meditec AG Goeschwitzer Strasse 51-52 07745 Jena, Germany SL cam compact - SL 220 REF 2352-903 SN XXXXXXXX</p>	SL cam compact - SL 220 type label
	 Manufacturer
	 Date of manufacture
	 Catalogue number / part number
	 Serial number
	Label with manufacturing date

Labels	Explanation
	"Observe user manual" information label
	Label for marking the device as a medical device
	CE approval label and disposal advice for EU
	 EU conformity symbol
	 Disposal advice for EU

SL Workstation

Labels	Explanation
	SL Workstation type label
	 Manufacturer
	 Date of manufacture
	 DC voltage
	SL Workstation identification label
	Label with manufacturing date
	CE approval label and disposal advice for EU
	 EU conformity symbol
	 Disposal advice for EU
	Information sign "Disconnect device from the power supply before opening"
	Windows license plate
	"Observe user manual" information label
	Label for marking the device as a medical device

3.3 System overview

System overview for slit lamps and SL Imaging Solution

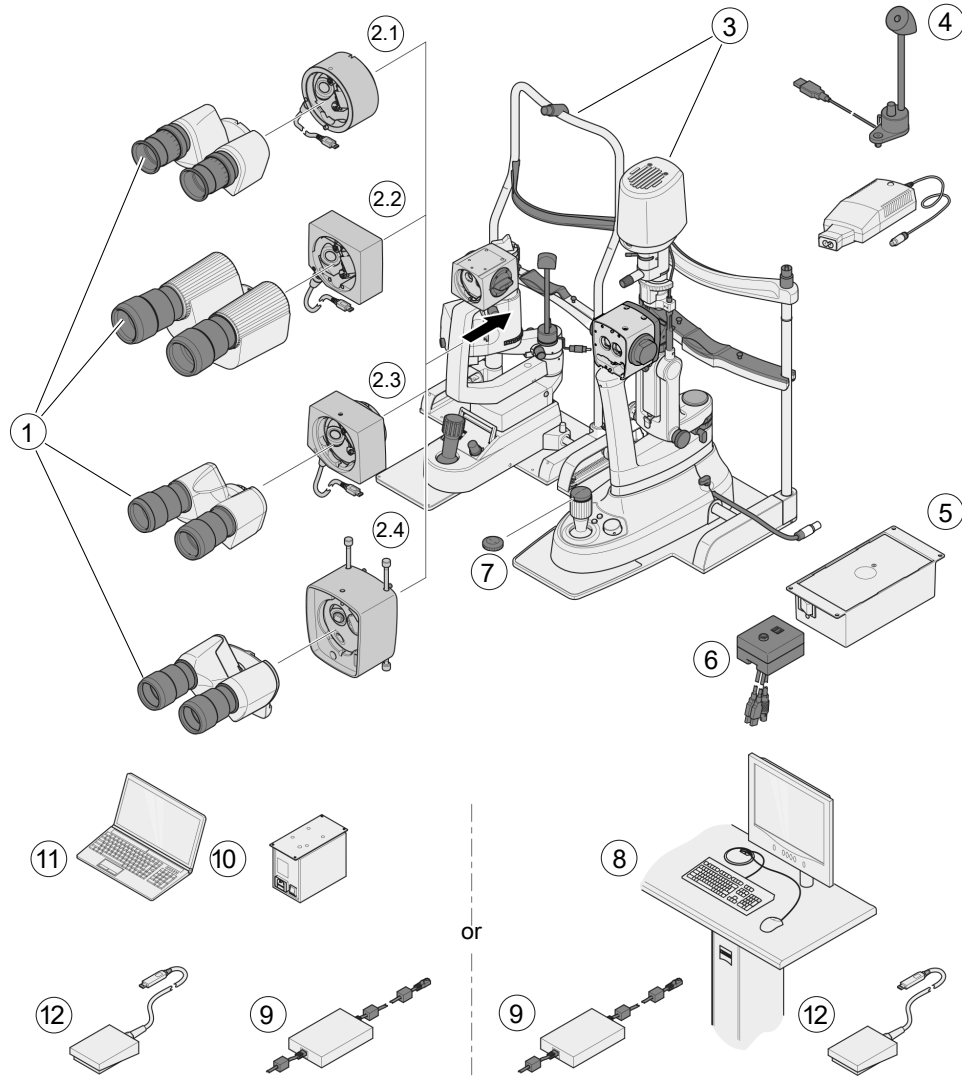


Figure 1: System overview for slit lamps and SL Imaging Solution

1	Binocular tube	2.1	SL cam compact for SL 220
		2.2	SL cam compact for SL 115 Classic
		2.3	SL cam compact for SL 120/130
		2.4	SL cam compact for SL 800
3	SL with stereomicroscope	4	Wide-field illumination (a separate power supply unit is available as an optional accessory for the wide-field illumination)
5	Power supply unit	6	Cable extension set for SL 800 (optional)
7	Joystick cap (SL 800)	8	SL Workstation

9	Network isolator	10	Power isolation transformer
11	Customer PC	12	Foot switch

3.4 Structure of SL Workstation

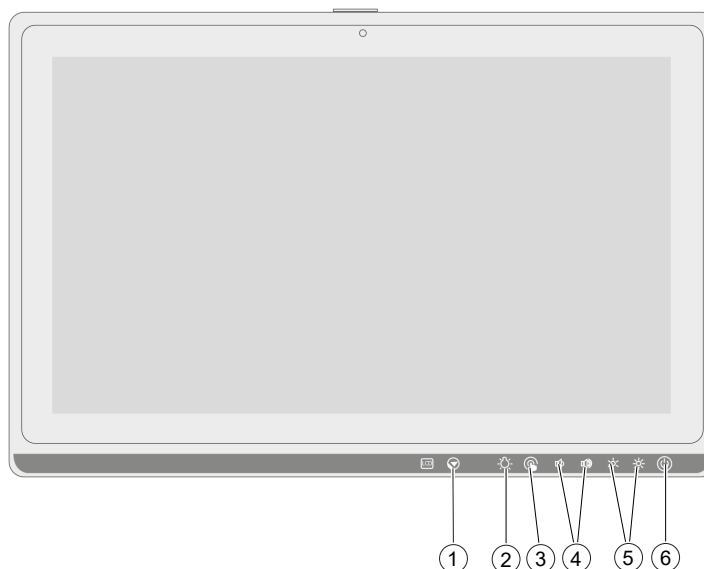


Figure 2: Front view of SL Workstation

1	LCD on / off	2	Reading light
3	Touch screen on / off	4	Volume
5	LCD brightness	6	Power on / off

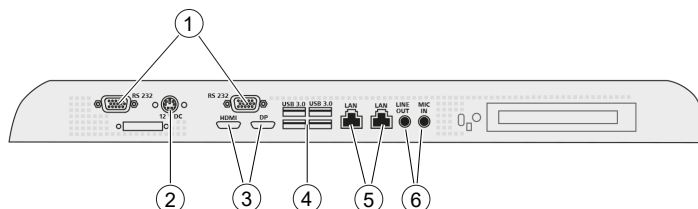


Figure 3: Plug-in connections on the underside of the SL Workstation

1	2x RS 232 (Service plug)	2	Power supply connection 12 V DC
3	HDMI and DisplayPort	4	4x USB 3.0
5	2x 1.5 kV Isolated Gigabit Ethernet Port	6	Audio connections (Mic-in/ Line-out) (Service plugs)

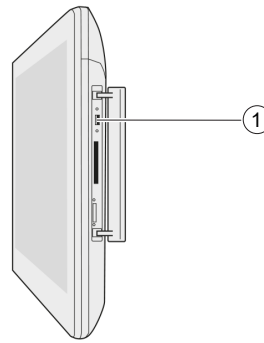


Figure 4: Lateral connections of the SL Workstation

1	USB 3.1 x 2		
---	-------------	--	--

3.5 Structure of the wide-field illumination

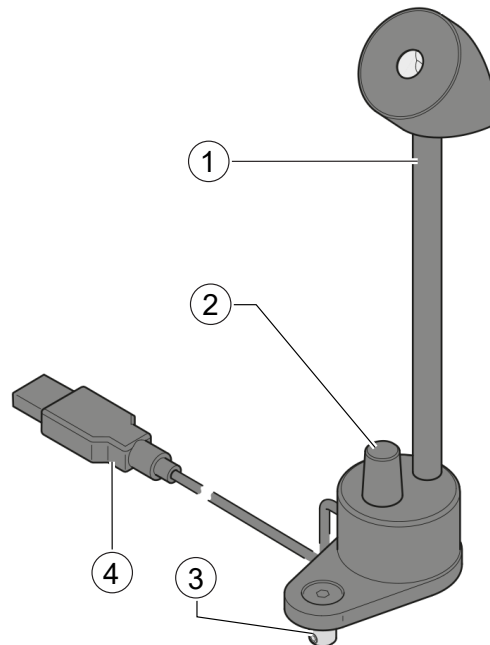


Figure 5: Structure of the wide-field illumination

1	Wide-field illumination	2	Control element
3	Centering pivot	4	USB connector (for SL 800) Cinch plug (for SL 115 Classic, SL 120, SL 220, SL 130)

3.6 Control elements when using with SL 800

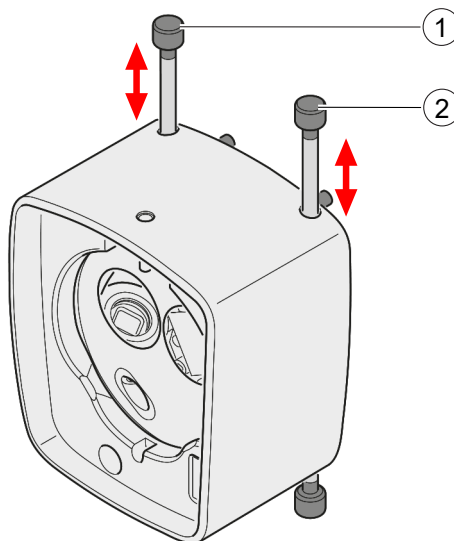


Figure 6: Control elements of the SL cam compact

Pos.	Name	Explanation
1	Yellow filter control element	You can insert and remove the yellow filter from the observation path using the push rod.
2	Aperture control element	You can insert and remove the aperture from the observation path using the push rod.

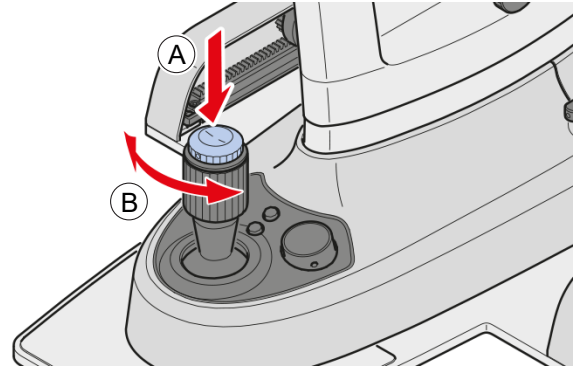


Figure 7: Control elements on the joystick cover of SL 800 for image documentation

Pos.	Name	Explanation
A	Push function	Press momentarily = Image capture Press and hold (> 1 s) = Start / Stop recording a video Press momentarily during video recording = Capturing a still image
B	Rotate function	Changes the parameter value as defined in the advanced settings of SL Imaging Software (see Software description)

3.7 Control elements when using with SL 115 Classic, SL 120, SL 220, SL 130

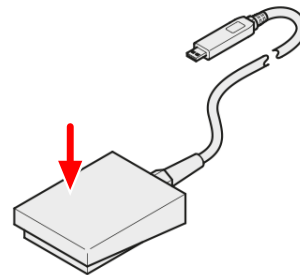


Figure 8: Foot switch

An image is captured when the foot switch is actuated.

3.8 Functional description

SL Imaging Solution consists of the SL cam compact, the joystick cover or foot switch for image documentation (depending on the slit lamp in use), the SL Imaging Software and a PC incl. monitor (customer PC or SL Workstation), keyboard/mouse as well as the wide-field illumination (optional).

SL Workstation is a panel PC with pre-installed SL Imaging Software.

SL cam compact is a digital camera included in an opto-mechanical adapter (including an integrated yellow filter aperture module for SL 800). When mounted to the stereomicroscope of a slit lamp, the accessory allows you to capture high-resolution images and videos in combination with the SL Imaging Software and the control element. For this purpose, 50 % of the observation beam is decoupled from the right observation beam path and imaged on the camera sensor.

For SL 800:

- The yellow filter and the aperture of the integrated yellow filter aperture module can be separately pushed into and out of the observation beam path using the control elements which allows you to observe and document fluorescein dyeings with improved contrast and to extend the range of depth of field during observation and documentation.
- Instead of the default cover of the joystick, the special joystick cover for image documentation can be mounted to the SL 800 slit lamp. It has a control element for pushing and turning.

You can use the optional wide-field illumination to brighten the eye when recording images and video data. The brightness of the wide-field illumination can be adjusted to the capturing situation by means of an appropriate control element. By turning the wide-field illumination, the user can adjust the direction of the illumination.

4 Installation

4.1 Installation safety

WARNING!

Electrical hazard due to connecting additional devices

If other system components are connected than those described in this manual, a non-medically-rated system is created in accordance with IEC 60601-1. There is a risk of electrical shock.

- ▶ No components other than the system components described should be connected.
- ▶ In case of system modifications (e.g. use of a customer PC) ensure that the safety requirements as per IEC 60601-1 are met.
- ▶ Always ensure that all peripheral devices (including the customer PC) are approved as a medical device or connected to a power isolation transformer.
- ▶ The power supply connections of the instrument table must only be used for supplying power to the slit lamp. Use of the power supply connections as a multiple socket is prohibited. Neither the customer PC nor the SL Workstation may be connected to the instrument table.

CAUTION!

Risk of tripping

There is a risk of tripping if the connecting cables are laid incorrectly.

- ▶ The system cables must be laid so as to avoid risk of tripping. If necessary they should be covered.

4.2 Installation of system components:

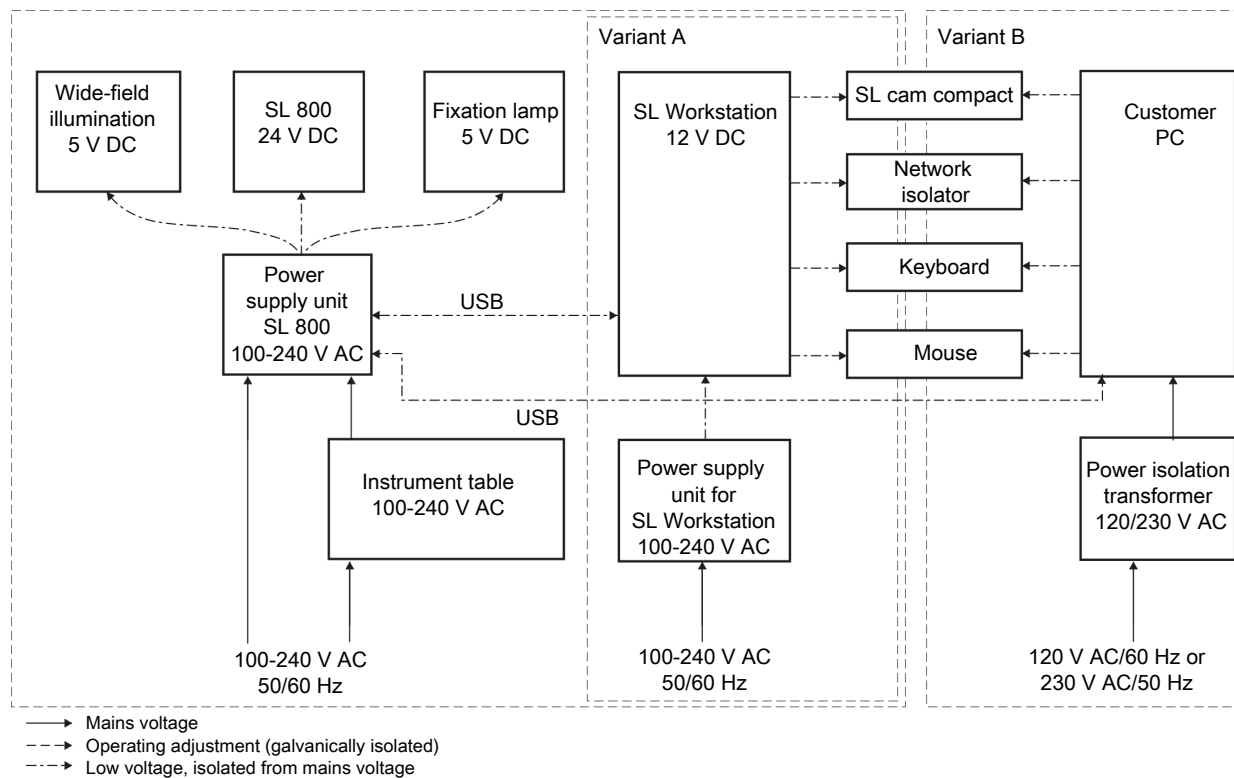


Figure 9: Installation of system components – schematic overview - SL 800 Variant A with SL Workstation, Variant B with Customer PC

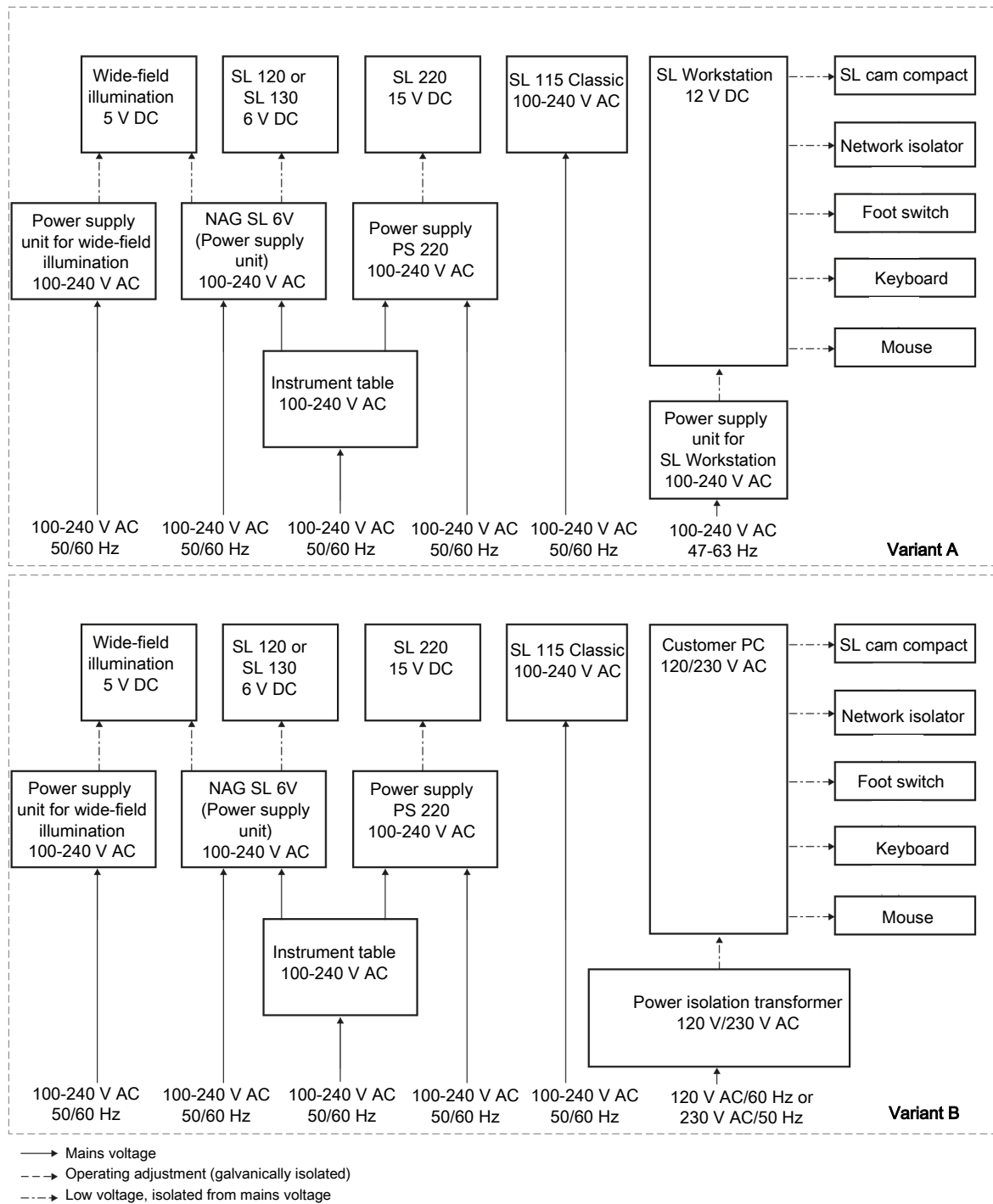


Figure 10: Installation of system components – schematic overview - SL 115 Classic, SL 120, SL 220, SL 130 Variant A with SL Workstation, Variant B with Customer PC

Notes on use of a customer PC for capturing and archiving images

The software can only be installed with administrator rights.

If you are using your own PC to capture and archive images and videos, the following minimum specifications must be met:

- Processor: Intel® Core™ - i3 or similar
- Minimum free hard disk space: 250 GB
- RAM: 16 GB
- Interfaces: 1x USB 3.0 (for SL cam compact), 1x USB 2.0 or higher (for slit lamp)
- Operating system: Windows 10 (x 64)*
- Minimum screen resolution: 1024 x 768

* For compatibility with other operating systems please contact your service contact.

The following firewall ports must be enabled to use all functions:

- Ports 8080 – 8089 and
- Ports 11110 - 11120

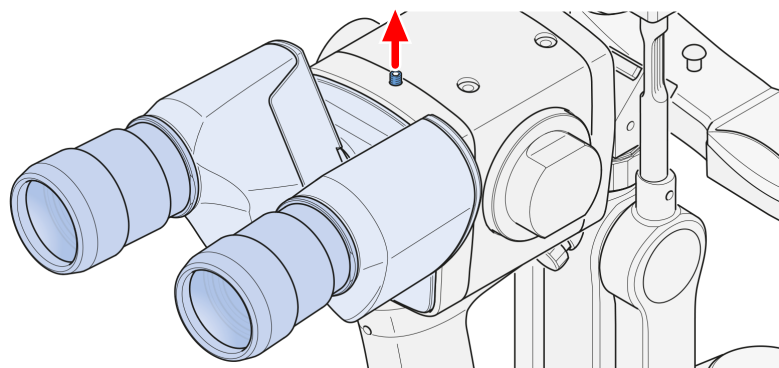
All generated data is stored under the system hard disk (C:). It is possible to change the storage location.

Please note the memory capacities of your PC, which should be selected accordingly large with intensive video and image production. A message appears as soon as less than 10 % memory is available.

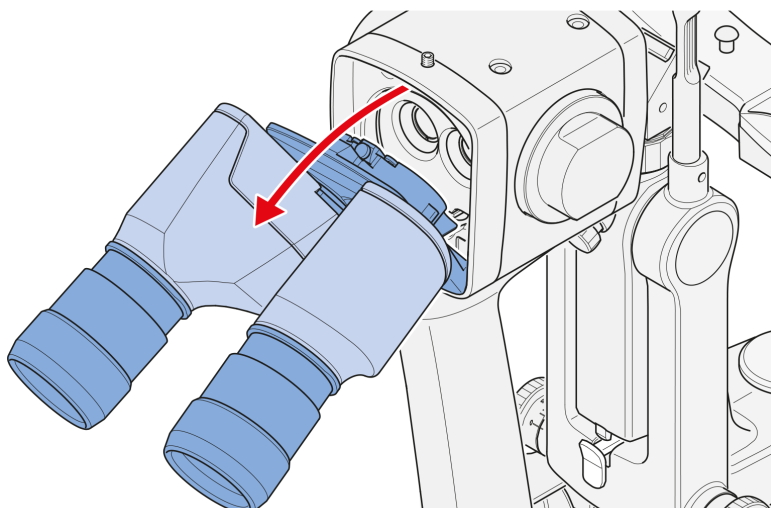
4.3 Mounting the SL cam compact to SL 800

Action

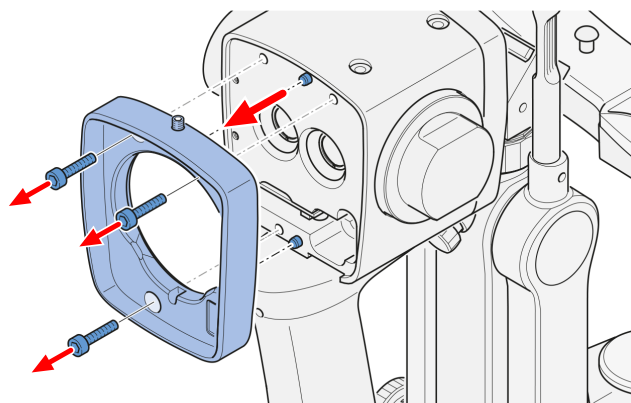
1. Hold the binocular tube while loosening the threaded pin at the top of the convenience interface with the size 1.5 Allen key, supplied.
⇒ Keep the convenience interface for future use.



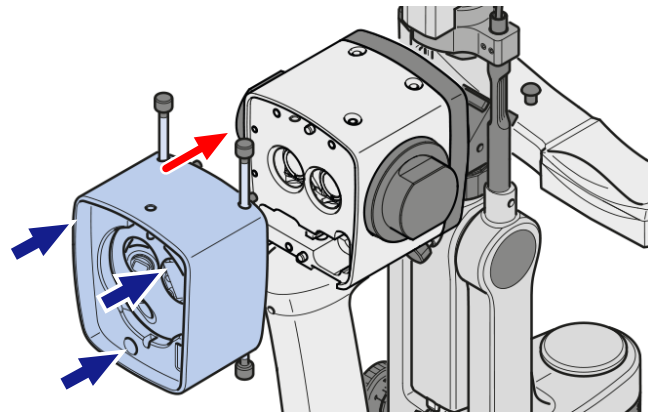
2. Tilt the binocular tube downwards out of the convenience interface.



