



CONSENS  
ICG/NIR  
FLUORESCENCE  
CAMERA SOLUTION



The improved vision

# ICG/NIR FLUORESCENCE CAMERA SOLUTION



## THE IMPROVED VISION

Indocyanine Green is a fluorescent substance visible in near-infrared light. It is useful for the identification of anatomical structures, the tissues vascularization for plasties and flaps in abdominal wall surgery, liver resection, in strangulated hernias and in intestinal ischemia<sup>1</sup>, for tumor identification<sup>2</sup>, sentinel node identification and lymphatic mapping in malignant tumors<sup>3</sup>.

The use of ICG (Indocyanine green) fluorescence imaging has been demonstrated as a tool for the detection and treatment of cancer

as well as for other diagnostics in endoscopic imaging. The ICG/NIR (near-infrared fluorescence imaging) has become an important technique in diagnostics in soft tissue endoscopy. The CONSENS ICG Camera solution provides a state of the art visualization system combining 4K resolution, a laser-free LED light source and NIR technologies in the All-in-One solution.

<sup>1</sup> Intraoperative use of indocyanine green fluorescence imaging in rectal cancer surgery: The state of the art  
Roberto Peltini, et al 2014

<sup>2</sup> The primary application of indocyanine green fluorescence imaging in surgical oncology  
Zhang-Yi Dai, et al 2014

<sup>3</sup> Indocyanine green (ICG) fluorescence guide for the use and indications in general surgery: recommendations based on the descriptive review of the literature and the analysis of experience  
Salvador Morales-Conde, Eugenio Licardie, Isaias Alarcón, Andrea Balla

## 4K/ICG for advanced visualization

- True 4K UHD resolution enables visualization of anatomical details
- ICG fluorescence can visualize blood flow beyond the limits of white light
- Fusion of 4K and ICG improves depth perception and tissue differentiation
- Real-time overlay supports continuous assessment without workflow interruption

<b>FULL HD</b>	<b>4K</b>	<b>4K + ICG/NIR</b>
		
<ul style="list-style-type: none"><li>▪ Established imaging standard</li><li>▪ Reliable image quality for routine procedures</li><li>▪ Limited image detail and depth perception</li></ul>	<ul style="list-style-type: none"><li>▪ Four times higher resolution for significantly increased image sharpness</li><li>▪ Improved visualization of anatomical details</li><li>▪ Digital zoom with preserved image quality</li></ul>	<ul style="list-style-type: none"><li>▪ Combination of high-resolution imaging and fluorescence information</li><li>▪ Simultaneous display of native and fluoroscopic data</li><li>▪ Additional visual information beyond white light imaging</li></ul>
<b>FULL HD</b>	<b>4K</b>	<b>ICG/NIR</b>

## Key aspects in surgery

				
<b>Tissue perfusion</b>	<b>Lymphatic mapping</b>	<b>Bile duct identification</b>	<b>Tumor localization</b>	<b>Critical anatomy visualization</b>
Visual assessment of tissue vascularization to support viability decisions	Visualization of lymphatic channels and sentinel lymph nodes	Fluorescence cholangiography for clear biliary anatomy	Support of identification for tumors and resection margins	Identification of structures such as the ureter to support surgical safety

# ICG/NIR FLUORESCENCE CAMERA SOLUTION

## Engineered for focus in surgery

### CONSENS Dual Chip Camera Head

- Dual CMOS Technology 4K-UHD & NIR
- Resolution 3840 x 2160
- 4 programmable buttons
- Camera weight < 350g with ICG TV adapter
- Fixed cable length 2.8m
- Splash-proof design
- C-mount



### CONSENS ICG/NIR-compatible TV adapter

- Parfocal TV adapter f14-32
- Focus and zoom ring
- For standard ocular, lockable
- Axial rotation of the optic
- C-mount

