

3.4.5 Overview of microscope

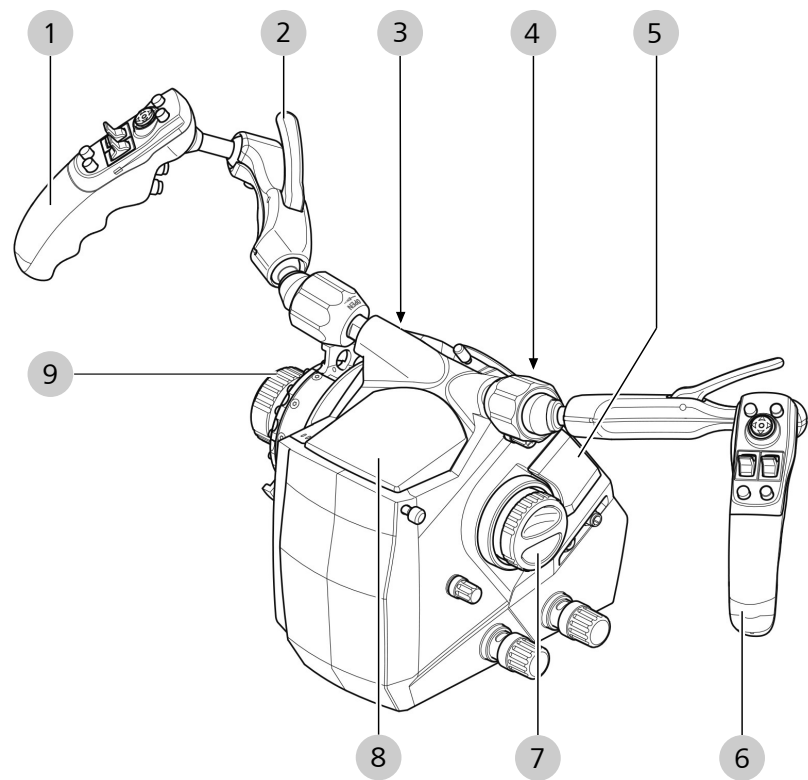


Figure 13: Overview of microscope

1	Left handgrip	2	Hand grip clamping
3	Microphone	4	Port for assistant tube (option)
5	Port for navigation system antenna (option)	6	Right handgrip
7	Port for co-observer right (option)	8	Microscope cover/ port for surgeon's tube (option)
9	Port for co-observer left (option)		

3.4.5.1 Hybrid visualization configuration options (option)

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

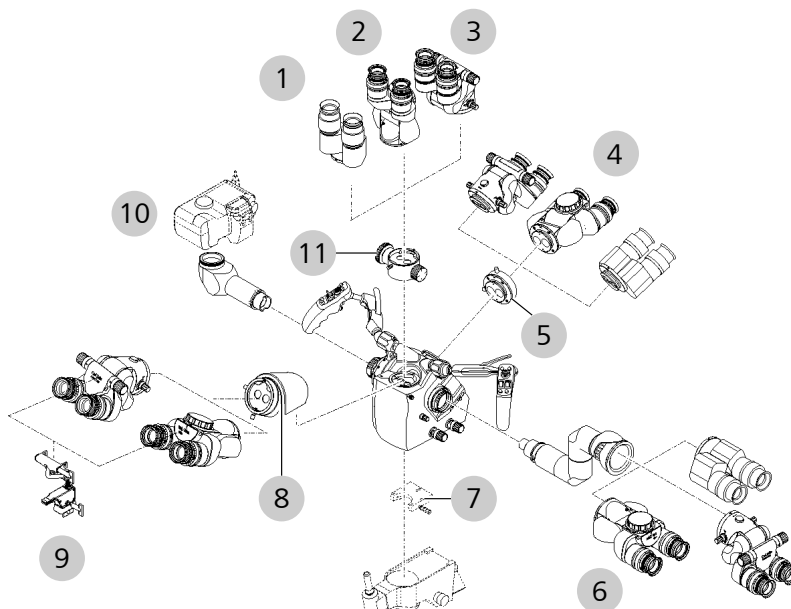


Figure 14: Configuration options

1	Straight binocular tube	2	Tiltable binocular tube
3	Folding binocular tube	4	Tubes for face-to-face viewing (items 1, 2, 3)
5	Rotary adapter	6	Stereo co-observation module with tubes (items 1, 2, 3)
7	Adapter plate for connecting laser micromanipulator	8	Angle optics*
9	Mouth switch	10	Photo adapter for DSLR
11	Magnification changer, 3-position*		

* When assembling the microscope, be careful not to mount the 3-position magnification changer (item 12) and the angle optics (item 9) on the microscope body at the same time. In this case, the microscope body would be too heavy for the autobalance function.

3.4.5.2 Overview of binocular tubes

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

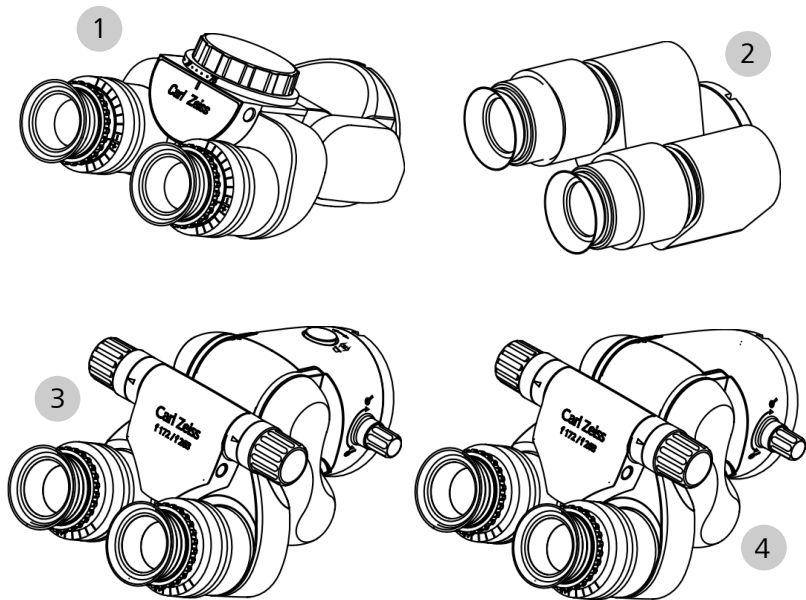


Figure 15: binocular tubes

1	180° tiltable tube, focal length $f=170$ mm	2	Straight tube, focal length $f=170$ mm
3	Foldable tube, focal length $f=170/260$ mm	4	Foldable tube for mouth switch, focal length $f=170/260$ mm

3.4.5.3 Widefield eyepiece (10x or 12.5x)

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

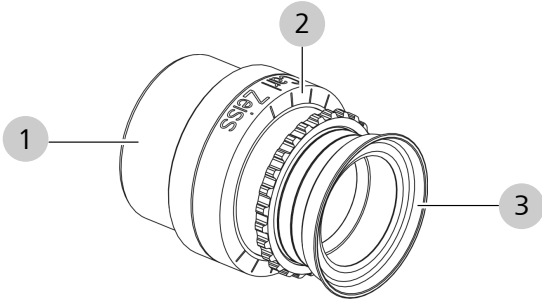


Figure 16: Widefield eyepiece (10x or 12.5x)

1	Magnetic coupling	2	Diopter scale
3	Eyecup		

3.4.5.4 Stereo co-observation module

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

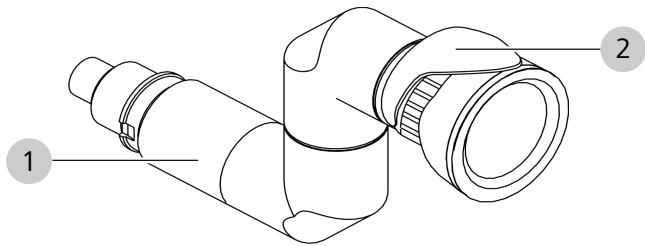


Figure 17: Stereo co-observation module

1	Stereo coobservation module with 2 pivot joints
2	Locking lever

3.4.5.5 Digiskop cover

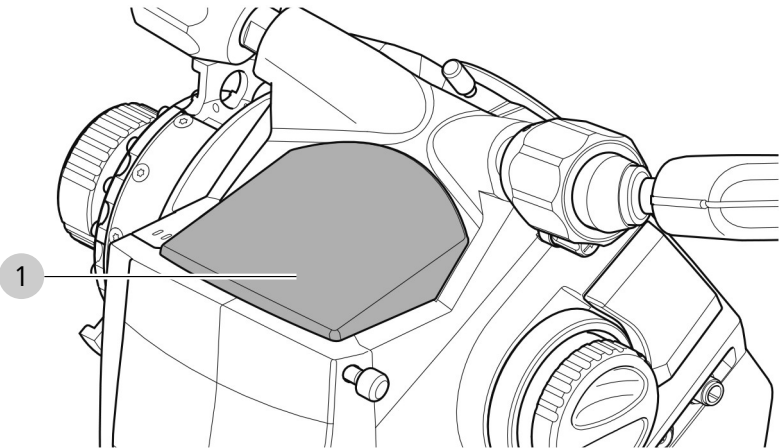


Figure 18: Digiskop cover

1	Cover for main observer tube		
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3.4.5.6 Additional Light

Schematic of shadow adjustment via additional illumination
The additional illumination can be activated via the touchscreen.

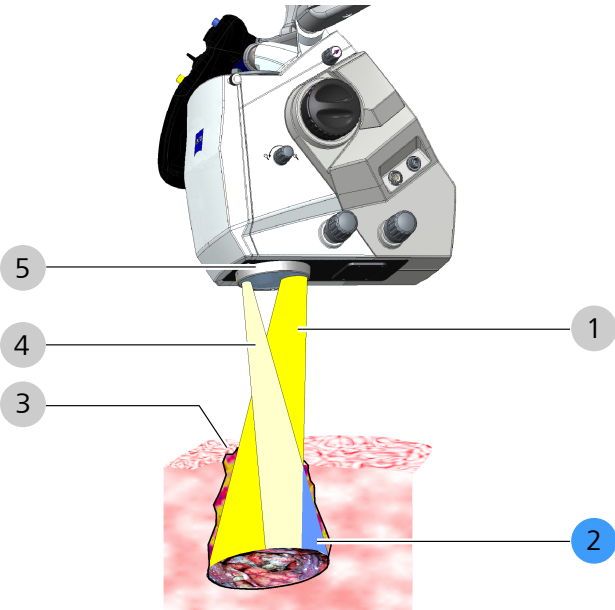


Figure 19: Additional Light

1	Main illumination	2	Shaded area of main illumination
3	Surgical field	4	Special illumination to brighten shadows
5	Objective lens of surgical microscope		

3.5 Control elements and displays

3.5.1 Screen keyboard

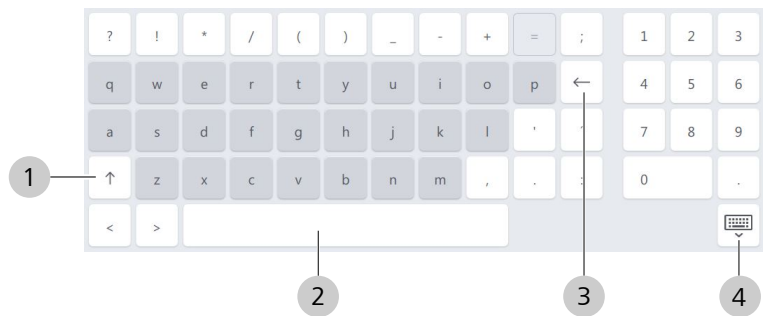


Figure 20: Screen keyboard key assignment

Item	Name	Explanation
1	Shift key	Switches between upper-case and lower-case letters.
2	Space key	-
3	Delete key	Deletes the character to the left of the cursor.
4	Close	Ends the input and closes the screen keyboard.