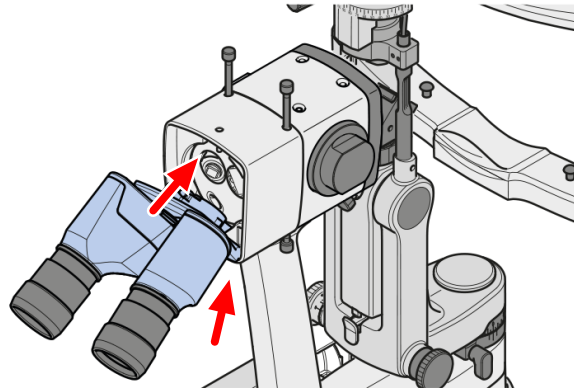
3. Put the binocular tube aside.
4. Remove the three screws of the convenience interface or the yellow filter aperture module or the beam splitter (depending on the delivery package of SL 800) with the size 3 screwdriver, supplied with the slit lamp.



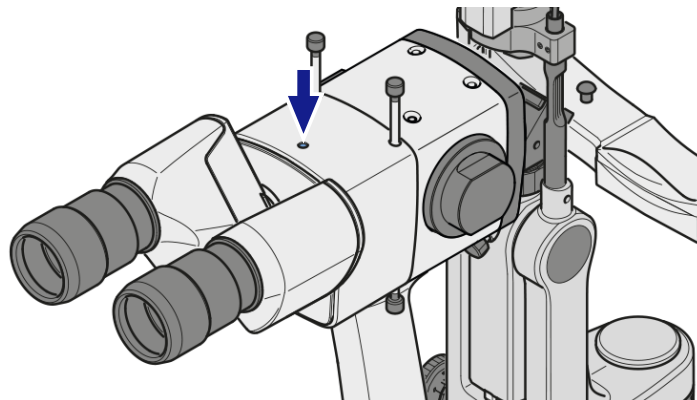
5. Attach the SL cam compact to the stereomicroscope.



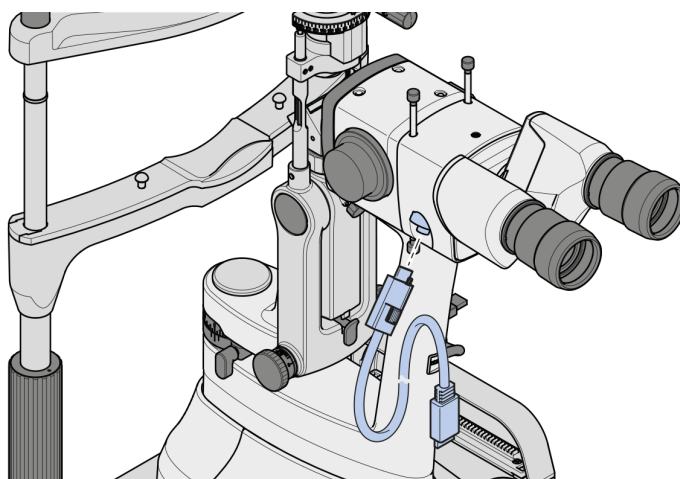
6. Carefully position the integrated screws of the SL cam compact on the stereomicroscope and hand-tighten them alternately. Ensure that the orientation pins are positioned correctly.
7. Attach the binocular tube from the bottom to the SL cam compact and tilt the binocular tube upwards.



8. Attach the binocular tube to SL cam compact by tightening the threaded pin.



9. Connect the supplied camera connection cable to the SL cam compact and lock the plug with the knurled screw on the camera.



10. When using a customer PC:
After installing the SL Imaging Software on your PC, connect the other end of the supplied camera connection cable to a USB 3.0 port on your PC.
When using the SL Workstation:
The SL Imaging Software is already pre-installed on the SL Workstation. Connect the other end of the supplied camera connection cable to a USB 3.0 port on the SL Workstation.

11. Lay the camera connection cable along the microscope arm and secure with the enclosed cable clips.

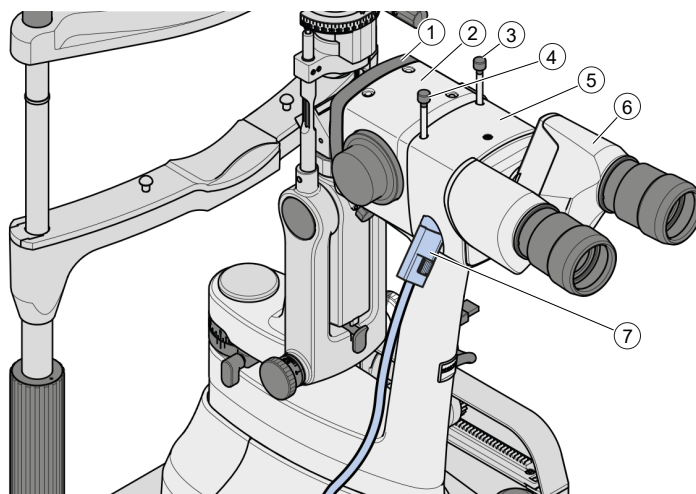


Figure 11: General view

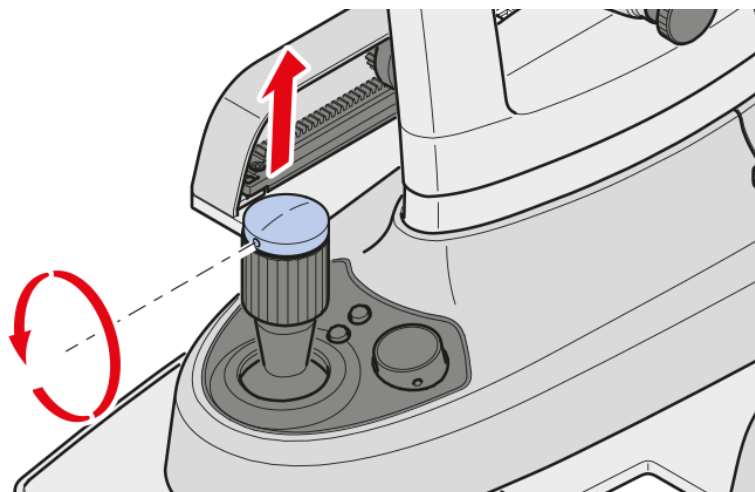
1	Front objective	2	Stereomicroscope
3	Control element for pushing in/out the aperture pushed downwards: aperture not active pushed upwards: aperture active	4	Control elements for inserting and removing the yellow filters pushed downwards: yellow filter not active pushed upwards: yellow filter active
5	SL cam compact	6	Binocular tube
7	Camera connection cable		

4.4 Mounting the joystick cover on SL 800

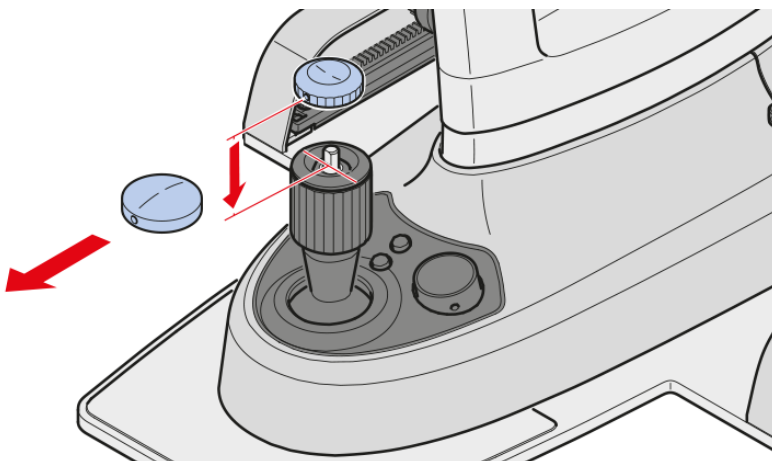
Mount the joystick cover for image documentation according to the following instructions, if it is not already factory mounted:

Action

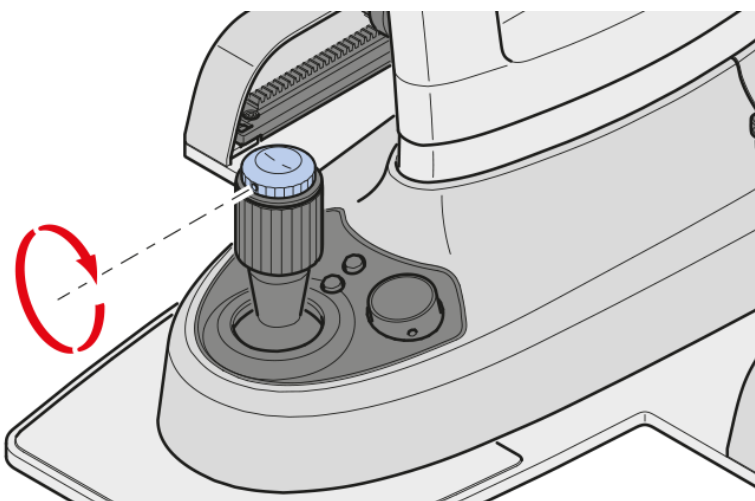
1. Loosen the threaded pin of the joystick cover with the size 1.5 screwdriver, supplied.



2. Remove the cover and keep it for future use.
3. Place the joystick cover for image documentation on the joystick. Ensure correct orientation.



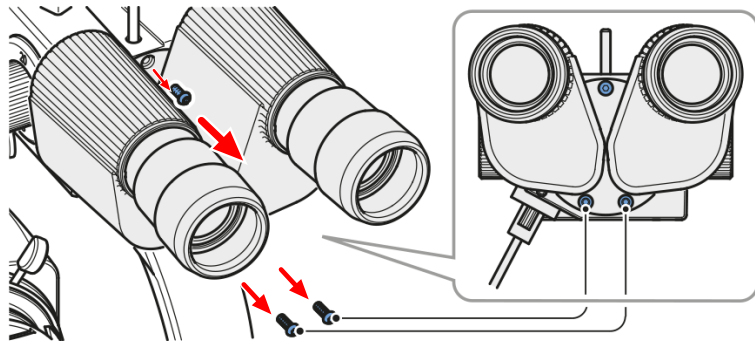
4. Tighten the threaded pin with the size 1.5 screwdriver, supplied.



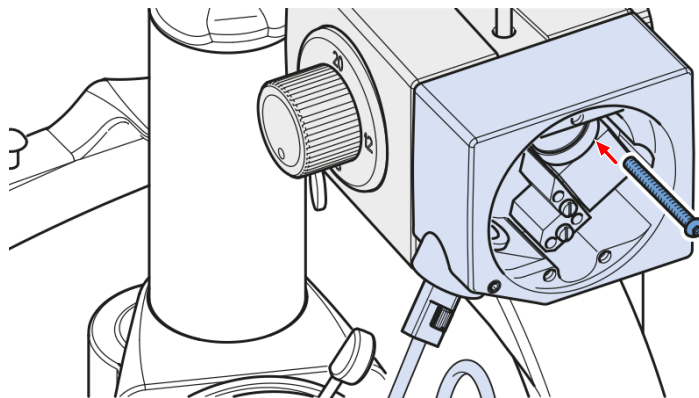
4.5 Mounting the SL cam compact on the SL 115 Classic slit lamp

Action

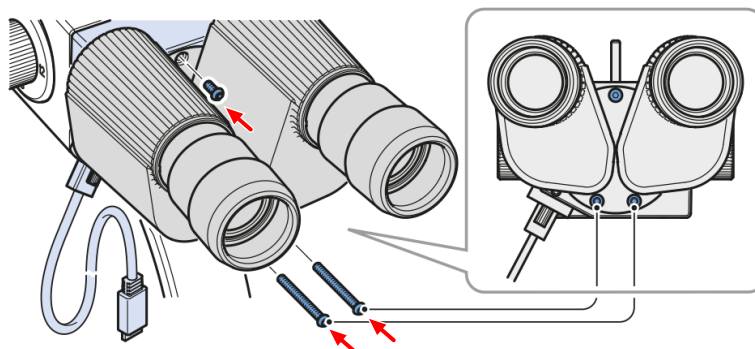
1. Remove the eyepieces from the binocular tube.



2. Remove the binocular tube from the microscope.
3. Attach the SL cam compact to the microscope and fasten it using one of the provided long hexagon socket screws. Use the right-hand hole inside the SL cam compact.



4. Attach the binocular tube to the SL cam compact by inserting the two long hexagon socket screws supplied (M3 x 35) through the two bottom holes and using the short hexagon socket screws (M3 x 5) through the upper hole.

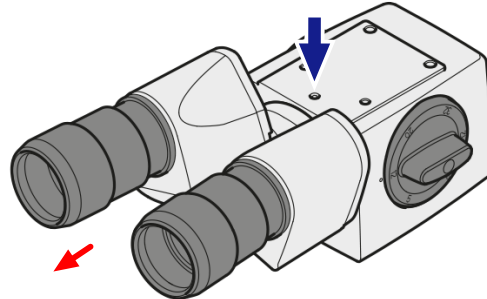


5. Plug the eyepieces back into the binocular tube.
6. Ensure that all screws are properly tightened and that the SL cam compact and binocular tube are not misaligned.
7. Connect the camera to one of the USB ports on the bottom side of the SL Workstation using the supplied camera connecting cable.
8. Lay the camera connection cable along the microscope arm and secure with the enclosed cable clips.

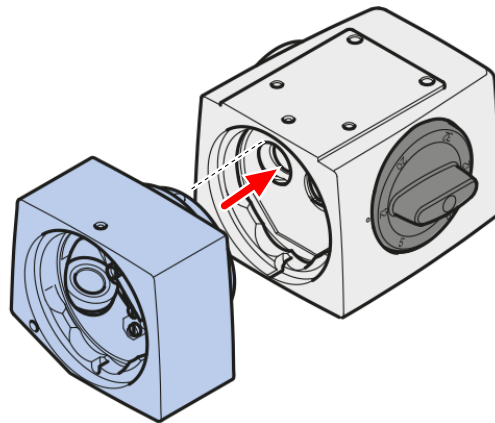
4.6 Mounting the SL cam compact on slit lamps SL 120/SL 130

Action

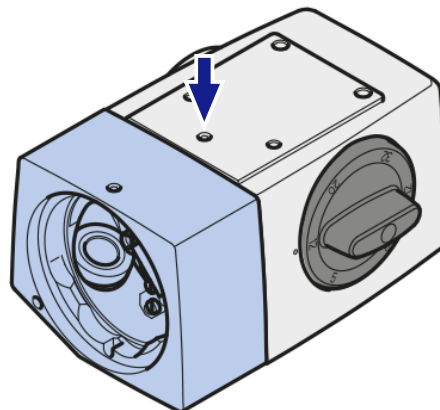
1. Remove the binocular tube from the microscope by loosening the hexagon socket screw or the knurled screw.



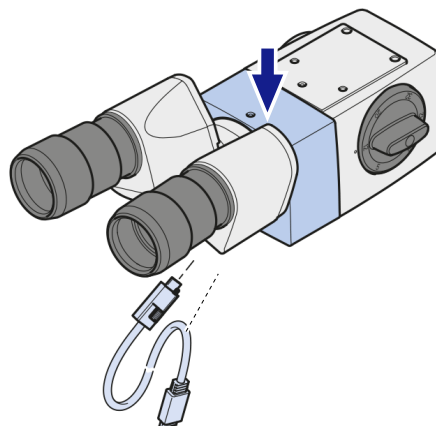
2. Attach the SL cam compact to the microscope using the annular dovetail mount on the microscope.



3. Secure the SLC cam compact using the hexagon socket screw or knurled screw.



4. Now attach the binocular tube to the adapter of the SL cam compact and secure it with the hexagon socket screw.

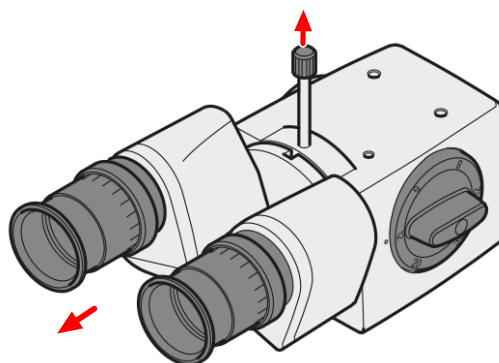


5. Connect the camera to one of the USB ports on the bottom side of the SL Workstation using the supplied camera connecting cable.
6. Lay the camera connection cable along the microscope arm and secure with the enclosed cable clips.

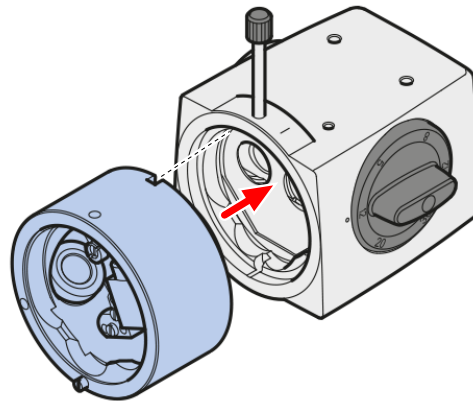
4.7 Mounting the SL cam compact on the SL 220 slit lamp

Action

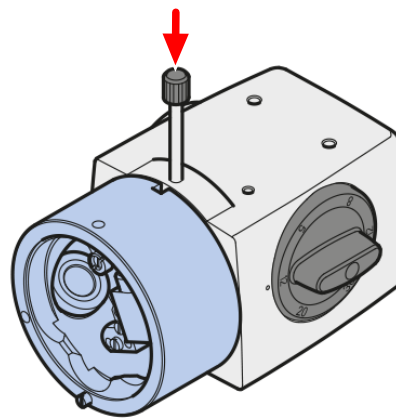
1. Remove the binocular tube from the microscope by loosening the knurled screw.



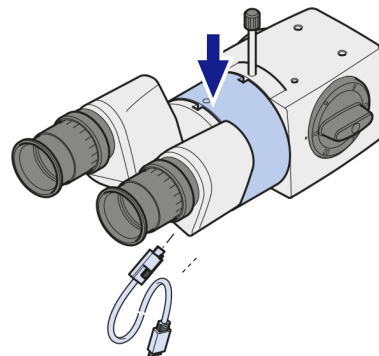
2. Attach the SL cam compact to the microscope using the annular dovetail mount on the microscope.



3. Secure the SL cam compact with the knurled screw.



4. Now attach the binocular tube to the adapter of the SL cam compact and secure it with the hexagon socket screw.



5. Connect the camera to one of the USB ports on the bottom side of the SL Workstation using the supplied camera connecting cable.
6. Lay the camera connection cable along the microscope arm and secure with the enclosed cable clips.

4.8 Mounting the monitor holder for SL Workstation on the instrument table

A drill hole with a diameter of 9 mm has been provided for the monitor holder at the rear of the instrument table (to the right of physician).

Two further holes are located in the stage carrier to the left and right of this drill hole. If necessary, holes can be drilled at these points in the table top for mounting the monitor holder. Drill holes which are not needed can be covered with caps.

Action

1. Insert the supporting rod of the monitor holder into the corresponding drill hole from above and lock the rod from below with the enclosed screw and washer.

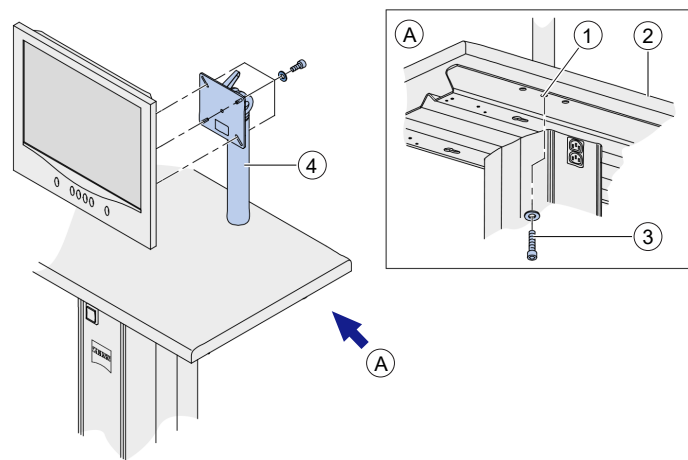


Figure 12: Mounting the supporting rod of the monitor holder on the instrument table

1	Drill hole (Ø 9 mm)	2	Tabletop
3	Screw	4	Supporting rod

The required screws and tools are included in the delivery package of the monitor holder.

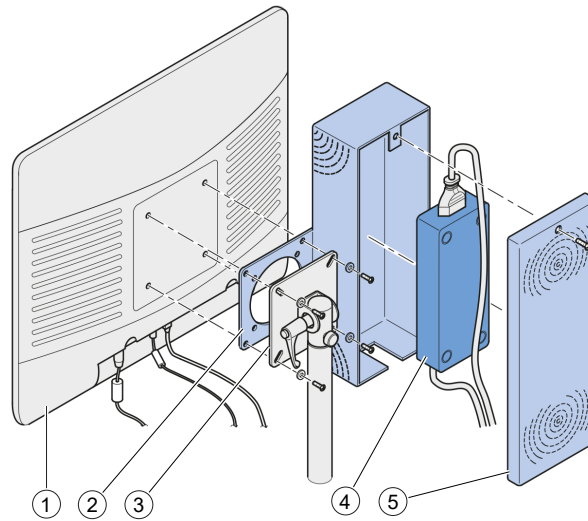


Figure 13: Mounting the power supply unit bracket on the monitor holder

1	SL Workstation	2	Bracket for power supply unit
3	Holding plate for monitor holder	4	Power supply unit
5	Cover of power supply unit bracket		

4.9 Mounting the SL Workstation on the base stand

If the SL Workstation is not secured to the monitor holder of an instrument table, it can be mounted on a base stand.

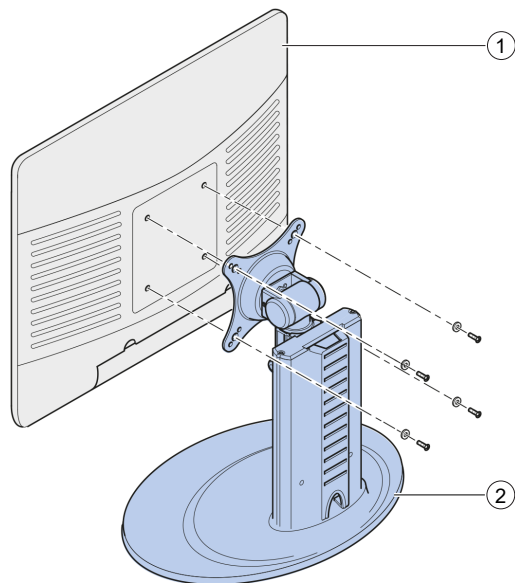


Figure 14: Mounting the SL Workstation on the base stand

1	SL Workstation	2	Base stand (optional)
---	----------------	---	-----------------------

The bracket for the power supply unit will also be mounted to the base stand as described in Section Mounting the monitor holder for SL Workstation on the instrument table [▶ 43].

4.10 Mounting the wide-field illumination

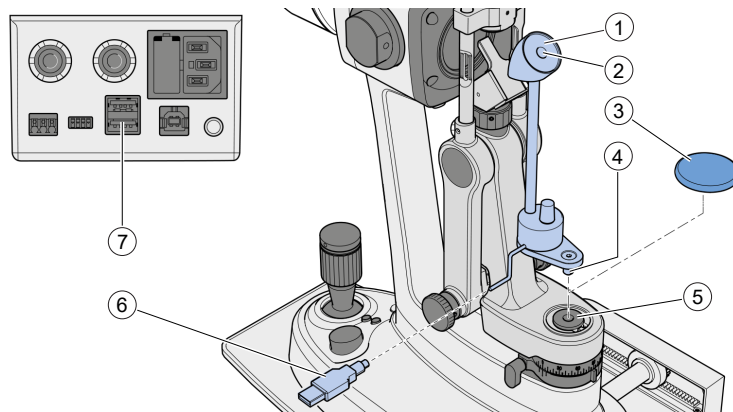


Figure 15: Mounting the wide-field illumination on the SL 800 slit lamp

1	Wide-field illumination	2	LED
3	Cover cap	4	Centering pivot
5	Centering aperture	6	USB connector
7	Fixation lamp and wide-field illumination connectors on the rear of the power supply unit		

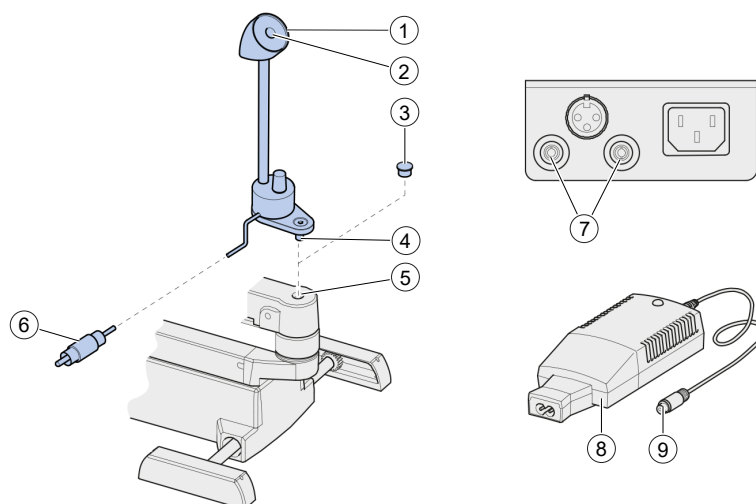


Figure 16: Mounting the wide-field illumination on slit lamps
SL 115 Classic, SL 120, SL 130 and SL 220

1	Wide-field illumination	2	LED
3	Cover cap	4	Centering pivot
5	Centering aperture	6	Cinch connector
7	Fixation lamp and wide-field illumination connectors on the rear of the power supply unit	8	Separate power supply
9	Connection for wide-field illumination		

Action

1. Remove the cover of the swivel joint and store it for further use in a safe place.
2. Insert the centering pivot of the wide-field illumination the centering hole, such that the LED faces towards the patient side.
3. Insert the Cinch connector into one of the two sockets on the slit lamp's power supply.
4. If the slit lamp does not have a separate power supply unit (e.g. in examination units), a separate 6 V power supply unit is required for the wide-field illumination. Insert the plug of the wide-field illumination into the appropriate connector on the power supply unit.

