

TONTARRA

ENDOSCOPY



ENDOOR - TOWER

ABOUT US

For more than 50 years “made by TONTARRA, Germany” is a synonym for state-of-the-art surgical and endoscopic instruments and equipment.

This success and the international recognition of the skillfulness in surgical and endoscopic instrument making of Tontarra Medizintechnik GmbH are based on our commitment to medical innovation, mastery in manufacturing, and a strong focus on our continuing tradition of excellence.

The confidence in our surgical and endoscopic lines as expressed by our international customers, distribution- and OEM-partners are a driving force to face and meet new challenges.

TONTARRA



Indispensable ‘tools’ for maturing new ideas into high-precision surgical instruments of highest precision include our state-of-the-art manufacturing facility and production processes, and especially the comprehensive technical know-how, ingenuity and strong commitment of our entire team.

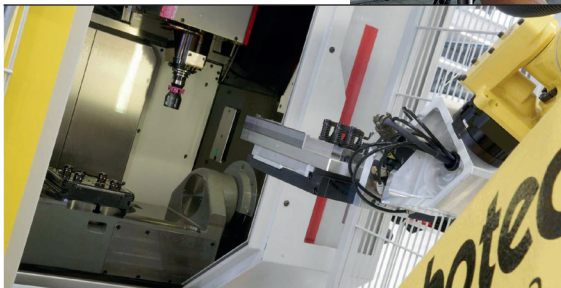
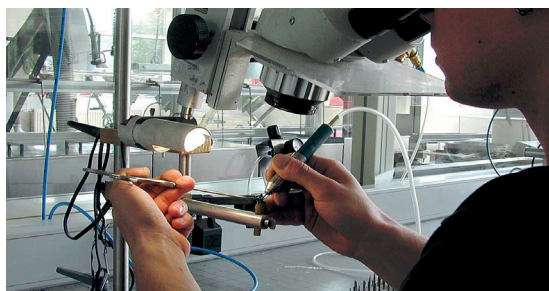


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EndoorCam 10

Camera Models

EndoorCam 10 Full HD camera:

Maximum compatibility of a high performance camera system to existing infrastructures.



An endoscopic camera controller for best in class image quality.

Edge enhancement, automatic gain control (AGC) and dynamic contrast function guarantee a best in class performance.

Time saving **camera presets** for Laparoscopy, Arthroscopy, Gynecology, Urology, ENT, Neuroendoscopy and Fiberscope complete the user-friendliness.

Two different camera heads for use with DIN ocular endoscopes:

- Camera Head Full HD Zoom
- Camera Head Full HD Fix 90° Angled

Enabling use in different medical departments and application areas.



EndoorCam 10

Art.No. SCHÖ/95-3930 *

Controller Full HD USB image capture

- ▶ Full HD USB image capture
- ▶ Multi-connectivity
- ▶ Videoalgorithms: selective color enhancement, smoke reduction, grid removal

TECHNICAL DATA	
Art.No. SCHÖ/95-3930	Controller Full HD USB image capture
Operation control panel	On-Off, menu, white balance, photo
Video outputs	High definition: 2 x DVI (1080 p), 2 x HD-SDI (1080i)
Remote outputs	2 x 3.5 mm phone jack connectors (to connect recording/printer devices)
Remote inputs	2 x 3.5 mm phone jack connectors (to connect a foot control switch)
Connectivity	SCHÖLLY MIS-Bus interface
Dimensions/Weight	295 x 100 x 355 mm (W x H x D) / 4.39 kg
SYSTEM	
Standard compliance	IEC 60601-1 2 nd and 3 rd
Directive compliance	CE-mark
Power connection	100 - 240 V AC, 50/60 Hz
Power consumption	0.8 - 0.4 A

* Original Manufacturer Product of SCHÖLLY

EndoorCam 20 NIR FI

Camera Models

EndoorCam 20 NIR FI **Native** Full HD camera:

An endoscopic NIR FI camera controller for visualization with Near Infrared Technology for clear definition of anatomic structures and photo-/videocapturing with integrated USB.

LUMI**niR**
near infrared

Recording made easy via controller button or via illuminated camera head button.

Equipped with NIR FI technology for use with standard Endoor HD Camera Heads and NIR FI Camera Head. First class **images & videos** based on state-of-the-art technologies.

Equipped with a **Native Full HD resolution** for capturing and storing images and video recordings via USB in Full HD.

Different **video algorithms** contribute to the excellent picture quality: Color shift 1+2, selective color enhancement, smoke reduction, grid removal and picture out of picture mode for the video algorithms.

In combination with the **EndoorLight 300 LED & EndoorLight 300 NIR FI light source**, the patented **automatic light control** offers an additional advantage for user and patient.

For **maximum image quality** the **3CMOS** Camera Head is recommended.



EndoorCam 20 NIR FI

Art.No. SCHO/95-3981 *

Controller Full HD

USB image / video capture / advanced image features

- ▶ Full HD USB image / video capture
- ▶ Multi-connectivity
- ▶ Videoalgorithms: color shift 1 + 2, selective color enhancement, smoke reduction, grid removal
- ▶ Picture out of picture modus at use of video algorithms
- ▶ Automatic light control in combination with EndoorLight 300 LED & EndoorLight 300 NIR FI light source
- ▶ Compatible with all Endoor HD Camera Heads
- ▶ Compatible with NIR FI Camera Head

TECHNICAL DATA	
Art.No. SCHO/95-3981	NIR FI Controller Full HD USB image / video capture
Operation control panel	On-Off, menu, white balance, photo, video
Video outputs	High definition: 2 x DVI (1080 p), 2 x 3G-SDI (1080i)
Interfaces Remote outputs	2 x 3.5 mm phone jack connectors (to connect recording/printer devices)
Interfaces Remote inputs	2 x 3.5 mm phone jack connectors (to connect a foot control switch)
Interfaces USB Keyboard / Drive	2 x USB
Connectivity	SCHÖLLY MIS-Bus interface
Dimensions/Weight	295 x 100 x 355 mm (W x H x D) / 5.7 kg
SYSTEM	
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	0.8 - 0.4 A
Protection class as per IEC 60601-1	Protection class I
Degree of protection	IP 21
Classification as per Directive 93/42/EEC	Class I medical device
Classification as per IEC/CISPR 11	Group 1 Class A

