

Quick Start Guide

SCALEREO

Stereo 3D Video Microscope System

The SCALEREO® system is available in two different variants:

SCALEREO-Desk

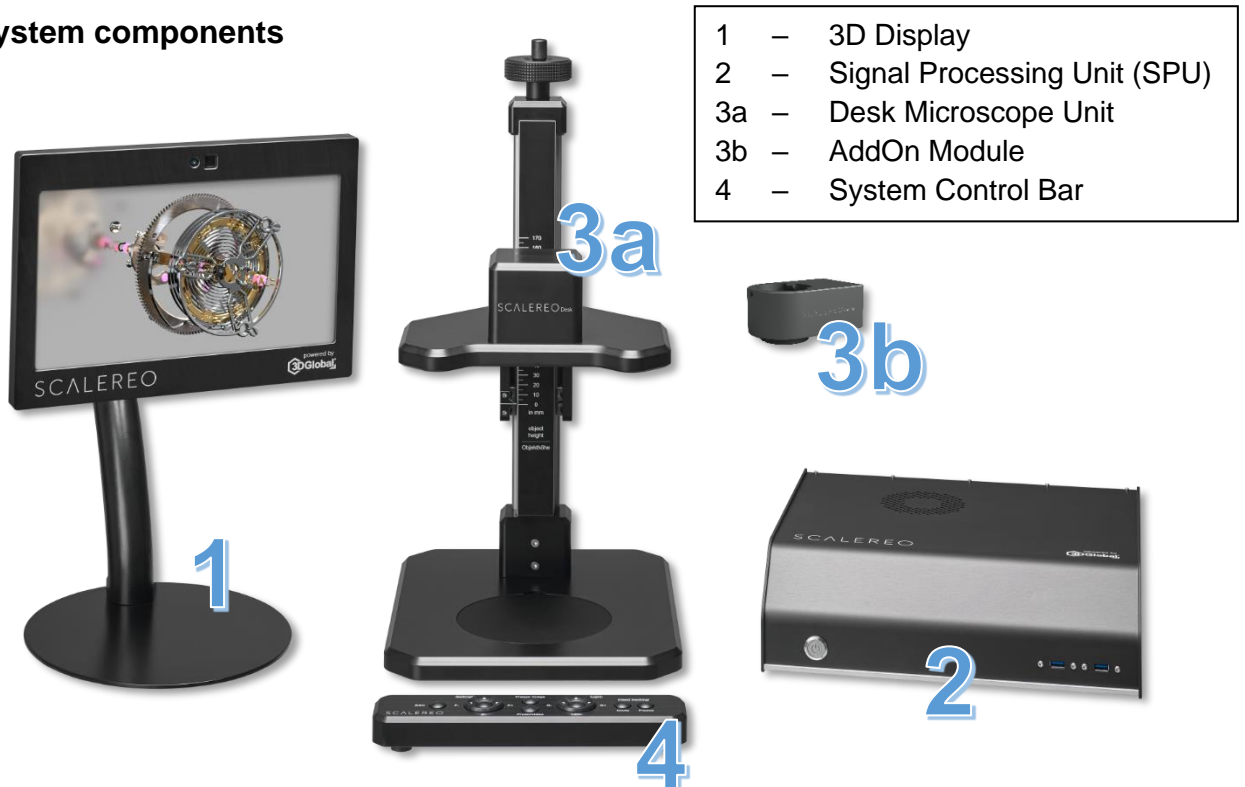
Complete 3D microscope system, including a height adjustable desk microscope unit (image 3a) with integrated microscope optics, stereo camera unit and flexible lighting system.

SCALEREO-AddOn

3D video extension kit, including a 3D camera add-on module (image 3b) to upgrade existing optical microscopes (e.g. Leica M-Series / Olympus / Zeiss / ...) to become a digital 3D video microscope system.

1. Start-Up

1.1 System components



The Power supply may not be connected until all components have been connected to the Signal Processing Unit (SPU) correctly!

NEVER disconnect any component while the system is running!

1.2 Installation

Only for SCALERO-AddOn

- Detach the original tube from your optical microscope
- Attach the SCALERO AddOn Module instead of the original tube
- Optionally attach the tube on top of the SCALERO AddOn Module

for SCALERO-Desk and SCALERO-AddOn

- Connect the camera signal cable to the SPU
- Connect the camera power cable to the SPU
- Connect the display signal cable (display port) to the SPU
- Connect the display tracking cable (USB) to the SPU
- Connect the display power cable to the SPU
- Connect the Control Bar cable (USB) to the SPU
- Connect the power cable to the SPU

1.3 Start the system

- Switch on the main switch
- Briefly press the power button (front side of SPU) to start the system
- Wait until the system has completely booted and 3D visualization is provided

To deinstall the system, follow the steps above, but in reverse order.

