



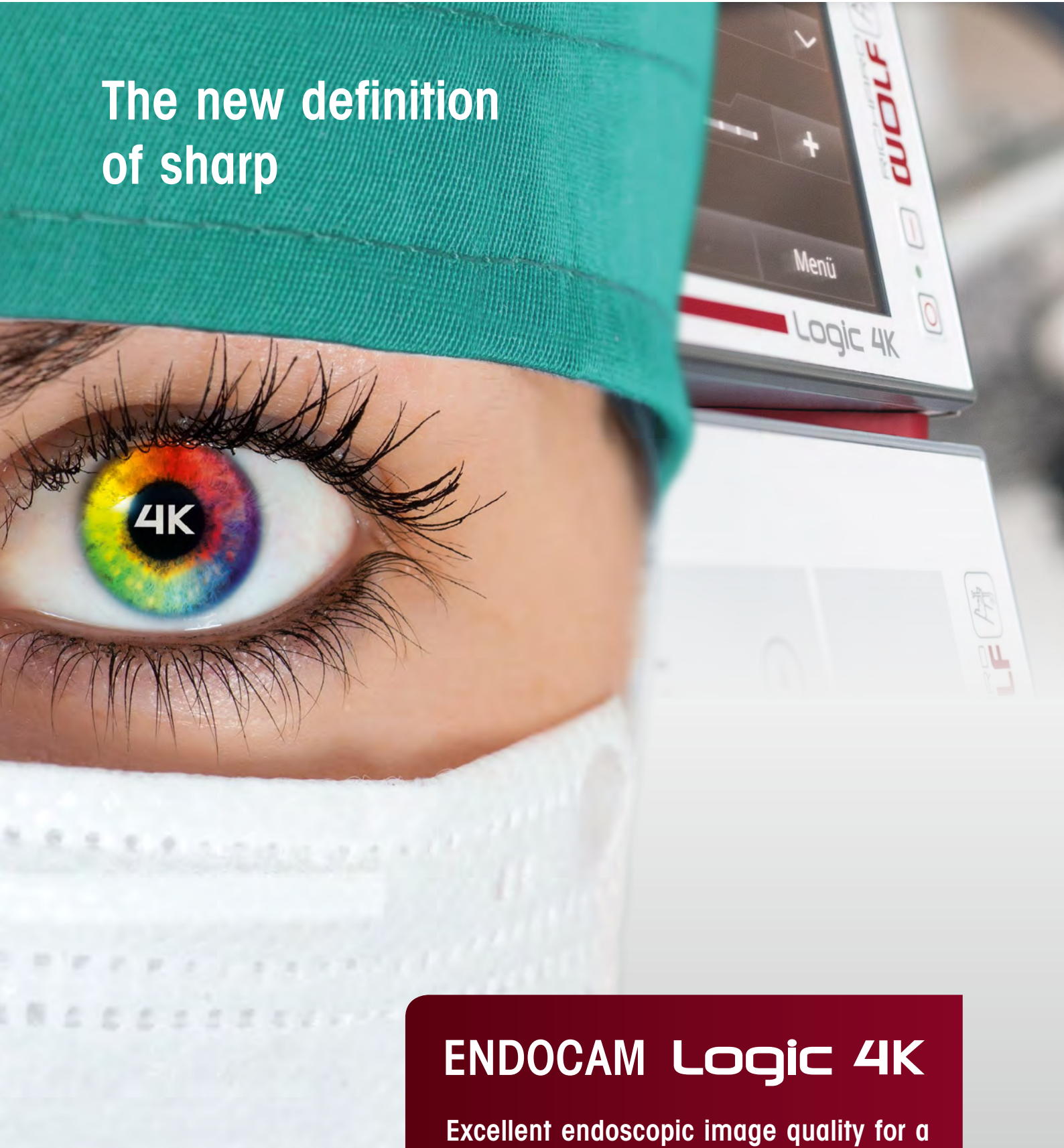
DUOMED

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spirit of excellence

**The new definition
of sharp**



ENDOCAM Logic 4K

**Excellent endoscopic image quality for a
better differentiation of superfine structures**

ENDOCAM Logic 4K

The new Sharp. The new Authentic. The new Efficient.