* Original Manufacturer Product of SCHÖLLY

EndoorCam Features

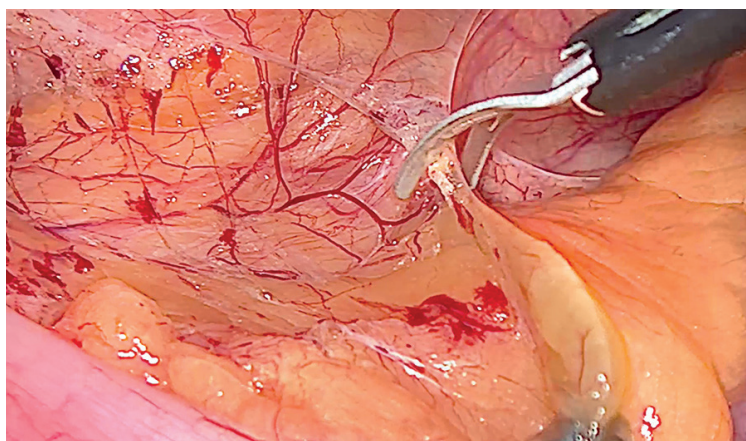
Camera features

EndoorCam – NATIVE FULL HD RESOLUTION

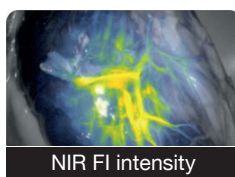
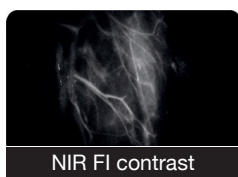
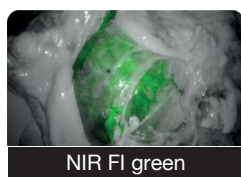
No compromise in image quality

Latest CMOS chip technology integrated in the **EndoorCam** native full HD endoscopy camera systems provides a brilliant image quality with highest sensitivity. Edge enhancement, dynamic contrast function and various video algorithms lead to a vivid, crystal clear image.

Vessels and tissue structures can be highlighted, the view during HF or laser applications can be improved or the honeycomb structure of image bundle endoscopes can be reduced. All these details and technologies lead to this best-in-class camera solution.



NIR FI Modes:



► Video Algorithm Color Shift 1 + 2

The range of advanced imaging algorithms is completed with „Color Shift“ modes. Spectral colors are shifted and exchanged. It can be used to enhance vessels and tissue structures.

► Picture out of picture mode (POP)

User can display the image improved by video algorithm either in fullscreen or use it side by side, with the original image, both on the same monitor in PoP-mode.

► Automatic Light Control

Perfect integration of LED light source and camera through MIS-Bus. The light source can be switched on and off and regulated in brightness through the camera controller and camera head buttons. The camera can even control the luminance of the light source fully automatic.

► OR-Integration Module

As an option the camera can be controlled by your integrated OR system. The whole camera menu can be accessed by your OR control system. Additionally we offer solutions for still image archive and video streaming through Ethernet hospital network to a KIS/PACS system

► NIR FI compatible

To visualize and access blood flow and tissue perfusion as well as specific anatomical structures during multiple MIS procedures

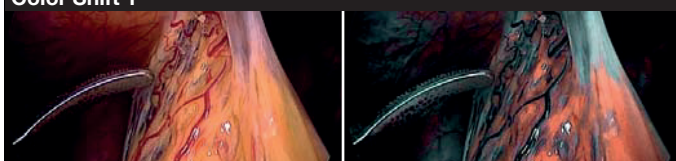
EndoorCam Features

Camera features

EndoorCam – NATIVE FULL HD RESOLUTION



Color Shift 1



Selective Color Enhancement (SCE)



Smoke reduction



System overview	EndoorCam 10 SCHO/95-3930	EndoorCam 20 NIR FI SCHO/95-3981
Video algorithms		
▶ Selective color enhancement	✓	✓
▶ Smoke reduction	✓	✓
▶ Grid removal	✓	✓
▶ Clear view	optional	optional
▶ Color Shift 1 + 2	-	✓
Picture out of picture mode (PoP) for all above mentioned algorithms	-	✓
Integrated galvanic insulation for use with chip-in-tip endoscopes	-	✓
Compatibility with future camera heads e.g. autoclavable heads	✓	✓
Full HD USB image capture	✓	✓
Full HD USB video capture	-	✓
Automatic light control with NEW LED light source	-	✓
OR integration module	-	optional
Camera Head Full HD Zoom	✓	✓
Camera Head Full HD Fix 90° Angled	✓	✓
Camera Head Full HD 3CMOS Zoom	-	✓
Camera Head NIR FI	-	✓

▶ Color Shift 1

Enhances vessels and tissue structures. Spectral colors are shifted and exchanged; with a stronger effect.

▶ Color Shift 2

Enhances vessels and tissue structures. Spectral colors are shifted and exchanged; with a weaker effect.

▶ Selective Color Enhancement

Enhances vessels and tissue structures with higher color contrast. The original color impression remains.

▶ Smoke reduction

For a clear view during dissection technologies that create smoke (e.g. HF).

▶ Grid removal

Reduces the honeycomb structure of image bundle endoscopes.

▶ Clear view

For a clear view during operations in hazy liquids (e.g. Arthroscopy)

EndoorCam 4K NIR FI

Camera Model

EndoorCam 40 NIR FI ULTRA HD 4K camera:

High-end endoscopic camera system

4K and Full HD outputs for maximum flexibility



LUMIniR
near infrared

Higher resolution permits **more natural visualization**

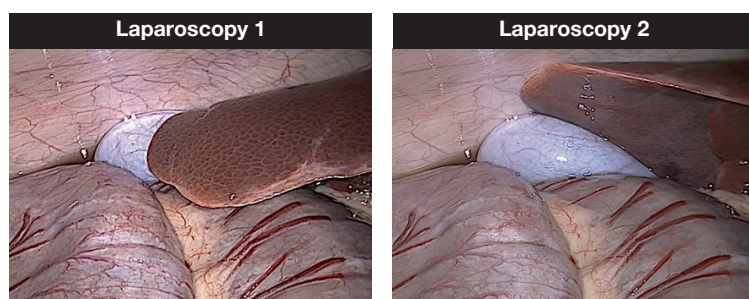
Better resolution of detail

Optimized settings for Laparoscopy, Arthroscopy, Gynecology, Urology, ENT, Fibroscopy and Neuroendoscopy.