NOTE! Connect the wide-field illumination only to the designated power supply unit.

NOTE! The wide-field illumination can only be used for slit lamps SL 115 Classic, SL 120, SL 130, SL 220 and SL 800.

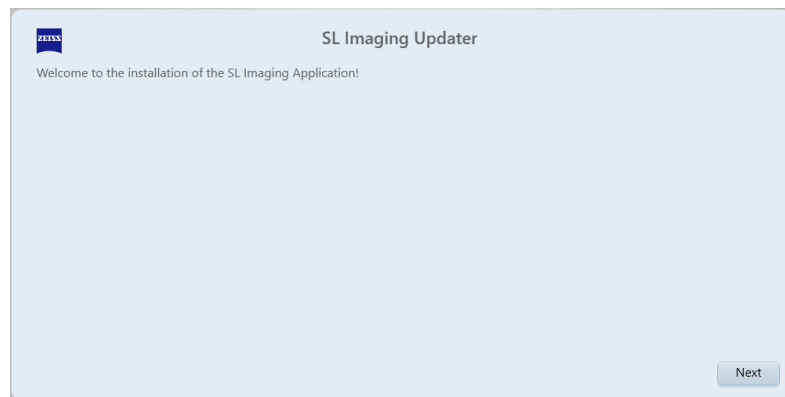
4.11 Mounting the foot switch

Insert the USB plug of the foot switch (see System overview [▶ 23]) into an available USB port on the SL Workstation or your PC.

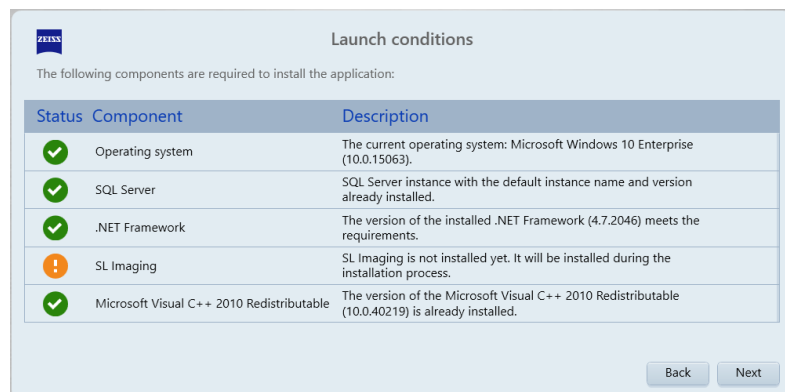
4.12 Installing the software

Action

1. Start the SL Imaging Software from the installation media and follow the pre-installation instructions.
⇒ After successful pre-installation, the SL Imaging-Update will start automatically.

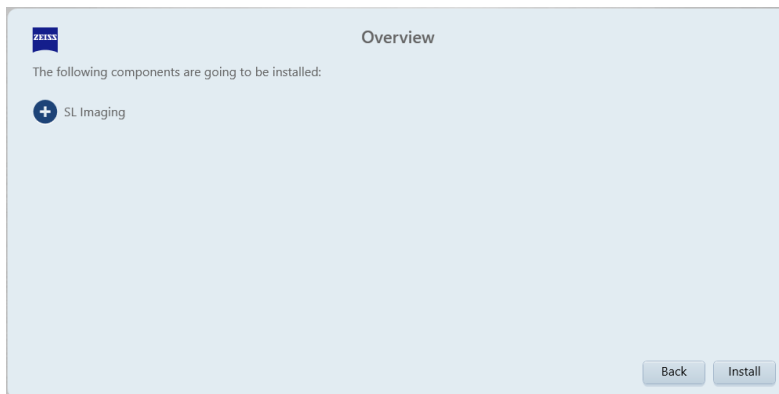


2. To start the installation, click [Next].



⇒ The Updater displays an overview of further software components which are required for installation. Components which have not yet been installed will be installed automatically.

3. Click [Next] and on the following screen, click [Install].



4. Follow the installation process and click [Next] to complete the installation.
 - ⇒ Note that installation windows of the individual components may open in the background.
5. After successful installation of the Virtual COM Port Driver, you will be asked whether you want to check for updates. Select [No, skip this step].

4.13 Starting the software for the first time

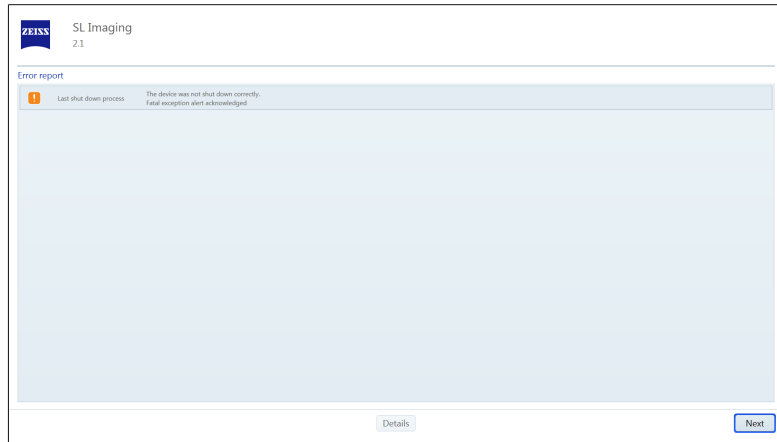
Action

1. Click on the "SL Imaging" shortcut icon in the start menu.
 - ⇒ The "SL Imaging Configuration Wizard" will be started to perform the basic configuration.
2. Make the required settings in the Configuration Wizard and click [Next] to confirm the settings.
3. Click [Next] if you want to save the default settings without changes.
 - ⇒ You can still modify the settings later on, see Section "Maintenance" [▶ 107].
4. Finally, click on [Finish] in the Configuration Wizard.

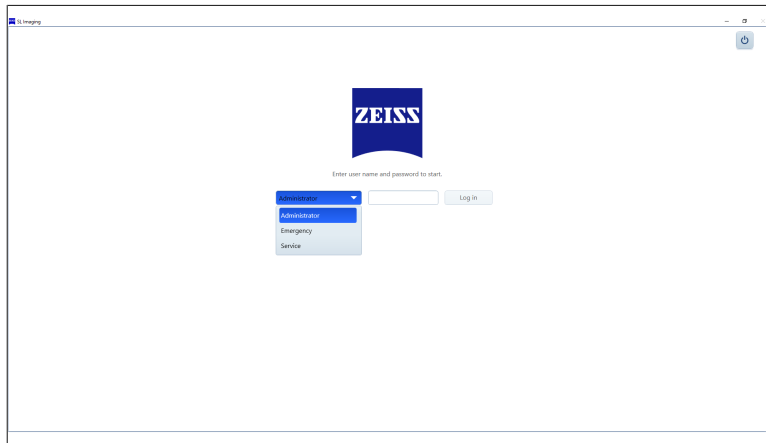


⇒ A system test will be performed and the start window of the software will be opened.

5. Click on [Details] to display a device state overview.



6. Click on [Next].



⇒ A window to log in will open.

7. Select one of the following users: Administrator, Emergency, Service.

8. Enter the password and click on [Log in].

TIP: The following users are already available when starting the software for the first time: Administrator, Emergency, Service. When starting the software for the first time, log in as Administrator. Use the initial password "0000". In the "User management" [▶ 112] dialog of "Settings" you should change the password later. In this dialog, you can also add other users.

4.14 Importing patient data

This section describes how to import existing patient data records (image and video data) created with SL Imaging version 2.0.3 or lower and which correspond exactly to the structure described below.

If the requirements described below are not met, contact ZEISS Service to perform the import.

If your data is already stored on a DICOM server (e.g. ZEISS FORUM®) or in an EMS/EMR system, the import function described here is not required.

NOTE! Import existing patient data records directly after starting the software for the first time and before configuring the DICOM server (e.g. FORUM connection).

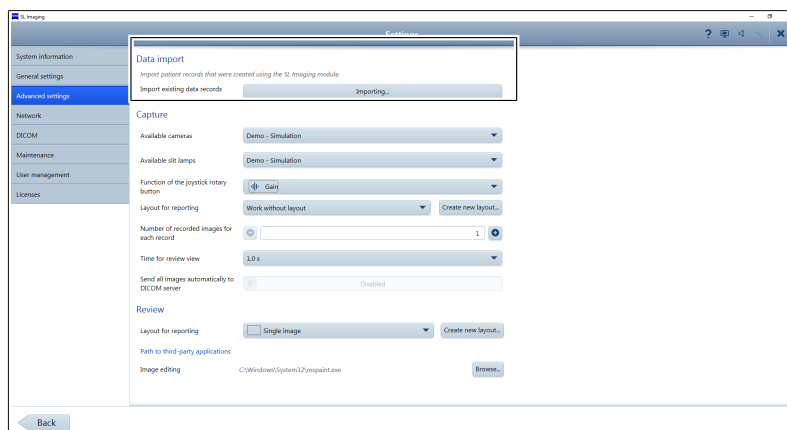


Figure 17: Settings/Advanced settings/Import functions

The import function is used to transfer image and video data (assigned to a patient) from the folder structure on your hard disk to the local database of the SL Imaging Software described herein. At the same time the corresponding patient data record is created there.

Patient data records created with SL Imaging version 2.0.3 or lower are not stored in a separate database, but in the normal folder structure of your PC or on your network. Therefore, it is important to know the folder structure created with SL Imaging version 2.0.3 or lower and the files it contains, including the file names.

NOTE! Please note in this context that data records of one patient can be stored in several folders. The import function therefore always assigns patient data records with the same name in several folders to one patient.



Figure 18: Possible patient folder structure

Both patients are identified and imported as one patient because of the identical file names of the patient data records (identical first and last name) (see figure "Possible patient folder structure" above). If this is not correct, the patient data records (file name) can either be renamed manually or each patient folder can be imported individually.

A patient data record comprises all image and video data of a patient.

The assignment of image and video data to a patient is done exclusively via the file name of the image and video data to be imported. The file name of all image and video data created with SL Imaging version 2.0.3 or lower is structured as follows for completely documented patient master data:

Lastname_Firstname_PatientID_Dateofbirth(YYYY/mm/dd)_Gender_Accessionnumber_Format_Laterality_Capturedate_Capturetime_Image in series.jpg

Example

- Doe_John_1064_19670720_M_01_Image_OD_20191108_114213_1.jpg
- Doe_John_1064__Video_OU_20191108_114213_1.mpg

4.14.1 Import prerequisites

Patient data records can only be imported correctly and completely if you have a **unique patient ID and/or a unique patient name**.

Requirements for the folder structure

Therefore, make sure that each **patient data record** is correctly named and that it can be **uniquely identified throughout the patient folder structure** on your PC or network. **This means that patient data records of different patients with the same name or patient ID must be recognizable as individual patients.** Note that only folders can be selected for import and not individual files.

NOTE! Patient data can be stored in several folders according to the folder structure you created. The import function therefore always assigns patient data records in several folders which have the exactly the same name to one patient.

If several patients with the same name are involved, the corresponding patient data must be edited manually or patient folders must be imported individually to avoid confusion. If you have any questions, please contact ZEISS Service.

4.14.2 Requirements to file names

As already described, the assignment of image and video data to a patient is done exclusively via the file name of the image and video data to be imported.

The following table provides information on the identification features used by the import function to distinguish patients. The corresponding import result does not depend on the existing folder structure.

Pos.	Identification feature for import	File name	Import result
1	Patient name and Patient ID are available	Doe_John_1064 _Image_OD_20191108_114213_1.jpg	Recognized and imported as Patient 1 "John Doe" with patient ID 1064.
2	Only Patient ID is available	__1064 _Image_OD_20191108_114213_1.jpg	Recognized as Patient 2 with corresponding patient ID .
3	Only patient name is available	Doe_John _Image_OD_20191108_114213_1.jpg	Recognized as Patient 3 "John Doe", software creates new patient ID during import.

Table 1: Correctly named patient data records and their import result

If these cases 1, 2, 3 concern the same patient, the data is recognized and imported as three different patients. Provided that the DICOM server is not yet configured, it is possible to merge these three patients subsequently in the software. (Workflow step for the selection and display of patient / image data [▶ 62])

Summary

If the image and video data **meet** the **requirements** regarding folder structure and file names, you can import them directly into the software using the import function.

If the image and video data **does NOT meet** the **requirements** regarding folder structure and file names, please contact the ZEISS Service.

4.14.3 Perform patient data import

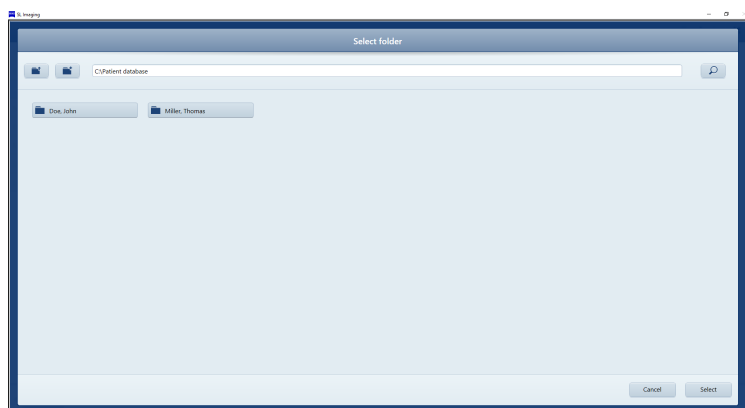
When pressing the [Import] button, first, a backup is automatically created. To do this, first configure the storage path of the backup. If necessary, the state before the import can be restored using this backup. Regardless of the import function, a backup can be created at any time (For more information and settings for the backup, see Maintenance [▶ 107]).

You cannot select individual files for import, but only folders containing image and video data. For this reason, it is important to know the patient folder structure created with SL Imaging version 2.0.3 or lower and the files it contains, including file names.

Patient data records with the same last name and first name and/or patient ID that are located in different subfolders are recognized as one patient (see Import prerequisites [▶ 53]).

Action

- ▶ Click the [Import] button.
 - ⇒ A window is opened in which the file source can be selected.
- ▶ Select the folders to be imported (e.g. C:\Patient data base).



- ⇒ Possible subfolders (e.g. Doe, John | Miller, Thomas) are displayed and imported together with the import of the main folder (e.g. C:\Patient data base).
- ▶ Click the [Select] button to start the import.

NOTE! After an import has been performed, check if it was successful before you configure the DICOM server. Otherwise, possible mergers of patient data can no longer be performed.

If you find that the import did not yield the desired result, you can restore the system to the state before the import by restoring the backup.

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5 Daily startup

5.1 Preparation safety

Prior to using the system, the user must ensure that the components of the SL Imaging Solution are in a good condition and fully functioning. Furthermore, the user must follow these instructions for use. The following inspections must be carried out each working day prior to use:

Action

- ▶ Visual inspection of the components, power cables and accessories to ensure that they are present and intact. If parts are missing or damage is visible, the system should not be used and should be taken out of service.
- ▶ Check that the connecting parts (e.g. retaining screw for attaching the binocular tube of SL cam compact) are properly seated and all screw connections (e.g. for accessories) are firmly tightened.

5.2 Switching on

Action

- ▶ Switch on the PC (customer PC or SL workstation).

The following item is only valid when using the SL Workstation:

- After starting Windows a login prompt appears.
 - Enter the user name (the default user name is: operator).
 - Enter the password (the default password is: java).
 - When entering the password, a distinction must be made between upper and lower case letters.
- ▶ Launch the software by double-clicking on the SL imaging link in the start menu.



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6 Operation

The operation of the software is described in the Software description section.

6.1 Backup

Action

- ▶ Perform a daily backup / archiving of patient data (see Maintenance [▶ 107]).

In the event of technical problems or premature abortion of the program, a loss of data may occur in which patient data is partially or completely destroyed.

In combination with the SL Imaging Software, the SL Workstation allows medical and administrative data to be exported. The transfer of exported data over the network or the import of such data to third-party application software may result in the loss of or unintended modification of medical information, or unintended disclosure of confidential data.

The manufacturer accepts no liability for the correct transfer and import of data and will not pay compensation for any damage incurred.

6.2 Switching off the system

NOTE

Data loss

Premature disconnection of the device from the power supply may result in loss of data.

- ▶ Do not unplug the power cable until the screen is extinguished.

Action

- ▶ Close the program.
- ▶ Switch the PC off and disconnect it from the mains supply.

Empty page, for your notes

7 Software description

7.1 General notes on operation

The software can be controlled by:

- clicking on buttons or menus with the mouse
- using a computer keyboard

Images and videos are captured depending on the slit lamp used by:

- buttons on the slit lamp joystick of SL 800
- the optional foot switch of SL 115 Classic, SL 120, SL 220, SL 130

7.2 Starting the software

The procedure for installation of the software is described in section Software installation [▶ 48].

Action

1. Click on the "SL Imaging" shortcut icon in the start menu.
 - ⇒ A system test will be performed and the start window of the software will be opened.
 - ⇒ A window to log in will open.
2. Select your user name and enter your password.

NOTE! In case of a warning or problem:

- Click on [Details] to display a device state overview.
- Click on [Next] to proceed with the starting sequence.

7.3 Patient workflow step

This dialog will appear upon starting the software and successful login. The "Patient" dialog enables the user to select, search, create, edit or delete patient data records.

7.3.1 Workflow step for the selection and display of patient / image data

In the "Patient" workflow step, an overview of all image data (images, videos, reports) of the selected patient is displayed, sorted by the recording day.

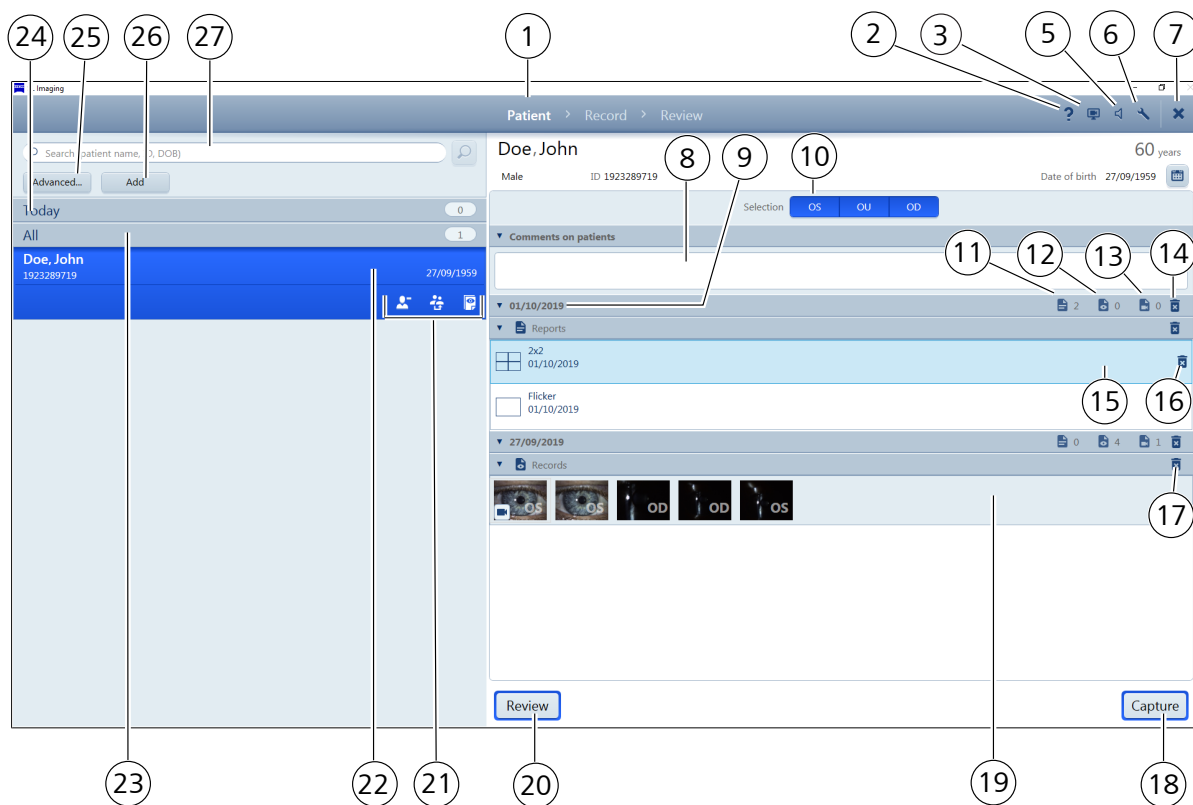






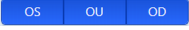














Figure 19: Patient / Image data

Pos.	Icon/Name	Explanation
1	Workflow bar	Shows the available workflow and the workflow step currently selected.
2	 Help	This button is not available.
3	 Record UI	The [Record UI] button records the user interface of the application as video. This video can be attached to a digital service report so that the Service can visually identify a problem.
4	 Brightness	Use the [Brightness] button to display a slide control for adjusting the brightness of the monitor. This function is not available for all monitor types.
5	 Speaker	Use the [Volume] button to display a slide control for adjusting the volume.
6	 Settings	Use the [Settings] button to open the "Settings" [▶ 88] dialog.
7	 Close	Use the [Close] button to open a menu with options for logging out the current user or finishing the software.

Pos.	Icon/Name	Explanation
8	Comments on patients	Click on the triangle to open a text field for entering information and notes on the patient.
9	Recording day	By clicking on the recording day, the display of the available recording and report data of the selected patient can be expanded or collapsed for the displayed day.
10		Use the [OS], [OU] or [OD] option buttons to select all images, videos and reports of a selected patient which have been marked with OS, OU or OD. With this selection, OU can either be a single eye or several images and videos in which both eyes are documented simultaneously (e.g. when using the SL 800 to generate videos with right and left eyes).
11	 Report	Shows the number of available reports.
12	 Records	Shows the number of available records according to the selection [OS], [OU], [OD], see item 10 .
13	 Videos	Shows the number of available videos according to the selection [OS], [OU], [OD], see item 10 .
14	 Delete recording day	Use this button to delete all recording and report data for a selected recording day and a selected patient. The [Delete] button is only displayed when the mouse pointer hovers in this area.
15	Reports	Shows the list of all available reports for the patient selected and on the recording day selected. A double-click opens the selected report in review mode.
16	 Delete report	Use this button to delete the report for the selected recording day and the selected patient. The [Delete] button is only displayed when the mouse pointer hovers in this area.
17	 Delete all records	Use this button to delete all images and videos for a selected recording day and a selected patient. The [Delete] button is only displayed when the mouse pointer hovers in this area.
18	Capture	Use this button to open the "Record" workflow step and to perform a new image capture or video recording.
19	Records	Shows the image and video data for the patient selected and on the recording day selected. A double-click shows the selected image in full-screen mode.
20	Review	Use this button to open the "Review" workflow step and to perform a new review.

Pos.	Icon/Name	Explanation
21	 Procedure	<p>The [Procedure] button is used to display the examination data of the patient and to reassign a procedure to another patient.</p> <p><i>Action</i></p> <ul style="list-style-type: none"> ▶ Select a patient and click the [Capture] button. A dialog with the list of examinations will be opened. ▶ Select an exam and click on [Reassign]. A dialog opens in which the patient can be searched to which the exam is to be assigned. ▶ Enter the search string in the "Search" input field. Parts of the patient name, ID or date of birth may be entered for the search. The search is started by clicking the magnifying glass or [Enter] key. The search can be reset by clicking the button . ▶ Select the patient from the search results to whom the selected exam is to be assigned. By clicking on [Details] further information on the patient will be displayed. ▶ Click on [Reassign] to assign the exam data to the selected patient. A text input field will be displayed to enter the reason for merging the data. ▶ Enter the reason for reassignment of data in the text input field. If you activate the checkbox "Define this text as default text" the text entered will be used in every reassignment of patient data. ▶ Now click [Reassign]. All exams will be saved under the name of the selected patient.
21	 Merge	<p>The [Merge] button will only be displayed if the patient data is saved on a device (e.g. ZEISS SL Workstation or clinic-owned PC) and if the DICOM network has been deactivated in the "Settings / Network" [▶ 97] dialog. The [Merge] button is used to merge several patient data records.</p> <p><i>Action</i></p> <ul style="list-style-type: none"> ▶ Select a patient and click the [Merge] button. A dialog window will be opened to search for other data records for merging. ▶ Enter the search string in the "Search" input field. Parts of the patient name, ID or date of birth may be entered for the search. The search is started by clicking the magnifying glass or [Enter] key. The search can be reset by clicking the button . ▶ In the list box with the search results, select the data records which you want to merge with the previously selected patient. Using the [Compare] button an overview with the difference between the data records will be displayed. ▶ Click the [Merge] button to merge the selected data records. A text input field will be displayed to enter the reason for merging the data. ▶ Enter the reason for merging the data in the text input field. If you activate the checkbox "Define this text as default text" the text entered will be used in every merge of patient data. ▶ Click [Merge]. All data records will be saved under the name of the patient who was selected first.

Pos.	Icon/Name	Explanation
21	 Delete	The [Delete] button will only be displayed if the patient data is saved locally on a device (e.g. ZEISS SL Workstation or clinic-owned PC) and not on the the DICOM server. By clicking the [Delete] button and confirming the query in the following window, the selected patient data record with all recording data will be deleted from the device (e.g. ZEISS SL Workstation or clinic-owned PC).
22	Selected patient	The selected patient is highlighted in blue.
23	All / Search results	<p>The "All" list box will be displayed if the DICOM network is disabled in the network settings. The list box can be expanded by clicking it. All existing patient data is displayed at the outset in the "All" list box. If a simple search has been performed, only the search results will be displayed.</p> <p>The "Search results" list box will be displayed if the DICOM network is enabled in the network settings. The list box can be expanded by clicking it. The "Search results" list box displays the results of the simple search.</p>
24	Today	<p>The list box can be expanded by clicking it. The "Today" list box displays the patients scheduled for examination or treatment on the current day.</p> <p>This patient data is imported, for example, from the worklist of your clinic's information system if the DICOM connection is enabled.</p> <p>Patients generated locally today are added to the list even if the DICOM connection is disabled.</p>
25	Advanced	The "Search" [▶ 66] dialog window will be opened to enter advanced search criteria.
26	Add	<p>New patient data can be entered.</p> <p>Depending on the settings under "Patient identification" General settings the following information is obligatory:</p> <p>Last name, first name: Use the keyboard to enter the last and first name of the patient in the text boxes provided.</p> <p>Gender: Select the patient's gender in the "Gender" drop-down box.</p> <p>Date of birth: Open the "Date" selection box and select the patient's day, month and year of birth. Confirm with [OK]. The patient's age and date of birth will be displayed on the screen.</p> <p>The symbol  may be displayed in the patient data (e.g. name). This serves as a placeholder for characters that cannot be displayed.</p> <p>Alternatively, the patient is identified via an ID.</p>
27	Search	Simple patient search by entering name, ID or date of birth of a patient in the local database or in FORUM (if available).