3.5.2 Display: Editing

A rotating editing symbol appears during editing. A load symbol is displayed while larger amounts of data are being saved, imported or exported.

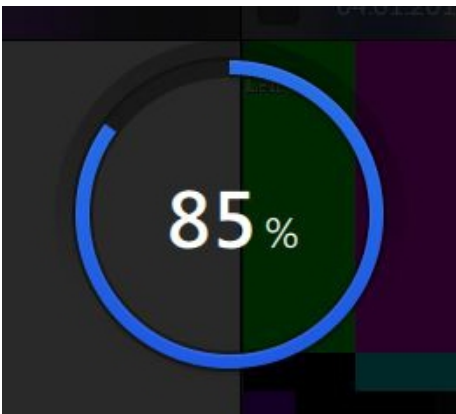


Figure 21: Progress display

During longer editing periods, the percentage display flashes inside the circle symbol.

3.5.3 Online help

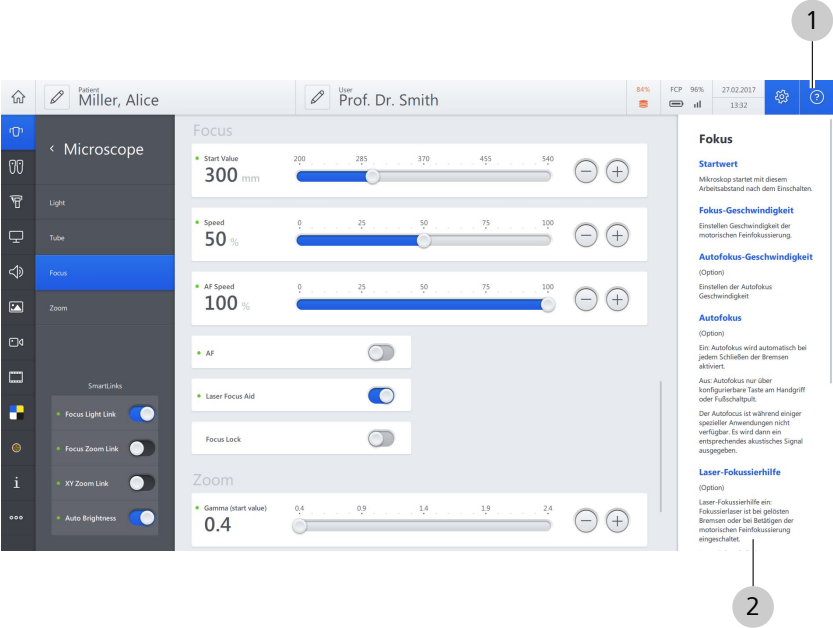


Figure 22: Call-up and display of online help

Item	Symbol	Name	Explanation
1		Button [Online help]	Tapping on the button opens the Help window on the right side.
2		Help menu	If the entire help text is not displayed, scroll down on the touchscreen.

The content of the Help window adapts to the respective opened menu. To close the Help window, tap on the [Online help] button again.

3.5.4 Error messages on the monitor

Information on a problem occurring during operation is detected automatically and displayed as an error message. The device saves this error message in a log file which can be exported (Settings - Extras - Export Log Files).

NOTE

Error messages on the monitor!

If a malfunction occurs during operation, a corresponding error message is displayed on the monitor.

- If an error occurs that you cannot correct with the aid of the chapter "What to do in the event of malfunctions", label the device as out of order and contact ZEISS Service.



Figure 23: Error message on the monitor

Prerequisite

- ☒ Error message appears on the monitor

Action

1. Carefully read through the error message and follow the instructions displayed therein.
2. Acknowledge the error message either directly on the monitor or by pressing the center joystick button on the **left** handgrip.
3. If the error message appears on the monitor again and the problem persists, export the log file and contact your responsible ZEISS Service organization.

3.5.5 Controls on the microscope

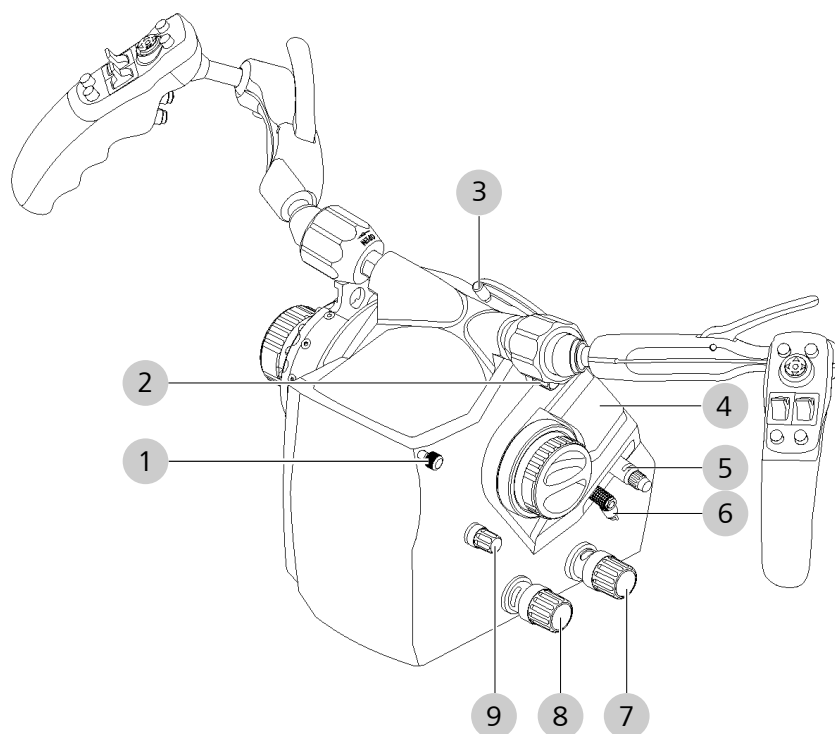


Figure 24: Controls on the microscope

Item	Symbol	Name	Explanation
1		Fastening screw	Attach the assembly: Tighten the fastening screw hand-tight.
2		Adjust pivoting mirror	Image outputs: Face-to-face image outputs: Right and left.
3		Fastening screw	Attach the assembly: Tighten the fastening screw hand-tight.
4		Socket (under cover)	Antenna connector (external navigation system accessory).
5		Camera release socket	For shutter release of an external camera.
6		Mouth switch socket	For connecting the optional mouth switch.
7		Adjust luminous field diameter manually	Turn CCW: Larger Turn CW: Smaller
8		Adjust focus/ working distance manually	Turn CCW: Larger Turn CW: Smaller

Item	Symbol	Name	Explanation
9		Adjust zoom magnification manually	Turn CCW: Smaller Turn CW: Larger

3.5.6 Controls of binocular tubes

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

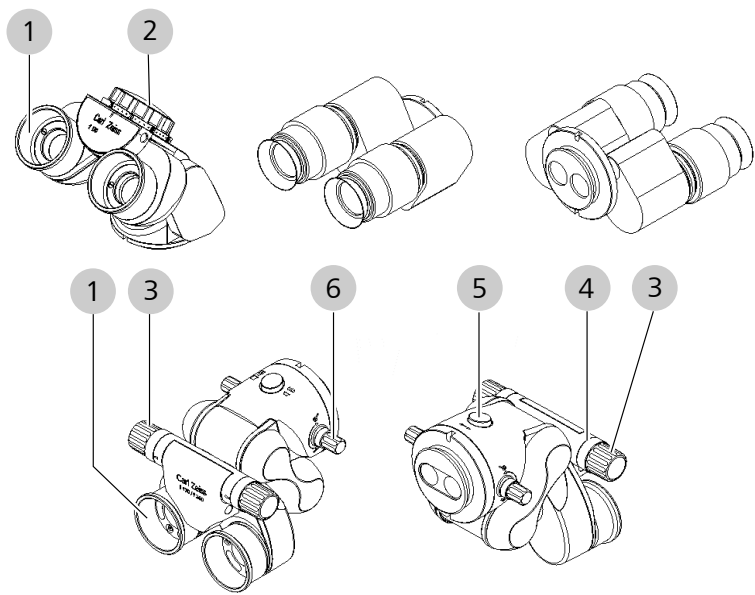


Figure 25: Controls of binocular tubes

Pos.	Symbol	Name	Explanation
1		Eyepiece mount	Insert widefield eyepieces into eyepiece mounting as far as they will go.
2		Adjustment wheel for eye distance	Setting the eye distance (interpupillary distance)
3		Adjustment knobs for eye distance	Setting the eye distance (interpupillary distance)
4		Eye distance scale	Display of eye distance (interpupillary distance)
5		Locking device for rotation function	After pressing the locking button, you can turn the tube to the left or right.
6		Adjustment wheel for integrated magnification changer (PROMAG)	Changing to a higher magnification.

3.5.7 Controls for widefield eyepieces

The information in this paragraph only applies to the optional configuration of the microscope as a system for hybrid (optical-digital) visualization.

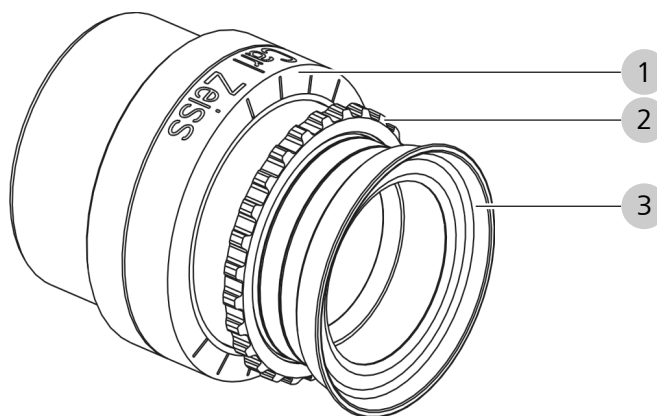


Figure 26: Control elements on the widefield eyepiece

Pos.	Name	Explanation
1	Diopter scale	Adjustable from -8 dpt. to +5 dpt.
2	Diopter setting ring	For adjusting the diopter setting.
3	Adjustable eyecup	Can be unscrewed to prevent the entry of scattered light.

3.5.8 Controls of handgrips

Both hand grips are of the same design. You can configure the left and the right hand grip with the same functions or with different functions.

