



Minimally Invasive Advanced  
Surgical Endoscopy

Near-Infrared/ICG Fluorescence  
Imaging System





As perfusion detection and differentiation of structures is crucial in endoscopic surgery, the combination of indocyanine green (ICG) and light with near infrared (NIR) wavelengths allows for the visualisation of anatomic structures. This technique is widely used by scientists to study tissue perfusion, anatomical features, internal organs, and lymphatics. It also helps physicians visualize tumour perfusion and assist in surgical technique precision. Fujifilm aims to offer a wide range of technologies to assist in enhancing visualization beyond the eye during endoscopic procedures with our 4K Near-Infrared Fluorescence Imaging Technology platform.

### Multiple Discipline Applications



#### Colorectal

Designed to assess perfusion rate and anastomotic leak with NIR/ICG Green Mode with 4K resolution.



#### Urology

Built for accurate identification of anatomical features, overcoming deviances and poor visibility with 4K resolution.



#### General Surgery

Assist in detecting bile duct structures and anastomotic leaks using NIR/ICG imaging.



#### Orthopaedic

Aims to overcome poor lighting in posterior compartments and improve fluid management and resection.



#### Gynaecology

Enhance deep pelvic lighting and aids in identifying sentinel lymph of sentinel lymph node using Intuitive NIR/ICG mode (Intensity)

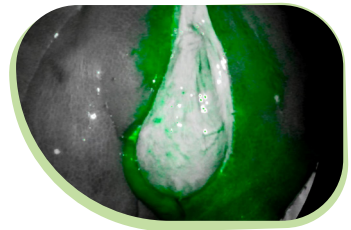


#### ENT

Designed to improve colour rendering, posterior lighting of the cavernous sinus with special colour enhancement specification.

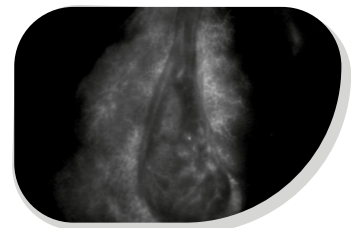
#### NIR/ICG Green

Optimal for perfusion assessment & biliary duct visualization



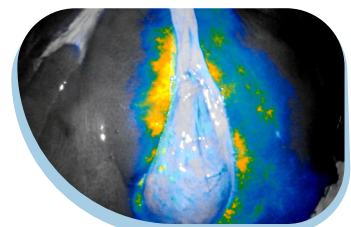
#### NIR/ICG Contrast

Allows for detecting vessel and arterial perfusion to determine stable anastomosis



#### NIR/ICG Intensity

Multicolor Scale Display with high-contrast signal gradients between weak and strong NIR signals helps in delineation of lymph nodes against surrounding fluorescence signal



Min Max

# Product Specifications



## Camera Control Unit (CCU) 4K UHD ITEM NO 95-3985

Fluorescence imaging modes	NIR FI Green, NIR FI Contrast, NIR FI Intensity
Operation control panel	On-Off, menu, white balance, photo, video
Video outputs 4K UHD	1 x 4K / UHD 3840 x 2160p (4x 3G-SDI)
Video outputs Full HD	2 x 3G-SDI, 2 x DVI
Interfaces	1 x MIS-BUS 2 x Remote IN 2 x Remote OUT 2 x USB
Dimensions	295 x 129,5 x 355 mm (W x H x D)
Weight	Approx. 7 kg
Standard compliance	IEC 60601-1
Electromagnetic compatibility	IEC / EN 60601-1-2
Directive compliance	CE-mark
Supply voltage	100 - 240 V ~ 50 / 60 Hz
Current consumption	1,2 - 0,5 A
Degree of protection	IP 21
Protection class acc. to IEC 60601-1	Protection class I
Classification within the meaning of applicable EU guidelines	Class I medical device
Classification as per IEC / CISPR 11	Group 1, Class A

### NIR/ICG – Near-infrared/ICG fluorescence imaging modes

**ICG Overlay Green:** visualization of the fluorescence signal as overlay for high-contrast visualization of targeted tissue structures  
**ICG Contrast:** visualization of the pure fluorescence signal indicated by the colour white and all other areas of the image appear dark for maximum contrast  
**ICG Intensity:** visualization of the NIR fluorescence signal intensity indicated by a multi-colour scale

### LED Laser Light Source

#### Outstanding performance

4K UHD imaging (3840 x 2160, 50 / 60p)  
 BT2020, large 4K UHD colour space  
 Integrated photo capture and video recording on external storage media via USB  
 Colour Shift, Selective Colour Enhancement, Smoke Reduction, Grid Removal

#### Multi-connectivity

NIR , 4K, Full HD Zoom Camera Head

## LED Light Source and Light Guide ITEM NO 05-0761nir & 05-0094l-nir



TECHNICAL DATA LIGHT GUIDE	
Length	3.000 mm
Active diameter	4.8 mm
Classification within the meaning of applicable EU guidelines	Class I medical device
Applied part as per IEC 60601-1	CF

### NIR/ICG LIGHT GUIDE

Specified equipment for NIR laser activation  
 Class 1M laser output at distal end (endoscope tip)

TECHNICAL DATA LIGHT SOURCE	
Illumination type	High power white light LED
Color Rendering Index	CRI Ra > 90
Color temperature	5,600 K
Luminous flux	1,420 lm
Lifetime of the illuminant	> 30,000 h

LASER OPERATION	
Laser aperture for NIR radiation emission	Light guide end and endoscope tip

### LIGHT SOURCE IN GENERAL

Operation control panel	LCD Display with illuminated buttons
Standard compliance	IEC 60601-1
Electromagnetic compatibility	IEC / EN 60601-1-2
Directive compliance	CE-mark
Dimensions	295 x 130 x 355 mm (W x H x D)
Weight	8 kg
Supply voltage	100 - 240 V ~ 50 / 60 Hz
Current consumption	1,6 - 0,6 A
Degree of protection	IP 21
Appliance class as per IEC 60601-1	Class 1
Classification as per IEC / CISPR 11	Group 1, Class A
Applied part as per IEC 60601-1	CF defibrillation-proof

### LED LASER LIGHT SOURCE

- Outstanding light quality with LED: CRI > 90
- Very silent device, virtually inaudible
- Fully automatic light control
- Multi-light-guide adapter

## Laparoscopes Ø 10 mm

WORKING Ø	WORKING LENGTH	DIRECTION OF VIEW	FIELD OF VIEW	ITEM NUMBER
10 mm	344 mm	0°	wide angle	11-0131nir
10 mm	344 mm	30°	wide angle	11-0143nir

Standard compliance	IEC / EN 60601-1 IEC / EN 60601-1-2 IEC / EN 60601-1-2-18 IEC / EN 60825-01
Directive compliance	CE-mark



### Especially designed laparoscopes for NIR/ICG applications

Special filter  
 Optical system based on featuring: High depth of field, Sharp images to the edges, High-contrast image & Homogeneous illumination  
 Low cost of ownership due to long life cycle

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