IMAGE1 S™ Rubina™ – The Value of ONE

Our Opal1® technology for NIR/ICG

Discover new technologies

that change the way you look at your patients

STORZ
KARL STORZ — ENDOSKOPE

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The primary goal of any surgeon is to achieve optimal surgical results. To meet this objective, the visualization and display of significant and critical structures is of crucial importance to the surgical workflow.

The rapid development of camera technology in the past has led to ever greater insights in the surgical field as well as an increasingly broader range of treatments in minimally invasive surgery and, ultimately, to a potentially better outcome for the patient.

4K technology provides increased resolution and a wider color space, and fluorescence diagnostics with NIR/ICG offers imaging possibilities for, e.g., the bile ducts or perfusion.

The Value of ONE

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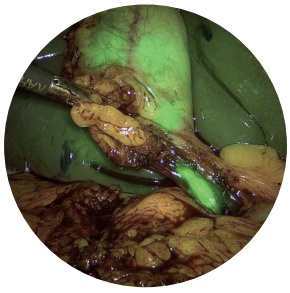
NIR/ICG visualization modes

The Rubina™ components offer various new modes for visualizing the NIR/ICG signal. This includes the overlay of NIR/ICG data onto the standard white light image or alternatively the monochromatic visualization of the infrared signal alone.

Customer satisfaction **is our priority**

Overlay

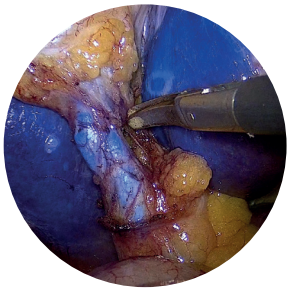
In overlay mode, the regular white light image is combined with the NIR/ICG data to generate an overlay image. This mode is ideal for intraoperative cholangiography.



Source: Boni, Milan, Italy

Green or blue - It's Up to You

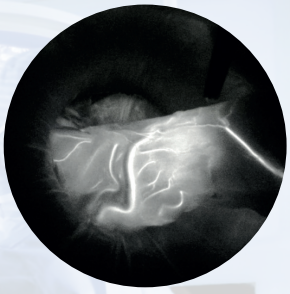
Depending on your preferences and application, the NIR/ICG data can be displayed as a green or blue overlay.



Source: Carlini, Rome, Italy

Monochromatic

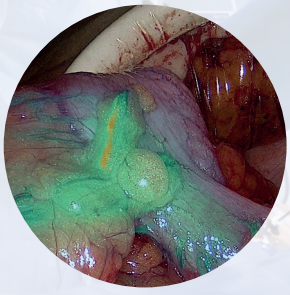
In this mode, the NIR/ICG signal alone is displayed in white on a black background to achieve the greatest possible differentiation. This mode is ideal for perfusion.



Source: Boni, Milan, Italy

Intensity Map

Displays the intensity of the NIR/ICG signal using a color scale in an overlay image.



Source: Zuend, Baar, Switzerland

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The Value of ONE

The new Rubina™ imaging technology is a further component of the IMAGE 1 S™ modular concept and offers a large range of compatibilities and configuration options. The new 4K NIR/ICG and LED components can be added to the existing IMAGE 1 S™ camera system to help streamline assets and cost.

4K

- Native 4K resolution
- Exceptional image quality in both white light and NIR/ICG modes
- Natural color rendition
- S-Technologies in white light and in combination with overlay modes

LED

- Laser-free LED light source for white light and NIR/ICG
- Excitation of ICG in the near-infrared range
- Camera head and footswitch control

OPAL1®
NIR/ICG

- Opal1® NIR/ICG technology
- Overlay mode: NIR/ICG is displayed in green or blue over the white light image
- Intensity Map mode: Displays signal intensity in overlay image
- Monochromatic mode: NIR/ICG image displayed in white with black background
- New and optimized NIR/ICG telescopes