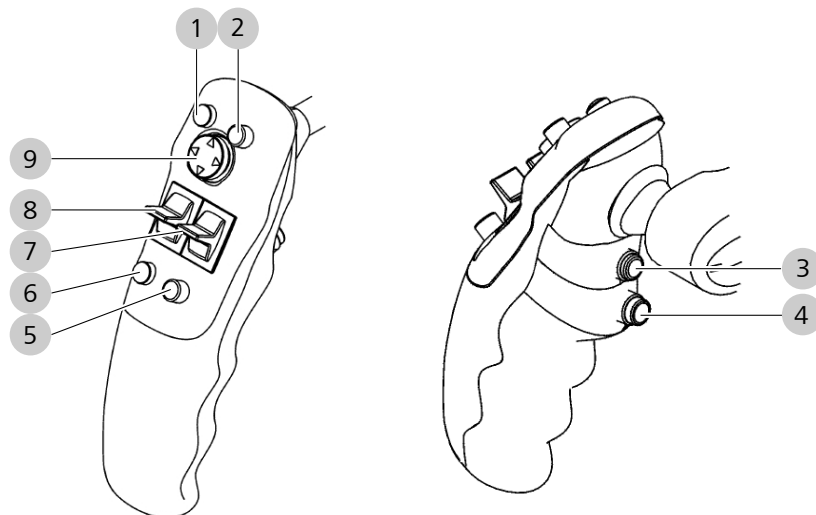
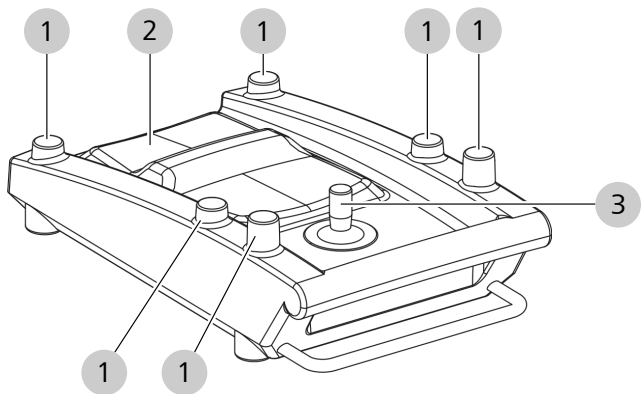


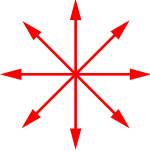
Figure 27: Button assignment of hand grips

Pos.	Name	Explanation
1	Button A , configurable	Factory setting: trigger photo
2	Button B , configurable	Factory setting: autofocus
3	Brake release button (SB)	Brake release button for selected rotary axes and PointLock (factory setting: PointLock)
4	Brake release button (AB)	Brake release button for all stand and microscope axes
5	Button D , configurable	Factory setting: increase illumination intensity Depending on the current operating mode/activated option, the yellow buttons of the right hand grip may have certain special functions (see separate description in the corresponding chapters).
6	Button C , configurable	Factory setting: reduce illumination intensity Depending on the current operating mode/activated option, the yellow buttons of the right hand grip may have certain special functions (see separate description in the corresponding chapters).
7	Rocker switch G / H	Zoom + / Zoom - (factory setting)
8	Rocker switch E / F	Focus + / Focus - (factory setting)

Pos.	Name	Explanation
9	Joystick	Motorized XY fine adjustment Depending on the current operating mode, the joystick of the right hand grip may have certain special functions (see separate description in the corresponding chapters). Messages displayed on the touchscreen can be acknowledged by pressing the center of the joystick button on the left hand grip.

3.5.9 14-function foot control panel



Pos.	Name	Explanation
1	Buttons	Control device functions (freely configurable).
2	Rocker switches	Control zoom and focus (horizontal and vertical configuration possible).
3	Joystick	Motorized XY fine adjustment (optional) in eight directions: 

3.6 Software description

3.6.1 General

All menus shown in these Instructions for Use are in English. The name and explanation of each function is specified in the respective language in the following lists.

Optional applications (licenses)

Various applications are available for the device which can be activated after obtaining a license. All licenses must be ordered separately.

Display and operation

Only activated applications are displayed on the touchscreen and can be configured and operated.

User-specific settings







User-specific settings are marked by a green dot placed in front of their designation.

These changes in settings are adopted only for the current user.

Please note the following: In order not to obstruct intraoperative changes of users, do not have the focus and zoom start values set user-specifically. Changes of the focus and zoom start values only become effective after the device is restarted.

3.6.2 Interactive buttons

All interactive buttons and their functions are described in the following table.

Symbol	Buttons	Explanation
	Live image	Touchscreen with live image, status bar and main menu bar
	Setup menu	All configurations and settings are accessible via this menu.
	switches	Function switched on
	switches	Function switched off
	Buttons	Triggers a function.
	Slide control	Continuously adjustable The values displayed (SI units) are rounded. They are intended to improve the display and do not represent a measurement function.



















Symbol	Buttons	Explanation
	+/- buttons	Adjustable in steps
	Record button	Records and saves the current display.
	Video Recording start button	Video recording running
	Video Recording stop button	Video recording stopped
	Selection field	Selection between functions (blue: selected)
	functionalities	Selection of various functions (blue: selected)
	Loudspeaker on button	Switch loudspeaker on
	Loudspeaker off button	Switch loudspeaker off
	PIN lock deactivated	Unlock settings for handgrips and FCP.
	PIN lock activated	Lock Hand Grips and FCP Settings.
	Selection menu	Selection of various system languages
	functionalities	Create new user or patient
	functionalities	Edit patient/user profile
	functionalities	Filter patient data/filtering direction
	functionalities	Search for patient record
	functionalities	Import/Export data
	functionalities	Hide keyboard
	functionalities	Delete

Table 2: Interactive buttons

3.6.3 User interface of the KINEVO 900

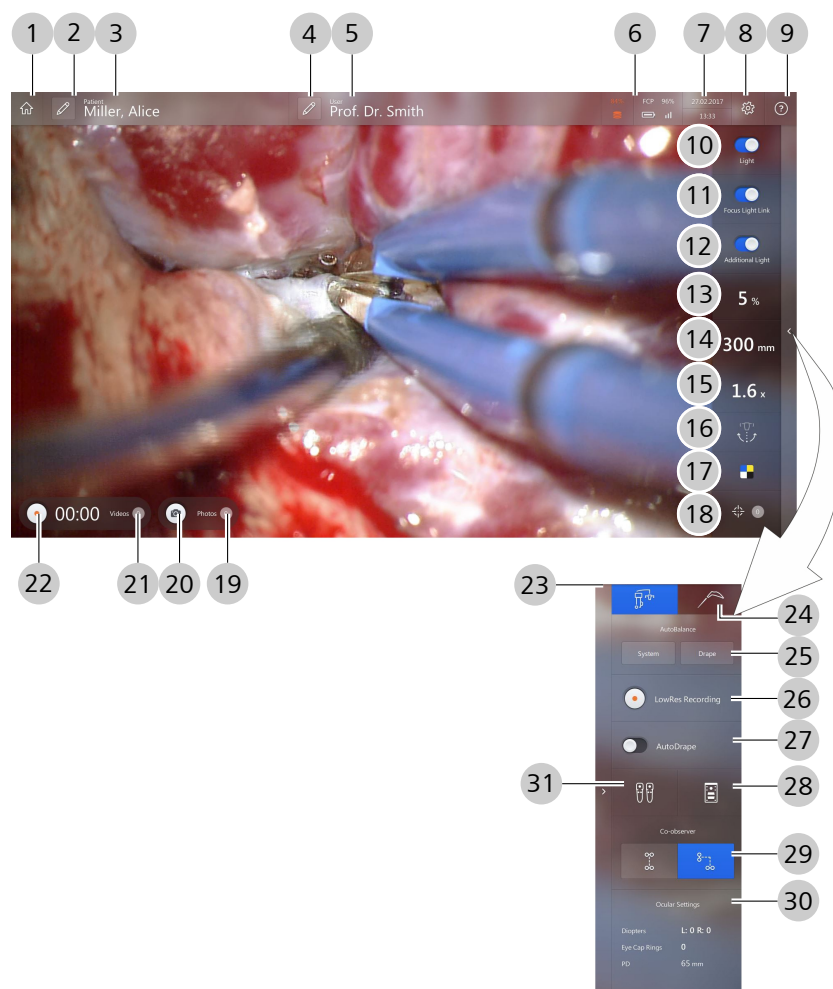


Figure 28: Design of the KINEVO 900 user interface

Pos.	Name	Explanation
1	Main menu (Home)	Navigation to the main menu with live image, status bar and main menu bar.
2	Edit Patient	Used to edit patient data.
3	Patient	Displays name of current patient, tapping on the button opens the patient directory.
4	edit a user	Used to edit user data.
5	Physician/user	Displays name of current user, tapping on the button opens the user directory.
6	Status Information	Displays current status information. The color of the hard disk or USB symbol changes from white to orange if only 20% of the storage capacity is available. Tapping on the button opens an overview [► 71].
7	Date, time	Displays current date and time.

Pos.	Name	Explanation
8	Setup menu	Opens the configuration menu.
9	Help	Opens the help window on the right-hand edge of the screen.
10	Light	switching the illumination on / off.
11	Focus Light Link	Limits the maximum light intensity for the selected working distance.
12	Additional Light	Switch the additional light on/off.
13	Light intensity	Set light intensity.
14	Focus speed	Set the speed of the motorized fine focusing.
15	Zoom speed	Set the zoom speed.
16	XY adjustment movement modes	Set the stand and speed movement modes.
17	Fluorescence setting	Select the activated fluorescence modules for BLUE 400, YELLOW 560 and INFRARED 800 with FLOW 800.
18	Position memory	Save position (bookmark) or move to stored position.
19	Number of photos	Displays the number of photos taken.
20	Image capture	Take still image (photo).
21	Number of videos	Displays the number of videos taken.
22	Video Recording	Start and stop video recording.
23	Additional menu "Extended operation"	Offers additional adjustment options for the device.
24	Surgical microscope or endoscope	Tap on the [Surgical microscope] button to work only with the device. Tap on the [QEVO] button to switch to the QEVO Micro-Inspection Tool. [► 70]
25	AutoBalance	Tap on the [System] button to balance the device. Tap on the [Drape] button to perform fine balancing with a drape.
26	Video recording with low resolution	Start and stop video recording with low resolution. Suitable for recording long-term videos.
27	AutoDrape	If the RFID label on your SMARTDRAPE has been scanned in, the system starts when the [AutoDrape] with drape suction button is tapped.

Pos.	Name	Explanation
28	Wired foot control panel	Tap on the button in order to assign functions to the buttons of the foot control panel.
29	Start value of co-observer tube	Switching between face-to-face and lateral co-observer connection. Only available in the optional configuration for hybrid (optical-digital) visualization and in the case of active optical co-observation (see Tube [► 79]). In digital mode, a stereo glasses symbol refers to the digital setting.
30	Settings of current users	Displays the user-specific eyepiece settings. Only available in the optional configuration for hybrid (optical-digital) visualization and in the case of active optical co-observation (see Tube [► 79]). In digital mode, a stereo glasses symbol refers to the digital setting.
31	Hand Grips	Tap on the button in order to assign functions to the buttons of the hand grips.

All control elements, the status bar and the main menu bar can be hidden by tapping on the live image (full screen mode). Only the video runtime is displayed during a recording in full screen mode. If you tap on the monitor again, all control elements, the status bar and the main menu bar will reappear. The values displayed (SI units) are rounded. They serve to enhance the display and do not represent a measurement function.