With four times the resolution of regular HD, 4K technology gives sharpness a new meaning. Fine details are more visible. Spatial depth is magnified. And colors are truer.

The new **ENDOCAM Logic 4K** system from Richard Wolf brings the brilliance of 4K to the operating room.



See for yourself

Richard Wolf presents an impressive turnkey system with the **ENDOCAM Logic 4K** for application in endoscopy. The harmonized image visualization and processing are entirely optimized to 4K.

The result: clear, pin-sharp images in a very realistic color scheme make the difference in endoscopy.





A complete solution from a single source

The **ENDOCAM Logic 4K** provides a continuous chain of intelligent solutions – from the tip of the scope to the high resolution monitor, and everything in between.

- **Brighter and sharper PANOVIEW ULTRA Endoscopes**
- **Distortion-free objective lens**
- **Ergonomic ENDOCAM Logic 4K camera head**
Acquisition of 4K UHD resolution from three sensors
- **Innovative ENDOCAM Logic 4K Camera Controller**
Integrated processing of the recorded image data in 4K UHD resolution
- **Robust fusion light cables**
For improved illumination
- **Energy efficient ENDOLIGHT LED 2.2 Light Source**
Extremely long-life and very quiet
- **Bright, color-intense monitors**
With special tuning



„This is a genuine advance, the image quality is significantly better than the quality we have been familiar with up to now. This relates specifically to sharpness. Particularly in situations when there is some bleeding. This is when the image normally becomes blurred and dark but the image quality here continues to remain excellent.“

*Prof. Dr. med. Dr. h.c. Manfred Wirth
Director of the Hospital and Polyclinic for
Urology, University Hospital "Carl Gustav
Carus", Dresden*

The new definition of sharp

THE NEW DEFINITION OF SHARP

You can find user opinions and additional information on our website: 4k.richard-wolf.com

ENDOCAM Logic 4K

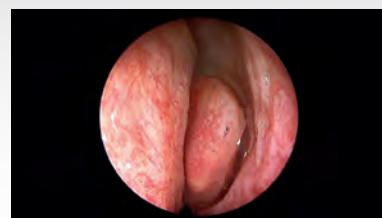
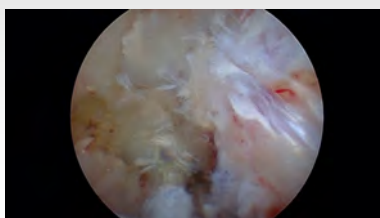
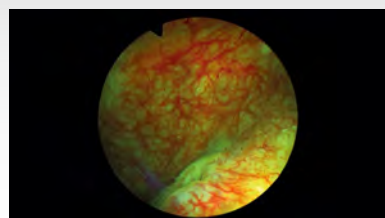
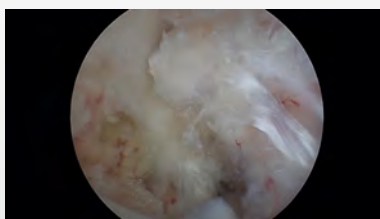
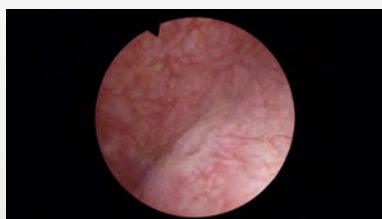
The ENDOCAM Logic Family, now in 4K

The ENDOCAM Logic Platform is a pioneer and trendsetter for groundbreaking new technologies. The **ENDOCAM Logic 4K** continues this tradition with a large number of impressive characteristics.

- **Brilliant 4K resolution** of 3840 x 2160 pixels or alternatively 4096 x 2160 pixels
- **Compatible** with all user components and camera heads of ENDOCAM Logic HD
- **User-friendly**
Clinically developed presets for different disciplines
- **Integrated Special Imaging Modes (SIM):** Digital algorithms for easier tissue differentiation
- **Storage** of high-resolution images and videos on USB storage media
- **Fully integratable in core nova,** the Operating Room integration system from Richard Wolf

SIM – Special Imaging Modes: The difference is in the detail

Alongside visualization of natural colors 6 digital algorithms are available as options. Depending on the situation, the Special Imaging Modes can improve tissue differentiation. The stored SIM can be switched on and off at the touch of a button using the camera head button.