4K and Full HD **backwards compatibility** for maximum flexibility

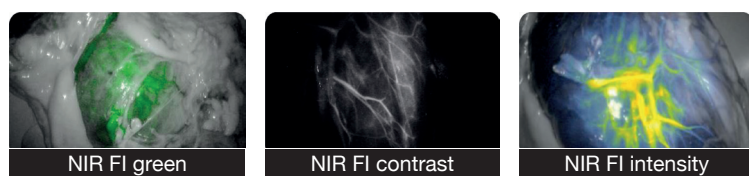
HDR: High Dynamic Range of brightness in UHD for improved visualization

Two 4K separate settings for Laparoscopy, standard and fine for large monitors



Techn. Explanation: Lap1= high sharpness vs. Lap2= high resolution (Source: Schölly)

NIR FI Modes:



EndoorCam 40 NIR FI

Art.No. SCHO/95-3985 *

NIR FI Controller 4K UHD USB Image/Videeo Capture

- ▶ Outstanding performance
- ▶ 4K UHD imaging (3840 x 2160, 50 / 60p)
- ▶ BT2020, large UHD color space
- ▶ Image / video capturing via USB (Full HD)
- ▶ Multi-connectivity:
 - NIR FI: camera head NIR FI full HD zoom
 - 4K UHD: camera head 4K UHD zoom
 - Full HD: camera head full HD zoom, full HD fix focal length, full HD 90° angled
- ▶ MIS-Bus interface for automatic and manual light source control via camera head
- ▶ NIR FI compatible to visualize and access blood flow and tissue perfusion as well as specific anatomical structures during multiple MIS procedures

* Original Manufacturer Product of SCHÖLLY

EndoorCam 4K NIR FI

Camera Model

EndoorCam 40 NIR FI ULTRA HD 4K camera:

High-end 4K UHD endoscopic camera system
4K and Full HD outputs for maximum flexibility



LUMInIR
near infrared

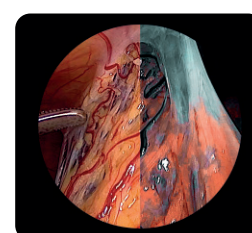
Video algorithms – with Picture out of Picture mode (POP)

- > Color Shift 1 + 2 – spectral colors can be shifted and exchanged in order to enhance vessels and tissue structures
- > Selective Color Enhancement (SCE) – for a much improved representation of the vessels and the tissue structure
- > Smoke reduction – for a better view during dissection technologies (e.g. HF)
- > Grid removal – reduces the honeycomb structure of image bundle endoscopes

Large UHD Color Space

- > BT.2020 contributes to better visualization, especially in red colors (blood)
- > Colors optimized for the light spectrum of EndoorLight 300 LED & NIR FI

TECHNICAL DATA	
Art.No. SCHO/95-3985	NIR FI Controller 4K UHD USB Image/Video Capture
Operation control panel	On-Off, menu, white balance, photo, video
Video outputs 4K-UHD	4 x 3G-SDI (3840 x 2160p, 50 / 60)
Video outputs HD	2 x 3G-SDI, 2 x DVI (1080p)
Remote outputs	2 x 3.5 mm (to connect recording / printer devices)
Remote inputs	2 x 3.5 mm (to connect a foot control switch) 2 x USB (1 x for image and video capture, 1 x keyboard)
Connectivity	MIS-Bus interface
Standard compliance	IEC 60601-1 (3.1 edition)
Electromagnetic compatibility	IEC/EN 60601-1-2 (4th)
Directive compliance	CE-mark
Dimensions	295 x 130 x 355 mm (W x H x D)
Weight	6.6 kg
Supply voltage	100 - 240 V~, 50/60 Hz
Power consumption	1.2 - 0.5 A
Protection class acc. to IEC 60601-1	Protection class 1
Degree of protection	IP21
Classification acc. to Directive 93/42/EEC	Class 1 medical device
Classification as per IEC/CISPR 11	Group 1 Class A



Video algorithms
(e.g. Color shift 1)

A perfect match for perfect colors



Large camera color space

&



High CRI Ra > 90

EndoorCam 40 camera
with EndoorLight 300
light source



AUTO

Automatic light control

* Original Manufacturer Product of SCHÖLLY

EndoorCam

Camera Heads

EndoorCam Camera Head Full HD Zoom: For a wide variety of endoscopic applications

Lightweight & ergonomic

Three individually programmable and illuminated keys.

Manually adjustable focal length of 14.25 - 28 mm.

Illuminated control buttons for easy identification in dark OR.

Designed to ensure that the full HD image remains sharp when zooming.

All-purpose 2 x optical zoom offers full screen laparoscopic images.

TECHNICAL DATA	
Art.No. SCHO/95-3901	Camera Head Full HD Zoom
Image sensor	1/3" CMOS, progressive scan
Sensor resolution	1920 x 1080, 50/60p
Function keys	3 individ. programmable & illuminated keys
Endocoupler	For standard ocular, lockable
Parfocal zoom	f = 14.25 - 28 mm
Waterproof connection plug	Yes
Lockable endoscope connection	Yes
Length camera cable	3.5 m
Weight camera head (without cable)	210 g
Control unit compatibility	EndoorCam 10 & EndoorCam 20



Camera Head Full HD Zoom

Art.No. SCHO/95-3901 *

Designed for a variety of endoscopic applications

- ▶ Full HD sensor resolution
- ▶ Illuminated control buttons
- ▶ 2x optical zoom
- ▶ 3x digital zoom
- ▶ Lockable endoscope connection
- ▶ Time saving and useful presets
- ▶ All rigid, flexible or semi-flexible endoscopes with standard ocular can be connected
- ▶ Sterilization via Steris and Sterrad

* Original Manufacturer Product of SCHÖLLY

EndoorCam

Camera Heads

EndoorCam Camera Head Full HD Fix 90° Angled:
Especially useful for urologic and gynecologic procedures



One focus ring with a focal length of 14.25 mm.

Illuminated control buttons for easy identification in dark OR.

Endocoupler has a 90° angle so that the camera cable does not hinder the surgeon during the treatment.