## Key benefits: designed for seamless surgical imaging



### Native UHD CMOS sensor

High-resolution surgical imaging



### Dedicated ICG/NIR CMOS sensor

Reliable 4K and ICG/NIR visualization



### Compact Design

Lightweight and ergonomic components



### Four-button control concept

Intuitive integration into the surgical workflow

# Platform for advanced surgical imaging

- Compact integrated solution 4K/NIR Camera unit with Dual LED/NIR light source (laser-free)
- One-touch Fusion instantly overlay fluorescence on the live white-light view
- 4 Display modes Fullscreen, Splitscreen, Fusion or PIP
- 2 video source PIP integrate your X-Ray, Ultrasound
- Recording of 4K Videos and pictures internal Flash drive or USB Port



## Optimized filters for image processing

- Comprehensive set of image parameters multiple adjustable parameters including brightness, contrast, sharpness and color settings
- Enhanced image filters improved differentiation of tissue and blood-related structures



**Color Contrast Enhancement**  
Intensifies color contrast without changing the natural color balance.

**Color Shift**  
Reduces red tones in the image and intensifies the green-blue spectral components.



## Efficient parameter navigation

- 8.4" capacitive LCD touchscreen
- Direct access to key parameters from the home screen
- One-Touch: White balance, Recording, Fusion
- Flat menu structure with minimal navigation depth
- Factory presets and customizable user profiles
- User-defined parameters can be saved and deleted

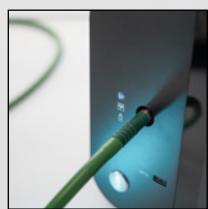
# ICG/NIR FLUORESCENCE CAMERA SOLUTION

## The combination of LED light and 4K camera in one device

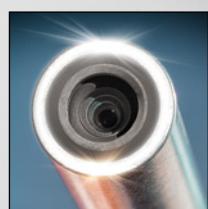
- Camera, illumination and recording combined in a single control unit
- One-click switching between white light, ICG/NIR and fusion visualization modes
- Integrated LED white light and NIR illumination laser-free technology
- Ergonomic camera head and centralized control designed for focused surgical handling
- Native 4K imaging provide ultra-high-definition visualization



Multifunctional camera head



High transmission light cable



Laser-free LED Illumination



8.4" LCD capacitive touchscreen



RZ Medizintechnik®  
PROGRESS IN SURGERY

User Mode

LAP

Display Mode

Split Screen

Chroma

DNR

5

M

White-Light

ICG/NIR Fluorescent

55



4K

RZ Medizintechnik®

# ICG/NIR FLUORESCENCE CAMERA SOLUTION



CONSENS ICG 4K Camera and light source  
including camera head

**300-700-100**



CONSENS ICG 4K Camera Head only  
with fixed 2.8m cable

**300-700-110**

## ACCESSORIES (for ICG/NIR use)



CONSENS ICG/NIR LED Light Cable  
Ø 4.8mm, 2300mm, with adapter

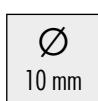
**250-148-230**



CONSENS TV-Coupler (compatible ICG/NIR)  
f14 - 32, C-mount

**250-015-040**

## ICG/NIR 4K LAPAROSCOPES



### 0° DIRECTION OF VIEW

330mm working length      300-700-400  
407mm overall length

### 30° DIRECTION OF VIEW

330mm working length      300-700-430  
407mm overall length



### 0° DIRECTION OF VIEW

300mm working length      300-755-400  
359mm overall length

### 30° DIRECTION OF VIEW

300mm working length      300-755-430  
359mm overall length

# 4K LAPAROSCOPES



∅  
10 mm

## 0° DIRECTION OF VIEW

330mm working length	300-100-400
405mm overall length	
450mm working length	300-200-400
532mm overall length	

## 30° DIRECTION OF VIEW

330mm working length	300-100-430
405mm overall length	
450mm working length	300-200-430
532mm overall length	



∅  
5.5mm

## 0° DIRECTION OF VIEW

300mm working length	300-155-400
356mm overall length	
424mm working length	300-255-400
480mm overall length	