3.6.4 QEVO user interface (option)

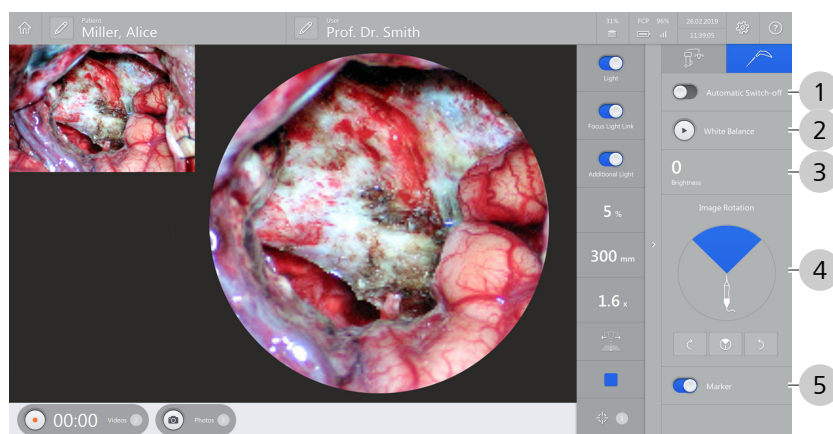


Figure 29: QEVO user interface


Pos.	Name	Explanation
1	Automatic Switch-off	Switch automatic deactivation on/off: <ul style="list-style-type: none"> ■ On (switch illuminated in blue): If the Micro-Inspection Tool is set aside and not moved, the camera and light source will switch off after 40 seconds. To switch the camera and light source back on, press the [QEVO] button on the hand grip or the foot control panel. ■ Off (switch gray): The camera and light source of the Micro-Inspection Tool are permanently switched on. The presentation on the monitor and the MultiVision display (if activated) remain in QEVO mode.
2	White Balance	Perform white balance
3	Brightness	Set the image brightness on a scale from -5 to +5
4	QEVO Alignment	Adjust the camera image on the monitor to the actual viewing direction in the surgical field
5	Marker	Switch marker on/off: <ul style="list-style-type: none"> ■ On (switch blue): A marking in the image displays the direction of sight of the camera image. ■ Off (switch gray): No marking is displayed.

3.6.5 Status Information



Figure 30: Status information overview

Pos.	Symbol	Name	Explanation
1		Internal Hard Drive	Available internal hard disk space The color of the hard disk symbol changes from dark gray to orange if only 20% of the storage capacity is available.
2		USB	Available storage space on connected USB storage medium The color of the USB symbol changes from dark gray to orange if only 20% of the storage capacity is available.
3	Eject	Remove Hardware	The USB storage medium (e.g. USB stick or external Mini HDD USB 3.0 hard disk) may be removed. For reliable system functioning, this eject function must be used before each removal of a USB storage medium.
4		Connection status	Wireless FCP connected
5		Battery Status	Charging status of battery in FCP
6		Signal Strength	FCP signal strength
7		Hotspot	Hotspot connection (WiFi) ON/OFF

Pos.	Symbol	Name	Explanation
8		Show Hotspot Password	Hotspot password display ON/OFF
9		Web interface address	Displays the address of the web interface

3.6.6 "Patient data" menu

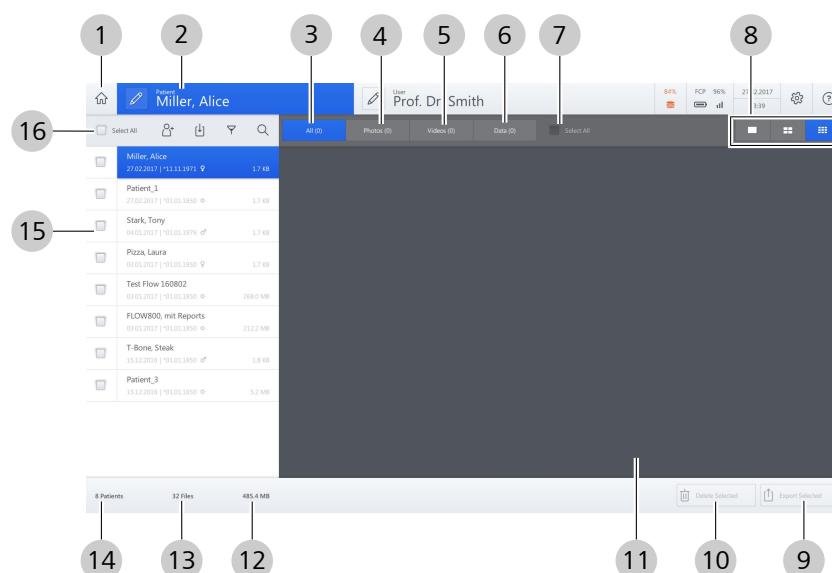


Figure 31: Design of "Patient data" menu

Pos.	Name	Explanation
1	Main menu (Home)	Navigation to the main menu with live image, status bar and main menu bar.
2	Patient	Displays name of current patient, tapping on the button opens the patient directory.
3	All	Displays all of the respective patient's recorded images, videos and data in the preview window.
4	Photos	Filters the preview window for photos; all of the respective patient's recorded images are displayed.
5	Videos	Filters the preview window for videos; all of the respective patient's recorded videos are displayed.
6	Data	Filters the preview window for data; all of the respective patient's recorded data are displayed (e.g. analysis data from the fluorescence mode INFRARED 800 with FLOW 800).

Pos.	Name	Explanation
7	Select All	Selects the entire contents of the respective preview window. This function is used e.g. to export or delete patient data.
8	Preview window display	Determines the size of the images in the preview window (large, medium, small).
9	Export	Exports all selected patient files.
10	Delete	Deletes all selected patient files.
11	Preview window	Displays all patient files as thumbnails.
12	Storage volume	Displays the total storage volume of all patient files in the footer bar.
13	Number of files	Displays the total number of all patient files in the footer bar.
14	Number of patients	Displays the total number of all patients in the footer bar.
15	Patient Directory	Displays the patient registry on the left side of the monitor.
16	Edit patient directory	Offers five options for working with the patient directory: Select all patients/Add new patients/Import patient files/Sort patients/Search for patients

3.6.7 Importing patient data from the DICOM Worklist

Main menu - Patient - Import  - DICOM

Figure 32: Input mask and DICOM Worklist display window

Pos.	Name	Explanation
1	Scheduled date	Period of time (selectable) for which the DICOM Worklist is to be called up.
2	Last name	Patient's last name.
3	First Name	Patient's first name.
4	Patient ID	Primary hospital identification number for the patient.
5	Accession Number	Department-specific case number which identifies the order for the "Imaging Service Request".
6	Req. Proc. ID	Requested Procedure ID: identification number that identifies the requested procedure in the "Imaging Service Request".
7	Modality	Device type with which the scheduled procedure step is to be performed.
8	AE title	AE title of the device with which the scheduled procedure step is to be performed.
9	Show Worklist	Tap on button to open the DICOM Worklist.

Pos.	Name	Explanation
10	Sch. Proc. Step Desc.	Scheduled Procedure Step Description: description specified by the hospital or classification of the scheduled procedure step.
11	Arrow button	Tap on button to display more details about the patient.
-	Req. Proc. Desc.	Requested Procedure Description: administrative description specified by the hospital or classification of the requested procedure.
-	Req. Proc. Code	Requested Procedure Code: code value that describes the requested procedure according to a specific coding scheme.
-	Ref. Phys. Name	Referring Physician's Name: name of the referring physician who requested the procedure.
-	Sch. Proc. Step Start	Scheduled Procedure Step Start: scheduled start time for the procedure step.
-	Sch. Protocol Code	Scheduled Protocol Code: code value that describes the scheduled protocol according to a specific coding scheme.

3.6.8 “Edit video recording” menu

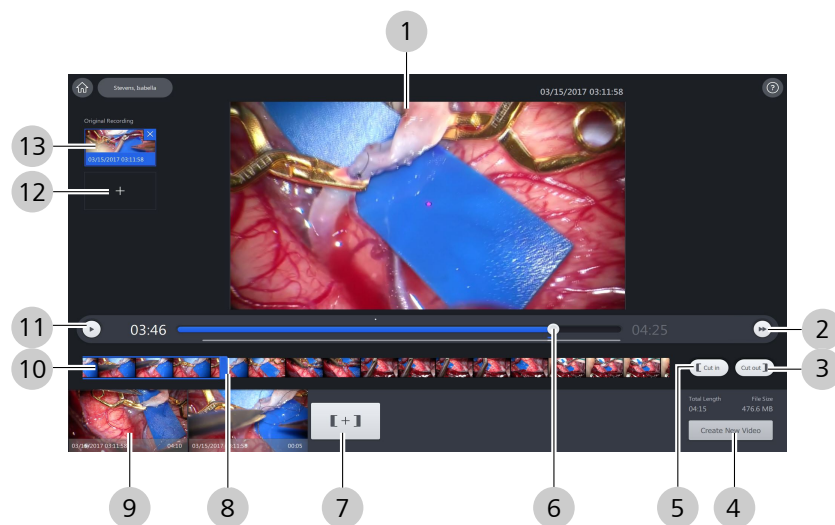


Figure 33: “Edit video recording” menu

Pos.	Name	Explanation
1	Video Recording	Displays the recorded video.
2	Fast forward	Used to run the video recording forward rapidly.
3	Cut out	Determines the end point of the timeline selection window, and therefore of the scheduled video recording.
4	Create New Video	Saves the cut video sequence as a new video.
5	Cut in	Determines the starting point of the timeline selection window, and therefore of the scheduled video recording/display.
6	“Video playback” slide control	The gray slide control keeps moving throughout the entire length of the video recording. Slide the gray slider to jump to an interesting area in the video recording without using the [Fast-forward] / [Rewind] buttons.
7	Save video sequence temporarily	Temporarily saves the currently cut video sequence and displays it as a preview.
8	Time marker	Marks the current position in the timeline selection window during video playback.
9	Preview window	Displays the cut video sequence(s).

Pos.	Name	Explanation
10	Timeline selection window	Displays the individual sequences/frames of the video. The start and end of the timeline selection window is bounded by blue bars. You can slide these blue bars to select and cut the sequence relevant for you in the video.
11	Start / Pause	Plays back the video recording. The playback of the video recording can be stopped by repeatedly tapping on the button.
12	Add Original Recording	Opens a preview window with all original video recordings of the patient.
13	Original Recording	Displays the original video recordings as a preview.

3.6.9 SmartLinks



In the “Settings Microscope” menu, four SmartLinks are available for your selection:

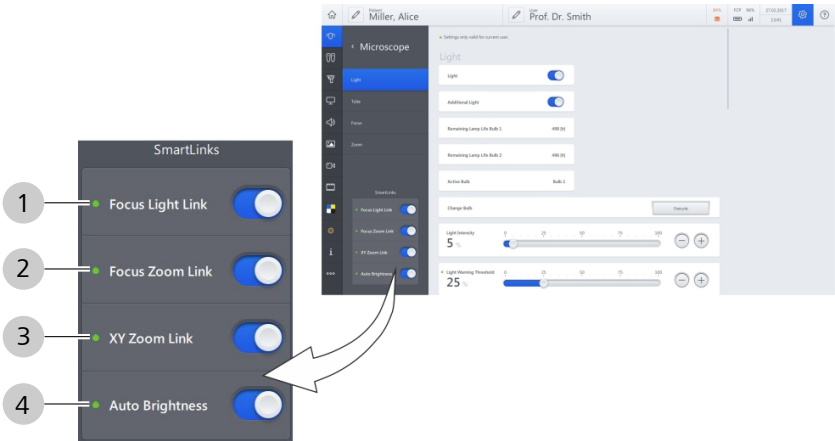


Figure 34: SmartLinks

Pos.	Name	Explanation
1	Focus Light Link	Limits the maximum light intensity for the selected working distance.
2	Focus Zoom Link	Automatically adapts the focusing speed to the magnification. The preselected focusing speed is automatically reduced when a higher magnification is used.
3	XY Zoom Link	Automatically adapts the XY travel speed to the magnification. The preselected travel speed is automatically reduced when a higher magnification is used.