Self-aligning to keep the horizon fixed while turning the endoscope.

The rotation can be stopped using the pendulum locking lever.

Low weight and long camera cable enables a long procedure time with maximal freedom of movement.



**Camera Head Full HD
Fix 90° Angled**

Art.No. SCHO/95-3903 *

TECHNICAL DATA	
Art.No. SCHO/95-3903	Camera Head Full HD Fix 90° Angled
Image sensor	1/3" CMOS, progressive scan
Sensor resolution	1920 x 1080, 50/60p
Function keys	3 individ. programmable & illuminated keys
Endocoupler	For standard ocular, freely rotating & lockable
Focal length	f = 14.25 mm
Waterproof connection plug	Yes
Lockable endoscope connection	Yes
Length camera cable	3.5 m
Weight camera head (without cable)	190 g
Control unit compatibility	EndoorCam 10 & EndoorCam 20

**Designed for urology, gynecology
and ENT surgeries**

- ▶ Full HD sensor resolution
- ▶ Illuminated control buttons
- ▶ Lightweight and slim design
- ▶ 3x digital zoom
- ▶ Lockable endoscope connection
- ▶ Time saving and useful presets
- ▶ All rigid, flexible or semi-flexible endoscopes with standard ocular can be connected
- ▶ Sterilization via Steris and Sterrad

* Original Manufacturer Product of SCHÖLLY

EndoorCam

Camera Heads

EndoorCam Camera Head **Native** Full HD 3CMOS Zoom:

For excellent color reproduction



Exceptionally ergonomic 3CMOS head for the EndoorCam 20 camera platform.

Illuminated control buttons for easy identification in dark OR.

All-purpose **2 x optical zoom** for full screen laparoscopic images as well as circular images of small endoscopes (e.g. arthro, uro, fiber).

Lockable endoscope connection for safe use.

Compatible for STERRAD sterilization.



Camera Head Full HD 3CMOS Zoom

Art.No. SCHO/95-3906 *

TECHNICAL DATA	
Art.No. SCHO/95-3906	Camera Head Full HD 3CMOS Zoom
Image sensor	3 x 1/3" CMOS, progressive scan
Sensor resolution	3 x 1920 x 1080, 50 / 60p
Function keys	3 individ. programmable & illuminated keys
Endocoupler	For standard ocular, lockable
Parfocal zoom	f = 14.25 - 28 mm
Waterproof connection plug	Yes
Lockable endoscope connection	Yes
Length camera cable	3.5 m
Weight camera head (without cable)	300 g
Applied part as per IEC 60601-1	Type CF defibrillation-proof
Control unit compatibility	EndoorCam 20

Outstanding performance

- ▶ 3CMOS sensor, native Full HD
- ▶ Best color reproduction due to 3CMOS sensor design
- ▶ 2x optical zoom (plus 3x digital zoom)
- ▶ Unique lockable endoscope connection
- ▶ Sterilization via Steris and Sterrad
- ▶ Time saving and useful presets
- ▶ All rigid, flexible or semi-flexible endoscopes with standard ocular can be connected
- ▶ Illuminated control buttons

* Original Manufacturer Product of SCHÖLLY

EndoorCam 4K

Camera Head

EndoorCam Camera Head 4K UHD Zoom:
3CMOS Sensor and 2x Optical Zoom



Exceptionally **ergonomic** design

Colored and **illuminated control buttons**

Programmable camera head control buttons

Separate **locking mechanism** for endoscopes (in addition to clamping)

No sensor resolution loss through zooming due to optical zoom

Permanently connected **parfocal zoom, holds focus** while zooming



Camera Head 4K UHD Zoom

Art.No. SCHO/95-3905 *

TECHNICAL DATA	
Art.No. SCHO/95-3905	Camera Head 4K UHD Zoom
Image sensor	3 x 1/3" CMOS, progressive scan
Sensor resolution	3840 x 2160, 50 / 60p
Function keys	3 individ. programmable & illuminated keys
Endocoupler	For standard ocular, lockable
Parfocal zoom	f = 14.25 - 28 mm
Waterproof connection plug	Yes
Lockable endoscope connection	Yes
Length camera cable	3.5 m
Weight camera head (without cable)	330 g
Applied part as per IEC 60601-1	Type CF defibrillation-proof
Control unit compatibility	EndoorCam 40

Outstanding performance

- ▶ 4K UHD imaging (3840 x 2160, 50 / 60p)
- ▶ 3CMOS sensor
- ▶ BT2020, large UHD color space
- ▶ 2 x optical zoom (plus 3 x digital zoom)
- ▶ Unique lockable endoscope connection
- ▶ Sterilization via Steris and Sterrad
- ▶ Integrated Endocoupler for less interfaces
- ▶ Waterproof connection plug
- ▶ Type CF defibrillation proof

* Original Manufacturer Product of SCHÖLLY

EndoorCam 4K

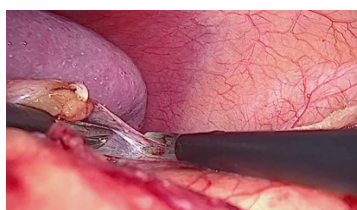
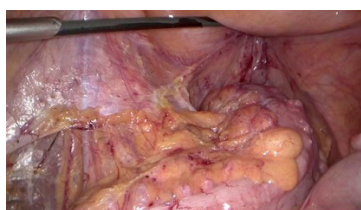
Camera Head

EndoorCam Camera Head 4K UHD Zoom:
3CMOS Sensor and 2x Optical Zoom



All-purpose 2x optical zoom for full screen laparoscopic images as well as circular images of small endoscopes (e.g. arthro, uro, fiber).

- > Better resolution due to 2x optical zoom combined with native Full HD 3-Chip technology
- > Higher number of active pixels



Time saving and useful presets

- > Optimized settings for Laparoscopy, Arthroscopy, Gynecology, Urology, ENT, Fibroscopy and Neuroendoscopy.
- > Individually programmable and illuminated function keys

Flexibility

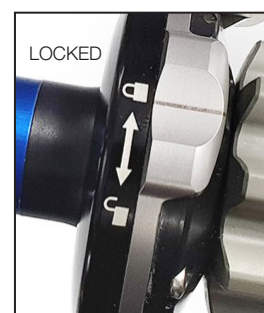
- > All rigid, flexible or semi-flexible endoscopes with standard ocular can be connected



Illuminated camera head buttons

- ▶ Easy to identify in dark OR-room
- ▶ Color coded: White = White balance

Lock/Unlock endocoupler grip



Endoscope clamping



* Original Manufacturer Product of SCHÖLLY

EndoorCam NIR FI

EndoorCam NIR FI Camera Head Full HD Zoom: For a wide variety of endoscopic applications

LUMInIR
near infrared

Lightweight & ergonomic

Three individually programmable and illuminated keys for easy identification in dark OR.

