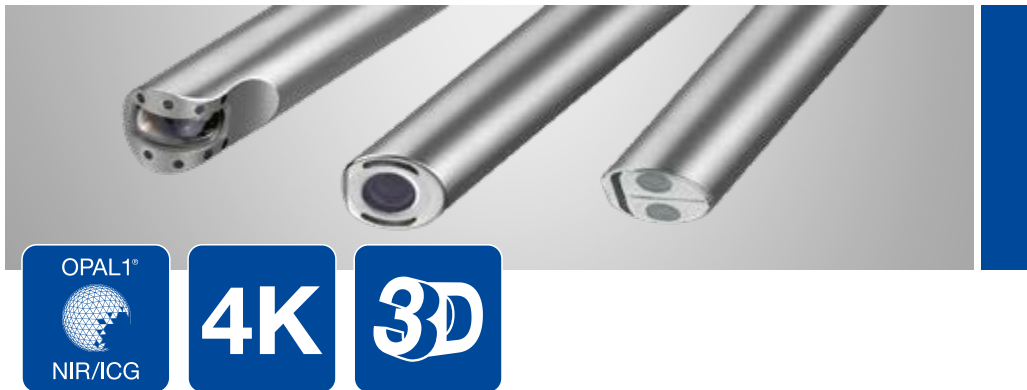


KARL STORZ Telescopes: The Original mORe to discover



KARL STORZ HOPKINS Telescopes: Quality – Value Preservation – Reliability



The KARL STORZ HOPKINS™ rod lens system maintains its impressive image quality with each new telescope. With more than 80 years of experience, the name KARL STORZ stands for high quality standards.

The innovative technologies from KARL STORZ

- Quality improvements of the KARL STORZ telescopes through the continuous optimization of manufacturing processes and the use of high-quality materials.
- Fine adjustment of the optical system with state-of-the-art manufacturing technologies.
- Detailed and precise reproduction of tissue structures thanks to the harmonization of KARL STORZ telescopes, light sources and the IMAGE1 S™ camera platform.

Conventional KARL STORZ HOPKINS™ telescopes can be used with all camera platforms, whether HD, 4K or future developments. With KARL STORZ telescopes, you are—according to our philosophy “the future has tradition, and tradition has a future”—ready for the next step.

Quality and service pay off:

The KARL STORZ repair-exchange program creates a closed service cycle: Replacement by original products from KARL STORZ ensures the long-term value preservation of your investments at repair prices. We will be happy to generate a specific cost calculation for you. In the long term, costs are reduced, and product life is maximized in accordance with the total cost of ownership model.

Application Images from KARL STORZ HOPKINS Telescopes

- Illumination and depth of field of an intraabdominal operative field while viewing tissue, e.g., in diagnostic laparoscopy.
- Sharpness of detail while performing anastomoses such as, for example, colonic anastomoses, esophageal anastomoses and gastric bypass anastomoses.

Prof. Dr. Dr. Martin Walz,
Kliniken Essen Mitte, Germany



Prof. Dr. med. Ralf Rothmund,
Lindenhofhospital, Berne,
Switzerland



Prof. Dr. med. Ralf Rothmund,
Lindenhofhospital, Berne,
Switzerland



Prof. Dr. Dr. Martin Walz,
Kliniken Essen Mitte, Germany



EndoCAMEleon®: Adjustable in Every Aspect!



The ENDOCAMELEON™ provides surgeons with a great deal of flexibility and overcomes the limitations that are traditionally associated with rigid telescopes. The viewing direction of the ENDOCAMELEON™ can be variably adjusted between 0° and 90°. This allows visualization of areas that are difficult to access with standard telescopes. Ergonomics and handling are the same as a conventional KARL STORZ HOPKINS™ telescope.

The capabilities of the ENDOCAMELEON™ are not obvious at first glance—a good sign as it shows that this revolutionary technology is not complicated to use and does not need the additional intracorporeal space required by telescopes with a flexible distal tip. The image alignment is the same as with any rigid telescope; changing the direction of view merely requires turning the control wheel.