7.3.2 Advanced search

The "Search" dialog will be opened by clicking the [Advanced] button in the "Patient" dialog. You can enter advanced search criteria.

For a search of patient data stored on the device (e.g. ZEISS SL Workstation or clinic-owned PC) the [All patients] option button must be selected with the DICOM network enabled.

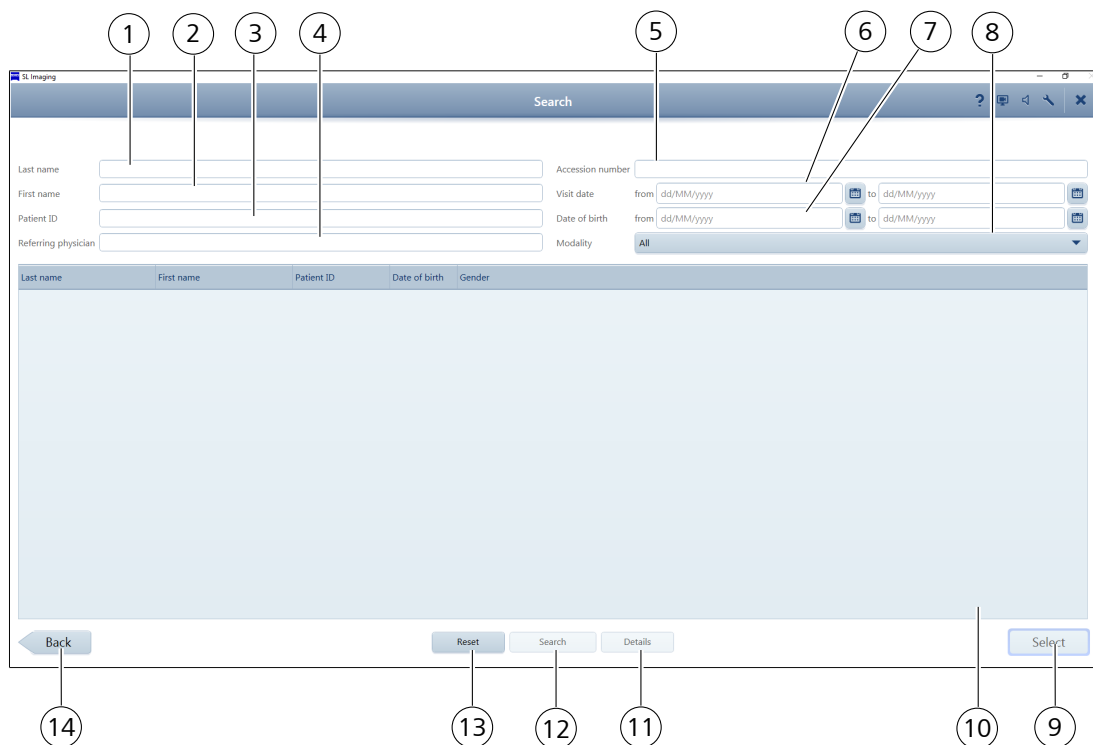


Figure 20: Advanced search

Pos.	Icon/Name	Explanation
1	Last name	Entering character strings. Search of patients whose last name contains the entered character string.
2	First name	Entering character strings. Search of patients whose first name contains the entered character string.
3	Patient ID	Entering numbers. Search of patients whose patient ID contains the entered numeric string.
4	Referring physician	Entering character strings. Search of patients the name of whose referring physician contains the entered character string.
5	Accession number	Entering character strings. Only patients whose accession number contains the entered character string will be included in the search.
6	Visit date	Once the "Visit date from / to" selection boxes have been expanded, the starting and ending date of a period can be selected. Search of patients whose date of visit lies within this period.

Pos.	Icon/Name	Explanation
7	Date of birth	Once the "Date of birth from / to" selection boxes have been expanded, the starting and ending date of a period can be selected. Search of patients whose date of birth lies within this period.
8	Modality	The data format is selected using the "Modality" drop-down list.
9	Select	Returns to the "Patient / Image data" [▶ 62] dialog. The patient data selected in the "Search results" list box will be imported to the "All" list box in the "Patient / Image data" [▶ 62] dialog.
10	Search results	All patient data that satisfy the given search criteria will be shown in the "Search results" list box.
11	Details	Displays the details of an entry in the Modality Worklist (MWL) of your clinic's information system (only visible if the [Scheduled patients] option button is enabled).
12	Search	By clicking the [Search] button, the search will be started.
13	Reset	The [Reset] button is used to delete all entered search criteria.
14	Back	The [Back] button closes the "Patient / Image data" [▶ 62] dialog without accepting the search results.

7.3.3 Advanced MWL search

The search mechanisms described below are only available in networked operation with a DICOM server that offers Modality Worklist (MWL).

The "Search" (MWL) dialog will appear after clicking the [Advanced] button in the "Patient" dialog when the DICOM network has been enabled previously. You can enter advanced search criteria. Both the DICOM network and the [Scheduled patients] option button must be enabled for the advanced MWL search in the modality worklist (MWL) of your clinic's information system.

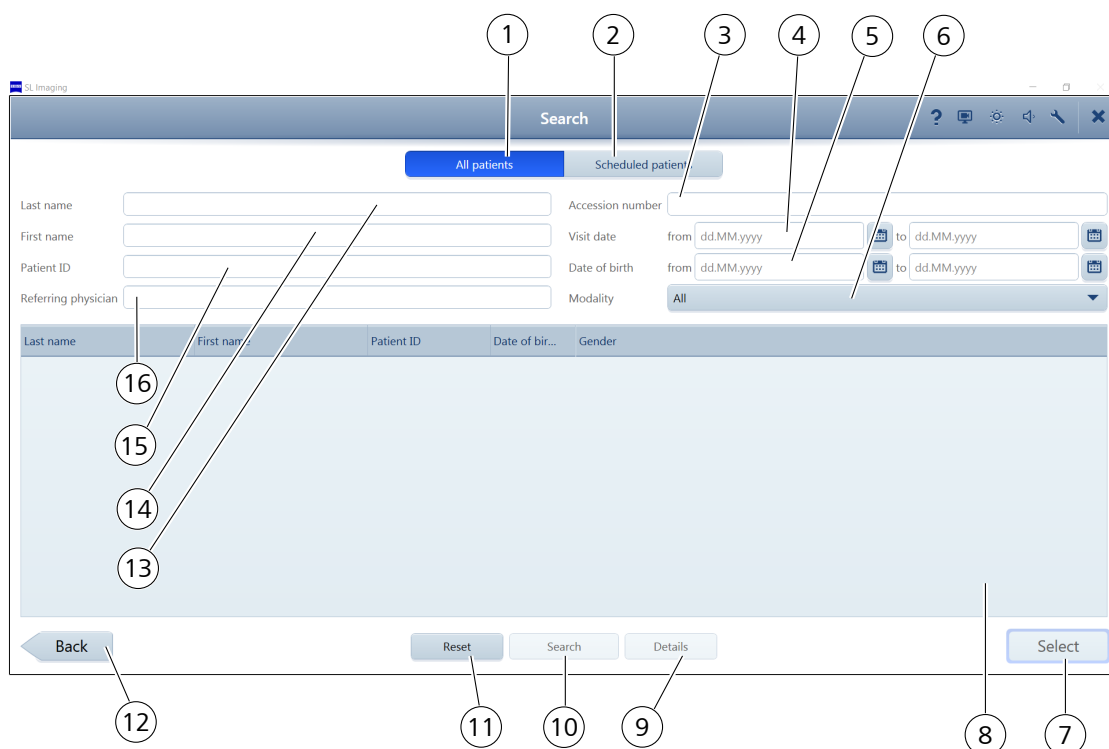


Figure 21: Advanced MWL search

Pos.	Icon/Name	Explanation
1	All patients (only visible if DICOM network has been enabled)	Search of all patient data stored on the device (see section "Advanced search" [▶ 66]).
2	Scheduled patients (only visible if DICOM network has been enabled)	Search of the modality worklist (MWL) of your clinic's information system.
3	Accession number	Entering character strings. Only patients whose accession number contains the entered character string will be included in the search.
4	Visit date	Once the "Visit date from / to" selection boxes have been expanded, the starting and ending date of a period can be selected. Search of patients whose date of visit lies within this period.

Pos.	Icon/Name	Explanation
5	Date of birth	Once the "Date of birth from / to" selection boxes have been expanded, the starting and ending date of a period can be selected. Search of patients whose date of birth lies within this period.
6	Modality	The type of treatment is selected using the "Modality" drop-down list.
7	Select	Returns to the "Patient / Image data" [▶ 62] dialog. The patient data selected in the "Search results" list box will be imported to the "All" list box in the "Patient / Image data" [▶ 62] dialog.
8	Search results	All patient data that satisfy the given search criteria will be shown in the "Search results" list box.
9	Details	Displays the details of an entry in the Modality Worklist (MWL) of your clinic's information system (only visible if the [Scheduled patients] option button is enabled).
10	Search	By clicking the [Search] button, the search will be started.
11	Reset	The [Reset] button is used to delete all entered search criteria.
12	Back	The [Back] button closes the "Patient / Image data" [▶ 62] dialog without accepting the search results.
13	Last name	Entering character strings. Search of patients whose last name contains the entered character string.
14	First name	Entering character strings. Search of patients whose first name contains the entered character string.
15	Patient ID	Entering numbers. Search of patients whose patient ID contains the entered numeric string.
16	Referring physician	Entering character strings. Search of patients the name of whose referring physician contains the entered character string.

7.4 Image capture and video recording workflow step

7.4.1 General information

After selecting or editing the patient data in the "Patient" dialog and clicking the [Capture] button, the dialog for the "Record" workflow step will open.

After manual selection of the eye (OD, OU, OS; depending on the slit lamp used) to be captured, the live image of the camera is displayed.

The structures of the selected eye to be documented can now be captured as an image or recorded as a video.

Recording of images or videos can be triggered either by foot switch, space bar or joystick, depending on the slit lamp used.

Images are captured by shortly pressing the button on the joystick. A video recording is started or stopped by pressing the button longer (> 1 s). It is possible to capture images while recording a video by briefly pressing the button. It is possible to capture images while recording a video by briefly pressing the button.

Pressing the foot switch generates images. To start and stop recording a video, press the corresponding camera icon on the screen.

TIP: Exact adjustment of the eyepieces is a prerequisite for optimum examination results and is necessary for image documentation. Ideally, for image documentation, an eyepiece with cross-hairs (optional accessory) should be used for the dominant eye. A correctly focused record can only be obtained if the cross-hairs in the eyepiece are focused and the eye structure to be recorded is also precisely focused.

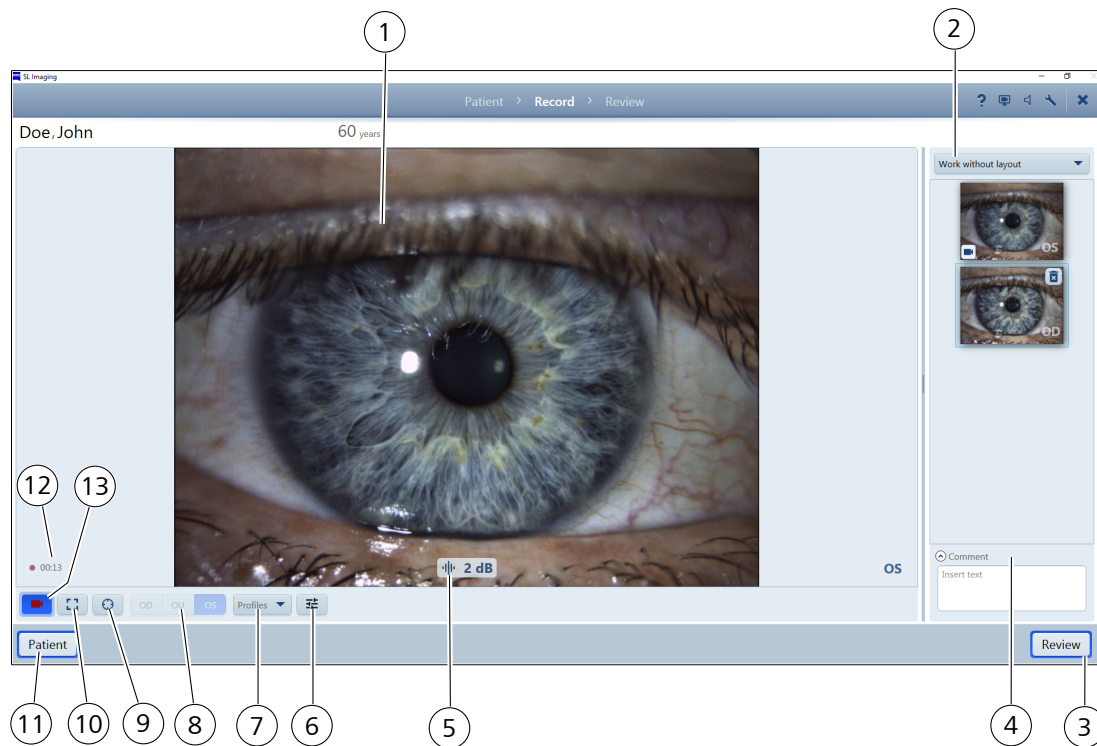









Figure 22: Capture

Pos.	Icon/Name	Explanation
1	Live image	Shows the current live image of the camera used with selected / automatically detected laterality (depending on the slit lamp used). In video recording mode, the duration of the recording in progress is displayed at the bottom left of the screen.
2	Layout	Drop-down list with a selection of layouts of recorded images. This function facilitates the creation of report in the "Review" workflow step. The layout filled with image data will be displayed as a report in Review. If more images are captured than are available in the selected layout, the most recent images are always added to the layout. A double click on the selected image displays it in full screen mode. The following selection options are available: <ul style="list-style-type: none"> ■ Work without layout ■ Single image ■ Create new layout The list entry "Work without layout" displays the recorded images and videos consecutively. The list entry "Create new layout" is used to create your own layouts. <i>Action</i> <ul style="list-style-type: none"> ▶ Select "Create new layout". A dialog will be opened. ▶ Enter a title for the layout / report you want to create. ▶ To change the displayed pattern, click on the small grey rectangle in the lower right corner of the pattern and hold down the mouse button. Drag the pattern until it has reached the desired size. You can create pattern sizes from 1x1 (single image) to 4x4. You can assign a name to each field of the generated view. ▶ Click on [OK] to save the view. Click on [Cancel] if you do not want to save the view. Own layouts can be edited  or deleted  afterwards.
3	Review	The dialog of the "Review" workflow step will be opened where you can view the recorded images and videos.
4	Comment	Text field for entering information and notes on the records of a patient.
5	 Display of changed parameter	Shows briefly the change made by turning the joystick rotary knob to the parameter specified for this purpose under "Advanced settings" (see Section "Advanced settings" [▶ 95]). In this case, the camera gain is displayed. This function is only available for the ZEISS SL 800 slit lamp.
6	 Profile settings	Use this button to change camera settings and save them in addition to the default profiles, see Section "Profile settings" [▶ 75].
7	Profiles	Drop-down list with a selection of stored profiles, see Section "Profile settings" [▶ 75].

Pos.	Icon/Name	Explanation
8	OS, OU and OD	Depending on the slit lamp, the laterality is detected automatically or must be entered manually. The selected laterality (OS, OU or OD) is assigned to the images or videos. It is possible to filter the data later, for example in patient management.
9	 Crosshairs/symbol	This button switches the crosshairs on and off to center the image on the monitor.
10	 Full-screen	Shows the live image in full-screen mode
11	Patient	Use this button to open the dialog for the "Patient" workflow step and to select another patient.
12	Time display	Duration of current video recording.
13	 Start / stop video recording	Start a video recording or stops a current video recording.

7.4.2 Change laterality

If necessary, you can correct the laterality of the documented eye in the thumbnail view.

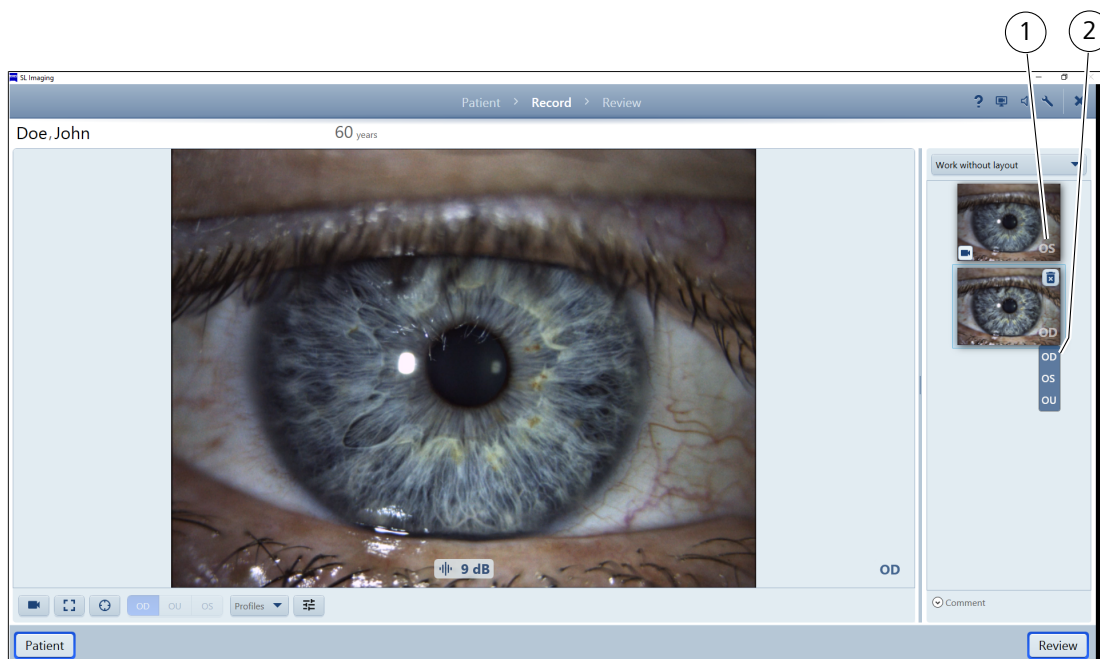


Figure 23: Correct record / laterality

Pos.	Icon/Name	Explanation
1	Laterality (OD, OU or OS)	Shows the laterality of the documented eye.
2	Change laterality	Drop-down list for selecting the laterality. The laterality selected during recording can be corrected. <i>Action</i> <ul style="list-style-type: none"> ▶ Click on the thumbnail of the displayed laterality. A drop-down list will be opened. ▶ Click on the desired laterality. The laterality is changed and the drop-down list is closed.

7.4.3 Profile settings

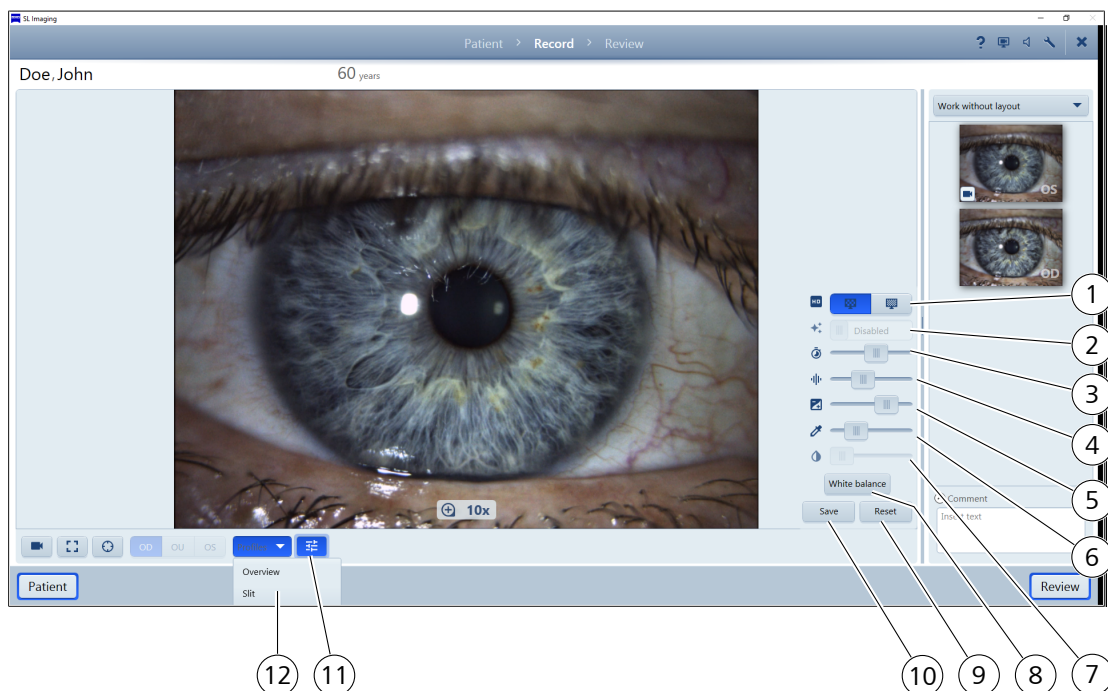












Figure 24: Record / Profiles drop-down list

Pos.	Icon/Name	Explanation
1	 Image quality	Use these buttons to adjust the resolution of the camera image depending on the frame rate (frames per second). <ul style="list-style-type: none"> ■ Optimal:  Creates records with medium quality at medium recording latency and frame rate. ■ High:  Creates high-resolution records, but with higher recording latency and lower frame rate
2	 Automatic gain/ exposure time	Automatically controls the settings for exposure time and gain depending on the currently displayed image.
3	 Exposure time	With this slide control the exposure time of the camera can be changed. Very long exposure times may also limit the frame rate.
4	 Gain	With this slide control the gain of the camera can be changed. The noise is increased when increasing the gain.

Pos.	Icon/Name	Explanation
5	 Gamma brightness	Use the "Gamma brightness" slide control to correct the gamma value (change of relationship between brightness and contrast).
6	 Fine color saturation	With this slide control the color saturation of the image in fine steps.
7	 Coarse color saturation	With this slide control the color saturation of the image in coarse steps.
8	White balance	<p>By clicking the [White balance] button, the default white balance value can be overwritten.</p> <p>The default white balance can be modified manually as follows:</p> <p><i>Action</i></p> <ul style="list-style-type: none"> ▶ Hold a sheet of white paper (e.g. a business card) in front of the slit lamp. ▶ Swivel the diffusor into position. ▶ Illuminate the sheet of paper with minimum illumination (e.g. 0.1 scale point with ZEISS SL 800) so that a grey image is visible on the monitor. ▶ Ensure that no glare is caused. ▶ Click on the [White balance] button. <p>TIP: Note that the monitor settings can also influence the result.</p>
9	Reset	Resets the profile settings to default values.
10	Save	Saves the changed profile settings.
11	 Profile settings	<p>Opens a menu with slide controls and buttons to change the profile settings. In addition to default profiles, new record profiles can be generated.</p> <p><i>Action</i></p> <ul style="list-style-type: none"> ▶ Change the desired settings and click on [Save]. A dialog will be opened. ▶ Enter a title for the profile to be saved. This title will then be visible in the "Selection of saved profiles" list. ▶ Click [OK] to save all changed settings. Click [Cancel] if you do not want to save the settings.
12	Saved profiles	<p>Enables fast access to profiles saved by default ("Slit" and "Overview") or created by the user.</p> <p>"Overview": settings optimized for overview records "Slit": settings optimized for slit lamp records</p>

7.5 Review workflow step - Review of image and video files and report creation

7.5.1 General information

The dialog of the "Review" workflow step will be opened where you can view the recorded images and videos as well as the reports. By double-clicking or dragging and dropping, the images from the overview can be inserted into the layout template and moved (drag and drop). Double-click on an image in the layout to open it in full-screen mode.

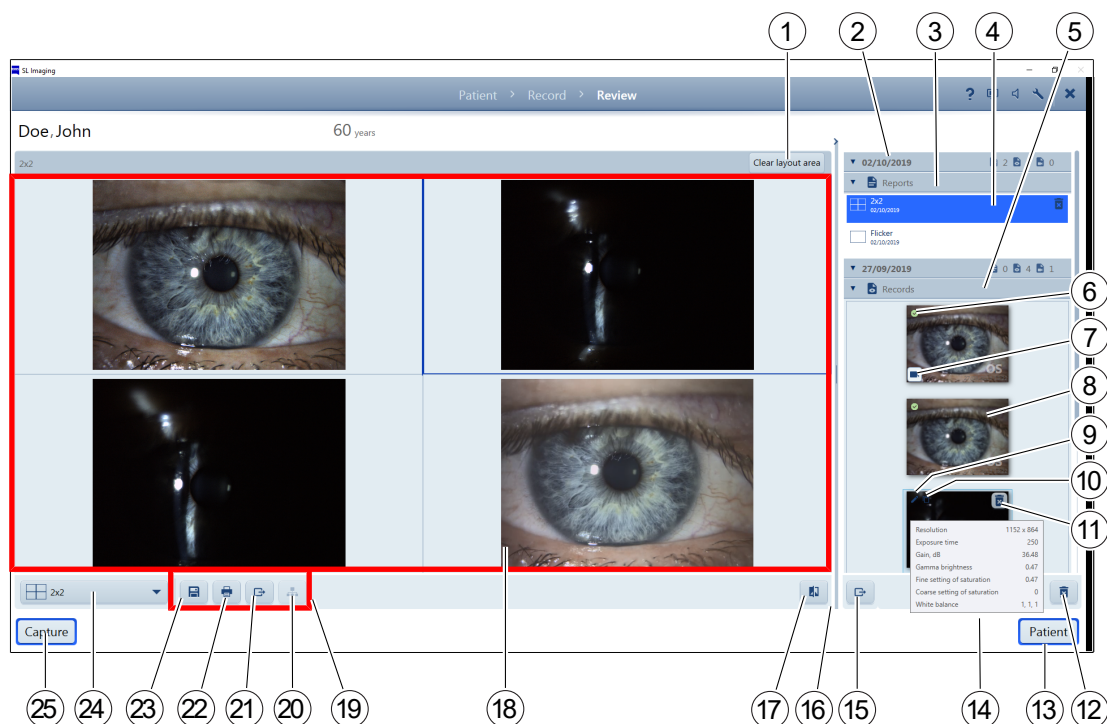















Figure 25: Review

Pos.	Icon/Name	Explanation
1	Remove layout content	Removes the contents of the layout. In case of unsaved changes you are prompted to save or discard the changes.
2	Recording day	Available records and reports for the selected patient on the selected day are displayed in this drop-down field. The adjacent icons indicate the number of available reports/images/videos.
3	Reports	Available reports for the selected patient on the selected day are displayed in this drop-down field.
4	Report thumbnail	Shows the thumbnails of all available reports for the selected patient and on the selected recording day. Displays the layout of the report as well as the title and date of creation.
5	Records	Available records for the selected patient on the selected day are displayed in this drop-down field.