Green NIR FI button allows easy switch from white light image to NIR FI imaging modes.

Manually adjustable focal length of 14.25 - 28 mm.

Designed to ensure that the full HD image remains sharp when zooming.

All-purpose 2x optical zoom and 3x digital zoom offers full screen laparoscopic images.



NIR FI Camera Head Full HD Zoom

Art.No. SCHO/95-3908 *

Designed for a variety of endoscopic applications

- ▶ Full HD sensor resolution
- ▶ Illuminated control buttons
- ▶ Green ICG button for fast and easy switch to NIR FI Modes
- ▶ 2x optical zoom
- ▶ 3x digital zoom
- ▶ Lockable endoscope connection
- ▶ Time saving and useful presets
- ▶ All rigid, flexible or semi-flexible endoscopes with standard ocular can be connected
- ▶ Sterilization via Steris and Sterrad
- ▶ Powerful sensor with improved NIR sensitivity

TECHNICAL DATA	
Art.No. SCHO/95-3908	NIR FI Camera Head Full HD Zoom
Image sensor	1/3" CMOS, progressive scan
Sensor resolution	1920 x 1080, 50/60p
Function keys	3 individ. programmable & illuminated keys
Endocoupler	For standard ocular, lockable
Parfocal zoom	f = 14.25 - 28 mm
Waterproof connection plug	Yes
Lockable endoscope connection	Yes
Length camera cable	3.5 m
Weight camera head (without cable)	210 g
Control unit compatibility	EndoorCam 20 NIR FI & EndoorCam 40 NIR FI

* Original Manufacturer Product of SCHÖLLY

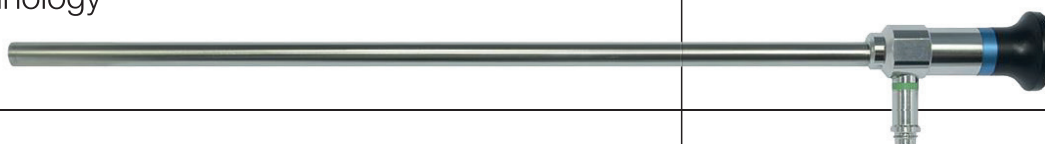
Endoscopes

Endoscopes

Special designed **NIR FI Endoscopes:**

Ø 10.0 mm Laparoscopes are based on the latest image technology

LUMIniR
near infrared



Specially designed NIR FI Endoscopes to transmit the NIR wave lengths are mandatory to detect the ICG Fluorescence. Only a complete image chain consisting of NIR camera unit, NIR camera head, NIR light source, NIR Light guide and NIR endoscopes allow a perfect visualization and functionality of the ICG Fluorescence.

Our Ø 10.0mm Laparoscopes are based on the latest image technology and optical components which ensure a high resolution and homogenous illumination of the complete OR field.

The new optical technologies behind the UHD telescopes will be standard of tomorrow's imaging systems, featuring:

- ▶ A nearly constant resolution from center to edge
- ▶ More depth of field for minimal refocusing
- ▶ Even superior contrast for better detail recognition
- ▶ Nearly 3-dimensional image (UHD)
- ▶ Class 1M laser output at distal end in combination with SCHÖLLY NIR FI SYSTEM

Description	Art. No.
Laparoscope UHD/NIR ▶ Ø 10.0 mm; 0° ▶ FL 344 mm	SCHO/11-0131NIR
Laparoscope UHD/NIR ▶ Ø 10.0 mm; 30° ▶ FL 344 mm	SCHO/11-0143NIR



0°



30°

* Original Manufacturer Product of SCHÖLLY

EndoorLight 300 LED

Light Source

EndoorLight 300 luminous intensity LED light source:
Unique high Color Rendering Index (CRI): Ra > 90



Universal LED light source for all applications comparable to 300 W Xenon.

Patented fully automatic light control, permitting reliable and efficient use in combination with the **EndoorCam 20 NIR FI** and **EndoorCam 40 NIR FI** camera system.

Quick adjustment by the user via camera control unit or camera head button.

Very silent during use.

The **multi-light guide adapter** allows the use of light guides from Storz, Wolf and Olympus.

Bus system for easy connection to camera system.



EndoorLight 300 LED

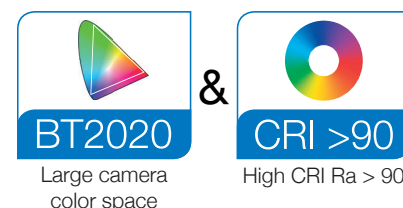
Art.No. SCHO/05-0760led *

Light Source

- ▶ High color rendering index (CRI): RA > 90
- ▶ Low noise level
- ▶ Multi-light-guide adapter
- ▶ Automatic light control in combination with EndoorCam 20 NIR FI & EndoorCam 40 NIR FI
- ▶ Meets high requirements for CF with defibrillators

TECHNICAL DATA	
Art.No. SCHO/05-0760led	EndoorLight 300 LED
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
Operation control panel	LCD Display with illuminated buttons
Standard compliance	IEC 60601-1 (3.1 Edition)
Electromagnetic compatibility	IEC/EN 60601-1-2 (3 rd and 4 th)
Directive compliance	CE-mark
Dimensions (W x H x D)	295 x 130 x 355 mm
Weight	8 kg
Supply voltage	100 - 240 V~, 50/60 Hz
Power consumption	1.6 - 0.6 A
Protection class acc. to IEC 60601-1	Protection class I
Degree of protection	IP21
Applied part as per IEC 60601-1	Type CF defibrillation-proof
Classification acc. to Directive 93/42/EEC	Class I medical device
Classification as per IEC/CISPR 11	Group 1 Class B

A perfect match for perfect colors



EndoorCam 40 camera with EndoorLight 300 light source

* Original Manufacturer Product of SCHÖLLY

EndoorLight 300 NIR FI

Light Source

EndoorLight NIR FI luminous intensity LED light source:
Unique high Color Rendering Index (CRI): Ra > 90

LUMInIR
near infrared

Universal LED light source for all applications comparable to 300 W Xenon.