ENDOCAMELEON

- Particularly suitable for anatomically tight cavities/spaces
- Easy-to-use control wheel for setting the desired direction of view for the visualization of various anatomical structures, without changing the trocar
- Ideally suited for use with the IMAGE1 S™ 4U camera system

ENDOCAMELEON Application Images

General and Visceral Surgery

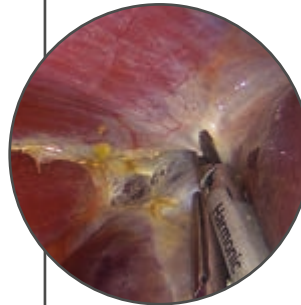


Bariatric Surgery

Sleeve gastrectomy

- Complete visualization of the gastroesophageal junction
- 45°–90°

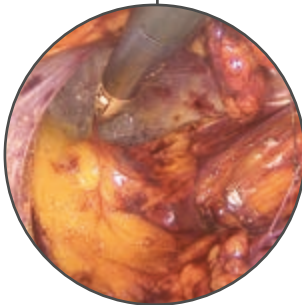
Prof. Carus, Germany



Liver Segment Resection

- Better visualization of the postero-superior segments of the liver
- 45°

Prof. Abu Hilal, Jordan

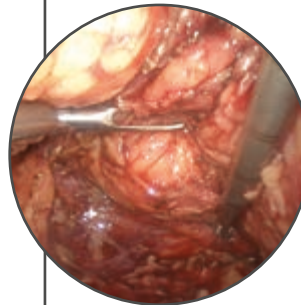


Hernia Surgery

TEP

- Complete visualization of the hernial sac
- 45°

Prof. Boni, Italy



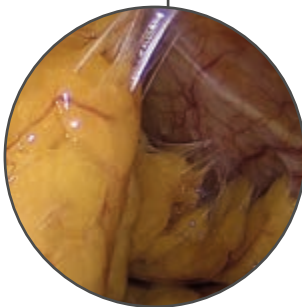
Colorectal Surgery

Rectum resection

- Complete visualization of the anastomosis
- 30°–90°

Dr. Kanehira, Japan

Gynecology

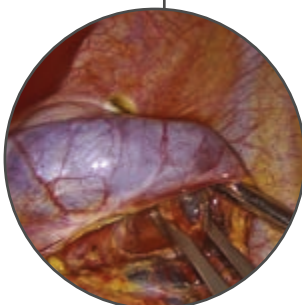


Adenectomy

- Better visualization of various adhesions for easier adhesiolysis
- 90°

Dr. Wojdat, Germany

Thoracic Surgery



VATS Lobectomy

- Better visualization during lymph node resection
- 45°

Dr. Kugler, Germany

HOPKINS Rubina NIR/ICG Telescopes–IMAGE1 S Rubina

The Rubina™ NIR/ICG telescopes with the HOPKINS™ rod lens system provide very good image quality. Optimized focus of the tissue to be viewed and the illumination of the operative field are the main features of these telescopes. The HOPKINS™ Rubina™ NIR/ICG telescopes were specially designed for use with the IMAGE1 S™ Rubina™ camera system. The telescopes form the basis for a high-quality 4K imaging technology which enables fluorescence imaging in the near infrared range via indocyanine green (ICG). The KARL STORZ NIR/ICG imaging chain features three visualization possibilities: Overlay, Monochromatic and Intensity Map to provide the user with additional information.

The HOPKINS™ Rubina™ NIR/ICG telescopes are recognizable by the Opal1™ logo and the NIR/ICG lettering.



Optical system specially designed for use in combination with IMAGE1 S™ Rubina™ and the POWER LED Rubina™ light source.