Pos.	Name	Explanation
4	Auto Brightness	Regulates the light intensity for constant brightness in the eyepiece depending on the working distance and magnification. Automatically adapts the luminous field diameter.

3.6.10 Light



In this menu, you configure the microscope illumination settings.

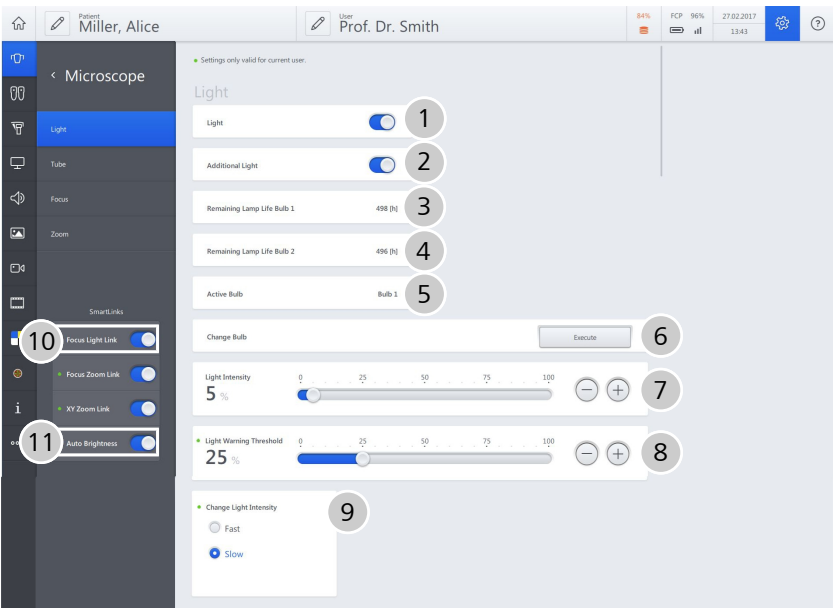


Figure 35: "Settings Microscope" menu, "Light" submenu

Pos.	Name	Explanation
1	Light	switching the illumination on / off.
2	Additional Light	Switch the additional light on/off.
3	Remaining lamp operating time Bulb 1	Remaining lamp operating time of bulb 1 until the next recommended bulb change (total lamp operating time = 500 hours)
4	Remaining lamp operating time Bulb 2	Remaining lamp operating time of bulb 2 until the next recommended bulb change (total lamp operating time = 500 hours)
5	Active Bulb	Indicates whether bulb 1 or bulb 2 is in operation.
6	Replace bulb	Activate lamp change from bulb 1 to bulb 2.
7	Light intensity	Set light intensity.
8	Light Warning Threshold	Set light warning threshold (factory setting: 25 %). Display on monitor.

Pos.	Name	Explanation
9	Change Light Intensity	Select speed of light intensity change (fast or slow).
10	SmartLinks: Focus Light Link	Limits the maximum light intensity for the selected working distance.
11	SmartLinks: Auto Brightness	Regulates the light intensity for constant brightness in the eyepiece depending on the working distance and magnification. Automatically adapts the luminous field diameter.

3.6.11 Tube

This menu is only available in the optional configuration of the microscope for the hybrid (optical-digital) visualization.



Activate the optical co-observation and select the tubes and eyepieces used for the surgeon. The total magnification is calculated with these stored values and displayed on the monitor.

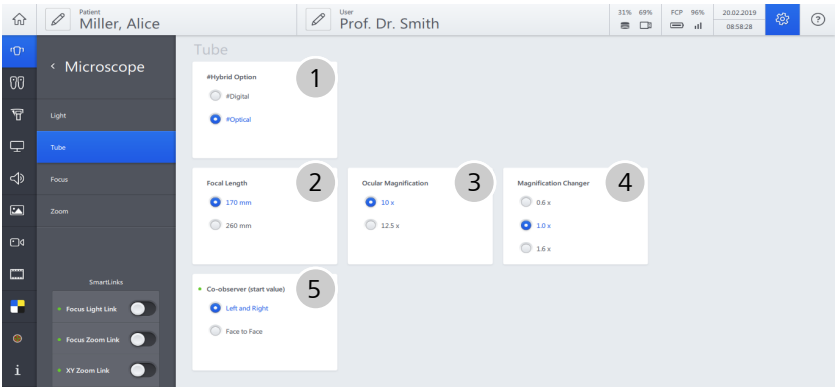


Figure 36: "Settings Microscope" menu, "Tube" submenu

Pos.	Name	Explanation
1	System Mode	Visualization mode selection: <ul style="list-style-type: none">■ Digital: purely digital visualization - optical co-observation not possible■ Optical: hybrid visualization - co-observation through tubes and on the monitor Only available in the optional configuration for hybrid (optical-digital) visualization. The selection also influences options and displays in other menus.
2	Focal Length	Focal length of tube in use: (170 mm for tiltable tube and foldable tube, 260 mm for foldable tube with magnification).

Pos.	Name	Explanation
3	Eyepiece magnification	Magnification of the eyepieces used: (10x or 12.5x).
4	Magnification Changer	Magnification of the optional 3-position magnification changer.
5	Co-observer (start value)	Selection of co-observer: <ul style="list-style-type: none">■ Opposite image outputs: Face-to-face for tiltable tube or foldable tube■ Lateral image outputs: Right and left for stereo co-observation module or photo adapter for external camera The "co-observer (start value)" can be adjusted on the monitor in the additional menu "Extended operation" and manually on the microscope body.

3.6.12 Focus



In this menu, you configure the focus settings.

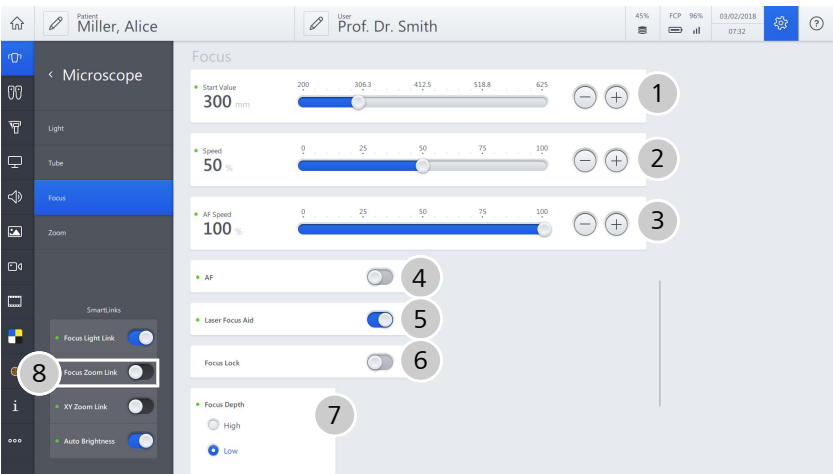


Figure 37: "Settings Microscope" menu, "Focus" submenu

Pos.	Name	Explanation
1	Start Value	The microscope starts with this working distance after it is switched on.
2	Speed	Set the speed of the motorized fine focus adjustment.
3	Autofocus (AF) Speed	(option) Adjust the autofocus speed.

Pos.	Name	Explanation
4	Autofocus (AF)	<p>(option)</p> <p>On: Autofocus is automatically activated each time the brakes are closed.</p> <p>Off: Autofocus only via configurable button on the handgrip or foot control panel.</p> <p>The autofocus is not available during a few specific applications. A corresponding acoustic signal is then emitted.</p>
5	Laser Focus Aid	<p>(option)</p> <p>Laser Focus Aid on: The focusing laser is switched on when the brakes are released or the motorized fine focus adjustment is actuated.</p> <p>Laser Focus Aid off: The focusing laser is switched off.</p>
6	Focus Lock	<p>For the application of an optional micromanipulator with a fixed working distance.</p> <p>Focus Lock on: Autofocus inoperative. Focus rocker switch on handgrip/foot switch out of operation.</p> <p>Focus Lock off: Autofocus functioning. Focus rocker switch on handgrip/foot control panel active.</p>
7	Depth of field	<p>High: High depth of field - less light - lower image resolution.</p> <p>Low: Low depth of field - more light - high image resolution.</p> <p>The [Focus Depth] field is not displayed when the BLUE 400 and YELLOW 560 options are activated simultaneously.</p>
8	SmartLinks: Focus Zoom Link	<p>Automatic adaptation of the focusing speed to the magnification. The preselected focusing speed is automatically reduced when a higher magnification is used.</p>

3.6.13 Zoom



In this menu, you configure the zoom settings.

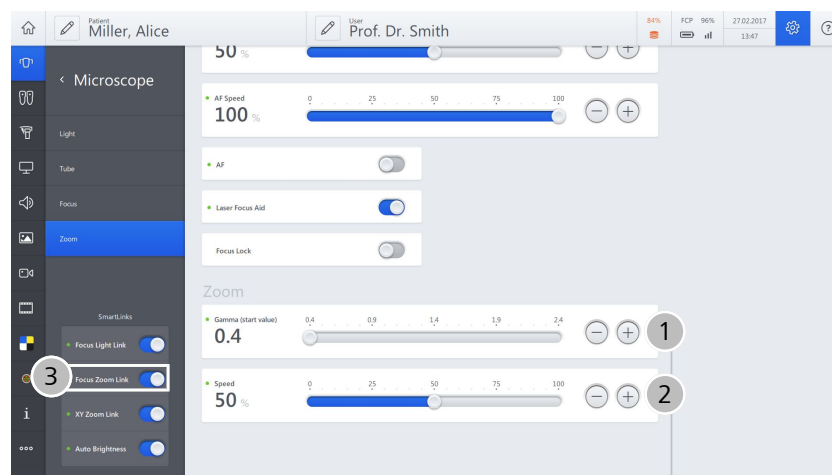


Figure 38: Zoom

Pos.	Name	Explanation
1	Gamma (start value)	Set the zoom factor (0.4 ... 2.4) at which the zoom system is to start after the system is switched on.
2	Speed	Set the zoom speed.
3	SmartLinks: XY Zoom Link	Automatic adaptation of the motorized XY travel speed to the magnification. The preselected travel speed is automatically reduced when a higher magnification is used.

3.6.14 Hand Grips



In this menu, you configure the controls of the handgrips.

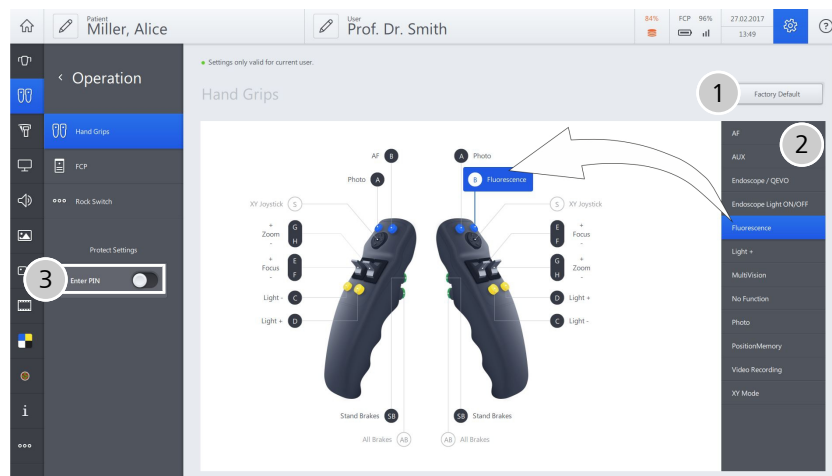


Figure 39: "Settings Microscope" menu, "Handgrips" submenu

Pos.	Name	Explanation
1	Factory Default	Tapping this button resets the programming of all handgrip functions to the factory settings.
2	Selection window, right side	Appears after a handgrip button is tapped: Displays all available functions for each handgrip button.
3	Enter PIN	By activating this button, you can protect your button assignment for the handgrips with a four-digit PIN.
A, B, C, D	Configurable buttons	Tapping on the respective button opens a selection window on the right side where the functions available to you can be selected.
S	XY Joystick	For motorized XY fine adjustment: The XY joystick of the right handgrip can have certain special functions, depending on the option activated. Messages displayed on the touchscreen can be acknowledged by pressing the center position of the joystick button on the left handgrip.
E, F, G, H	Rocker switch for focus and zoom	Tapping on the buttons opens a selection window on the right side for selecting the direction (+/-) or changing the zoom/focus functions.