Patented fully automatic light control, permitting reliable and efficient use in combination with the **EndoorCam 20 NIR FI** and **EndoorCam 40 NIR FI** camera system.

Quick adjustment by the user via camera control unit or camera head button.

Very silent during use.

The **multi-light guide adapter** allows the use of light guides from Storz, Wolf and Olympus beside the NIR light guide.

Bus system for easy connection to camera system.

NIR FI – Near infrared fluorescence imaging with 805 nm NIR laser for optimal ICG excitation.



EndoorLight 300 NIR FI

Art.No. SCHO/05-0761NIR *

Light Source

- ▶ High color rendering index (CRI): RA > 90
- ▶ Low noise level
- ▶ Multi-light-guide adapter
- ▶ Automatic light control in combination with EndoorCam 20 NIR FI & EndoorCam 40 NIR FI
- ▶ Meets high requirements for CF with defibrillators
- ▶ For common MIS interventions and for use with NIR FI
- ▶ To use the NIR FI function it is mandatory to use a NIR FI light guide which needs to be connected to the light source as well as to a NIR FI Endoscope.
- ▶ SCHO/05-0094L-NIR NIR FI light guide Ø 4.8mm x 3000mm length
- ▶ Class 1M laser output at distal end in combination with SCHÖLLY NIR FI SYSTEM

TECHNICAL DATA	
Art.No. SCHO/05-0761NIR	EndoorLight 300 NIR FI
Illumination type	High power white light LED
NIR FI	805 nm NIR laser
Color Rendering Index	CRI Ra > 90
Color temperatue	5,600 K
Luminous flux	1,420 lm
Lifetime of the illuminant	> 30.000 h
Operation control panel	LCD Display with illuminated buttons
Standard compliance	IEC 60601-1 (3.1 Edition)
Electromagnetic compatibility	IEC/EN 60601-1-2 (3 rd and 4 th)
Directive compliance	CE-mark
Dimensions (W x H x D)	295 x 130 x 355 mm
Weight	8 kg
Supply voltage	100 - 240 V~, 50/60 Hz
Power consumption	1.6 - 0.6 A
Protection class acc. to IEC 60601-1	Protection class I
Degree of protection	IP21
Applied part as per IEC 60601-1	Type CF defibrillation-proof
Classification acc. to Directive 93/42/EEC	Class I medical device
Classification as per IEC/CISPR 11	Group 1 Class A
Laser class as per IEC 608025-1	Class 3R

* Original Manufacturer Product of SCHÖLLY

Multi Indication Pump

Pumps

MULTI-INDICATION PUMP –

One pump, four indications



The **Multi-Indication Pump** facilitates everyday routine hospital activities.

The ingenious device combines a streamlined design, easy operation, and maximum safety.

Key parameters are seen at a glance, allowing for quick and correct actions by personnel.

Transponders for each of the applications have to be ordered additionally (see page 21 / Accessories).



Multi-Indication Pump

Art.No. WOMO/PM304-M01 *

TECHNICAL DATA	
Art.No. WOMO/PM304-M01	Multi-Indication Pump
Pressure range	Laparoscopy: not adjustable Arthroscopy: 5 - 150 mmHG Hysteroscopy: 15 - 150 mmHG Urology: 15 - 150 mmHG
Flow range	Laparoscopy: 1.0 - 1.8 l/min Arthroscopy: 0.1 - 1.8 l/min Hysteroscopy: 50 - 500 ml/min Urology: 50 - 500 ml/min
Suction capacity	Max. 2 l/min (depending on outflow cannula)
Power supply	100 - 240 V~
Frequency	50 - 60 Hz
Power consumption	80 VA
Current consumption	100 V: 0.8 A 240 V: 0.3 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (W x H x D)	381 x 149 x 379 mm
Weight	6.3 kg

Multi Indication:

- ▶ Laparoscopy
- ▶ Arthroscopy
- ▶ Hysteroscopy
- ▶ Urology

* Original Manufacturer Product of WOM

Lap Pump

Pumps

LAP-PUMP – One device, two functions:
suction & irrigation

With a built-in vacuum pump, the **LAP-Pump** combines irrigation and suction functionality in one device – which makes it the device of choice for minimally invasive surgeries.

A suction and irrigation volume of 3 l/min and a pressure performance of up to 450 mmHg when irrigating, creates clear view during the operation.

The LAP-Pump reacts to our RFID protected tube sets and ensures proper use. If used improperly, the pump automatically locks and irrigation is not possible.



Lap-Pump

Art.No. WOMO/PP120-M01 *

TECHNICAL DATA	
ART.No. WOMO/PP120-M01	Lap-Pump
Mains voltage range	AC 100 - 240 V~
Supply frequency range	50 / 60 Hz
Protection class	IP21
Classification acc.	Ila
Max. sound level	< 80 dB (a)
Max. negative suction pressure	- 60 kPA
Max. pump pressure	450 mmHg
Max. irrigation performance	3 l/min
Accuracy flow	± 10 %
Dimensions (W x H x D)	380 x 148 x 388 mm
Weight	6.0 kg

One device, two functions, many advantages

- ▶ Simple set up and operation
- ▶ Easy to load tube set
- ▶ Vacuum suction included