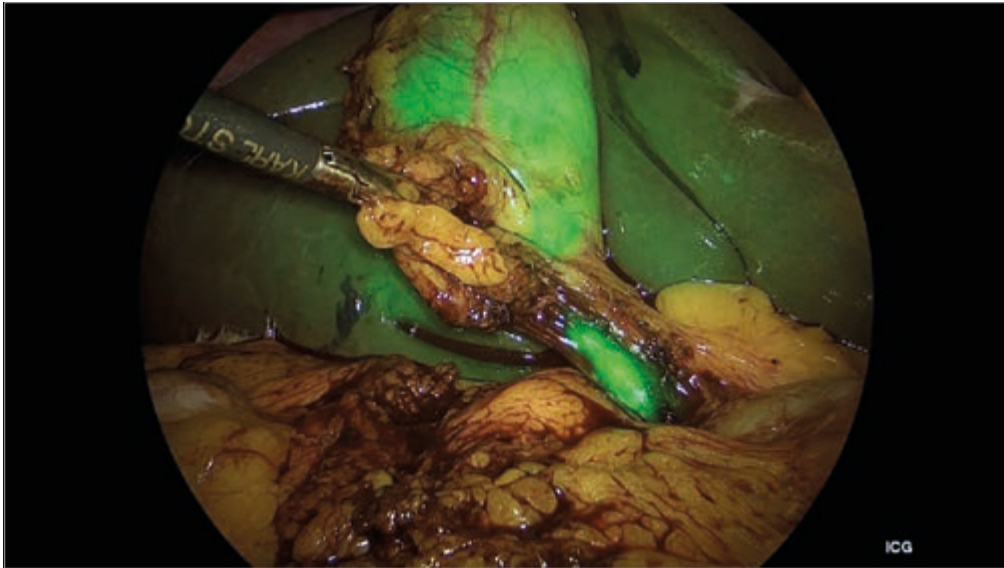
- Optimized illumination of the operative field
- No refocusing required when switching between white light and NIR modes
- Selection of different angles of view, e.g., 0°, 30°, and 45°
- Available in diameters 5 mm and 10 mm



Click here to view the application video for the HOPKINS Rubina NIR/ICG telescopes.
<https://go.karlstorz.com/96112045-en-1>

Fluorescence Imaging with the HOPKINS Rubina NIR/ICG Telescopes

Visualization of the gallbladder and the bile ducts



Prof. Luigi Boni, IRCCS - Ca' Granda, Policlinico Hospital, University of Milan, Milan, Italy

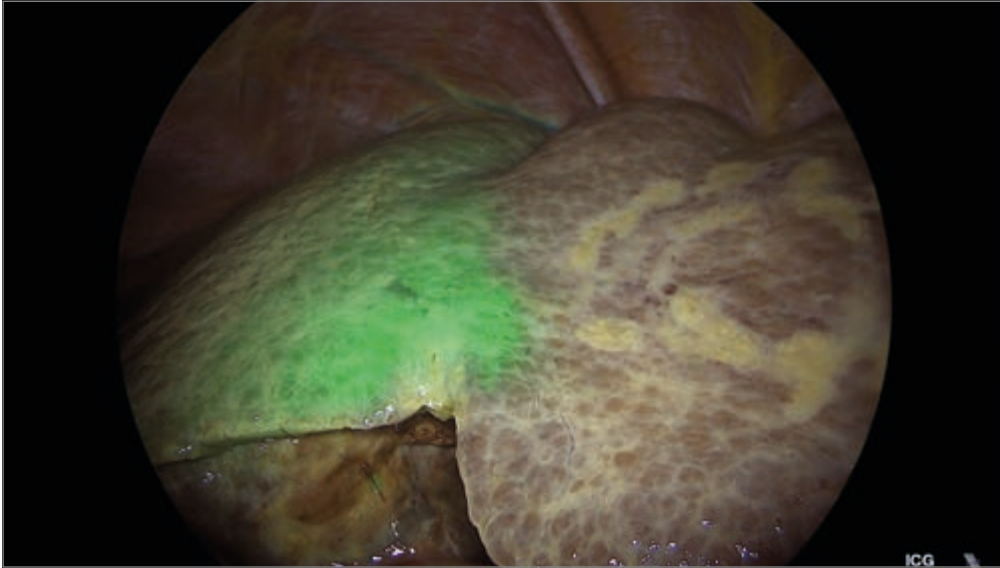
- Superimposed NIR/ICG signal in white light image



Prof. Salvador Morales Conde, Quirónsalud Sagrado Corazón Hospital, Seville, Spain