Pos.	Icon/Name	Explanation
6	 Image with a green tick	The green tick indicates that the record is being used in the current view.
7	 Video recording	This symbol is displayed in the thumbnail if the record is a video recording. If the mouse pointer hovers over the thumbnail for a few seconds, the video properties are displayed.
8	Record thumbnail	Shows the thumbnails of all available records for the selected patient and on the selected recording day. If the mouse pointer hovers over the thumbnail for a few seconds, the image properties are displayed (14).
9	 The image has been edited.	The pen indicates that the image has been edited and no longer corresponds to the original image. The edited image can be reset to the original image at any time using the "Reset" button.
10	 Copy	This symbol indicates that the present image is a copy.
11	 Delete	This button deletes the corresponding record of the selected patient if the record was not selected previously. The [Delete] button will only be displayed if the mouse pointer is located in this area.
12	 Delete selected records	Use this button to delete all selected records.
13	Patient	Use this button to open the dialog for the "Patient" workflow step to select another patient.
14	Image properties	If the mouse pointer hovers over the thumbnail for a few seconds, the image properties will be displayed.
15	 Export selected records	Use this button to export all selected records (images and videos). The drive path will be defined in Settings. TIP: Videos can only be exported by clicking on this button.
15.1	 Export selected records	Use this button to export the selected images to a DICOM server. It is not possible to export videos. This button is only enabled if a DICOM connection is available.
16	Separator bar for page layout	This horizontally adjustable separator bar can be used to adjust the vertical distribution between the review area (left) and the display area for reports and records (right). The thumbnail area can be folded in and out using the arrow above the separator bar.

Pos.	Icon/Name	Explanation
17	 Flicker mode	Enables and ends the flicker mode.
18	Review area	Displays the selected image or video. Double-clicking on the selected image displays it in full-screen mode. When moving the mouse over the image the editing options are displayed; see Section "Image review" control elements [▶ 80].
19	Export functions	The following symbols (20 , 21 , 22 and 23) are used to select the export options for the recorded data (depending on the saved settings; see Section "Settings" [▶ 88]): Use the selected button to export the report. A title must be entered for each report. A comment can also be entered. TIP: It may take some time to export images that were taken with resolution set to "High".
20	 DICOM export	DICOM export: exports the report as PDF and the corresponding images as JPG to the FORUM/DICOM database. This button is only enabled if a DICOM connection is available.
21	 Export drive path	Exports the report as PDF and the corresponding images as JPG to the previously defined folder.
22	 Print	Prints the selected report on a printer already installed and defined in your operating system.
23	 Save report	Saves the created layout as a report in the local database. TIP: When leaving the review area without saving, a query appears. The "Save" button permits you to save the current report to the local database.
24	Layout for report generation	Drop-down list with a selection of layouts in the review area. The following selection options are available: <ul style="list-style-type: none"> ■ Single image ■ Create new layout
25	Record	Use this button to open the "Record" workflow step and to release a new record.

7.5.2 Data security

The file names of exported images automatically include the title of the report and the date and time the image was taken. The manufacturer reminds that patient data in the document name poses a risk to data security. Furthermore, with regard to the handling of exported reports (PDFs), the manufacturer explicitly refers to the user's responsibility for data protection

7.5.3 "Image review" control elements

Image editing controls are displayed when you move the mouse over the image in the layout. Double-clicking an image in the layout opens the record in full-screen mode and displays the controls for image processing.

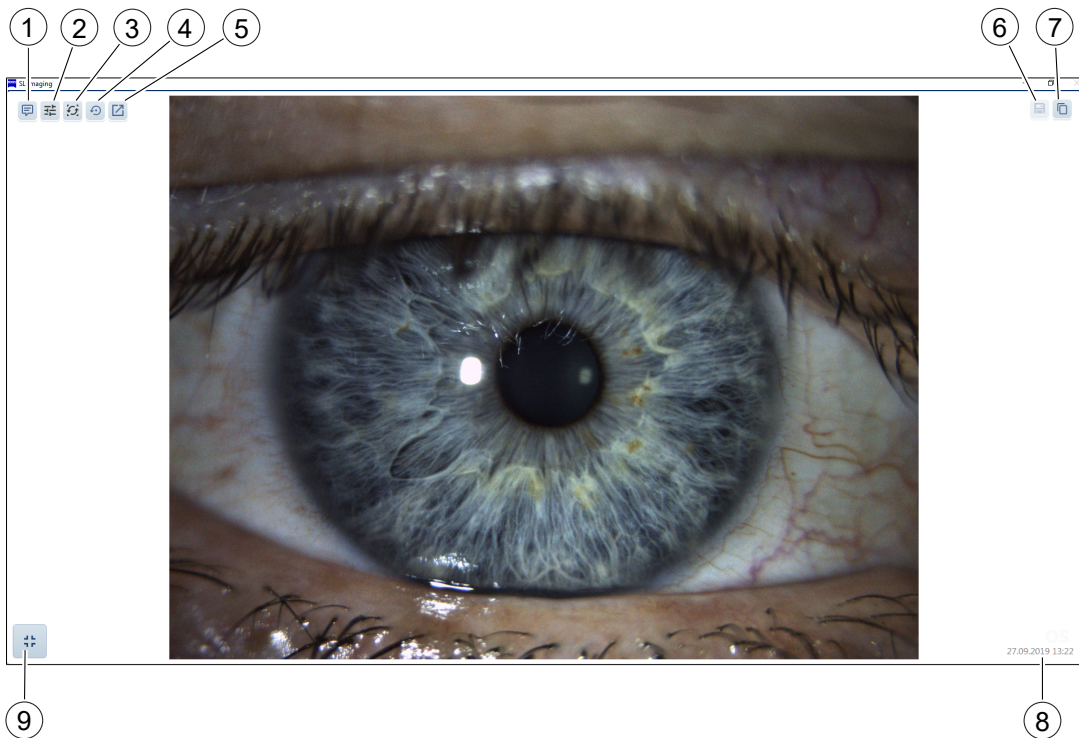










Figure 26: Review / control elements in image review

Pos.	Icon/Name	Explanation
1	 Insert comment	Opens a dialog for entering a comment for the selected record. This comment is inserted in the report below the corresponding image.
2	 Customize record	Opens a menu with sliders to adjust the image values of Zoom, Brightness, Contrast and Gamma, see Section "Adjust image settings" [► 82].
3	 Image rotation and zoom	Opens a menu for rotating, moving and enlarging/reducing the image.
4	 Reset	Resets the selected settings. Allows you to reset the adjustments in an image that was saved as an original.

Pos.	Icon/Name	Explanation
5	 Open image in third-party application	<p>Opens the record in the third-party application defined under "Settings" [▶ 88]. In this third-party application, the record can be processed or measured. The default application is the Windows program "Paint".</p> <p>TIP: Do not save the file that is opened in the third-party application in a folder other than the one previously defined. Otherwise, this will lead to synchronization problems. When saving the image in the third-party application, a copy is automatically created, since it is not possible to reset the modified image to the original. Close the third-party application first before saving/exiting the report.</p>
6	 Overwrite the original	<p>Overwrites the original images with the changes made. Resetting the image to the original image is possible at any time with the [Reset] button.</p>
7	 Create copy	<p>Creates a copy of a record in the review area and saves it as an individual record. Copies are marked with the same symbol in the thumbnail.</p>
8	Date and time of record	Displays the date and time of the record.
9	 Enable/disable full-screen mode	<p>Pressing the corresponding button or a double click enables or ends full-screen mode.</p>

7.5.4 "Adjust image settings" control elements

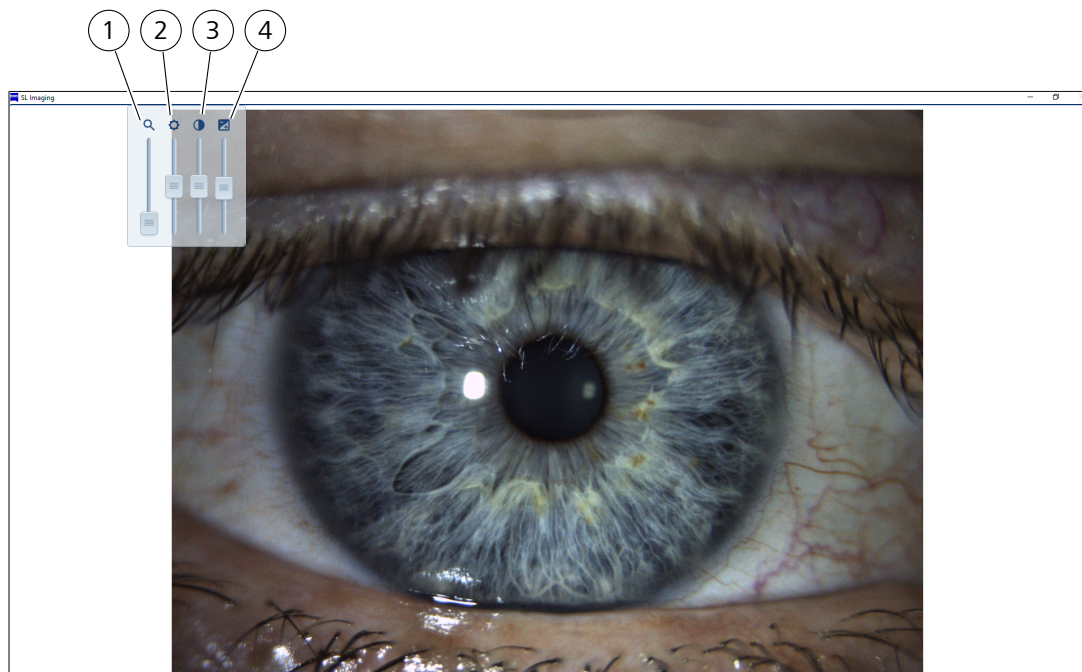






Figure 27: Controls for adjusting image settings

Pos.	Icon/Name	Explanation
1	 Zoom	Use the "Zoom" slide control to adjust the size of the image.
2	 Brightness	Use the "Brightness" slide control to adjust the brightness of the image.
3	 Contrast	Use the "Contrast" slide control to adjust the contrast of the image.
4	 Gamma	Use the "Gamma" slide control to correct the gamma value (change of relationship between brightness and contrast).

7.5.5 "Video review" control elements

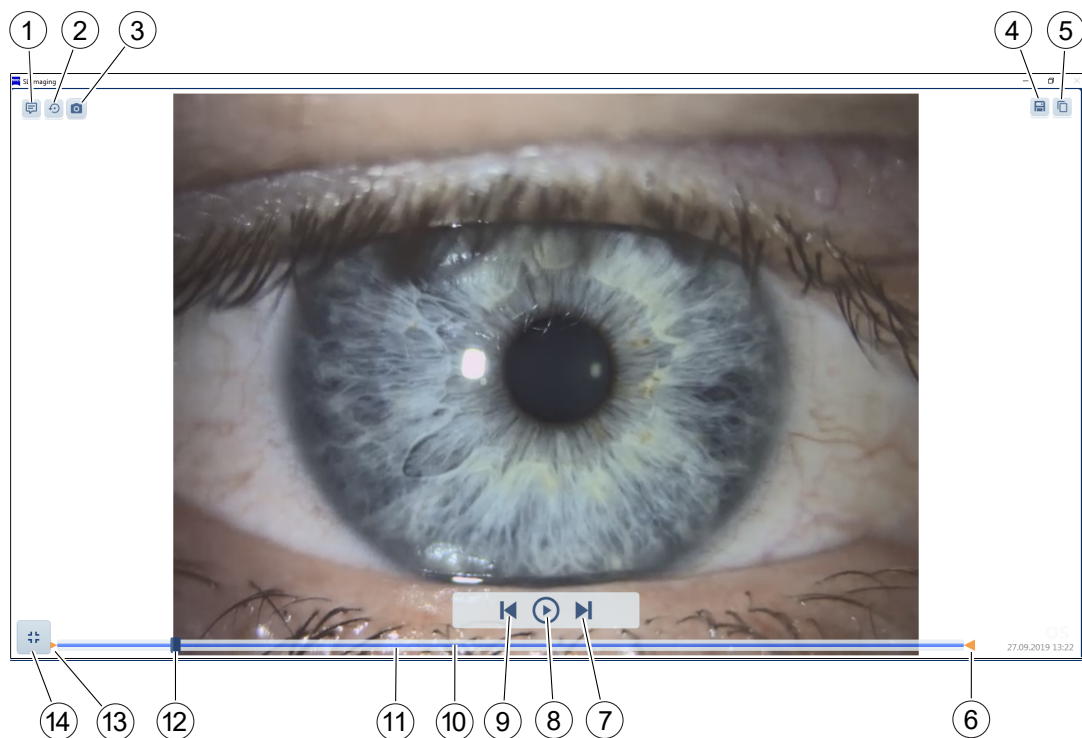
















Figure 28: Video review / control elements

Pos.	Icon/Name	Explanation
1	 Insert comment	Opens a dialog for entering a comment for the selected record. This comment is inserted in the report below the corresponding image.
2	 Reset	Resets the selected settings. Also allows to reset the adjustments in a record that was saved as an original.
3	 Create image from video	Creates a still (single) image from a video which was played in the review area, and saves the current video image as an individual image.
4	 Overwrite the original	Overwrites the original record with the changes made. Resetting the record to the original record is possible at any time with the [Reset] button.
5	 Create copy	Creates a copy of a record in the review area and saves it as an individual image or video. Copies are marked with the same symbol in the thumbnail.
6	 Triangle pointing to the left	Shows the defined ending point of the video as originally recorded (grey bar). A new end point can be set by moving the triangle.

Pos.	Icon/Name	Explanation
7	 Forward by image	When the video is paused, pressing this button moves the video forward by one video image per click. When video is running, the video plays faster per each click.
8	 Play video / Pause video	Starts or pauses the playback of the video.
9	 Backward by image	When the video is paused, pressing this button moves back by one video image per click. When the video is running, the video plays slower per each click.
10	 Blue bar	Shows the length between the selected start and end point.
11	 Grey bar	Shows the total length of the recorded video.
12	 Rectangle	Shows the current position within the video, use a slide control to navigate within the video.
13	 Triangle pointing to the right	Shows the defined starting point of the video as originally recorded (grey bar). A new starting point can be set by moving the triangle.
14	 Enable/disable full-screen mode	Pressing the corresponding button or a double click enables or ends full-screen mode.

7.5.6 Subsequent change of laterality

You can change the laterality of the documented eye subsequently during review.

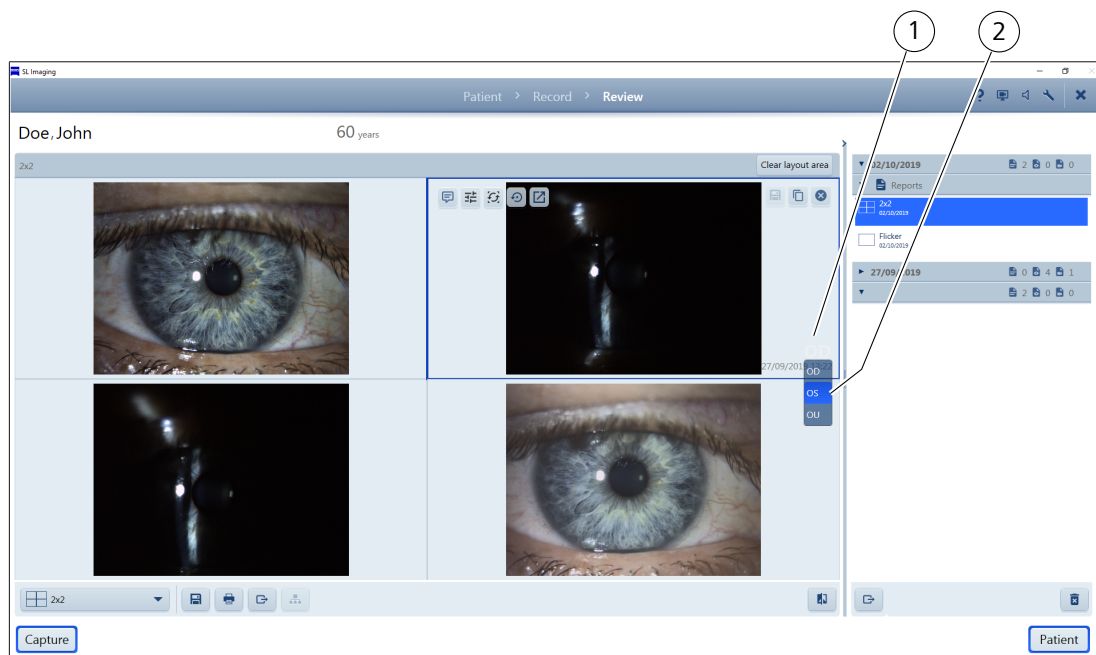




Figure 29: Review / Change laterality

Pos.	Icon/Name	Explanation
1	Laterality (OD, OU or OS)	Shows the laterality of the documented eye.
2	Change laterality	<p>Drop-down list for selecting the laterality. The laterality selected during recording can be corrected subsequently.</p> <p><i>Action</i></p> <ul style="list-style-type: none"> ▶ In the review area, click on the record which is to be changed. ▶ Click on the displayed laterality. A drop-down list will be opened. ▶ Click on the desired laterality. The laterality is changed and the drop-down list is closed. ▶ Click on  to save the changed laterality.

7.5.7 Flicker mode

You can compare two or more images in Review by overlapping them – in the so-called differential view or flicker mode.

The flicker mode can be started by clicking the  button in Review. After activation, it is possible to insert at least two images in one field of the review area.

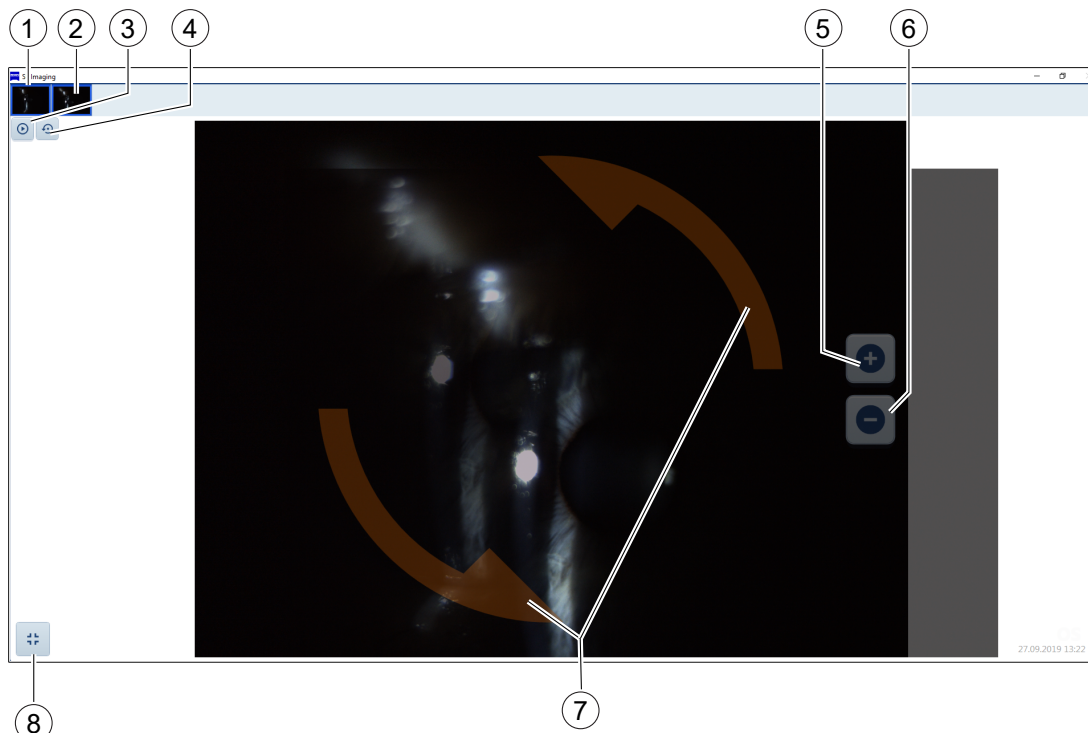










Figure 30: Review / Flicker mode

Pos.	Icon/Name	Explanation
1	Basic image and other records used in flicker mode	Shows records, which are to be used in flicker mode, as thumbnails. The left image is always the first one to be drawn in and is always displayed in the background. <ul style="list-style-type: none"> The blue border around the thumbnail indicates that the record is displayed or overlaid in the review area. Only images with a blue border are flickered when pressing . The white/dark grey border around the thumbnail indicates that the record is not displayed or overlaid in the review area.
2	 Delete an image	Deletes the selected image from the flicker mode. The symbol only appears when the mouse pointer is located in the corresponding area.
3	 Start/end flicker	Use this button to start or stop the automatic overlapping of the records arranged in flicker mode.

Pos.	Icon/Name	Explanation
4	 Reset all	All records in flicker mode are reset.
5	 Enlarge image	Enlarges the image area.
6	 Reduce image	Reduces the image area.
7	Image rotation	The curved arrow to rotate appears when the mouse cursor is placed in the highlighted area.
8	 Enable/disable full-screen mode	Pressing the corresponding button or a double click enables or ends full-screen mode.



Action

- ▶ Enable flicker mode by pressing the  button.
- ▶ In the thumbnail area, double-click on a record and drag it to the review area while keeping the left mouse button pressed.
- ▶ In the thumbnail area, select another record that you want to overlap with the first record by double-clicking on it.
- ▶ If necessary, repeat these steps if you want to overlap other records in flicker mode.

Change zoom, position or orientation of overlapped record

- ▶ Select the thumbnail for which you want to change zoom, position, or orientation so that a blue frame appears around the thumbnail.
 - ⇒ The first image (far left) cannot be changed.

Change zoom

- ▶ Use the  button to enlarge and the  button to reduce.





Change position

- ▶ In the review area, click on the record which is to be overlapped. Hold down the left mouse button and position the record within the review area aligned with the basic image.

Change orientation


- ▶ Within the highlighted circle symbol, you can rotate the image using the curved arrows and position it to match the basic image.

Start flicker

- ▶ If the records which are to be overlapped are correctly aligned regarding zoom, position and orientation, click on the  button.
 - ⇒ The automatic overlapping of the selected records will start.
 - ⇒ Only records with a blue frame are used for the flicker mode.
- ▶ To stop the automatic overlapping click again on the  button.
- ▶ Click on the  button to remove a record in flicker mode from the review area.
- ▶ Disable flicker mode by pressing the  button.

7.6 Settings

7.6.1 Menu bar

Use the  (Settings) button in the right upper corner to open the "Settings" dialog.

On the left side of the "Settings" dialog is the menu bar showing various setting options.

The dialog of the selected setting option is displayed on the right side in the work area of the dialog.

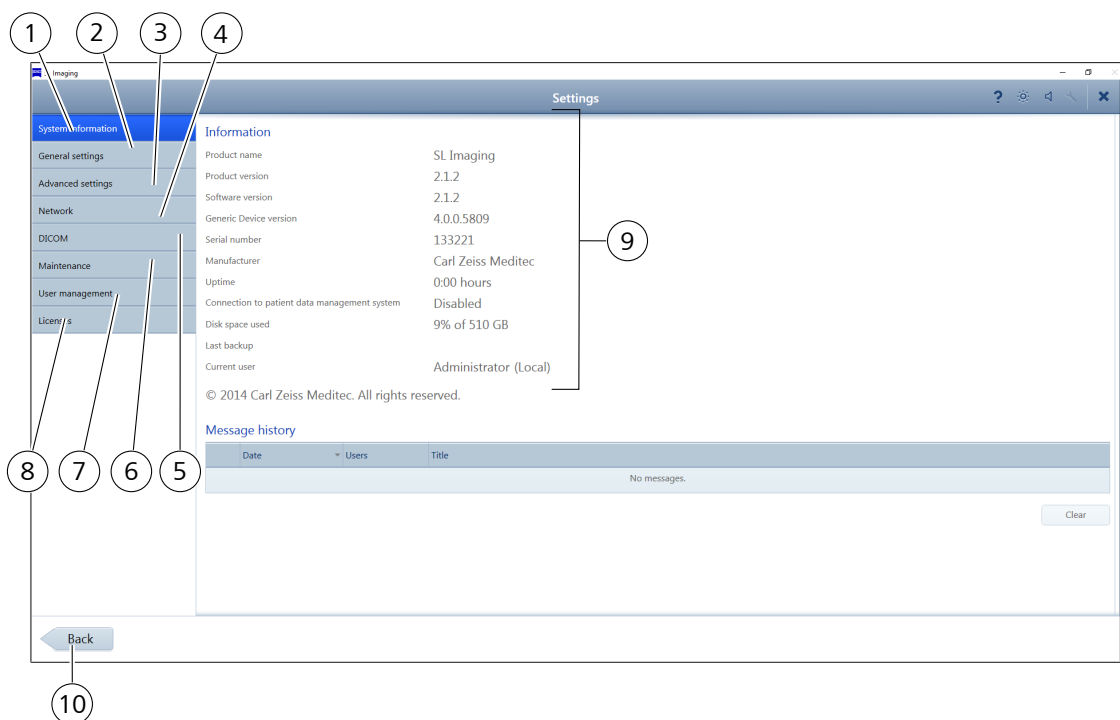


Figure 31: Settings - menu bar

Pos.	Icon/Name	Explanation
1	System information	Opens a window displaying system information (start window after opening the "Settings" dialog).
2	General settings	Opens a window for specifying general device settings.
3	Advanced settings	Opens a window for specifying advanced system settings.
4	Network	Opens a window for specifying network settings
5	DICOM	Opens a window for specifying DICOM settings.
6	Maintenance	Opens a window for specifying maintenance settings.
7	User management	Opens a window for configuring user management.
8	Licenses	Opens a window for displaying existing licenses and activating new licenses.
9	Working area	Displays the dialog for the selected setting option.
10	Back	Closes the "Settings" dialog. All modified settings will be automatically saved.