Pos.	Name	Explanation
SB	[SB] ("Selected Brakes") button	Tapping on the button opens, on the right-hand side, a selection window for programing the button with the brake function for the stand brakes, the brake function for the microscope brakes or the PointLock function.
AB	[AB] ("All Brakes") button	The button is not configurable. As long as the button is pressed, the entire system can move freely. When you let go of the button, the system locks stably and with vibration damping.

3.6.15 Foot Control Panel (FCP)



In this menu, you configure the controls of the FCP (foot control panel).

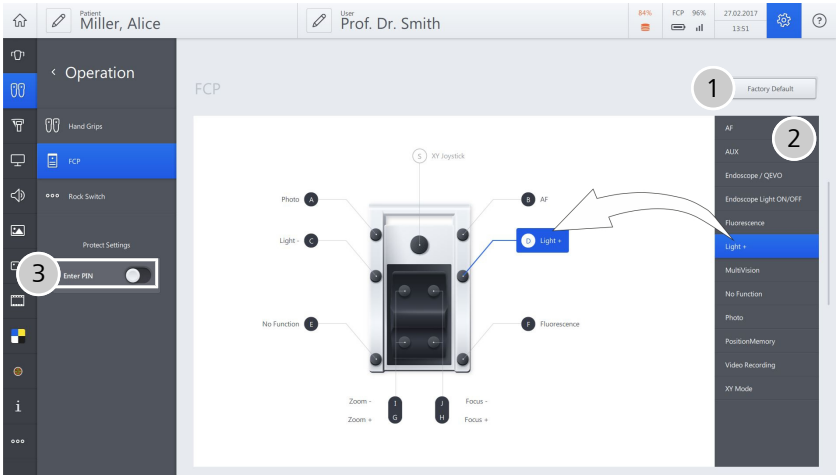


Figure 40: "Settings Microscope" menu, "Handgrips" submenu

Pos.	Name	Explanation
1	Factory Default	Tapping this button resets the programming of all handgrip buttons to the factory settings.
2	Selection window	Appears after a foot control panel button is tapped: Displays all available functions for each foot control panel button.
3	Enter PIN	By activating this button, you can protect your button assignment for the foot control panel with a four-digit PIN.
S	XY Joystick	Motorized XY fine adjustment.
A, B, C, D, E, F	Configurable buttons	Tapping on the respective button opens a selection window on the right side where the functions available to you can be selected.
G, H, I, J	Rocker switch for focus and zoom	Tapping on the buttons opens a selection window on the right side for selecting the direction (+/-) or changing the zoom/focus functions.

3.6.16 Rock Switch



In this menu, you configure the controls of the rocker foot switch.

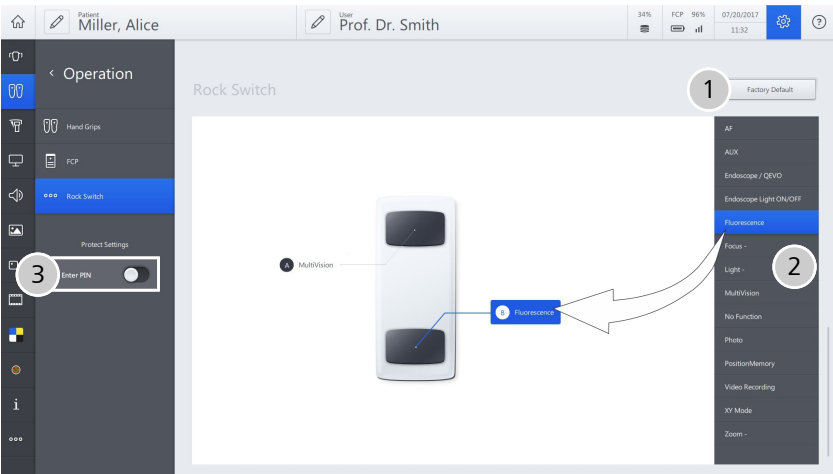


Figure 41: “Settings Microscope” menu, “Rocker foot switch” submenu

Pos.	Name	Explanation
1	Factory settings	Tapping this button resets the programming of the rocker foot switch to the factory settings.
2	Rocker foot switch, configurable	Appears after rocker foot switch is tapped: Displays all available functions for each rocker foot switch button: When the following functions are selected for a rocker foot switch, the second rocker foot switch is automatically assigned: <ul style="list-style-type: none">■ Light: Light brighter (top button) / darker (bottom button)■ Zoom: + (top button) / - (bottom button)■ Focus: + (top button) / - (bottom button)
3	Enter PIN	By activating this button, you can protect your button assignment for the rocker foot switch with a four-digit PIN.

3.6.17 Suspension System



In this menu, you configure the movement modes, the park position and the drape position.

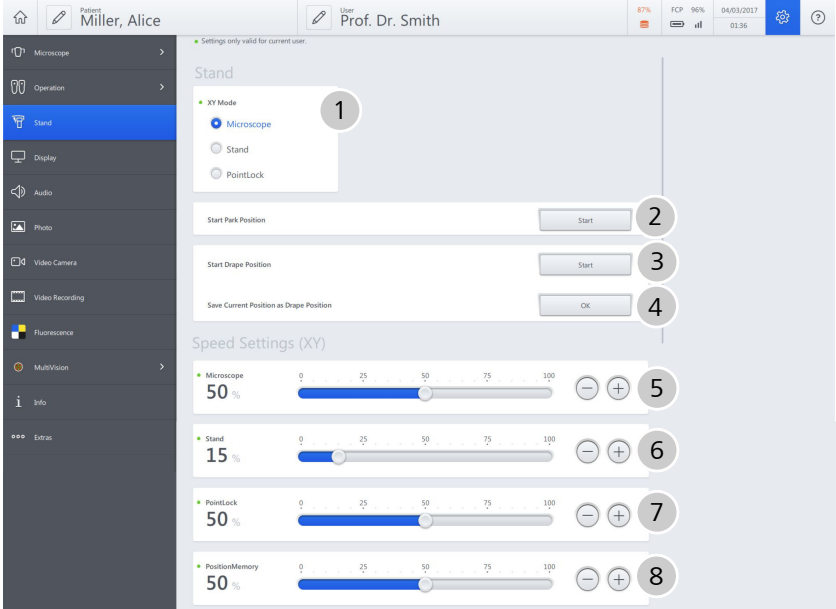


Figure 42: “Settings Stand” menu

Pos.	Name	Explanation
1	XY Mode	Selection of the movement modes for motorized fine adjustment using the XY joystick on the handgrip or on the foot control panel: <ul style="list-style-type: none">■ Microscope: Microscope movement in three axes■ Stand: XY stand movement in the focal point plane■ PointLock: adjustment around the focal point The setting can also be carried out in the main menu.
2	Start Park Position	Device moves to park position. To do this, the right button of the XY joystick on the hand grip or the foot control panel must also be kept pressed.
3	Start Drape Position	Device moves to drape position. To do this, the right button of the XY joystick on the hand grip or the foot control panel must also be kept pressed.
4	Save Current Position as Drape Position	Save drape position.

Pos.	Name	Explanation
5	Microscope	Preselect speed for movements in this XY mode.
6	Suspension system	Preselect speed for movements in this XY mode.
7	PointLock	Preselect speed for movements in this XY mode.
8	PositionMemory	Preselect speed for movements in the PositionMemory function.

3.6.18 Displays



In this menu, you configure the settings of the video outputs.

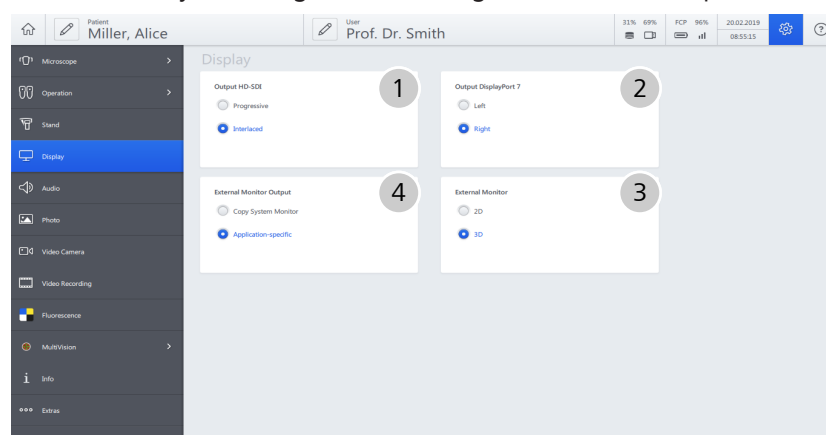


Figure 43: "Settings Display" menu

Pos.	Name	Explanation
1	Output HD-SDI	<ul style="list-style-type: none"> ■ Progressive 3G-SDI: Full Image ■ Interlaced HD-SDI Video output: 9 or 10
2	Output DisplayPort 7	<ul style="list-style-type: none"> ■ left-hand camera ■ right-hand camera Video output: 8
3	Video Format	Video format for second system monitor and optional external monitor. This setting is only available with integrated 3D video system (stereo option). <ul style="list-style-type: none"> ■ 2D ■ 3D Video output: 6

Pos.	Name	Explanation
4	External Monitor Output	Display on the second system monitor and optional external monitor. <ul style="list-style-type: none">■ Copy System Monitor■ Application-specific Video output: 6

3.6.19 Audio



In this menu, you configure the audio settings.

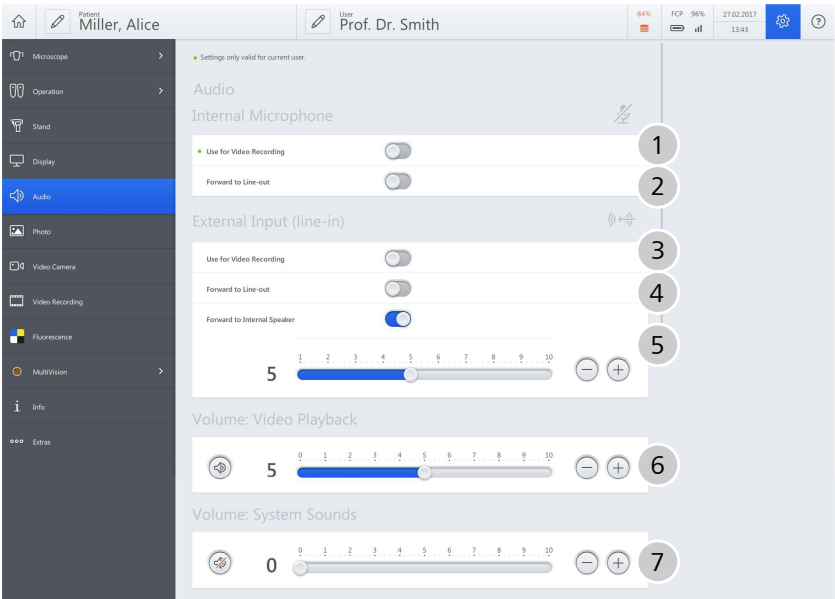


Figure 44: "Settings Display" menu

Pos.	Name	Explanation
1	Internal Microphone: Use for Video Recording	Switch microphone on/off.
2	Internal Microphone: Forward to Line-out	Switch microphone on/off.
3	External Input (line-in): Use for Video Recording	Switch microphone on/off.
4	External Input (line-in): Forward to Line-out	Switch microphone on/off.