- Near infrared mode in monochromatic color display

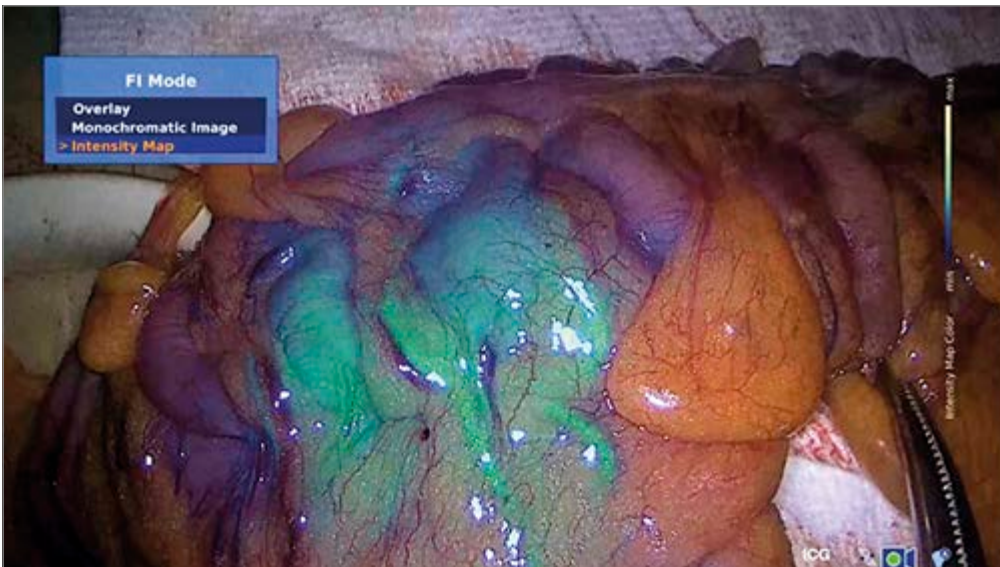
Visualization of liver metastases, liver tumors and bile leakage



Prof. Go Wakabayashi, Ageo Central General Hospital, Japan

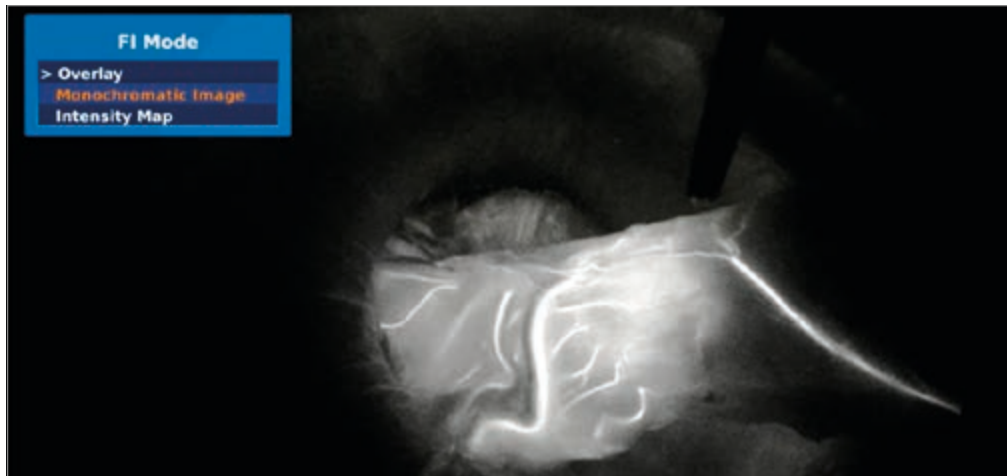
- Superimposed NIR/ICG signal in white light image