## 30° DIRECTION OF VIEW

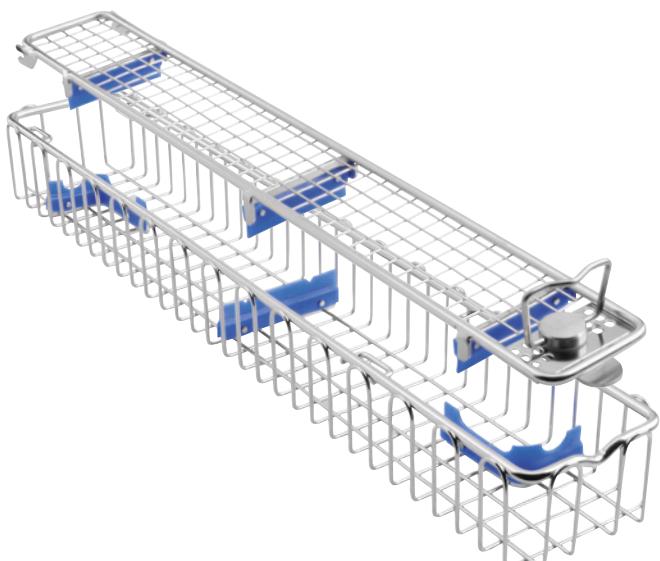
300mm working length	300-155-430
356mm overall length	
424mm working length	300-255-430
480mm overall length	

600-462-052

Endoscopes	max. 2
Endoscope length	max. 350mm
Dimensions	460 x 80 x 55mm

600-670-052

Endoscopes	max. 1
Endoscope length	max. 550mm
Dimensions	670 x 80 x 55mm



# ICG/NIR FLUORESCENCE CAMERA SOLUTION

## 4K MONITOR



- 4K ultra HD picture quality
- Maximum brightness up to 1000cd/m<sup>2</sup>
- Multi-window display (PIP and POP)
- Front panel protective cover
- Conforms to the EMC test standards

32" 4K Monitor

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300-001-031

## CONSENS CART



CONSENS Cart Essential  
with monitor holder, 3 shelf, 1 handle  
1 drawer, ocular holder

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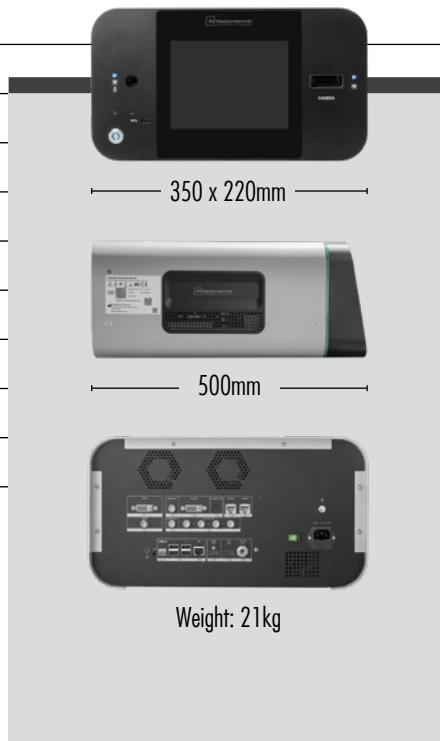
300-002-920

## ACCESSORIES (for CONSENS Cart)

- Additional shelf
- Keyboard holder
- Gas cylinder holder
- Cup camera holder
- Rear handles
- Cable winder
- Light cable holder
- Rear panel
- Flexible endoscope holder
- IV pole

## Technical Data

Light	Integrated white light + near infrared (NIR/ICG) LED laserfree
Fluorescence	Fusion Mode (overlay) Split Screen Full Screen Positive/negative Fluorescence modes Gradient intensity & Grayscale Fluorescence modes Overlay color customizable Fluorescence wavelength 785nm
Image Algorithms	DeHighlight - homogenous brightness DNR - Dynamic Range Shadow RDE - Red Dynamic Enhancement (Blood filter) Defog Detail Demoiré Chroma Spectral Filter
Dual Picture Mode	Original image and filter image view on the same monitor via split screen Record both endoscopy sources with one camera 5 Display modes, E-POP/PIP, etc
Zoom in/out	x 5.0 Zoom in x 0.5 Zoom out
Touch Display	8" LCD Display
Camera Buttons	4 programmable on the touch display
Recording	USB, supports 8TB USB input 4K recording and capture in real-time optional build-in SSD up to 4TB
Output interface	4K output x 4: HDMI, 12G-SDI, 3G-SDI, DP FHD output : DVI, 3G-SDI SD output : S-Video, CVBS
Processor	8-core





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