Pos.	Name	Explanation
5	External Input (line-in): Forward to Internal Speaker	Switch microphone on/off. Adjust volume.
6	Volume: Video Playback	Switch playback on/off. Adjust volume.
7	Volume: System Sounds	Switch playback on/off. Adjust volume.

3.6.20 Photo



In this menu, you configure the photo settings.

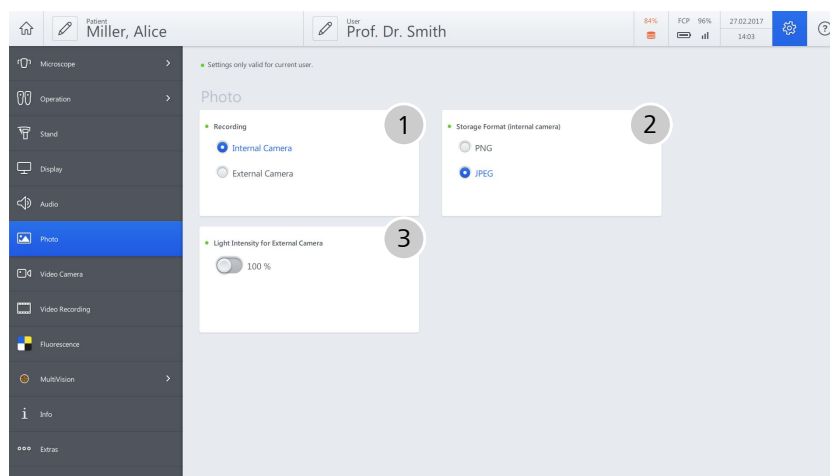


Figure 45: "Settings Photo" menu

Pos.	Name	Explanation
1	Recording	Selection: <ul style="list-style-type: none"> Single images with internal video camera Images with external photo camera (DSLR, option)
2	Storage Format (internal camera)	Storage format for images taken: <ul style="list-style-type: none"> PNG format JPEG format
3	Light Intensity for External Camera	Utilization of maximum xenon light output (100%) for taking photos.

3.6.21 Video Camera



In this “White Light” menu, you configure the settings of the video camera. You can optionally configure the video settings for BLUE 400 and YELLOW 560.

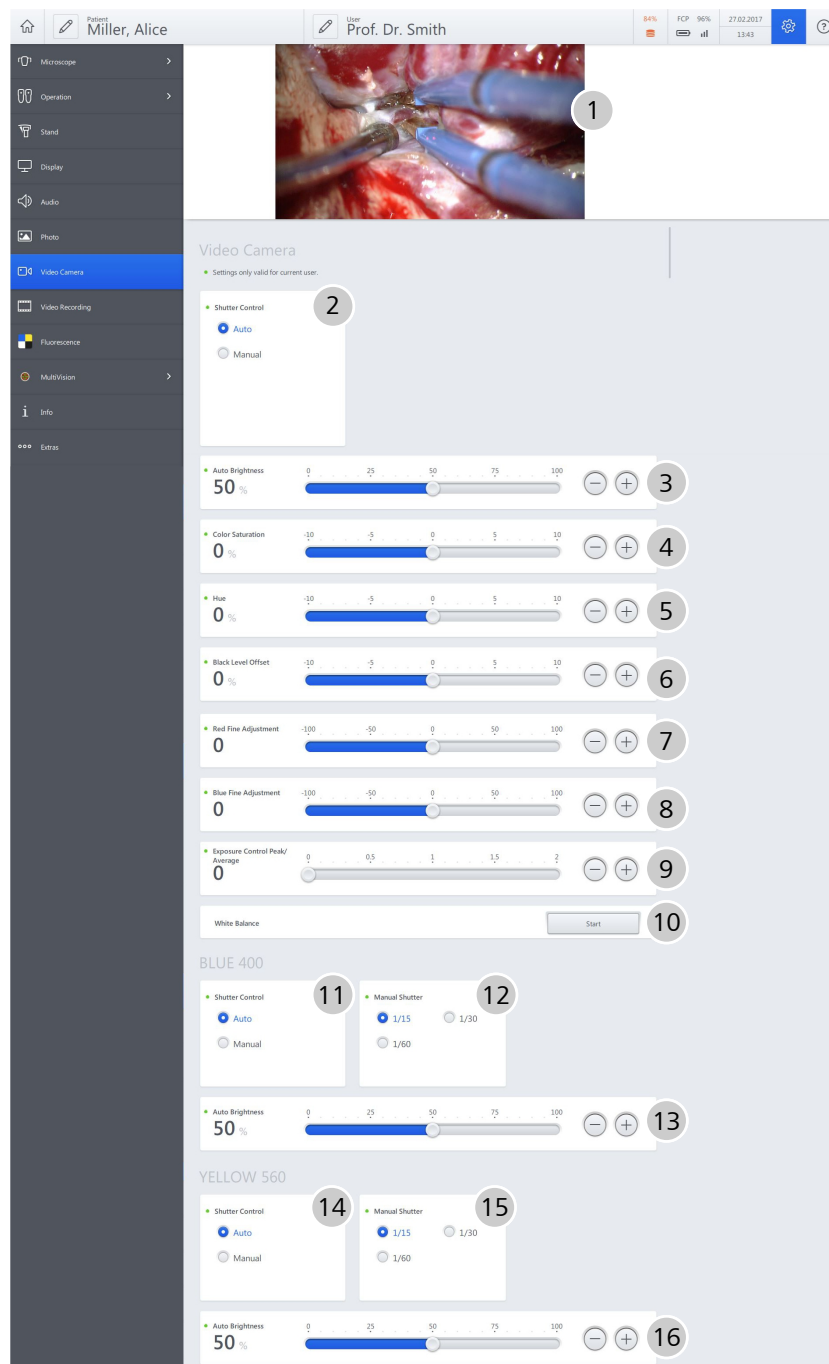


Figure 46: “Settings Video Camera” menu

Pos.	Name	Explanation
1	Preview window	Video image for checking the settings.
2	Shutter Control	Selection in the shutter control: <ul style="list-style-type: none"> ■ Auto: Automatic control of the exposure time ■ Manual: Manual control of the exposure time
3	Auto Brightness	Set the brightness level of the automatic brightness control. This field appears only if the shutter control was set to "Auto".
4	Color Saturation	Set the color saturation.
5	Hue	Set the hue.
6	Black Level Offset	With a higher black level, dark image details are displayed brighter. This can lead to an enhanced recognizability.
7	Red Fine Adjustment	Set the red value.
8	Blue Fine Adjustment	Set the blue value.
9	Exposure Control Peak/Average	Set the peak value or the average value.
10	White Balance	Start white balance.
11	Shutter Control BLUE 400	Selection in the BLUE 400 brightness mode: <ul style="list-style-type: none"> ■ Auto: Automatic control of the exposure time ■ Manual: Manual control of the exposure time
12	Manual Shutter BLUE 400	Set the desired exposure time for BLUE 400 manually. This field appears only if the BLUE 400 shutter control was set to "Manual".
13	Auto Brightness BLUE 400	Set the brightness level of the automatic brightness control for BLUE 400. This field appears only if the BLUE 400 shutter control was set to "Auto".
14	Shutter Control YELLOW 560	Selection in the YELLOW 560 brightness mode: <ul style="list-style-type: none"> ■ Auto: Automatic control of the exposure time ■ Manual: Manual control of the exposure time

Pos.	Name	Explanation
15	Manual Shutter YELLOW 560	Set the desired exposure time for YELLOW 560 manually. This field appears only if the YELLOW 560 shutter control was set to "Manual".
16	Auto Brightness YELLOW 560	Set the brightness level of the automatic brightness control for YELLOW 560. This field appears only if the YELLOW 560 shutter control was set to "Auto".

3.6.22 Video Recording



In this menu, you configure the settings for video recordings.

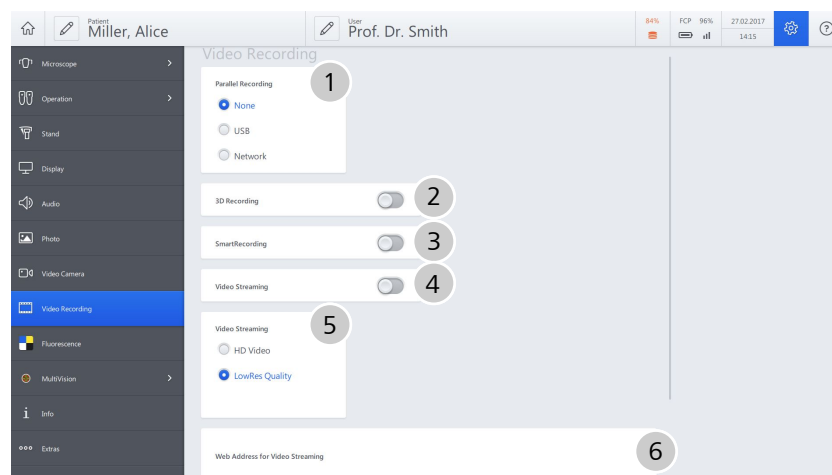


Figure 47: "Settings Video Recording" menu

Pos.	Name	Explanation
1	Parallel Recording	The data are always stored on the internal hard drive. In addition, parallel storage on a connected USB storage medium or a configured network drive (USB or network drive) also is possible.
2	3D Recording	Option for a stereo video camera. Selection whether the internal recording is to be made in 3D format (ON).
3	SmartRecording	If "SmartRecording" is activated, video data of the operation are recorded in a buffer which is automatically cleared and restarted every five minutes. You can start and stop the recording of the video data from the buffer at any time.
4	Video Streaming	Video recordings can be live streamed to a preset web address or device via LAN or WLAN.
5	Video Streaming	Selection of video resolution. <ul style="list-style-type: none"> ■ HD Video: High resolution (1920 x 1080) ■ LowRes Video: Low resolution (960 x 540)
6	Web Address for Video Streaming	Entry of intended web address for video streaming.

3.6.23 Fluorescence



(Option) Fluorescence settings for BLUE 400, YELLOW 560 and INFRARED 800 with FLOW 800.

Only activated fluorescence options are displayed on the touch-screen and can be configured.