Visualization of perfusion, e.g., colorectal anastomoses

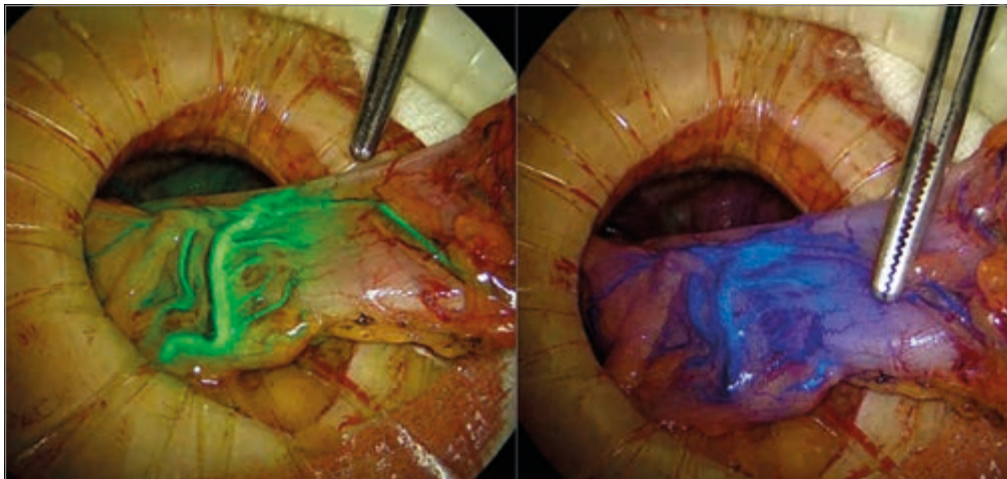


Prof. Salvador Morales Conde, Quirónsalud Sagrado Corazón Hospital, Seville, Spain

- Intensity display of the NIR/ICG signal



- Near infrared mode in monochromatic color display



Prof. Luigi Boni, IRCCS - Ca' Granda, Policlinico Hospital, University of Milan, Milan, Italy

- Superimposed NIR/ICG signal in white light image

Visualization of the lymphatic system



Dr. Michael Zünd, Kantonsspital Baar, Switzerland

- Intensity display of the NIR/ICG signal

TIPCAM1 Rubina: The 4K-3D NIR/ICG Videoendoscope



The TIPCAM1™ Rubina™ provides surgeons with excellent depth perception. This stereoscopic system offering 3D in 4K quality is particularly helpful when performing activities that require spatial vision.



- 4K imaging chain
- 4K-3D NIR/ICG videoendoscope with 10 mm diameter as well as 0° and 30° directions of view



- Easy toggle from 3D to 2D



- Automatic horizon control for better orientation and handling



- Visualization of NIR/ICG
- Easy integration into the IMAGE1 S™ platform

3D in 4K image quality

The TIPCAM1™ Rubina™ features two 4K sensors that are integrated into the distal end of the videoendoscope. The TIPCAM1™ Rubina™ can still be used as a 2D or 3D videoendoscope. Image processing takes place in the IMAGE1 S™ camera system.

Automatic horizon control

In order to offer the user a stable image horizon, the TIPCAM1™ Rubina™ is equipped with an automatic horizon control function in both the 2D and 3D modes. This function offers the user better orientation and handling. If the TIPCAM1™ Rubina™ is used in the 2D mode, the automatic horizon control is called "Autorotation". If the TIPCAM1™ Rubina™ is used in the 3D mode, the automatic horizon control is called "Autoswitch".

A video explaining the autorotation and autoswitch functionalities is available here:
<https://go.karlstorz.com/96112045-en-2>



NIR/ICG functionalities

The TIPCAM1™ Rubina™ offers the following NIR/ICG modes in 2D and 3D:

- **Overlay:** This mode displays the superimposed NIR/ICG signal in the white light image. The background illumination is retained so that structures, tissue etc. remain visible.
- **Monochromatic:** This mode is a pure near infrared mode in a monochromatic color display.
- **Intensity Map:** The intensity of the NIR/ICG signal is displayed in the white light image. The background illumination is thereby retained.

White Light Telescopes:

HOPKINS Telescopes diameter 3.3 mm, length 25 cm

- 26007AA **HOPKINS Straight Forward Telescope 0°**, enlarged view, diameter 3.3 mm, length 25 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26007BA **HOPKINS Forward-Oblique Telescope 30°**, enlarged view, diameter 3.3 mm, length 25 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red

HOPKINS Telescopes diameter 5 mm, length 24 cm

- 26011AA **HOPKINS Straight Forward Telescope 0°**, enlarged view, diameter 5 mm, length 24 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26011BA **HOPKINS Forward-Oblique Telescope 30°**, enlarged view, diameter 5 mm, length 24 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red