COLOR CONTRAST I-III

Differentiated color reproduction as a result of targeted false color representation and contrast enhancement

CONTRAST I – II

Enhancing structures without changing the original color shades

HDR – High Dynamic Range

Lightening dark image areas and reducing over-exposures

Compact high-power package

The newly developed **ENDOCAM Logic 4K** Camera Head generates 4K UHD resolution. This enables the recorded image data to be directly processed without extrapolation. This light weight camera head combined with its ergonomic design helps to reduce hand fatigue making it ideal for endoscopic applications.

- **3 x 1/3 inch CMOS image sensor**
Aspect ratio 16:9
- **Universal C-mount lens connector**
- **2 freely programmable camera head buttons**
Each with two functions
- **Autoclavable, disinfectable and gas sterilizable (V-PRO™ 1)**
Suitable for STERRAD NX, special reprocessing basket supplied



„I found the weight, the ergonomics and most importantly fatigue-free working when carrying out laparoscopies extremely impressive.“

Dr. Holger Böhme // Managing Senior Physician, Urological Oncology, Laparoscopy, Endoscopic Urology, Asklepios Hospital Barmbek, Hamburg



Bright. Clear. True.

The new high-resolution telescope generation

Outstanding results are achieved if the entire image chain has been harmonized from the endoscope to the monitor.

This is the case at Richard Wolf – with the PANOVIEW ULTRA Telescopes at the start of the process and an outstanding monitor at the end.



Bright. Clear. True. **The new high-resolution telescope generation**

The PANOVIEW ULTRA Telescopes offer perfect balance between depth sharpness and luminous intensity:

- **Improved edge sharpness and optimized sharpness gradient**
Over the entire endoscopic image
- **Advanced high-tech glass fibers**
With particularly high light transmission
- **Optimum illumination**
Of the endoscopic operating site
- **Natural color visualization**
- **5.5 mm and 10 mm telescopes**
In different directions of view and lengths

A true image with optical zoom

The optical zoom lens enlarges the image captured by the sensor by up to 2.25 times – for a complete and true image.

All lenses are bright, service friendly and represent outstanding image quality:

- **Distortion-free display**
- **Hermetically sealed enclosure**
- **Autoclavable**
- **C-mount connector and interchangeable snap-on lock for endoscopes**
- **Parfocal zoom lens**

