



IMAGING SOLUTIONS

The new way of imaging



Tradition and innovation – Since 1858 visionary thinking and a fascination with technology have guided us to develop innovative products of outstanding reliability: Anticipating trends to improve quality of life.

HAAG-STREIT
SURGICAL

A new way of imaging



HS MIOS

With the HS MIOS we set a new standard for handling recording systems: intuitive software control and error-proof hardware. Developed in close relationship with surgeons and users, the three different colored menus guide you easily through surgery.

MIOS stands for **M**icroscope **I**maging and **O**peration **S**ystem. Its main functions are recording operation scenes, as well as capturing and recording of snapshots which can be assigned to patient names and stored internally or externally on USB drives or DVDs.

The latest product release is the HS MIOS 5 with full HD functionality as its main advantage. However, a recording system for standard quality, the HS MIOS 4, is also available.



HS Hi-R NEO 900A on FS 2-21/FS 2-25 with HAAG-STREIT SURGICAL imaging equipment



HS MIOS 5

MICROSCOPE INTEGRATION

The HS MIOS can be fully integrated with HAAG-STREIT SURGICAL microscopes. Video recordings and capturing of still images can be triggered by programmable buttons on foot or hand switches. Microscope settings such as zoom, focus, and light values can be shown as an overlay on all recordings.



HOSPITAL INTEGRATION

It is also possible to integrate the HS MIOS into a hospital's existing infrastructure. It can connect to a time server for full synchronization. In addition, recordings can be uploaded to network folders. An even higher level of integration can be achieved with the optional HS MIOS module M.DCM, which can connect to the hospital's DICOM Server.



HARDWARE

The hardware for the HS MIOS recording solution was especially designed for use in operating theaters. Thus patient data is stored on exchangeable hard drives to maintain privacy. The system data is stored on two redundant CF cards. This makes it easy to service and due to their write protection feature the system cannot be affected by viruses.

Similar to a tablet PC, the new multi-touch monitor of the HS MIOS 5 enables the user to dynamically zoom in and navigate through the live picture. Interesting areas are magnified and their position is shown in an overview window in the top right corner.





HS MIOS 5

PATIENT

The patient menu features an intelligent patient search function that shows live results. The patient data may be sorted by different properties so the system can be operated more quickly. Patient data that is stored on the HS MIOS can be opened for preview.



RECORDING

The recording menu is used to record videos and snapshots onto the internal hard drive or directly to a USB flash drive, USB hard disk, or a network folder. Start/stop of video recording and taking snapshots can be controlled via the touch screen, where direct feedback is also provided, or remotely via the microscope's hand or foot switch. The best live image observation is provided by the full-screen mode. For direct comparison, previously taken videos and snapshots can be reviewed side by side with the live image.



ARCHIVE

The archive provides a summary of all patient information sorted by surgery date. Single recordings and images can be marked for deleting, copying, and viewing. For copying, select the target drive between connected external drives or network folders. To fit a CD's or DVD's capacity, different video sizes can be selected.





HS MIOS optional modules

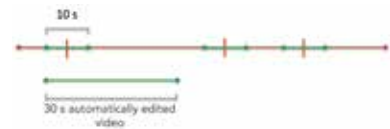
M.DCM: DICOM

M.DCM, the DICOM module, is fully integrated into all three program steps of the HS MIOS, making it possible for the user to download a worklist from the DICOM Server, access the PACS database, send selected pictures and videos to the DICOM Server, and create a DICOM media storage DVD.



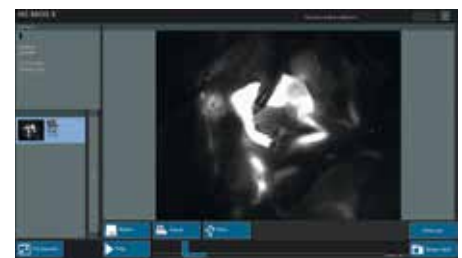
M.AED: AUTOMATIC EDITING

M.AED is a unique feature that allows automatic editing with HS MIOS without changing the normal/full recording. Its initial setup is as easy as its operation and requires the definition of a time period only (e.g., 5 seconds). Interesting scenes are marked during surgery via snapshots (red line) and video sequences around the snapshots are stored (5 seconds before and 5 seconds after each snapshot, green lines). When entering the archive menu all interesting scenes are automatically composed into one additional video (e.g., 30 seconds, green line).



M.ICG: ICG FLUORESCENCE

The HS MIOS module M.ICG is integrated in all ICG-compatible microscope systems to allow its visualization. ICG recording is initialized via a hand switch or touch screen and automatically turns the ICG live image to full screen. In addition, the live ICG flow is directly shown on the M.DIS that is positioned in the surgeon's view. The time frame for ICG recording to stop is adjustable and a playback mode allows slow motion and loop playing. ICG videos are clearly distinguishable from other videos in the archive by how they are labeled and marked.



M.WFI: Wi-Fi

The Wi-Fi module is used to make a wireless connection to the network. The standard IEEE 802.11n, as well as WPA2 encryption are supported. For easy handling HS MIOS with M.WFI automatically reconnects to the network when the system is booted up.





Camera and Monitor

C.MOR HD

C.MOR HD is a full HD color video camera designed for the HAAG-STREIT SURGICAL microscope. Its ultra-compact camera head houses a 1/3" CMOS sensor that meets very high standards. With a resolution of 900 TV lines and an S/N ratio of 500 dB images are crisp and sharp. Different user settings allow for individual adjustments.



C.MON HD

With its flat design and the size of 21.5" the brilliant HD monitor C.MON HD can easily be attached to the microscope's floor stand. Its touch function can be operated even with medical gloves. Due to the planar screen and glass surface it can be disinfected easily. For the safety of the system C.MON HD is fully approved for medical use.



M.DIS

The M.DIS (Microscope Display) is a touch screen mounted close to the oculars in the surgeon's direct view. It can visualize up to 3 different video inputs that are connected to the screen via M.BOX S. To switch between the different video inputs a simple tap of your finger is all that is needed.

When connected to the HS MIOS the M.DIS acts as a remote control of the recording system. It can even be operated through the drape and makes visualization possible right in front of the surgeon. This is especially beneficial for ICG.



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HAAG-STREIT SURGICAL distributes products manufactured by MÖLLER-WEDEL through dedicated representatives as well as national sister companies globally.



While all certifications are ongoing for HAAG-STREIT-SURGICAL, MÖLLER-WEDEL maintains a Quality Management System for Medical Products in accordance with ISO 13485. MÖLLER-WEDEL not only develops innovative products but also produces them in an environmentally friendly manner. Compliance with an Environmental Management System according to ISO 14001 is the guideline. Both, the Quality Management System and the Environmental Management System are certified by TÜV.



All products are conform to the EC guidelines and are thus CE labeled.