7.6.2 System information

This window will be opened when clicking the [System information] button. It shows important system information.

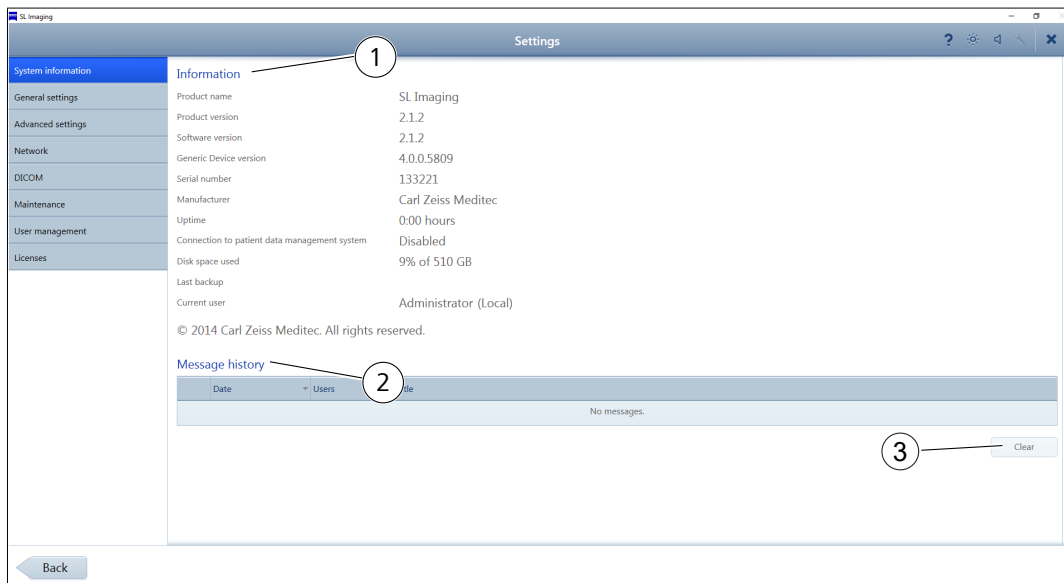






Figure 32: Settings / System information

Pos.	Name	Explanation
1	"Information" dialog area	
		This area displays important information about the device software.
2	"Message history" dialog area	
	List of system messages	This area contains an overview of all system messages (e.g. network connection errors).
	 Warning	"Warning" symbol in message overview
	 Error	"Error" symbol in message overview
	 Serious error	"Serious error" symbol in message overview
	 Information	"Information" symbol in message overview
3	Clear	Clears all messages from the "Message history".

7.6.3 General settings

Click the [General settings] button to open this dialog. All general software settings can be made here.

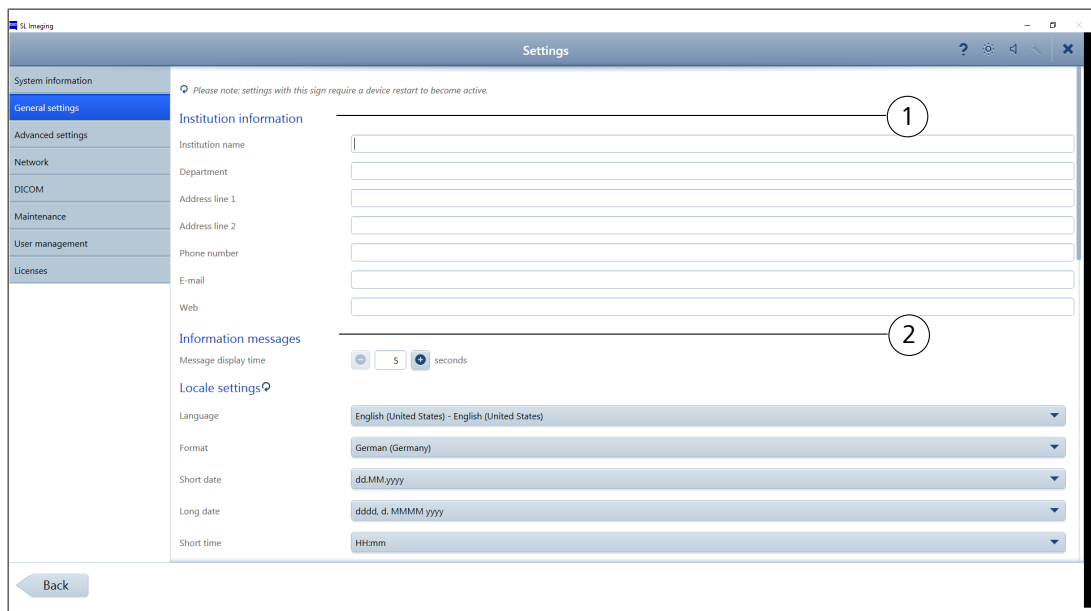


Figure 33: Settings / General settings 1

Pos.	Name	Explanation
1	"Institution information" dialog area	
	Institution name	Input field for entering the name of the institution / clinic / practice that is to appear in the reports
	Department	Input field for entering the name of the department that is to appear in the reports
	Address line 1; Address line 2	Input fields for entering the address to appear in the reports
	Phone number	Input field for entering the telephone number to appear in the reports
	E-mail	Input field for entering the e-mail address to appear in the reports
	Web	Input field for entering the web address to appear in the reports
2	"Information messages" dialog area	
	Message display time	Input field for setting the display time of system messages (in seconds). The time can be increased/reduced in one second increments with the [+] and [-] buttons.

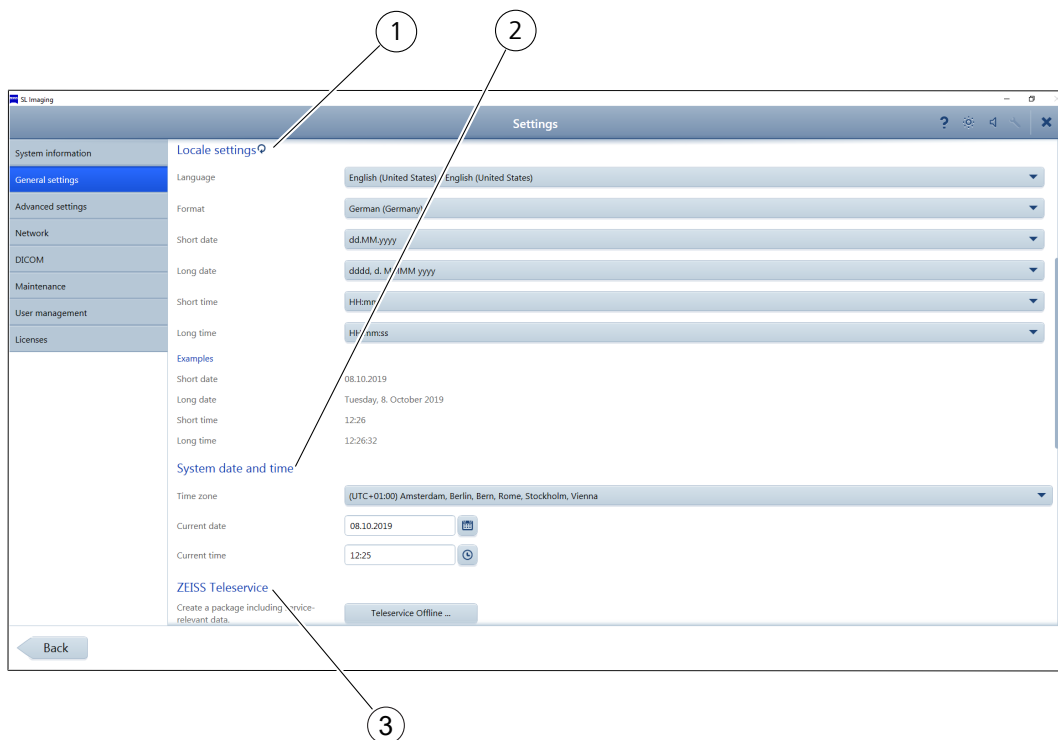


Figure 34: Settings / General settings 2

Pos.	Name	Explanation
1	"Locale settings" dialog area	
	Language	Drop-down list for selecting the language
	Format	Drop-down list for selecting the regional format settings
	Date (long / short)	Drop-down lists for selecting the display format for the date
	Time (long / short)	Drop-down lists for selecting the display format for the time
When changing the language, a restart of the device is required. After changing the setting, the following message will be displayed: "Restart necessary. Settings were changed which require a restart to be activated." Confirm with [OK].		
2	"System date and time" dialog area	
	Time zone	Drop-down list for selecting the current time zone
	Current date	The current date can be selected after the expanding the "Current date" selection box
	Current time	The current time can be selected after the expanding the "Current time" selection box

Pos.	Name	Explanation
3	"ZEISS Teleservice" dialog area	
	Teleservice Offline...	The [Teleservice Offline] button opens the offline remote maintenance tool. In the event of problems, a file package with log files and screenshots of the occurring problem can be created, exported to an external network drive or USB drive and sent by e-mail to ZEISS Service.
	Teleservice Online...	This function is not available.

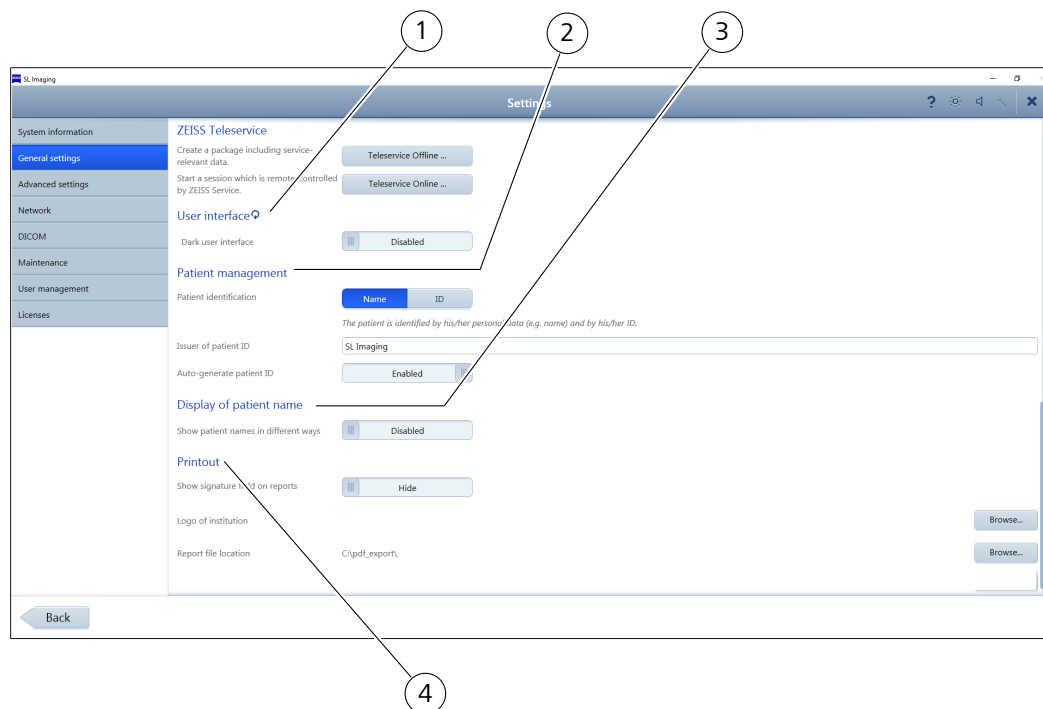


Figure 35: Settings / General settings 3

Pos.	Name	Explanation
1	"User interface" dialog area	
	Dark user interface	This option button is used to enable or disable a darkened user interface.
2	"Patient management" dialog area	
	Patient identification	In the [Name] button setting the patient is identified by his/her personal data (e.g. name) and an ID. In the [ID] button setting the patient is identified by ID and Gender only. Additional personal data is optional.
	Issuer of patient ID	This input field is for entering the initials of the person creating the patient ID (issuer).
	Auto-generate patient ID	This option button is used for enabling and disabling the automatic assignment of a patient ID.

Pos.	Name	Explanation
3	"Display of patient name" dialog area	
	Show patient names in different ways	This option button is used to enable/disable the display of the patient name in different ways. Activation of the option [Show patient names in different ways] enables a choice between ideographic, phonetic and alphabetic notation.
	Order of display	This list box is only displayed when the option [Show patient names in different ways] is enabled. The order of display can be selected with the arrow keys. Only the first two entered patient names are displayed in each case.
4	"Printout" dialog area	
	Show signature field on reports	This option button is used to enable/disable the display of the signature field on reports.
	Logo of institution	The [Browse] button opens a window for choosing a logo of the institution in JPG format that is to appear on reports. After selecting the desired folder, the window is closed by clicking the [Select] button; the name of the selected logo will be displayed on the screen. The [Cancel] button closes the window without importing the logo.
	Report file location	The [Browse] button opens a window for selecting the storage location for reports in PDF format. After selecting the desired folder, the window is closed by clicking the [Select] button; the selected folder will be displayed on the screen as the storage location. The [Cancel] button closes the window without changing the storage location.

7.6.3.1 Teleservice Online

This function is not available.

7.6.3.2 Teleservice Offline

This function is used to create a data package which can be sent to the ZEISS Service for error analysis.

7.6.4 Advanced settings

This dialog is opened by clicking the [Advanced settings] button. The current user-specific settings can be displayed, entered and changed here.

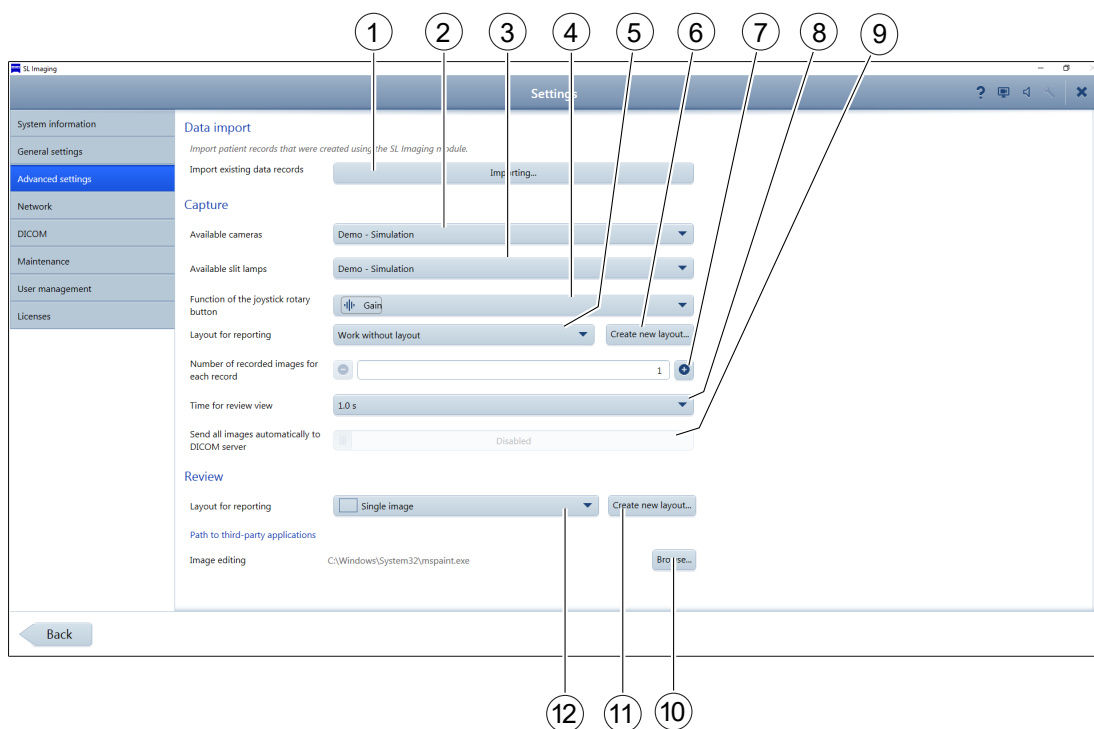


Figure 36: Settings / Advanced settings

Pos.	Icon/Name	Explanation
	Data import	
1	Import existing data records	Enables importing patient data records from SL Imaging 2.03 or lower (Importing patient data ▶ 50)). The following prerequisites must be fulfilled when importing: The patient file must contain first name, last name and date of birth of the patient as described in the "Instructions for Use SL Imaging module".
	Capture	
2	Available cameras	The drop-down list "Available cameras" is used to select the camera mounted to the slit lamp. The "Demo-Simulation" selection allows to play a demo video for testing the software.

Pos.	Icon/Name	Explanation
3	Available slit lamps	The drop-down list "Available slit lamps" is used to select the slit lamp connected. The "Demo-Simulation" selection allows to play a demo video for testing the software and simulating the connected slit lamp.
4	Function of the joystick rotary button	The drop-down list "Function of the joystick rotary button" is used to select the function of the joystick rotary button. By turning the joystick rotary knob, the specified parameter is changed during recording in the "Record" workflow step. You will see the change in the live image. This function is only available for the ZEISS SL 800 slit lamp.
5	Layout for reporting	The drop-down list "Layout for reporting" is used to select a default or own layout, see Section "Image / video recording" [▶ 70].
6	Create new layout	Use the [Create new layout...] button to create own layouts, see Section "Image / video recording" [▶ 70].
7	Number of recorded images for each record	Use the [+] and [-] buttons to specify how many images a series should contain. An image series may contain 1 to 5 images. The last image of an image series is the image captured when pressing the release button of the camera.
8	Time for preview view	Use this drop-down list to specify how long the last image of a series is to be displayed in full-screen mode. The length of display may be set from 0.5 to 5 seconds, or the display may be disabled.
9	Send all images automatically to DICOM server	Use this option button to enable / disable automatic image transfer to a DICOM server during capturing. If this button is disabled, only the images contained in a report will be exported to DICOM. This button can only be selected if the DICOM services are activated.
Review		
10	Browse	Select the external application you want to use in the Review to edit recordings. The Windows application "Paint" is set as default.
11	Create new layout	Use the [Create new layout...] button to create own layouts, see Section "Review" [▶ 77].
12	Layout for reporting	The drop-down list "Layout for reporting" is used to select a default or own layout, see Section "Review" [▶ 77].

7.6.5 Network

This dialog window is opened by clicking the [Network] button. The current network settings can be displayed and changed here.

NOTE! Configuration and network settings may only be changed by an experienced network administrator.

This functionality is not currently available if your network settings are managed through Windows.

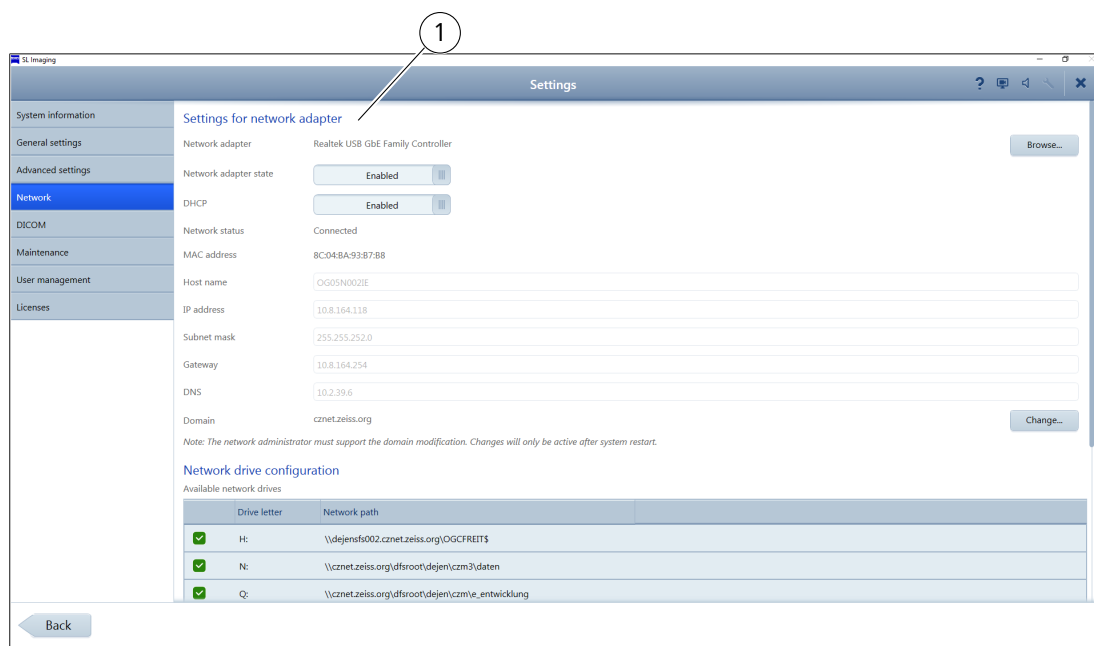


Figure 37: Settings / Network 1

Pos.	Name	Explanation
1	"Settings for network adapter" dialog area	In this area, the current settings for network configuration such as DHCP status, IP address, subnet mask, gateway, DNS, MAC address, host name and network status are displayed.
	Network adapter	Information field to display the selected network interface board
	Network adapter status	Information field for displaying the network adapter status
	DHCP	Option button for enabling/disabling the DHCP. If DHCP has been enabled, the IP address, subnet mask and gateway are retrieved from the DHCP server. The following boxes will then be greyed out.

Pos.	Name	Explanation
	Network status	Information field for displaying the network status
	MAC address	Information field for displaying the MAC address
	Host name	Information field for displaying the host name
	IP address	Input field for entering the IP address. This field must only be filled out if DHCP has been disabled.
	Subnet mask	Input field for entering the subnet mask. This field must only be filled out if DHCP has been disabled.
	Gateway	Input field for entering the gateway. This field must only be filled out if DHCP has been disabled.
	DNS	Input field for entering the DNS address
	Domain	Allows to join a domain

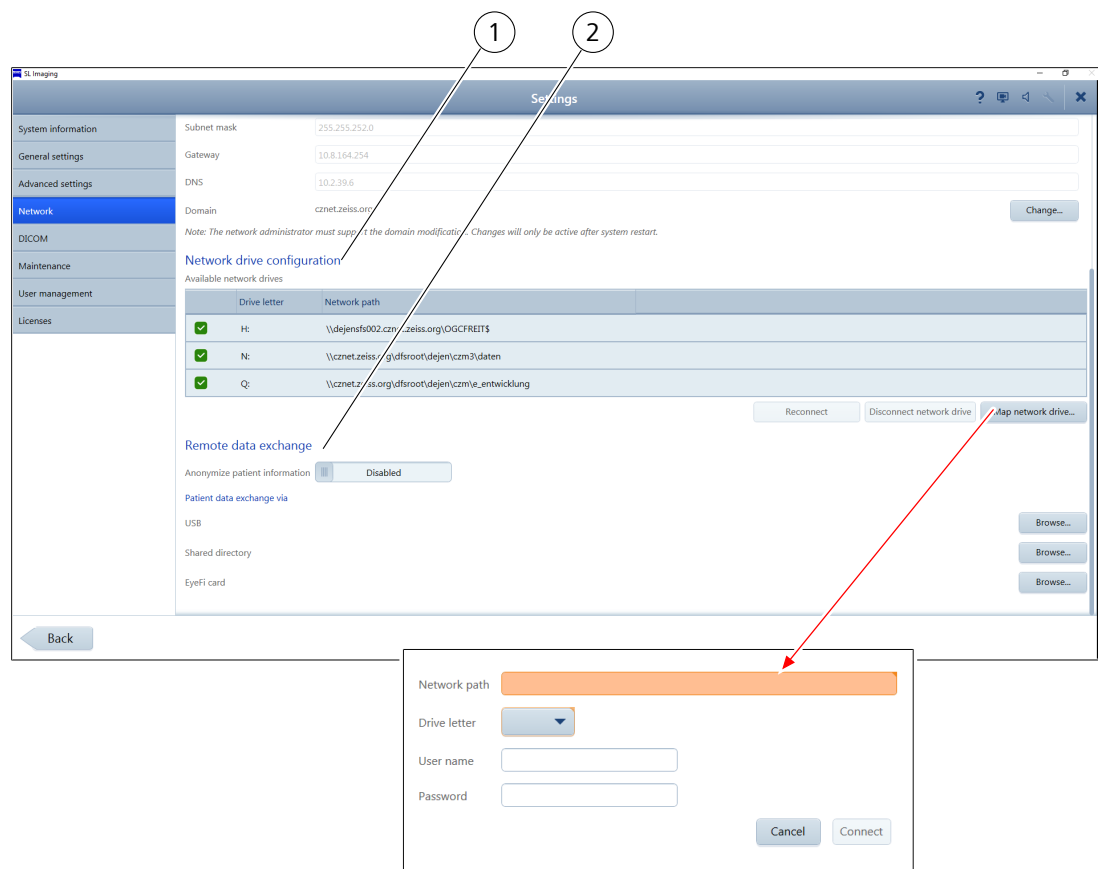


Figure 38: Settings / Network 2

Pos.	Name	Explanation
1	"Network drive configuration" dialog area	
	Available network drives	All existing network drives are displayed in this list box with the drive letter and network path.
	Reconnect	This button is used to reconnect the network drive selected in the "Available network drives" list box.
	Disconnect network drive	This button is used to disconnect the network drive selected in the "Available network drives" list box.
	Map network drive ...	This button is used to map a new network drive. A dialog window opens in which the network path, drive letter, user name and password can be entered. The network drive is mapped by clicking the [Map] button. The new network drive will be displayed in the "Available network drives" list box.