* Original Manufacturer Product of WOM

Accessories

Pumps

ACCESSORIES –

For Multi-Indication Pump & Lap Pump



ACCESSORIES *	FOR MULTI-INDICATION PUMP
WOMO/2205334	Transponder, Indication LAP
WOMO/2205331	Transponder, Indication ARTHRO
WOMO/2205333	Transponder, Indication HYS
WOMO/2205336	Transponder, Indication URO
WOMO/Z0223-01	Differential volume scale only for WOMO/PM304-M01, for use in HYST and URO mode
WOMO/Z0540-01	Foot pedal
ACCESSORIES *	FOR MULTI-INDICATION PUMP & LAP-PUMP
WOMO/T0505-01	Tube set for Irrigation, single-use, 10 pcs./pack, all indications
WOMO/T0506-01	Tube set for Irrigation, reusable, 20 uses, 1 pc./pack, all indications
WOMO/T0502-01	Tube set for suction, single-use, 10 pcs./pack, all indications
WOMO/T0503-01	Tube set for suction, 2 connectors, single-use, 10 pcs./pack, all indications
WOMO/T0504-01	Tube set for Vacuum, incl. Filter, 30-day use, 10 pcs./pack, all indications
BEMO/3002055	Bemis Container, 3 L, disposable
BEMO/532810	BEMIS Container, wire ring
WOMO/Z0101-01	Power supply cord EU
WOMO/Z0176-00	Power supply cord UK
WOMO/Z0102-01	Power supply cord US
WOMO/Z0103-01	Power supply cord CN
WOMO/Z0560-01	Power supply cord BR



WOMO/T0505-01



WOMO/T0506-01



WOMO/Z0223-01

* Original Manufacturer Product of WOM

Insufflator 50 L

Insufflator

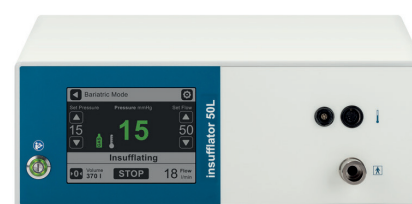
INSUFFLATOR 50L – Higher performance enhances safety in the operating room



Insufflator 50L

The Insufflator 50L adds even more safety during minimally invasive surgeries delivering the performance needed – even under extreme conditions such as obesity of the patient – to maintain a stable pneumoperitoneum. In pediatric or vessel-harvesting mode, the insufflator optimally adjusts according to the different anatomical requirements.

Another plus for all surgical procedures is its ease of use. The Insufflator has a color touchscreen for a high degree of user-friendliness.



Insufflator 50L

Art.No. WOMO/FM134-M01 *

TECHNICAL DATA	
Art.No. WOMO/FM134-M01	Insufflator 50L
Insufflation medium	Med. CO ₂
Max. gas flow	50 l/min
Pressure range	1 - 30 mmHG
Power supply	100 - 240 V~
Frequency	50 - 60 Hz
Power consumption	150 VA
Current consumption	100 V: 1.5 A 240 V: 0.63 A
Classification	Protection Class I, Type BF, IP21
Dimensions (W x H x D)	406 x 150 x 195 mm
Weight	10 kg

Multi-mode powerhouse

- ▶ Three additional modes: Bariatric, Pediatric and Vessel Harvesting
- ▶ High-end performance
- ▶ Gas heating: reusable and disposable

* Original Manufacturer Product of WOM

Accessories

Insufflator

ACCESSORIES – For Insufflator 50L



ACCESSORIES *	FOR INSUFFLATOR 50L
WOMO/Z0452-01	Tube set for insufflation, reusable, 20 uses, ISO
WOMO/Z0280-01	Heating tube set for insufflation, reusable, 100 uses
WOMO/Z0293-01	Tube set for insufflation, single-use (20 pieces)
WOMO/Z0260-01	Heating tube set for insufflation, single-use (10 pieces)
WOMO/4222/701BSSA	ECO Filter, single-use, sterile, ISO-ISO (50 pieces)
WOMO/Z5044-01	Hose for CO2 gas bottle DIN:US, 1.5m
WOMO/Z5045-01	Hose for CO2 gas bottle ISO:US, 1.5m
WOMO/Z0499-01	Hose for CO2 gas bottle Pin:US, 1.5m
WOMO/Z5073-01	US adapter for universal gas connector
WOMO/Z5077-01	Universal gas connector CO2 angled
WOMO/Z5031-01	Hose for CO2 central gas supply DIN:NIST, 5m
WOMO/Z5033-01	Hose for CO2 central gas supply AGA:NIST, 5m
WOMO/Z5037-01	Hose for CO2 central gas supply NF:NIST, 5m
WOMO/Z5039-01	Hose for CO2 central gas supply UNI:NIST, 5m
WOMO/Z5074-01	NIST adapter for universal gas connection
WOMO/Z5075-01	DISS adapter for universal gas connection
WOMO/Z5072-01	Sinter filter for universal gas connector (5 pieces)
WOMO/Z5101-01	Hose for CO2 central gas supply DIN/US 5m
WOMO/Z5102-01	Hose for CO2 central gas supply NF/US 3m
WOMO/Z5103-01	Hose for CO2 central gas supply NF/US 5m
WOMO/Z5104-01	Hose for CO2 central gas supply UNI/US 3m
WOMO/Z5105-01	Hose for CO2 central gas supply UNI/US 5m
WOMO/Z5106-01	Hose for CO2 central gas supply AGA/US 3m
WOMO/Z5107-01	Hose for CO2 central gas supply AGA/US 5m
WOMO/Z5010-01	Hose for CO2 central gas supply NIST



WOMO/4222/701BSSA



WOMO/Z5044-01



WOMO/Z0293-01



WOMO/Z0260-01



WOMO/Z5077-01



WOMO/Z5074-01

* Original Manufacturer Product of WOM

Digital Video Recorder

MediCap USB 300 Digital Video Recorder – Medical Imaging made easy

Records high-definition video and still images from medical video sources to internal hard drive, external USB drive, or network drive

TECHNICAL DATA	
MECO/USB300UE	MediCap USB300 Digital Video Recorder
Device Type	HD/3D2 Medical Video Recorder
Case	Rugged metal case with high-impact plastic faceplate
LCD Monitor	2 1/2", full color (for video confirmation only, not for diagnosis)
Buttons	Sealed membrane, fluid resistant
Video Inputs	DVI (RGB via adapter), HD SDI, S-Video, Composite
Video Output	DVI (RGB, VGA via adapter)
Video Formats	H.264 / MPEG4 (1080, 720, NTSC, PAL)
Video Quality	Compact, Normal, Ultra (up to 40 Mbit/s)
Image Formats	JPG, TIFF, BMP, DICOM
Networking	RJ45 10/100/1000 Ethernet
Internal Storage	Internal hard drive, 1TB
External Storage	USB flash drive, USB hard drive, network drive
USB Support	USB2.0, high speed, 1 front connector, 2 rear connectors
Printer Support	Sony UP-DR80MD medical color printer
Footswitch / Trigger	Standard 3.5mm mini jacks (one for photos, one for videos)
Mechanical	Size: 240 x 211 x 63mm / 9.5 x 8.3 x 2.5" Weight: 1.8kg / 3lb 15oz
Environmental	Storage: -40° to +85° C; Operating: -20° to +40° C
Power	AC 100-240V 50/60Hz 25W; 3-prong AC jack
Certifications	CE 93/42/EEC, IEC 60601-1:2005, ANSI/AAMI ES60601-1:2005, CAN/CSA C22.2 No.60601, 1:2008, E361228, FCC Part 15, FDA Class 1, RoHS, PSE, GOST-R, CCC
Kit Contents	MediCap USB300, USB flash drive, video and power cables, user guide