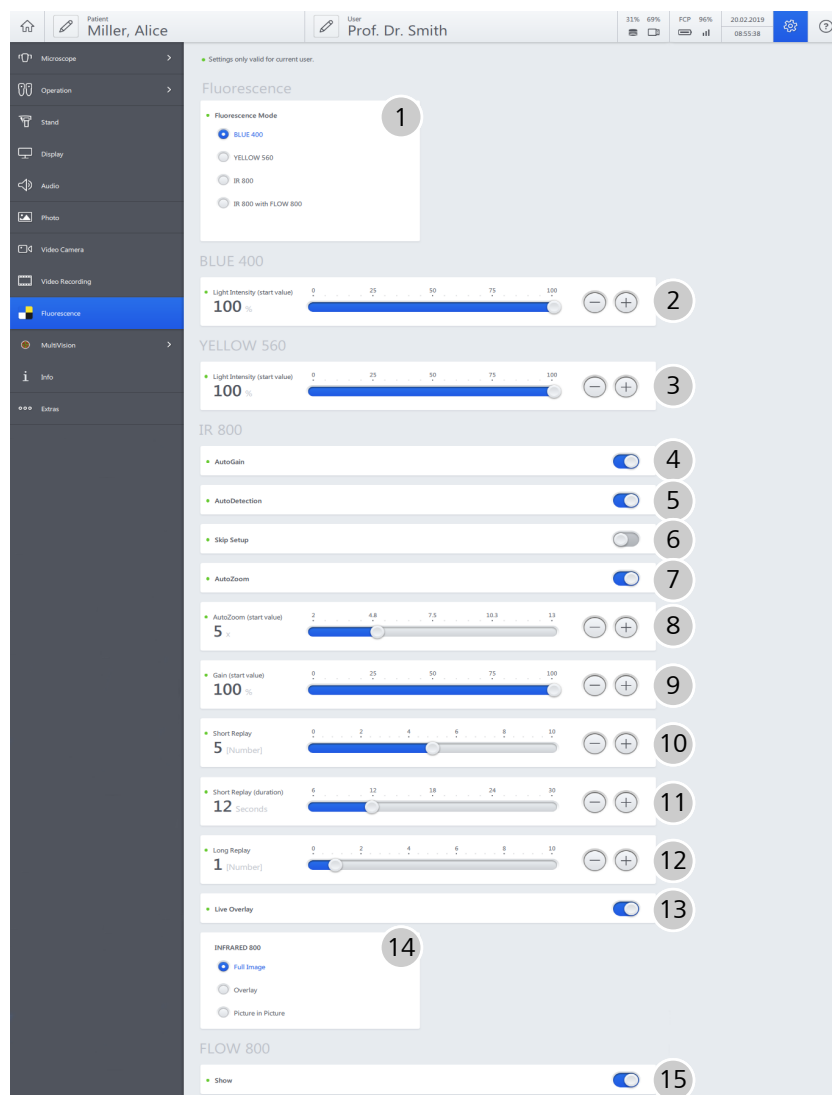


Figure 48: "Settings Fluorescence" menu

Pos.	Name	Explanation
1	Fluorescence mode	<p>Selection of the fluorescence mode which is activated with the configured hand grip button</p> <ul style="list-style-type: none"> ■ BLUE 400 ■ YELLOW 560 ■ IR 800 ■ IR 800 with FLOW 800 <p>By pressing on the touchscreen, the configured handgrip button or the FCP button, you can activate the respective fluorescence application.</p>
2	Light Intensity Start Value BLUE 400	Selecting the light intensity for BLUE 400
3	Light Intensity Start Value YELLOW 560	Selecting the light intensity for YELLOW 560
4	AutoGain	<p>Manual or automatic control of camera gain</p> <ul style="list-style-type: none"> ■ Auto: The camera gain is controlled automatically. ■ Manual: The camera gain is controlled manually.
5	AutoDetection	<p>AutoDetection detects the influx of the fluorescence dye during the recording.</p> <ul style="list-style-type: none"> ■ ON: The black leader without any fluorescence signal is hidden during the replay. ■ OFF: The replay is played back incl. the black leader.
6	Skip Setup	When the option is activated, INFRARED 800 starts immediately in the recording mode, the setup phase is skipped.
7	AutoZoom	<p>On: The total magnification is automatically changed to the preconfigured value without a notice dialog.</p> <p>Off: A setup dialog for changing the total magnification outside of the preconfigured range is displayed.</p>
8	AutoZoom (start value)	Magnification value to which the microscope is set for the start of the recording of the INFRARED 800 video.
9	Gain (start value)	Set the gain start value for a manual camera gain.

Pos.	Name	Explanation
10	Short Replay	The short replay is played back repeatedly until the preset number of short replays has been reached or the button that was configured for the fluorescence application is pressed on the handgrip or the foot control panel. The number of short replays is automatically limited to max. 25.
11	Short Replay (duration)	The length of the short replay is adjustable from 6 to 30 seconds. The adjusted length defines the video sequence used for the FLOW 800 card.
12	Long Replay	The recorded fluorescence video is played back in full length until the preset number of replays has been reached or the button that was configured for the fluorescence application is pressed on the handgrip or the foot control panel.
13	MultiVision Overlay	Live display of the infrared image (during recording) <ul style="list-style-type: none"> ■ On: Display on the monitor and as MultiVision Data Injection ■ Off: Display on the monitor only
14	Display on Monitor	Live display of the infrared image on the touchscreen (during recording) <ul style="list-style-type: none"> ■ Full Image ■ Overlay ■ Picture in Picture
15	MultiVision Data Injection	Show FLOW 800 evaluation

3.6.24 MultiVision



In this menu, you configure the settings for MultiVision (integrated data injection, option).

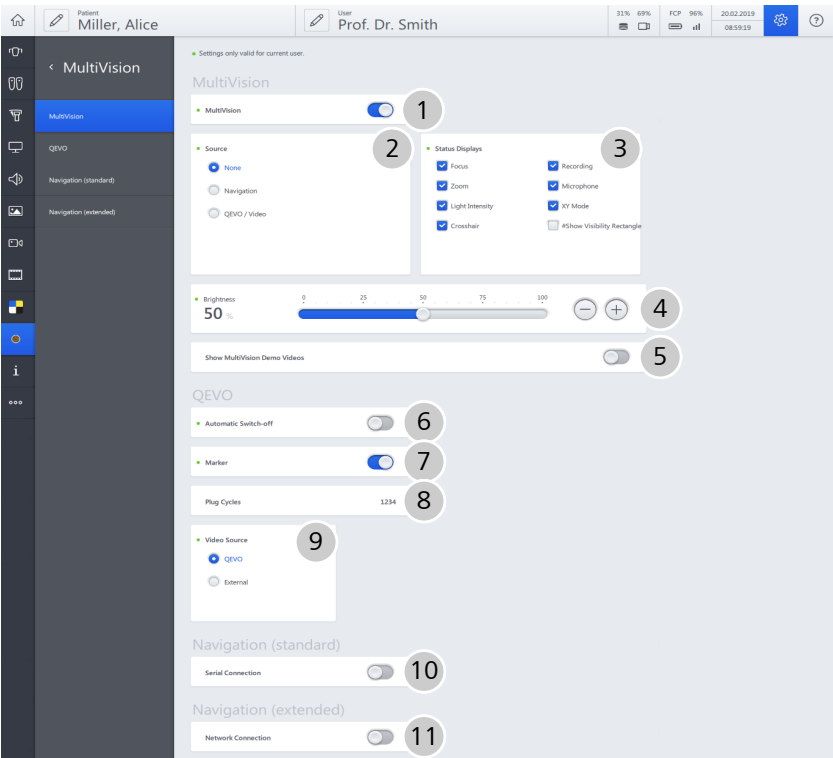


Figure 49: "Settings MultiVision" menu (option)

Pos.	Name	Explanation
1	MultiVision	Switch the MultiVision function (option) on/off
2	Source	Selection of MultiVision data source for display: <ul style="list-style-type: none">■ None■ Navigation: Data from the navigation system are displayed.■ QEVO / Video: Video recording of the Micro-Inspection Tool or the integrated video camera is shown.

Pos.	Name	Explanation
3	Status Displays	<p>Selection of displays which can be shown in the MultiVision display with a corresponding symbol:</p> <ul style="list-style-type: none"> ■ Focus: current working distance ■ Zoom: current magnification ■ Light intensity: current light intensity ■ Reticle: marking of the current focus point ■ Recording: REC symbol ■ Microphone: current status of microphone ■ XY mode: current movement mode of XY adjustment ■ Camera (16:9): Marking of the camera recording area
4	Brightness	Set the brightness of the data injection
5	Show MultiVision Demo Videos	Selection of different MultiVision demo videos. These MultiVision demo videos can be displayed with the shutter open or closed.
6	QEVO Automatic Switch-off (Auto rest mode)	Switch automatic switch-off for QEVO on/off
7	QEVO Marker	Switch QEVO marker on/off
8	Plug Cycles	Shows how often a QEVO has already been plugged in.
9	Video Source	<p>Select video source (output 5):</p> <ul style="list-style-type: none"> ■ QEVO ■ External
10	Navigation (standard)	The navigation system is connected directly to the device: Activate / deactivate connection to navigation system with standard functions
11	Navigation (extended)	The navigation system is connected to the device via the network: Activate / deactivate connection to navigation system with extended functions. As soon as the connection to the navigation system has been activated, the current IP address appears in the "Navigation (extended)" field.

3.6.25 Info

INFO

This menu displays a variety of information regarding the system (serial numbers, software versions, license information).

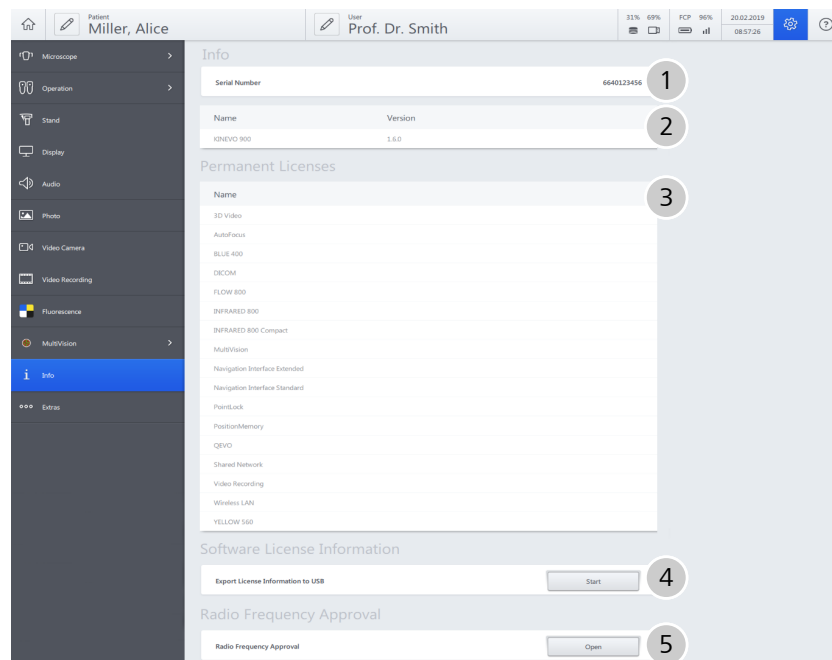


Figure 50: "Settings Info" menu

Pos.	Name	Explanation
1	Serial Number	Displays serial number of device.
2	Name / Version	Displays the following values: <ul style="list-style-type: none"> ■ Product name ■ Software version
3	Permanent Licenses	Lists all licenses installed in the device.
4	Export License Information to USB	Tap on the [Start] button to export licenses to a USB storage medium.
5	Radio Frequency Approval	Tap on the [Open] button to display all radio frequency approvals available on the device.