Pos.	Name	Explanation
2	"Remote data exchange" dialog area	
	Anonymize patient information	Use this option button to enable / disable the anonymization of patient data. If this button is enabled, the patient data will be anonymized before export during remote data exchange. If this button is disabled, the patient data will be exported as shown during remote data exchange.
	USB	The [Browse...] button allows you to select a USB removable disk to store patient data during remote data exchange. The USB removable disk must be connected to allow you to select it in this window.
	Shared directory	The [Browse...] button allows you to select a shared folder to store patient data during remote data exchange.
	EyeFi card	The [Browse...] button allows you to select an EyeFi card to store patient data during remote data exchange. The EyeFi card must be connected to allow you to select it in this window.

7.6.6 DICOM

This dialog is opened by clicking the [DICOM] button. The DICOM services can be enabled and edited here.

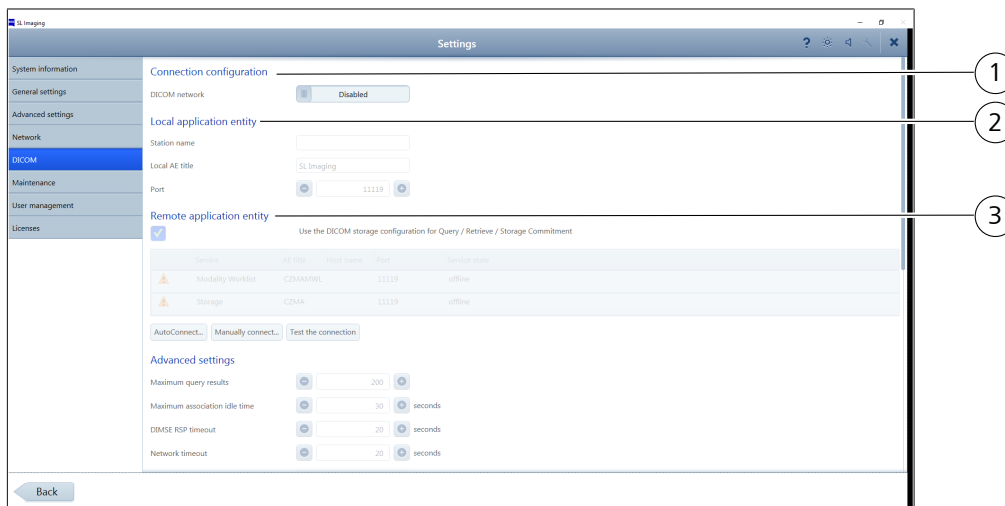


Figure 39: Settings/DICOM 1

Pos.	Name	Explanation
1	"Connection configuration" dialog area	
	DICOM network	Use the DICOM storage configuration also for Query / Retrieve / Storage Commitment. Option button for enabling/disabling the DICOM network communication. If this button is enabled, only the DICOM services MWL and Storage must be configured. The settings for the DICOM services Retrieve, Query and Storage Commitment are retrieved from Storage. Observe the note following the table.
2	"Local application entity" dialog area	
	Station name	Input field for entering the station name.
	Local AE title	Input field for entering the AE title.
	Port	Input field for entering the port number. The port number can be changed using the [+] and [-] buttons.

Pos.	Name	Explanation
3	"Remote application entity" dialog area	
	"Remote application entity" list box	This list box contains an overview of all remote application entities including AE title, Host and Port.
	AutoConnect...	The [AutoConnect™] button is used for performing an automatic configuration. All detected DICOM servers are displayed in a list. The desired DICOM server is selected by clicking [Select] and the connection will be automatically configured. The AutoConnect™ function only works with ZEISS FORUM Servers from FORUM version 3.0. Observe the note displayed below the table.
	Manually connect...	This button is used for configuring the DICOM services manually. To do this, select the desired service and click the [Manually connect...] button. A window will open in which the service can be enabled/disabled. The values must be entered manually in the "AE title", "Host name" and "Port" input fields.
	Test connection	This button is used for testing the connections to the individual services. The results of the test connection are shown in a new window. By clicking the [See details] button, the details of the test connection results can be displayed. For the DICOM service Retrieve a yellow exclamation mark appears during the test because SL Imaging does not support this service.

Note on the "Retrieve" service

Currently, the SL Imaging does not support the "Retrieve" service. Please make sure that this service is not enabled. To do this, click on "Manually connect..." and disable the "Retrieve" option.

<input checked="" type="checkbox"/>	MWL	CZMAMWL	ForumServer.inblr10.zeiss.o...	11119
<input checked="" type="checkbox"/>	Storage	CZMA	ForumServer.inblr10.zeiss.o...	11119
<input type="checkbox"/>	Retrieve	CZMA	ForumServer.inblr10.zeiss.o...	11119
<input checked="" type="checkbox"/>	Query	CZMA	ForumServer.inblr10.zeiss.o...	11119
<input checked="" type="checkbox"/>	Storage Commitment	CZMA	ForumServer.inblr10.zeiss.o...	11119

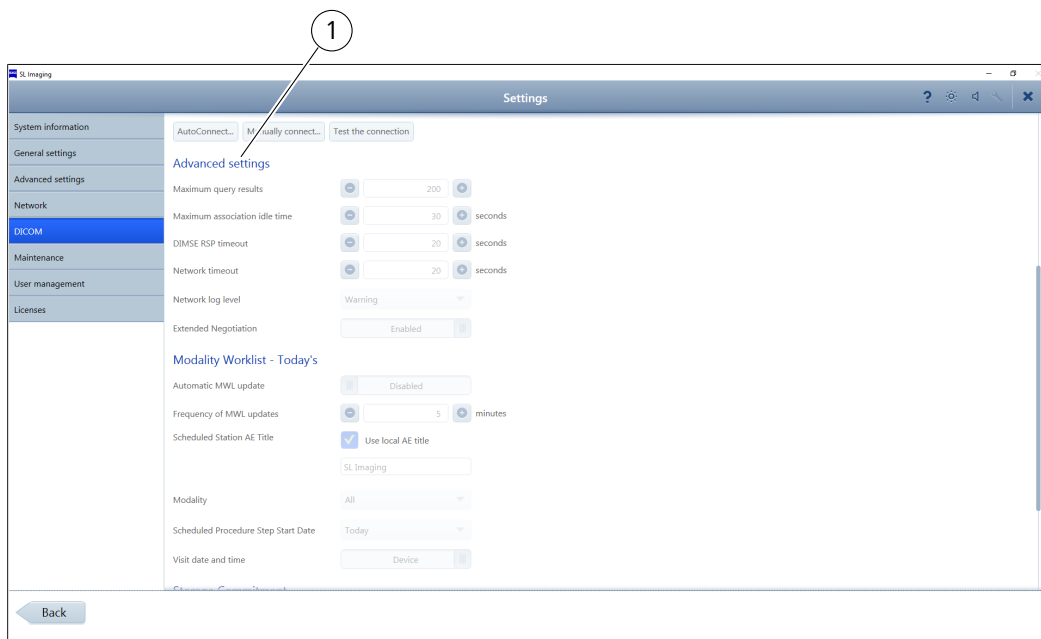


Figure 40: Settings/DICOM 2

Pos.	Name	Explanation
1	"Advanced settings" dialog area	
	Maximum query results	The maximum query results can be entered in the "Maximum query results" input field. The value can be changed using the [+] and [-] buttons.
	Maximum association idle time	The "Maximum association idle time" configures the time within which the association is kept open after any request / response communication. The value (in seconds) can be changed using the [+] and [-] buttons.
	DIMSE RSP timeout	The "DIMSE RSP timeout" configures the maximum time in which the system waits for a specific response from the server to a prior request. The value (in seconds) can be changed using the [+] and [-] buttons.
	Network timeout	The "Network timeout" after which the search should be aborted can be entered in this input field. The value (in seconds) can be changed using the [+] and [-] buttons.
	Network log level	The log level of the network services can be set in this drop-down list. The following modes are possible: <ul style="list-style-type: none"> ■ Debug ■ Info ■ Warning ■ Error
	Extended Negotiation	The Extended Negotiation is the negotiation of an advanced feature set between client and server which is required for complete FORUM communication. If this option button has been enabled, communication with Extended negotiation will be put into operation.

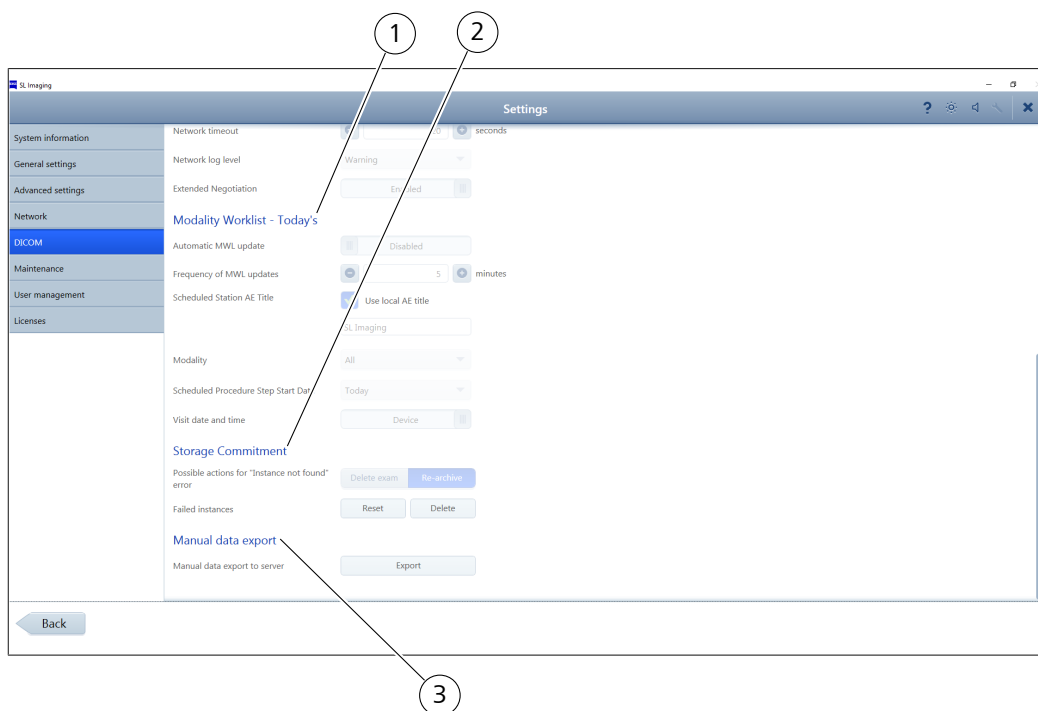


Figure 41: Settings/DICOM 3

Pos.	Name	Explanation
1	"Modality Worklist - Today's" dialog area	
	Automatic MWL update	This option button is used to specify whether or not the modality worklist is to be automatically updated.
	Frequency of MWL updates	If the [Automatic MWL update] option button has been enabled, the update frequency can be specified in the "Frequency of MWL updates" input field. The number entered specifies the update frequency in minutes. It can be changed using the [+] and [-] buttons.
	Scheduled Station AE Title	This MWL query parameter defines for which device the scheduled patient orders are to be queried. The default value is the AE title of the local device (Local AE title). If the parameter is not set (empty string), orders for all devices will be queried.
	Modality	This MWL query parameter defines for which device type (Modality) the scheduled patient orders are to be queried. The default value is "All". (All device types will be queried).
	Scheduled Procedure Step Start Date	This MWL query parameter queries only patient orders scheduled for a specific date. The default value is "Today", other possible values are "Tomorrow", "Week" or "All".
	Visit date and time	Use the button to select "Device" or "Query". If the button is set to "Device", the device automatically sets the date and time of the visit during an examination. If the button is set to "Query", the date and time information from the Modality Worklist response during an examination is used to determine the date and time of the visit.

Pos.	Name	Explanation
2	"Storage Commitment" dialog area	
	Possible actions for "Instance not found" error	The reaction of the device to all data for which the error message "Instance not found" was returned by the server during transmission to the Storage commitment DICOM service can be set here. If the "Re-archive" option has been enabled, the system will attempt to re-archive the data; otherwise the instance will be deleted.
	Failed instances	The [Reset] button is used to re-archive data that has not been confirmed as archived by the Storage Commitment DICOM service. The [Delete] button is used to delete data that has not been accepted by the Storage Commitment DICOM service.
3	"Manual data export" dialog area	
	Manual data export to server	This function is not available. Images can be sent to a DICOM server either directly during capturing DICOM [▶ 101] or via the export options in Review Review workflow step - Review of image and video files and report creation.

7.6.7 Maintenance

This dialog is opened by clicking the [Maintenance] button. A configuration wizard for checking and modifying the software settings can be launched here. The patient database can be backed up on an external drive for subsequent retrieval. Software updates can be carried out.

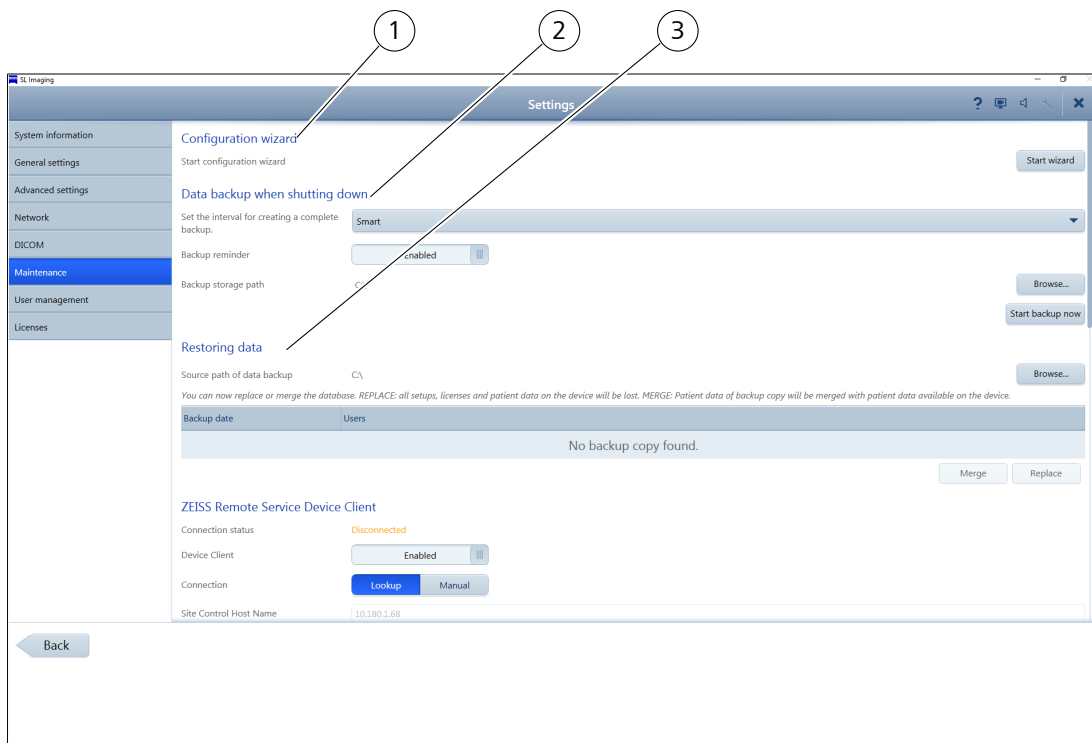


Figure 42: Settings / Maintenance 1

Pos.	Name	Explanation
1	"Configuration wizard" dialog area	
	Start configuration wizard	The [Start wizard] button launches the configuration wizard. The configuration wizard guides the user in a few steps through the device configuration process.
2	"Data backup when shutting down" dialog area	
	Drop-down list to select the interval for creating a complete backup	Click an entry in the list to define the interval between two complete backups. When selecting [Smart] a daily backup will be performed. All changes since the last backup will be saved which saves storage space and time compared to a complete backup.
	Backup reminder	Clicking "Backup reminder" displays a regular reminder for a backup copy.
	Backup storage path/Browse	The [Browse] button opens a window for selecting the drive for data backup. After selecting the desired drive, the window is closed by clicking the [Select] button; the selected drive will be displayed on the screen as the storage location. The [Cancel] button closes the window without changing the storage location.
	Start backup now	The [Start backup now] button starts the data backup.

Pos.	Name	Explanation
3	"Restoring data" dialog area	
	Source path of data backup / Browse	The [Browse] button opens a window for selecting the options for data backup. After selecting the desired data backup the window will be closed by clicking the [Select] button. The selected path with the data backup file will be displayed on the screen. The [Cancel] button closes the window without selecting a data backup.
	List box with data backups	All data backups in the selected folder are displayed in this list box, together with the time of backup and name of the user who created the backup.
	Start restore	By clicking the entry in the data backup list more details of the data backup are displayed. The [Start restore] button is displayed. If you click this button and confirm the query in the following window by clicking on [Restore], the data restore will be started using the selected data backup. For this purpose, the application will be restarted.
	Merge	The patient data of the selected backup will be merged with the current patient data on the device.
	Replace	The licenses and patient data on the device will be replaced by the selected data backup.

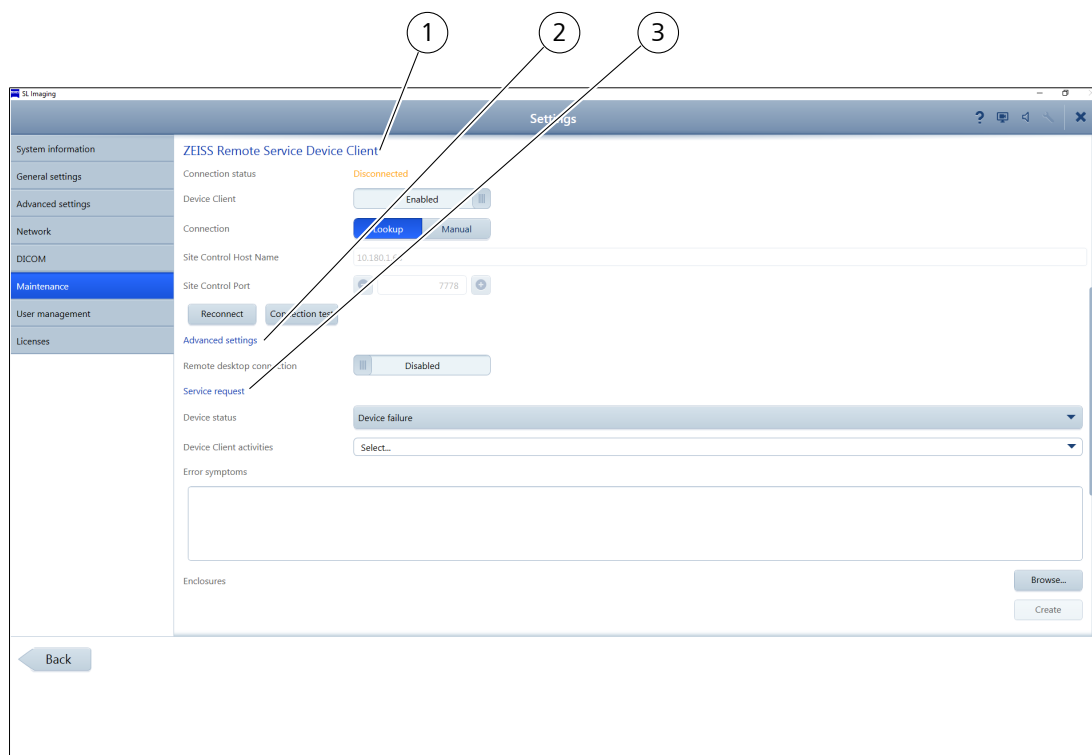


Figure 43: Settings / Maintenance 2

Pos.	Name	Explanation
1	ZEISS Remote Service Device Client"	
	Connection status	The status of the existing connection with the ZEISS Remote Service is displayed in this field.
	Device Client	If this button is enabled, the device client on the device will be enabled to communicate with ZEISS Remote Service. If this button is disabled, the device client will not be enabled on the device.
	Connection	If this radio button is set to [Lookup], the device will automatically search for the ZEISS Remote Service - Site Control to communicate with the local network.
	Site Control Host Name	Input field for the host name of the ZEISS Remote Service - Site Control which is hosted on the local network.
	Site Control Port	Input field for the port. The ZEISS Remote Service - Site Control is ready for communication with the device client. The port number can be changed using the + and - buttons.
	Reconnect	The [Reconnect] button restarts the ZEISS Remote Service Device Client.
	Connection test	Use this button to test the connection with ZEISS Remote Service - Site Control. The results of the test connection are shown in a new window.

Pos.	Name	Explanation
2	"Advanced settings" dialog area	
	Remote desktop connection	If this button is enabled, the ZEISS service employee can establish a remote connection via the ZEISS Remote Service for diagnosis, repair and troubleshooting if the system should show an unexpected malfunction. If this button is disabled, the ZEISS service employee cannot establish a remote connection via the ZEISS Remote Service.
3	"Service request" dialog area	
	Device status	Use this drop-down list to enter a general description of the device problem for a service request. The following states are possible: <ul style="list-style-type: none"> ■ Device failure ■ Impaired use ■ No negative effects
	Device Client activities	Use this drop-down list to select the Device Client activities for a service request. You can select one or more actions for a service request, which are then executed together with the service request.
	Error symptoms	You can enter the detailed error symptoms for a service request in this input field.
	Enclosures	Use [Browse] to open the file manager and select the file to attach (see next figure). Use [Create] to send the service request.

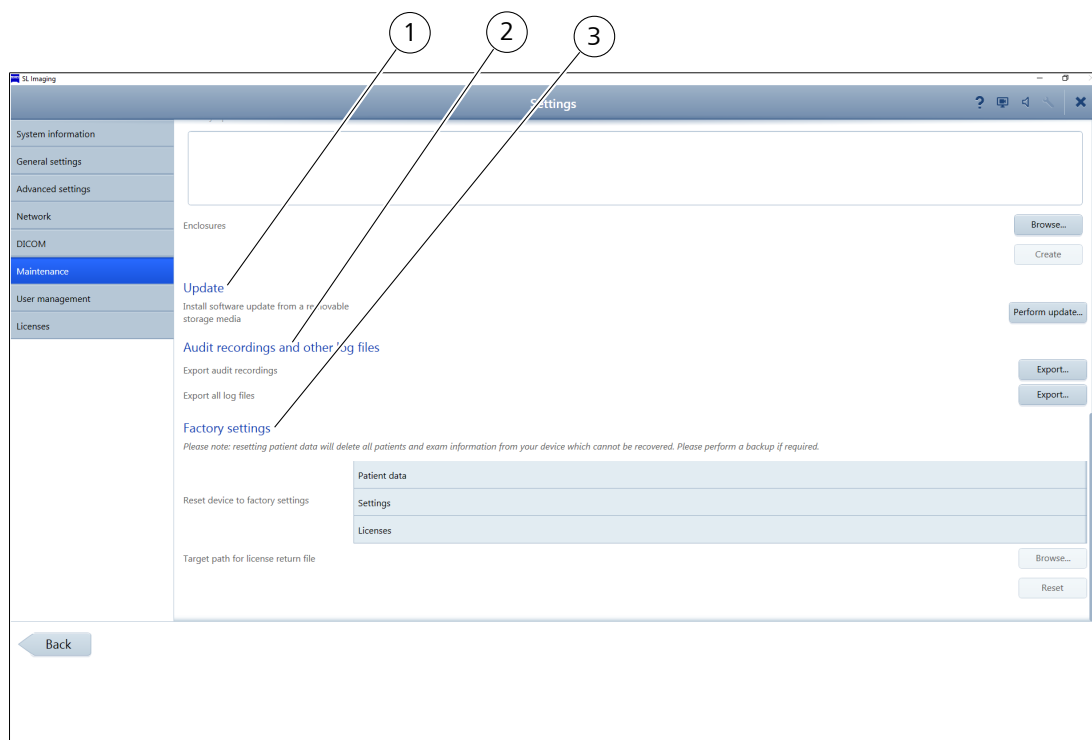


Figure 44: Settings / Maintenance 3

Pos.	Name	Explanation
1	"Update" dialog area	
	Install software update from a removable storage media	Clicking the [Perform update] button closes the application and launches the update wizard. This wizard guides the user through the individual software update steps.
2	"Audit recordings and other log files" dialog area	
	Export audit recordings	The [Export] button opens a window for selecting the folder for backing up audit recordings. After selecting the desired folder the window must be closed by clicking the [Select] button and the files will be exported. Upon successful completion of the export, the corresponding message will be displayed.
3	Export all log files	The [Export] button opens a window for selecting the folder for backing up log files. After selecting the desired folder the window must be closed by clicking the [Select] button and the files will be exported. Upon successful completion of the export, the corresponding message will be displayed.
	"Factory settings" dialog area	
	Reset device to factory settings	Select whether patient data, licenses or settings will be reset.
	Target path for license return file / Browse...	When clicking on [Browse...] in the "Target path for license return file", a window will be opened to select the target path for the license return file. Select the desired folder, then click [Select]. The window will be closed. Click [Cancel] to close the window without selecting a folder.
	Reset	Click [Reset] to reset the selected data to factory settings.

7.6.8 User management

This dialog is opened by clicking the [User management] button. The "User management" dialog is used for creating, changing, managing and deleting users.