HOPKINS Telescopes diameter 5 mm, length 29 cm

- 26046AA **HOPKINS Straight Forward Telescope 0°**, enlarged view, diameter 5 mm, length 29 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26046BA **HOPKINS Forward-Oblique Telescope 30°**, diameter 5 mm, length 29 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red
- 26046FA **HOPKINS Telescope 45°**, enlarged view, diameter 5 mm, length 29 cm, **autoclavable**, fiber optic light transmission incorporated, color code: black

HOPKINS Telescopes diameter 10 mm, length 31 cm

- 26003AA **HOPKINS Straight Forward Telescope 0°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26003BA **HOPKINS Forward-Oblique Telescope 30°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red
- 26003FA **HOPKINS Telescope 45°**, enlarged view, diameter 10 mm, length 31 cm, **autoclavable**, fiber optic light transmission incorporated, color code: black

HOPKINS Telescopes diameter 10 mm, length 42 cm

Recommended for surgery on adipose patients

- 26003AEA **HOPKINS Straight Forward Telescope 0°**, enlarged view, diameter 10 mm, length 42 cm, **autoclavable**, fiber optic light transmission incorporated, color code: green
- 26003BEA **HOPKINS Forward-Oblique Telescope 30°**, enlarged view, diameter 10 mm, length 42 cm, **autoclavable**, fiber optic light transmission incorporated, color code: red
- 26003FEA **HOPKINS Telescope 45°**, enlarged view, diameter 10 mm, length 42 cm, **autoclavable**, fiber optic light transmission incorporated, color code: black

ENDOCAMELEON:

- 26003EC **ENDOCAMELEON HOPKINS Telescope**, diameter 10 mm, length 31 cm, **autoclavable**, variable direction of view from 0°-90°, adjustment knob with fin for selecting the desired direction of view, fiber optic light transmission incorporated, color code: gold

NIR/ICG Telescopes:

26003ARA	HOPKINS Rubina 0° , NIR/ICG, straight forward telescope 0°, enlarged view, diameter 10 mm, length 31 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: green
26003BRA	HOPKINS Rubina 30° , NIR/ICG, forward-oblique telescope 30°, enlarged view, diameter 10 mm, length 31 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: red
26003FRA	HOPKINS Rubina 45° , NIR/ICG, forward-oblique telescope 45°, enlarged view, diameter 10 mm, length 31 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: black
26003FREA	Same , length 42 cm
26046ARA	HOPKINS Rubina 0° , NIR/ICG, straight forward telescope 0°, enlarged view, diameter 5 mm, length 29 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: green
26046BRA	HOPKINS Rubina 30° , NIR/ICG, forward-oblique telescope 30°, enlarged view, diameter 5 mm, length 29 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: red
26046FRA	HOPKINS Rubina 45° , NIR/ICG, forward-oblique telescope 45°, enlarged view, diameter 5 mm, length 29 cm, autoclavable , for indocyanine green (ICG), fiber optic light transmission incorporated, color code: black

TIPCAM1 Rubina

26606ACA	TIPCAM1 Rubina , Opal1 NIR/ICG, 4K/3D, direction of view 0°, diameter 10 mm, length 32 cm, autoclavable , including video connecting cable
26606BCA	TIPCAM1 Rubina , Opal1 NIR/ICG, 4K/3D, direction of view 30°, diameter 10 mm, length 32 cm, autoclavable , including video connecting cable

IMAGE1 S Rubina System Components

TC201	IMAGE1 S CONNECT II , connect module, for use with up to 3 link modules, 4K technology, resolution 3840 x 2160 and 1920 x 1080 pixels, with integrated KARL STORZ-SCB and digital Image Processing Module, power supply 100-240 VAC, 50/60 Hz
TC304	IMAGE1 S 4U-LINK , link module, for use with IMAGE1 S 4U camera heads, power supply 100-240 VAC, 50/60 Hz, for use with IMAGE1 S CONNECT TC200 or IMAGE1 S CONNECT II TC201
TH121	IMAGE1 S 4U Rubina , Opal1 NIR/ICG, S-Technologies available, progressive scan, low-temperature sterilization, 2 freely programmable camera head buttons, for use with IMAGE1 S 4U-LINK
TL400	Cold Light Fountain POWER LED Rubina , with high-performance light unit for perfusion assessment and standard endoscopic diagnosis, including a LED and a KARL STORZ light cable connection, power supply 100-125/220-240 VAC, 50/60 Hz including: Mains Cord Patch Cable Sync Connecting Cable
UF101	One-Pedal Footswitch , one-stage

