RZ Medizintechnik®
PROGRESS IN SURGERY

CONSENS

VP2 **ICG/NIR** VISUALIZATION PLATFORM



The improved vision



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[1], for tumor identification[2], sentinel node identification and lymphatic mapping in malignant tumors[3].

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 VP2 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.

[1] **Intraoperative use of indocyanine green fluorescence imaging in rectal cancer surgery: The state of the art**
Roberto Peltrini, et al 2014

[2] **The primary application of indocyanine green fluorescence imaging in surgical oncology**
Zhang-Yi Dai, et al 2014

[3] **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

FULL HD



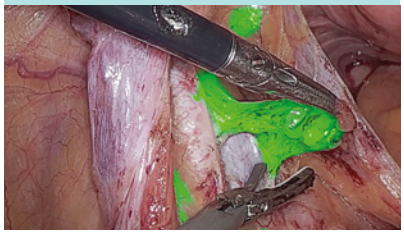
- Established imaging standard
- Reliable image quality for routine procedures
- Limited image detail and depth perception

4K



- Four times higher resolution for significantly increased image sharpness
- Improved visualization of anatomical details
- Digital zoom with preserved image quality

4K + ICG/NIR



- Combination of high-resolution imaging and fluorescence information
- Simultaneous display of native and fluoroscopic data
- Additional visual information beyond white light imaging

Key aspects in surgery

Tissue perfusion

Visual assessment of tissue vascularization to support viability decisions

Lymphatic mapping

Visualization of lymphatic channels and sentinel lymph nodes

Bile duct identification

Fluorescence cholangiography for clear biliary anatomy

Tumor localization

Support of identification for tumors and resection margins

Critical anatomy visualization

Identification of structures such as the ureter to support surgical safety

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

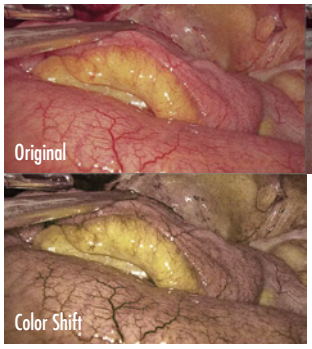
Platform for advanced surgical imaging

- 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 intesifies 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

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


4K+
INTEGRATED
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PROGRESS IN SURGERY
User Mode
LAP
Display Mode
Split Screen
Chroma
5
DNR
M
White-Light
ICG/NIR Fluorescent
55
4K
RZ Medizintechnik

CONSENS VP2 4K/ICG VISUALIZATION PLATFORM



CONSENS VP2 4K/ICG Visualization Platform
including camera head

300-700-100



CONSENS VP2 4K/ICG Camera Head only
with fixed 2.8m cable

300-700-110

ACCESSORIES (for ICG/NIR use)



CONSENS ICG/NIR LED Light Cable
with both adapters

Ø 4.8mm, 2300mm	250-148-230
Ø 4.8mm, 3000mm	250-148-300
Ø 3.5mm, 2300mm	250-135-230
Ø 3.5mm, 3000mm	250-135-300



CONSENS 4K TV-Coupler (compatible ICG/
NIR)
f14 - 32, C-mount

250-015-040

ICG/NIR 4K LAPAROSCOPES



Ø 10 mm

0° DIRECTION OF VIEW

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

30° DIRECTION OF VIEW

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

Ø 5.5mm

0° DIRECTION OF VIEW

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

30° DIRECTION OF VIEW

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

4K LAPAROSCOPES



Ø 10 mm

0° DIRECTION OF VIEW

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

30° DIRECTION OF VIEW

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



Ø 5.5mm

0° DIRECTION OF VIEW

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

30° DIRECTION OF VIEW

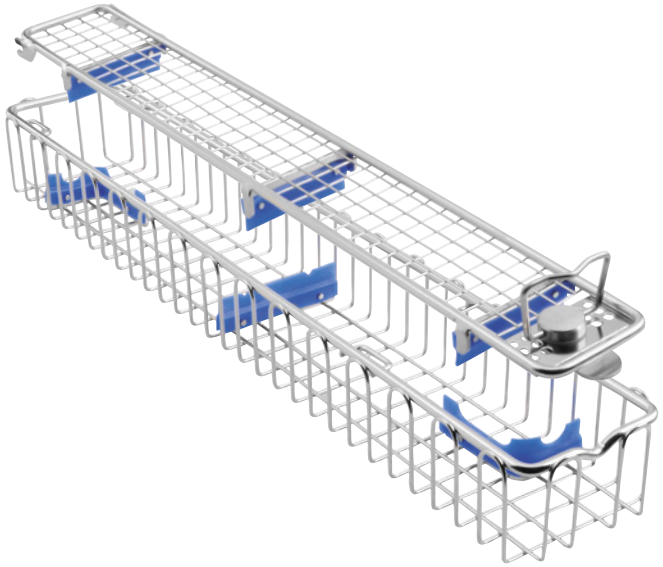
300mm working length 356mm overall length	300-155-430
424mm working length 480mm overall length	300-255-430

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



4K MONITOR



- 4K ultra HD picture quality
- Maximum brightness up to 1000cd/m²
- Multi-window display (PIP and POP)
- Front panel protective cover
- Medical Grade
- Conforms to the EMC test standards

32" 4K Monitor

300-001-031

CONSENS Cart



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

300-002-920

ACCESSORIES (for CONSENS Cart)

Addional 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
	Lifetime: >30.000 hours
	CRI: >90
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 Dynmaic Enhancement (Blood filter)
	Defog
	Detail
	Anti-moire
	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	4 buttons
	programmable on the touch display
Recording	USB, supports 8TB USB input
	4K recording and capture in real-time
	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



350 x 220mm



500mm



Weight: 21kg

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