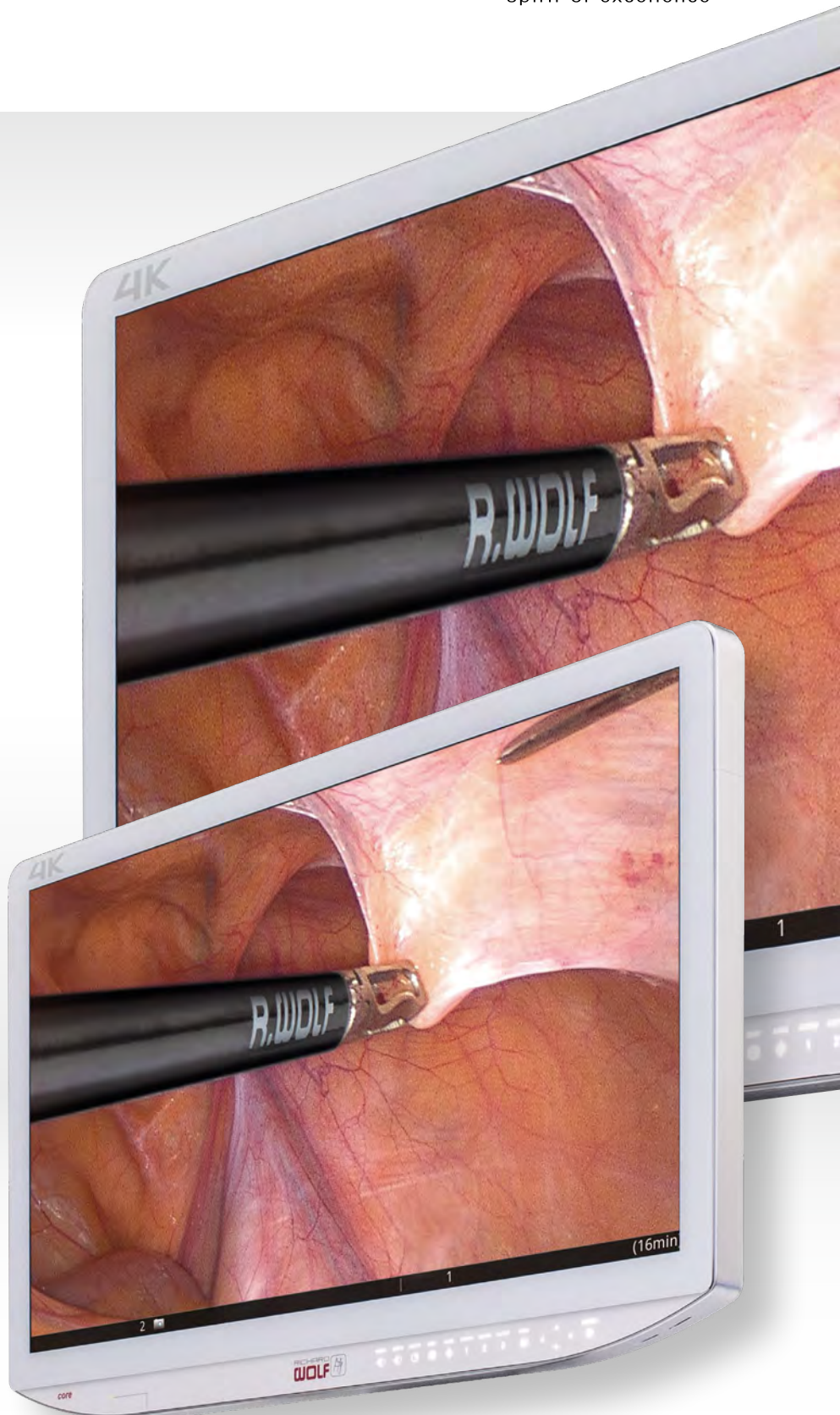
Furthermore, the **ENDOCAM Logic 4K** Camera Controller provides an integrated 1.5-fold digital zoom.

Exceptional monitors

For an exceptional picture



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Brilliant visualization experience

The monitors supplied by Richard Wolf are harmonized in-house to match the requirements of **ENDOCAM Logic 4K** in order to provide ideal reproduction for the fourfold higher resolution of the 4K image:

- **4K UHD resolution**
- **Special presets**
For outstanding visualization of the **ENDOCAM Logic 4K** image
- **Easy cleaning**
With smooth, wipeable front panel
- **Light-intense, anti-glare OptiContrast Panel™**
for vibrant and high-contrast images
- **Multiple screen size options**
Available in 31" and 55"

ENDOLIGHT LED_{2.2}

Intelligent and efficient

An important contribution to the outstanding efficiency of the overall system is provided by the illumination: This is why the new Fusion Light Cables now conduct the luminous intensity of the high-power LED light source even better.

The High-Power Model

ENDOLIGHT LED 2.2 offers a light power comparable with a 300 watt xenon light source. The high level of detail in the visualization of the operating site is achieved by homogenous illumination and harmonized light color:

- **Very long service life**
For the LED lamp with approximately 30,000 hours
- **Approximately 80 % lower electricity consumption**
Compared with xenon
- **Virtually inaudible**
With an innovative cooling system
- **Constant brightness**
- **Effectively uniform light power**
Over the entire service life



In dialog

Richard Wolf endoscopy instruments operate automatically as a system in dialog operation for even simpler handling.

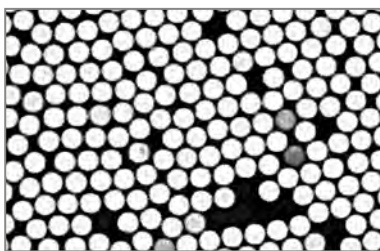
This permits automatic adjustment of the light power to suit the surgical situation. Furthermore, the most important device parameters of other devices, e.g. pressure, flow or residual gas display can be overlaid in the monitor image.