2. Usage Requirements

It is **absolutely essential** to observe these 3 basic requirements, otherwise the system may not work properly!

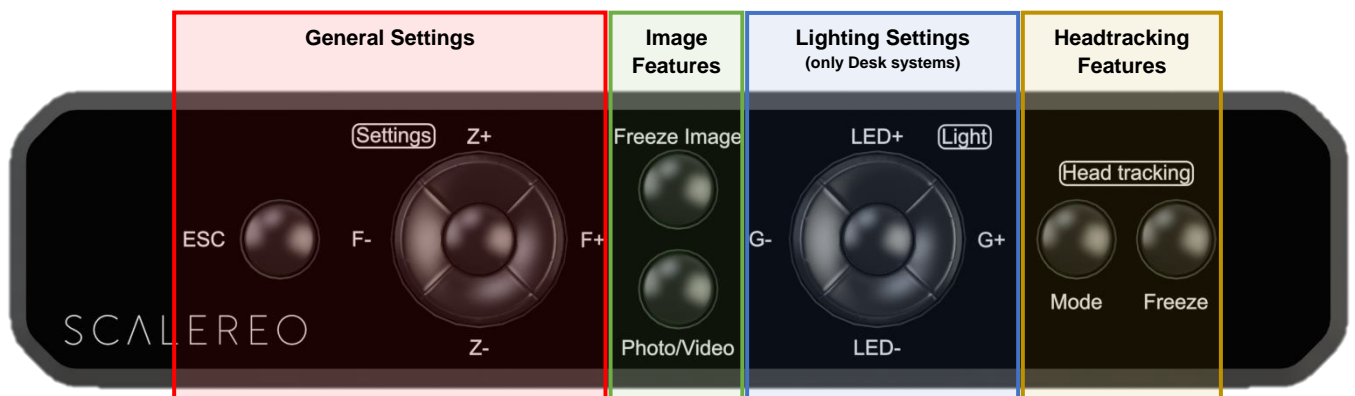
If you notice any inadequacies while using the system, check these 3 points first.



3. Control

The entire system is controlled by a “System Control Bar”.

Some of the buttons have different functions, depending if pressed short (SP) or long (LP)



General Settings		Image Features		Lighting Settings (only Desk systems)		Headtracking Features	
ESC	Quit current menu	Freeze Image	Pause / "freeze" current image on the screen	Center Button	Toggle lighting modes	Mode	Toggle headtracking modes
Center button	Enter settings menu Within the menu: "confirm"	Photo/Video	SP: Save image (or stop video recording) LP: Start video recording	LED+	Increase LED brightness	Freeze	Pause / "freeze" headtracking at its current position
Z+	Navigate within menu <u>only on Desk-Systems:</u> SP: Run AutoFocus LP: Zoom in			LED-	Decrease LED brightness		
Z-	Navigate within menu <u>only on Desk-Systems:</u> SP: run AutoFocus LP: Zoom out			G+	Increase camera gain		
F+	Navigate within menu <u>only on Desk-Systems:</u> Move focus-plane upwards			G-	Decrease camera gain		
F-	Navigate within menu <u>only on Desk-Systems:</u> Move focus-plane downwards						

4. Using the system

4.1 Camera adjustments (available only at SCALERE0-Desk)

- Short press (< 0,5s) on button "Z+" or "Z-" will perform an auto focus adjustment
- Long press (> 0,5s) on button "Z+" or "Z-" to zoom in or out
- Long press (> 0,5s) on button "F+" to set the focus plane upwards
- Long press (> 0,5s) on button "F-" to set the focus plane downwards

4.2 Photo / video documentation

4.2.1 freeze image

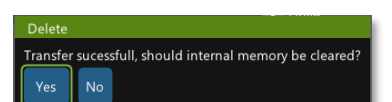
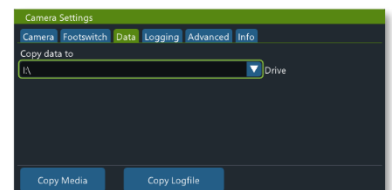
- Press "Freeze Image" to temporarily freeze the current image on the screen ("PAUSE")
- Press "Freeze Image" again, to go back to "LIVE" image visualization