Continuous development **to optimize clinical care**

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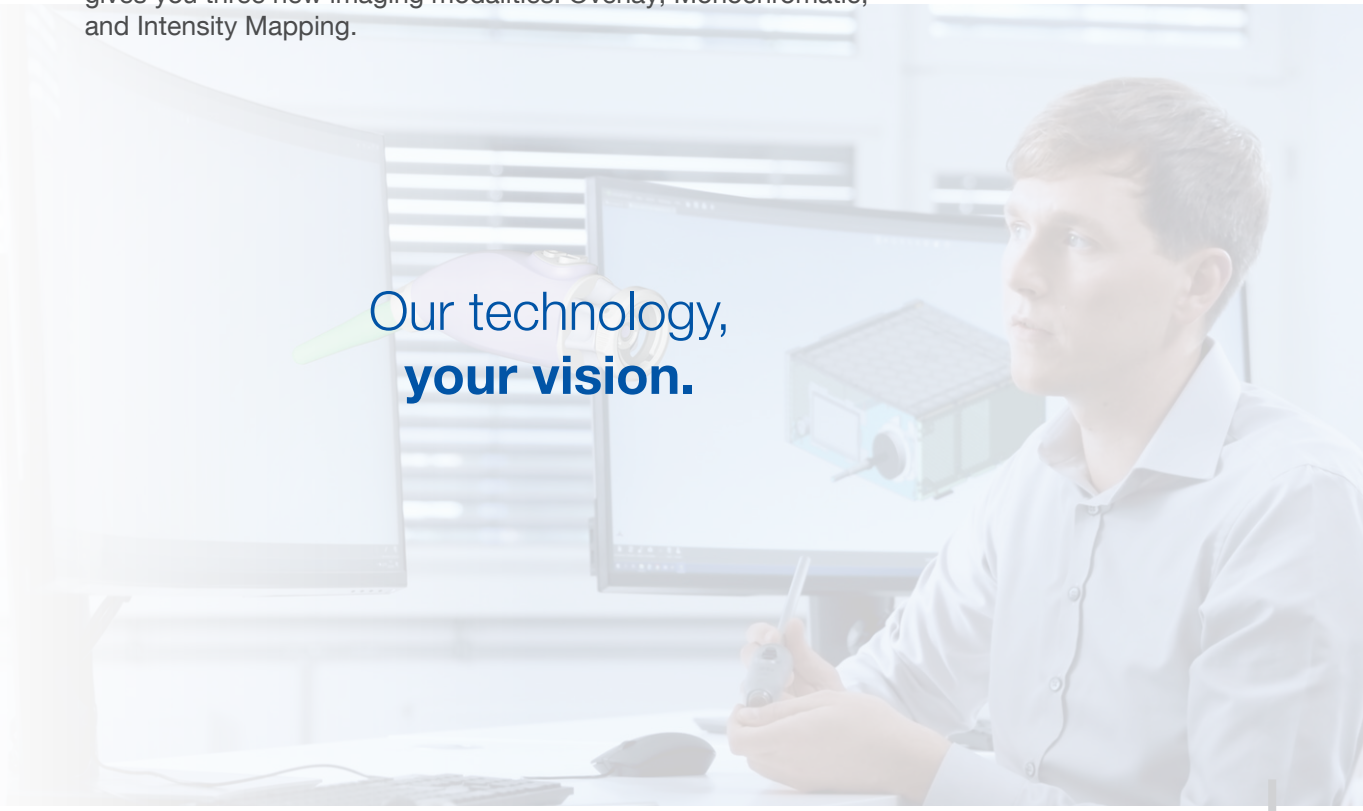
IMAGE1 S™ Rubina™ – The Value of ONE

The diamond standard for NIR/ICG fluorescence imaging

Rubina™ Telescopes are a crucial element of the imaging chain that have been optimized for two light spectra, near infrared (NIR/ICG Mode) and white light (WL Mode). The focal points of the new KARL STORZ Rubina™ optics are aligned, eliminating the need for refocusing when switching between WL and NIR modes. Another distinct benefit is edge-to-edge clarity and enhanced illumination of the surgical field.

Designed specifically for the Rubina™ 4U camera system, Rubina™ gives you three new imaging modalities: Overlay, Monochromatic, and Intensity Mapping.



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Overview of IMAGE1 S™ Rubina™ components

TC201US	**IMAGE1 S CONNECT® II,** connect module, 4K technology, resolution 3840 x 2160 and 1920 x 1080 with integrated KARL STORZ-SCB or KS HIVE and digital Image Processing Module, power supply 100-240 VAC, 50/60 Hz
TC304US	**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, two-chip 4K UHD camera head, S-Technologies available, for NIR/ICG fluorescence imaging in combination with POWER LED Rubina™, Opal1® NIR/ICG, progressive scan, low-temperature sterilization, focal length f = 19 mm, 2 freely programmable camera head buttons, for use with IMAGE1 S CONNECT® II and IMAGE1 S™ 4U-LINK
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, or 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
TL400	**Cold Light Fountain POWER LED Rubina™,** for NIR/ICG fluorescence imaging and standard endoscopic diagnosis, with two LEDs and one KARL STORZ light cable connection, with integrated unit communication via KS HIVE, power supply 100-125/220-240 VAC, 50/60 Hz
UF101	**One-Pedal Footswitch,** one-stage
TM340	**32" 4K Monitor,** screen resolution 3840 x 2150, image format 16:9, inputs: 12G-SDI, DP 1.2, HDMI, DVI-D

* For use with HOPKINS® Rubina™ NIR/ICG telescopes or the VITOM® II ICG exoscope for open surgery

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Additional Compatible ICG Scopes

28164AC	**HOPKINS® Straight Forward Telescope 0°,** enlarged view, diameter 4 mm, length 18 cm, autoclavable, for indocyanine green (ICG)
28164BC	**HOPKINS® Straight Forward Telescope 30°,** enlarged view, diameter 4 mm, length 18 cm, autoclavable, for indocyanine green (ICG) fiber optic light transmission incorporated color code: red
28164FC	**HOPKINS® Forward-Oblique Telescope 45°,** enlarged view, diameter 4 mm, length 18 cm, autoclavable, for indocyanine green (ICG)
20916025AGA	**VITOM® II NIR/ICG Telescope 0°,** with integrated illuminator and observation filter for fluorescence diagnostics with ICG, HOPKINS® telescope, working distance 25-75 cm for white light, 20-30 cm for fluorescence applications, length 11 cm, autoclavable, with fiber optic light transmission incorporated and condenser lenses, color code: green

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.

Further information on IMAGE1 S™ Rubina™ is available at

www.karlstorz.com

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Shaping the Future
of Endoscopy with you

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KARL STORZ — ENDOSKOPE
THE DIAMOND STANDARD

KARL STORZ SE & Co. KG
Dr.-Karl-Storz-Straße 34, 78532 Tuttlingen/Germany
Postfach 230, 78503 Tuttlingen/Germany
Telefon: +49 7461 708-0
Telefax: +49 7461 708-105
E-Mail: info@karlstorz.com
www.karlstorz.com

KARL STORZ Endoscopy-America, Inc.
2151 East Grand Avenue
El Segundo, CA 90245-5017, USA
Phone: +1 424 218-8100
Phone toll free: 800 421-0837 (US only)
Fax: +1 424 218-8525
Fax toll free: 800 321-1304 (US only)
E-Mail: communications@karlstorz.com

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