- **Continuous control**
Of illumination to match the surgical scene
- **Status display of the light source possible**
In the camera image
- **Compensation for color fluctuations**
On account of different luminous intensity (dialog.lightbalance)

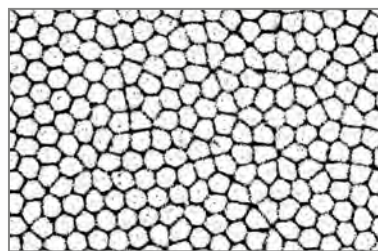
Illuminating characteristics

Fusion Light Cables are part of high-power systems. They represent simple handling, efficient organization and high retention of asset value. The fused glass fibers on the light-source side ensure 20 % higher transmission.

- **Very high temperature resistance**
- **Significantly longer service lifetime**
- **Particularly resistant to chemicals**
- **Easier handling and lower susceptibility to fiber fracture**
With improved flexibility and steel anti-kink protection
- **Recommended for 4K systems**
On account of improved efficiency



Standard Light Cable
with bonded fibers



Fusion Light Cable
with fused fibers



„I can only say that I am extremely impressed by the technology: It really was a quite outstanding image. In particular, this technology achieved optimum success for illumination across all image sections.“

Prim. Univ-Prof. Dr. Mag. Alexander Klaus // Director of the Department of Surgery, Hospital of the Merciful Sisters, Vienna



ENDOCAM Logic 4K

Mobile and integrated

Mobile on RIWomobil

Richard Wolf supplies the RIWomobil Equipment Cart as a compact, multi-functional system, which can be individually configured. The 55" 4K monitor is recommended for assembly on this equipment cart.

The 31" 4K Monitor should ideally be mounted on spring arms designed for this purpose. Alternatively, it can be attached to a dedicated, mobile roll stand so that it can be used in different operating theaters.

We will be delighted to send you detailed information on request.



Integrated in core nova

The **core nova** OR Integration System from Richard Wolf impresses with convenient documentation options, integrated device control, intuitive video routing, simple operation and low installation expenditure.

An ENDOCAM Logic Camera System forms the heart of OR integration – now also in 4K.

You will find additional information as follows: www.core-nova.com



Ordering Information

Camera controller

ENDOCAM Logic 4K Camera Controller bundle

consisting of:

ENDOCAM Logic 4K Camera Controller (5525301), hand-held remote control (5525401), USB Flash Storage 32 GB (72321829), HDMI / HDMI cable interlock 3.0 m (103847), power cable (2440.03) **55253011**

Camera head

ENDOCAM Logic 4K Camera Head

3-Chip, cable length 3.0 m **85525942**

Objective lenses

RIWO Lens, C-mount

14 mm **85261144**

24 mm **85261244**

RIWO Zoom Lens, C-mount

13 - 29 mm **85261504**

Telescopes

PANOVIEW ULTRA Telescope, Ø 5.5 mm,

WL 300 mm

0° **8935461**

30° **8935462**

WL 430 mm

0° **89354416**

30° **89354426**

PANOVIEW ULTRA Telescope, Ø 10 mm,

WL 305 mm

0° **8934461**

30° **8934462**

50° **8934463**

WL 440 mm

0° **89344416**

30° **89344426**

50° **89344436**

Light source

ENDOLIGHT LED 2.2 bundle

consisting of:

ENDOLIGHT LED 2.2 (5164001), patch cable, RJ45 SFTP, 0.5 m (72325378) and power cable (2440.03), 100-240 V~, 50/60 Hz **51640011**

Light cable

Fusion Fiber Light Cable bundle, Ø 5.0 mm

consisting of:

Adapter on the projector side (8095.07), adapter on the endoscope side (809509) and

Fusion Fiber Light Cable (80655023),

2.3 m long **806550231**

Fusion Fiber Light Cable (80655030),

3.0 m long **806550301**

Fusion Fiber Light Cable (80655035),

3.5 m long **806550351**

Monitors

LCD Monitor 4K

31" **LMD-X310MD**

55" **LMD-X550NB**

Reprocessing

Reprocessing basket for camera head

(L x W x H) 445 x 200 x 73 mm **38047111**

Keyboard

Mini Cleanboard USB

Wipeable USB keyboard incl. mousepad

German (QWERTZ) **103823**

American / English (QWERTY) **103824**

Printer

Digital Color Printer SONY UP-DR80MD **5651051**

Color Photo Print Package

DIN-A4 UPC-R80MD **5651926**



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Specifications subject to change without notice.

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