Further information on the components of the Rubina product family is available here:
<https://go.karlstorz.com/96112045-3>



TM343	32" 4K Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, wall-mounted with VESA 100 and VESA 200 adaptors
TM351	32" 4K/3D Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, wall-mounted with VESA 100 and VESA 200 adaptors
TM441	43" 4K Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, wall-mounted with VESA 300 and VESA 400 adaptors
TM451	55" 4K/3D Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, VESA 200 x 200 and VESA 200 x 400 adaptors
TM344	32" 4K Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, VESA 100 and VESA 200 adaptors
TM442	55" 4K Monitor , screen resolution 3840 x 2160, image format 16:9, power supply 100-240 VAC, 50/60 Hz, VESA mount 400 x 200

Wire Trays

39501B1	Wire Tray for Cleaning, Sterilization and Storage of one rigid endoscope, including holder for light post adaptors, silicone telescope holders and lid, external dimensions (w x d x h): 430 x 65 x 52 mm, for rigid endoscopes up to diameter 10 mm and working length 34 cm
39501B2	Wire Tray for Cleaning, Sterilization and Storage of two rigid endoscopes and one light cable, including holder for light post adaptors, silicone telescope holders and lid, external dimensions (w x d x h): 487 x 125 x 54 mm, for rigid endoscopes up to diameter 10 mm and working length 32 cm
39501C	Wire Tray for Cleaning, Sterilization and Storage of one rigid telescope, with silicone telescope holder and lid, external dimensions (w x d x h): 670 x 80 x 52 mm, for telescopes for bronchoscopy and esophagoscopy
39501BEC	Wire Tray for Cleaning, Sterilization and Storage of ENDOCAMELEON, length 32 cm and one light cable, including holder for light post adaptor, silicone telescope holder and lid, external dimensions (w x d x h): 480 x 125 x 54 mm
39501XTC	Wire Tray for Cleaning, Sterilization and Storage of TIPCAM1 S 3D LAP Videoendoscopes 26605AA, 26605BA or TIPCAM1 Rubina, Opal1 NIR/ICG, 4K 3D 26606ACA, 26606BCA, 26616ACA, 26616ABCA and one light cable, autoclavable , external dimensions (w x d x h): 640 x 150 x 87 mm

Light Cables

	Light cable diameter	Endoscope diameter	
	3–3.5 mm	3–6.5 mm	495NL Fiber Optic Light Cable , diameter 3.5 mm, length 180 cm
			495NA Fiber Optic Light Cable , diameter 3.5 mm, length 230 cm
			495NAC Fiber Optic Light Cable , extremely heat resistant, with safety lock, enhanced light transmission, can be used for ICG applications, diameter 3.5 mm, length 230 cm
			495ND Fiber Optic Light Cable , diameter 3.5 mm, length 300 cm
	4.8–5 mm	10–11 mm	495NB Fiber Optic Light Cable , diameter 4.8 mm, length 180 cm
			495NCS Fiber Optic Light Cable , extremely heat resistant, enhanced light transmission, diameter 4.8 mm, length 250 cm
			495NCSC Fiber Optic Light Cable , extremely heat-resistant, with safety lock, enhanced light transmission, diameter 4.8 mm, length 250 cm
			495NE Fiber Optic Light Cable , diameter 4.8 mm, length 300 cm
			495TIP Fiber Optic Light Cable , with straight connector, extremely heat-resistant, enhanced light transmission, with safety lock, diameter 4.8 mm, length 300 cm

Please inform yourself accordingly in advance for which application the respective preparation is approved in your country.

It is recommended to check the suitability of the product for the intended procedure prior to use.
Please note that the described products in this medium may not be available yet in all countries due to different regulatory requirements.



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