4.2.2 record photo / video

- Short press (< 0,5s) "Photo/Video" to save the current image as a screenshot
 - Image is stored with timestamp locally on SPU & a short confirmation is displayed
- Long press (~ 1s) "Photo/Video" to start the video recording
- Short press (< 0,5s) "Photo/Video" to stop the current video recording
 - Video is stored with timestamp locally on SPU & a short confirmation is displayed

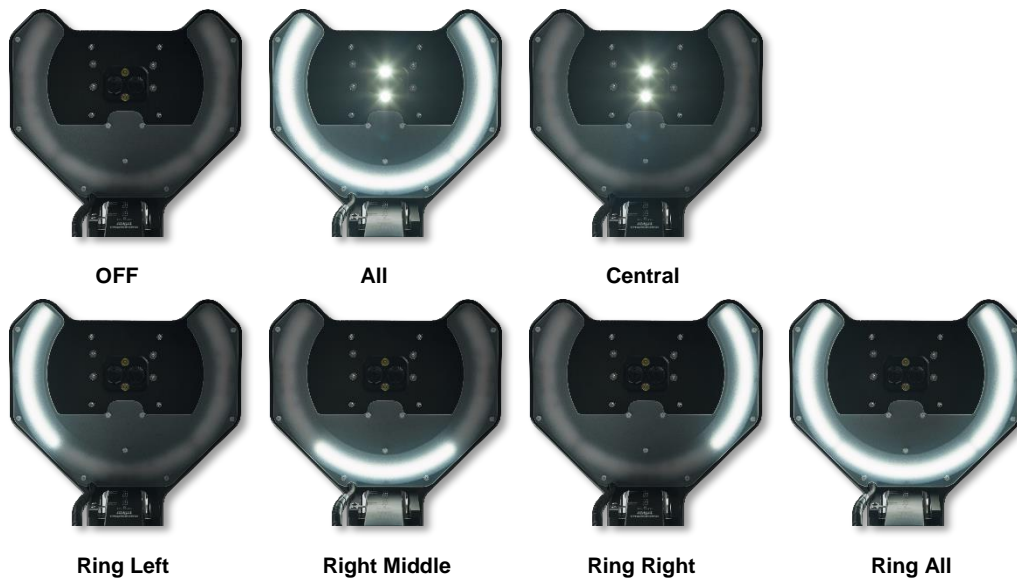
4.2.3 transfer records to USB stick

- insert a USB stick to one of the front USB interfaces of the SPU
- enter the settings menu (center button)
- use the rocker switches (left / right / up / down) to navigate within the settings menu and the center button to confirm your selection
- Choose "Data"
- Select you USB stick
- Press "Copy" to copy your locally stored records from the SPU to the USB stick
- Wait until transfer is finished (may take several minutes, depending on amount of data)
- Choose, if the copied images & videos should be deleted from local space on the SPU (e.g. for data privacy reasons)



4.3 Lighting modes (available only at SCALEREO-Desk)

There are 7 different modes for the LED light system:



4.4 Headtracking modes

4.4.1 Freeze

- Press **“Freeze”** to instantly pause the headtracking system. The user’s current position is “frozen” and the user is no more tracked, thus he needs to re-position himself in this position to get correct 3D.
 - This mode is useful to temporarily use the system with multiple users simultaneously, e.g. to explain something
- Press **“Freeze”** again to run the headtracking system in its last used mode

4.4.2 Headtracking working modes

- Press **“Mode”** to toggle between the 2 pre-activated headtracking modes:
 - FINE – Continuous, immediate tracking of the viewing position
 - ⇒ The image is tracked to the user's current position even if the user's position changes only very slightly.
 - ⇒ When this mode is activated, "User Tracking FINE" appears briefly on the screen.
 - OFF – No active tracking of the 3D viewing position
 - ⇒ The user must be positioned optimally in the viewing zone located centrally in front of the display.
 - ⇒ Permanent overlay of “User Tracking OFF”.

If required, the following two additional headtracking modes can optionally be enabled in the settings menu (refer to the user manual for detailed information):

- COARSE – “Rough” tracking of the viewing position with low hysteresis
- 2D FORCED – Forced 2D visualization

When the headtracking system is “OFF” or in “freeze mode”, the display works in untracked “BlackMatrix” mode, which means that certain black areas are projected into the edge-areas of the viewing zone.

This simplifies the correct positioning within the viewing zones, even for more than one user.