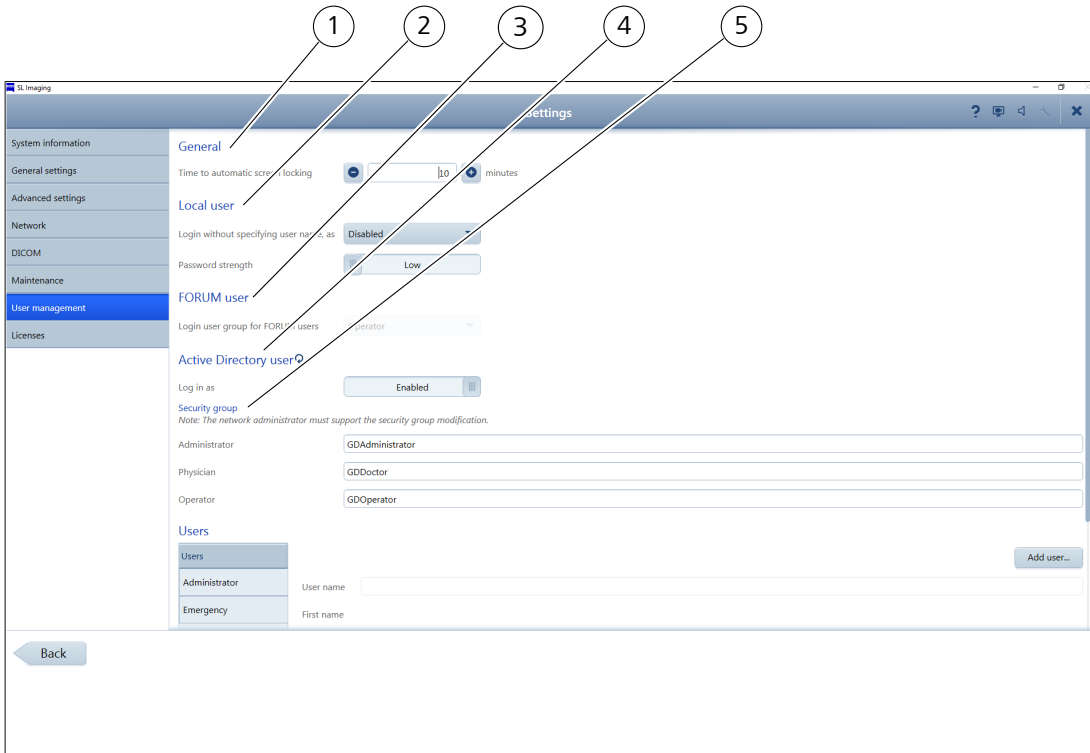


Figure 45: Settings / User management 1

Pos.	Icon/Name	Explanation
1	"General" dialog area	
	Time to automatic screen locking	This input field can be used to enter the time in minutes after which a user is automatically logged off when the screen has not been touched.
2	"Local user" dialog area	
	Login without specifying user name, as	This drop-down list contains the following entries: <ul style="list-style-type: none"> ■ Disabled: Each user must log in with user name and password. ■ Physician: User login is disabled. Each user is automatically assigned to the "Physician" user group. ■ Operator: User login is disabled. Each user is automatically assigned to the "Operator" user group.
	Password strength	This option button is used to specify the criteria for the password check. <p>Low: No requirements are imposed on the password.</p> <p>High: The password must consist of at least 6 characters from at least two of the three following categories:</p> <ul style="list-style-type: none"> ■ Upper case letters (A-Z) ■ Lower case letters (a-z) ■ Numbers (0 to 9)

Pos.	Icon/Name	Explanation
3	"FORUM user" dialog area	
	Login user group for FORUM users	<p>This drop-down list contains the following entries:</p> <ul style="list-style-type: none"> ■ Disabled: FORUM users cannot log in. ■ Physician: If the FORUM user logs in for the first time, he/she will be assigned to the database of the "Physician" user group. In subsequent logins this user can be selected from a drop-down list in the login window. ■ Operator: If the FORUM user logs in for the first time, he/she will be assigned to the database of the "Operator" user group. In subsequent logins this user can be selected from a drop-down list in the login window. <p>This drop-down list can be edited only if the DICOM network is enabled in the network settings.</p>
4	"Active Directory user" dialog area	
	Log in as	<p>When this button is enabled, authorized Active Directory users can log on to the PC and use it.</p> <p>When this button is disabled, authorized Active Directory users cannot log on to the PC and cannot use it. Only authorized local users or FORUM users can log in and use PC / software.</p> <p>When enabling this button, a restart of the software is required. To acknowledge the message, press [OK].</p>
5	"Security group" dialog area	
	Administrator	In this input field, you can enter the security group in Active Directory for the Administrator user group. The user is then assigned to the Administrator user group when he logs on to the PC.
	Physician	In this input field, you can enter the security group in Active Directory for the Physician user group. The user is then assigned to the Physician user group when he logs on to the PC.
	Operator	In this input field, you can enter the security group in Active Directory for the Operator user group. The user is then assigned to the Operator user group when he logs on to the PC.

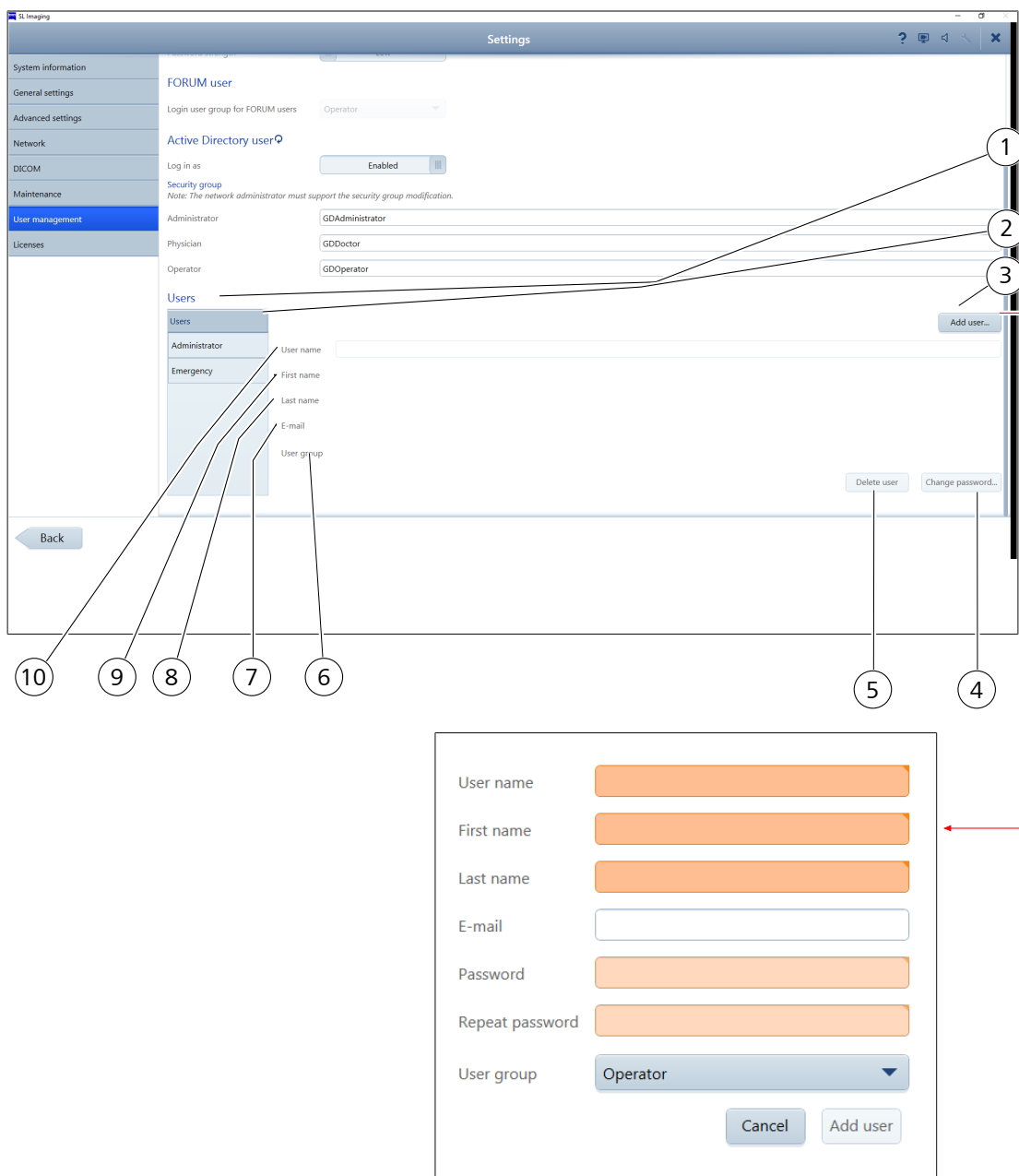


Figure 46: Settings / User management 2

Pos.	Name	Explanation
1	"Users" dialog area	
2	"Users" list box	The "Users" list box contains all existing users. The list can be scrolled down vertically using the scroll bar at the side. A user can be selected by tapping the respective entry. The data of the selected user is displayed in the adjacent input fields and can be edited there.

Pos.	Name	Explanation
3	Add user...	Clicking the [Add user] button opens a dialog for entering a new user. The "User name", "First name", "Last name", "E-mail", "Password", "Repeat password" and "User group" fields must be filled out or selected. Clicking the [Add user] button closes the dialog and adds the new user. [Cancel] closes the dialog window without adding the new user to the list.
4	Change password	Clicking the [Change password] button opens a dialog for issuing a new password for the selected user. The new password must be entered in the input fields "New password" and "Repeat new password". The new password must then be confirmed by clicking the [Reset password] button again.
5	Delete user	The selected user will be deleted. The deletion must be confirmed in the following dialog by clicking the [Delete user] button.
6	User group	The assignment of the selected user to one of the user groups (e.g. Physician, Administrator, Operator) can be changed with the aid of the "User group" drop-down list.
7	E-mail	Input field for editing the e-mail address of the selected user
8	Last name	Input field for editing the last name of the selected user
9	First name	Input field for editing the first name of the selected user
10	User name	Input field for editing the user name

7.6.9 Licenses

This dialog is opened by clicking the [Licenses] button. It allows you to activate licenses for additional software options.

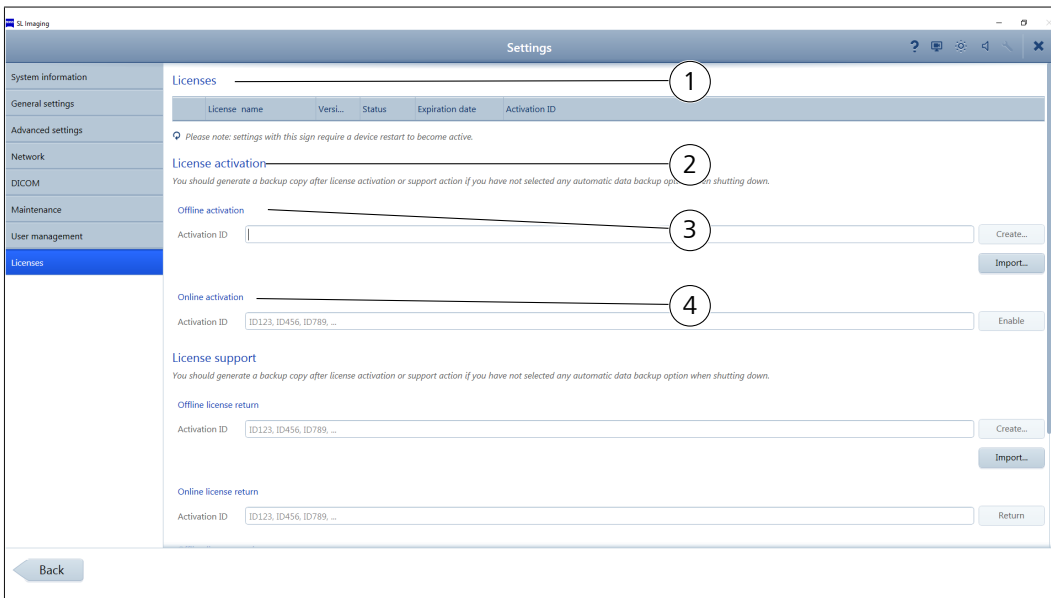


Figure 47: Settings/Licenses 1

Pos.	Name	Explanation
1	"Licenses" dialog area	
	"Licenses" list box	<p>The following information on licenses already activated on the PC is shown in the "Licenses" list box.</p> <ul style="list-style-type: none"> ■ License name ■ Version ■ Status (Enabled / Disabled / Invalid / Expired) ■ Expiration date ■ Activation ID <p>A license can be selected by clicking it. Further details are displayed.</p>
2	"License activation" dialog area	<p>You should generate a backup copy after license activation or other license actions if you have not selected any automatic data backup option when shutting down your PC.</p>

Pos.	Name	Explanation
3	Offline activation	The offline activation enables you to activate a new license on your device without network connection.
	Activation ID	Enter the activation ID received from ZEISS Service in this input field.
	Create	Connect an external storage medium to your PC and click [Create]. A requirement file will be created on the external storage medium. Submit this requirement file to ZEISS Service. You will receive an activation file from ZEISS Service.
	Import	Connect an external storage medium containing the activation file to your PC and click [Import]. A confirmation of the successful activation of the license will be displayed.
4	Online activation	The online activation enables you to activate a new license on your PC online.
	Activation ID/ Activate	Enter the activation ID received from ZEISS Service in this input field and click [Enable].

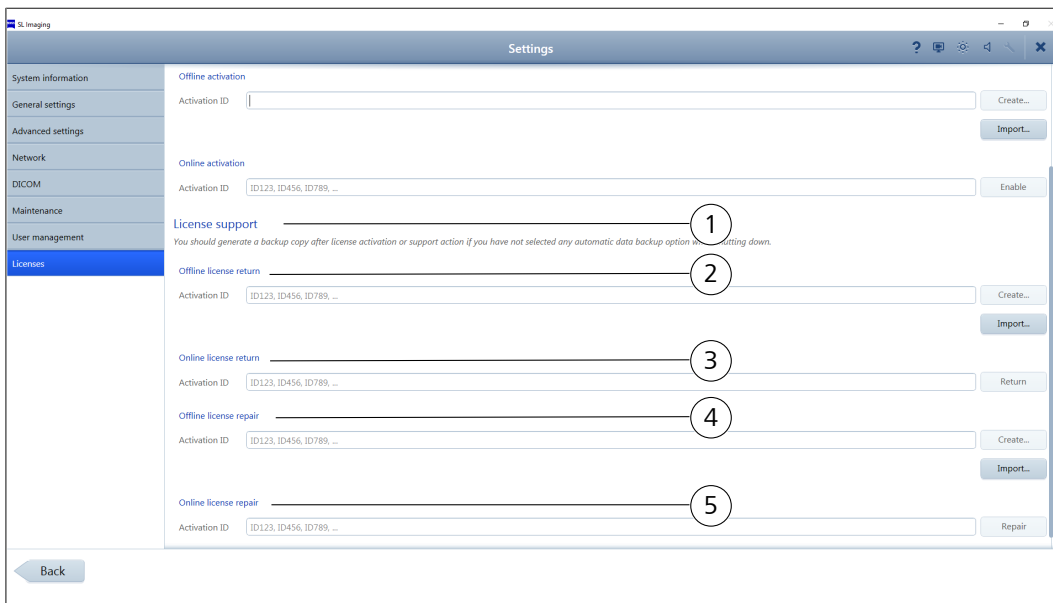


Figure 48: Settings/Licenses 2

Pos.	Name	Explanation
1	"License support" dialog area	
2	Offline license return	Offline license return is used to return a license on your PC without network connection.
	Activation ID	Enter the activation ID received from ZEISS Service in this input field.
	Create	Connect an external storage medium to your PC and click [Create]. A requirement file will be created on the external storage medium. Submit this requirement file to ZEISS Service. You will receive a reply file from ZEISS Service.
	Import	Connect an external storage medium containing the reply file to your PC and click [Import]. A confirmation of the successful return of the license will be displayed.
3	Online license return	If your PC has a network connection, you can return the activated license of your PC using the online license return.
	Activation ID	Enter the activation ID received from ZEISS Service in this input field and click [Enable].
	Return	Click [Return]. A confirmation of the successful return of the license will be displayed.

Pos.	Name	Explanation
4	Offline license repair	Use the offline license repair to restore invalid licenses without a network connection.
	Activation ID	Enter the activation ID received from ZEISS Service in this input field.
	Create	Connect an external storage medium to your device and click [Create]. A repair requirement file will be created on the external storage medium. Submit this repair requirement file to ZEISS Service. You will receive a repair reply file from ZEISS Service.
	Import	Connect an external storage medium containing the repair reply file to your PC and click [Import]. A confirmation of the successful repair of the license will be displayed.
5	Online license repair	If your device has a network connection, you can restore an invalid license using the online license repair function.
	Activation ID	Enter the activation ID received from ZEISS Service in this input field.
	Repair	Click [Repair]. A confirmation of the successful repair of the license will be displayed.

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8 Cleaning and disinfection

8.1 Safety when cleaning and disinfecting the device

WARNING!

Electrical hazard due to penetration of moisture

The penetration of moisture into the system components may cause an electric shock.

- ▶ Prevent moisture from penetrating the system components or the accessories.
- ▶ Disconnect the power cable from the power supply before cleaning or disinfecting the device.

NOTE

Damage due to improper cleaning and disinfection

Some cleaning agents and disinfectants may have an adverse effect on plastic components. Damage caused by such disinfectants is not covered by our warranty.

- ▶ Observe the national disinfection regulations.
- ▶ Use only disinfectants approved by the manufacturer for the treatment of plastics and painted surfaces. The surfaces of the system components have been tested and are guaranteed to resist frequent treatment with alcoholic disinfectants and cleaning agents (e.g. isopropyl alcohol up to 99.5 % and ethanol up to 96 %) over a long period.
- ▶ Do not use aggressive (e.g. acetone) or abrasive cleaning agents.

8.2 Cleaning

The optical components can be cleaned if necessary.

Action

- ▶ Use the following utensils for cleaning:
 - LensPen® cleaning pen (order number 000000-0483-896)
 - ZEISS optical cleaning set (order number 000000-1216-071)
- ▶ To remove dust from surfaces accessible from the exterior, use a soft brush.
- ▶ Clean very dirty paint surfaces with a cloth moistened (not dripping) with weak detergent.
- ▶ Cover all system components with the dust covers when not in use.

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9 Technical specifications

9.1 Essential performance

The system does not have any essential performance features as defined in IEC 60601-1.

9.2 Regulatory information

This declaration shall be rendered invalid if changes are made to the product without the manufacturer's authorization.

The tested system consists of the SL Imaging Solution in combination with one of the slit lamps SL 115 Classic, SL 120, SL 130, SL 220 or SL 800.

9.2.1 System classification

UMDNS No.: 18-369

9.3 Electrical data

SL cam compact

	Value
Rated voltage	5 V DC
Power consumption	max. 2.5 W
Ingress protection rating	IP 20

SL Workstation

	Value
Rated voltage	12 V DC
Power consumption	max. 120 W
Protection class	I

Power supply unit for SL Workstation

	Value
Rated voltage	100 V to 240 V AC, 50 Hz to 60 Hz
Power input	240 VA max.
Power output	120 W
Output voltage	12 V DC
Ingress protection rating	IP 21
Protection class	I

Wide-field illumination

	Value
Rated voltage	5 V DC

9.4 Dimensions and weights

SL cam compact

	Value
Dimensions (W x H x D)	76 mm x 90 mm x 55 mm
Weight	350 g

SL Workstation

	Value
Dimensions (W x H x D)	546 mm x 351 mm x 66 mm
Weight	approx. 8 kg

Power supply unit for SL Workstation

	Value
Dimensions (W x H x D)	175 mm x 90 mm x 51.3 mm
Weight	approx. 1.5 kg

Wide-field illumination

	Value
Dimensions (W x H x D)	35 mm x 185 mm x 50 mm
Weight	150 g

9.5 Camera resolution SL cam compact

	Value
Optimum	5 MP (2592 x 1944 px) at approx. 40 fps
High	18 MP (4912 x 3680 px) at approx. 15 fps

9.6 Ambient conditions

	SL cam compact	SL Workstation	Wide-field illumination
Ambient requirements for the intended use			
Temperature	+10 °C to +45 °C	+10 °C to +35 °C	+10 °C to +35 °C
Relative humidity	10 % to 95 % (no condensation)	30 % to 75 % (no condensation)	30 % to 95 % (no condensation)
Atmospheric pressure:	700 hPa to 1060 hPa		
Ambient conditions for storage and transport in original packaging			
Temperature	-30 °C to +80 °C	-20 °C to +60 °C	-40 °C to +70 °C
Relative humidity	10 % to 95 % (no condensation)	10 % to 90 % (no condensation)	10 % to 95 % (no condensation)

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10 Optional accessories

- Power isolation transformer
- Network isolator

Information on the power isolating transformer can be found in the operating instructions supplied.

You can find the ZEISS contact partner for your country on the following website: www.zeiss.com/med

Only use accessories and spare parts which are approved by ZEISS for this system. When using accessories and spare parts that are not approved by ZEISS, safe operation of the system cannot be guaranteed.

10.1 Network isolator

The purpose of the ZEISS network isolator is to provide a galvanic separation of the network supply (network cable) between the PC and a network.

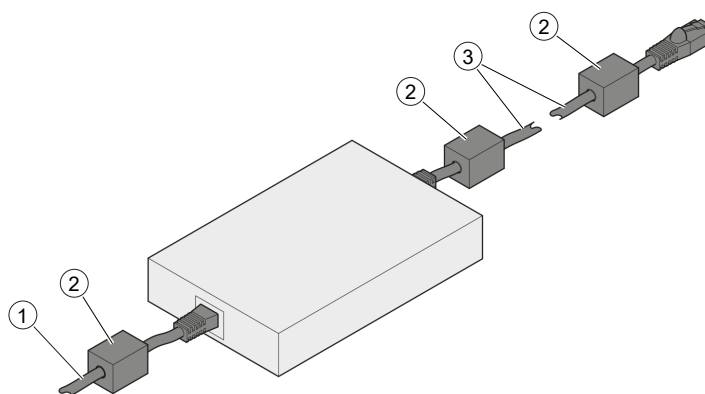


Figure 49: Galvanic network isolator

1	Network cable to LAN	2	Ferrite (with rectangular body)
3	Network cable to SL Workstation		

10.2 Instrument table

WARNING!

Electrical hazard due to improper electrical connection

Improper electrical installation may cause an electric shock.

- ▶ Connect the device via an instrument table qualified by Carl Zeiss Meditec. If using another table, the user is solely responsible for ensuring the electrical safety of the device.

⚠ CAUTION!

Mechanical hazard due to instability

Injury may be caused by falling parts.

- ▶ When selecting a suitable table, ensure that the combination of table and device is stable up to a tilt angle of 10°. The table must be designed for 4 times the weight of the device configuration.
- ▶ When using a mobile table ensure that the casters have locking devices.

ZEISS offers two instrument tables for the device. If the device is mounted on an instrument table qualified by ZEISS, it will be powered through this table. Follow the instructions for use of the instrument table.

For questions regarding the attachment of the slit lamp to the table or ophthalmic unit, refer to the slit lamp instructions for use.

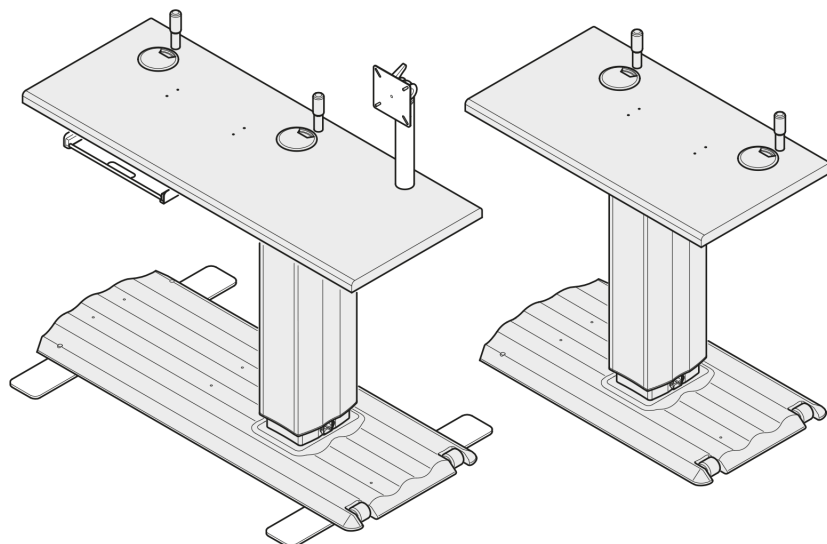


Figure 50: Instrument tables

11 Maintenance

The components of SL Imaging Solution do not require any maintenance.

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12 Disposal of the system

- ▶ Retain packaging materials for future relocation or repair.
- ▶ If you wish to dispose of the packaging material: Submit the packaging material to a recognized collection system for recycling.

The system contains electronic components with built-in batteries.

- ▶ Dispose of the system and the built-in batteries properly and in accordance with national regulations.



In accordance with applicable EU guidelines and national regulations at the time at which the system was brought onto the market, the product specified on the consignment note is not to be disposed of via the domestic waste disposal system or communal waste disposal facilities.

- ▶ For further information on disposing of the system, contact the ZEISS contact person for your country.

You can find the ZEISS contact partner for your country on the following website: www.zeiss.com/med

- ▶ If you resell the system or its components: Inform the buyer that the system is to be disposed of in accordance with the currently applicable regulations.

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Glossary

AE

AE (Application Entity) is the name of a DICOM node

DHCP

a client/server protocol that automatically provides an Internet Protocol (IP) host with its IP address and other related configuration information such as the subnet mask and default gateway.

DICOM

DICOM (Digital Imaging and Communications in Medicine) is an open standard for the archiving and exchange of information within medical image management.

DNS

Domain name system

FORUM

A software product for managing, archiving, and viewing patient data, images, and reports from computerized diagnostic instruments or documentation systems.

fps

Frames per second

Gain

Camera sensitivity gain during the recording phase.

ID

Identification

IEC

International Electrotechnical Commission

IP

The IP (Internet Protocol) is a communications protocol to transfer data in the Internet or a network.

JPG

JPG (Joint Photographics expert Group) is a file extension for image files.

MWL

Modality worklist

OD

Oculus dexter (right eye)

OS

Left eye (oculus sinister)

OU

Oculus uterque (both eyes)

PC

Personal Computer

SL

Slit lamp

USB

USB (universal serial bus) is a standard connector to connect peripheral devices.

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Subject to change



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