**MediCap USB300
Digital Video Recorder**
Art.No. MECO/USB300UE *

Medical Imaging made easy

- ▶ HD / 3D Medical Video Recorder
- ▶ Intuitive use
- ▶ Medical grade



**SlimCool Medical Grade
Keyboard**
Art.No. MECO/KB001WHUS *

* Original Manufacturer Product of MEDICAPTURE

Equipment Cart

EQUIPMENT CART CLASSIC –

The universal solution for all applications

Equipment Cart Classic

Limitless options for expansion and upgrade.

Flexibility is facilitated by the high load capacity of 150 kg / 330 lbs, combined with standard supply in two widths and three heights.

Numerous accessory components, such as shelves with a distributed load rating of up to 50 kg / 110 lbs, offer solutions to meet all types of requirement.

Four large twin castors also provide a high level of mobility and easy maneuverability.

The support extrusions offer easy attachment for the jointed arm and optionally supplied power columns guarantee safe cabling, accommodation of all standard socket strips and large volumes of power lines and data cables.

TECHNICAL DATA

Art.No. ITDO/KU.1 Equipment Cart Classic

CONSISTING OF:

Classic-cart basic frame Profi 40U, W500

Castor conversion kit Ø 125mm, conductive

Power columns 40U

Shelf, W500

Keyboard drawer with mousepad, D491, W500; color: waterblue

Shelf with handle, W500

Isolating transformer 1600 VA for classic-cart

Cross piece with monitor holder up to 14 kg, W500

Socket strip earthed 8-way for trafo



Equipment Cart Classic

Art.No. ITDO/KU.1 *

RM-Port Pivot Arm

Art.No. ITDO/TH.2101.991 *

* Original Manufacturer Product of ITD

Monitors

ACL OR-MD FULL HD MEDICAL DISPLAYS –

Bright, true colors make this series first choice for endoscopy

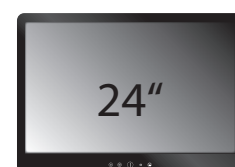


ACL OR-MD Medical Displays

ACL Medical Displays in a sealed aluminium housing with bright, true-color IPS displays and allround viewing angle are the first choice for medical image and video display in operating theatres and intensive care units. Configurable with a variety of analogue and digital interfaces, even including an integrated video crossbar.

Endoscopy, microscopy and radiology are important applications for ACL Medical Displays. But with their optional touch functionality, these monitors are also ideal for use as a second screen for various medical devices.

TECHNICAL DATA	
Laquering	Light grey RAL 7035; optional: germ-reduction nano-lacquering, other color tones in conformity with RAL
Protective pane	integrated: optional with touchscreen
Mounting	Built-in VESA-100 interfaces; optional: extensive mounting solutions available as accessories
Weight	10.5 kg (without accessories)
Power supply unit	100 - 240 V / 50 / 60 Hz / internal 80 W
USV	none; optional: external (as much as 10 minutes of power failure bridging)
Front keypad	On/Off-button, six buttons for OSD
Display	Internal TFT display, 16.7 million colors, Solution 1920x1080 pixels, Contrast 1000:1, Brightness 350 cd/m², Viewing Angle 178°/178°
Digital	DVI-I (optional: VGA D-SUB-15)
S-video	4-polig mini DIN
Composite video	RCA (PAL/NTSC)
Programming	RS232
Language selection	german; optional: english, french, italian, hispanic, polish



ACL OR-MD 24"
Art.No. ACLO/OR-MD24 *



ACL OR-MD 27"
Art.No. ACLO/OR-MD27 *



ACL OR-MD 32"
Art.No. ACLO/OR-MD32 *

* Original Manufacturer Product of ACL

Monitors

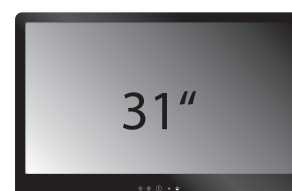
BARCO 4K MEDICAL DISPLAY –

Crystal clear image and true colors



BARCO 4K Medical Display convinces with exceptional brightness and black value which makes it a perfect fit for the digital operation theatre. With its IP45 rating the display is easy to clean and disinfect. Also, the glass display is scratch resistant.

With its various input connectivities and the numerous control functions the BARCO 4K Medical Display can be connected to all kind of camera systems.



BARCO 4K Display 31"

BRCO/MDSC-8231-12G *

TECHNICAL DATA	
Screen Technology	TFT AM LCD / IPS-PRO technology / LED backlight
Resolution	4K-2K (4096 x 2160)
Front protective screen	scratch-resistant 2-side AR alkali-aluminosilicate glass
Weight	12.1 kg (without accessories)
Rating	IP20 (IP45 front side only)
Video inputs	4K-UHD input selectable among: Quad-link 3G-SDI up to 4096 x 2160 @50Hz/60Hz 12G-SDI up to 4096 x 2160 @50Hz/60Hz 1x DP 1.1 up to 4096 x 2160 @25Hz/30Hz 2x DP 1.1 up to 2048 x 2160 @50Hz/60Hz 1x DP 1.2 MST up to 4096 x 2160 @50Hz/60Hz 2x HDMI 2.0 up to 4096 x 2160 @50Hz/60Hz FHD input (upscaled to UHD): 1x DVI

* Original Manufacturer Product of BARCO

Video Signal Converter

Quad SDI to 12G SDI / HDMI 4K Converter –

IPS100A is a video signal converter that accepts quad SDI (3G or 12G) input up to 4K, and delivers single SDI (3G or 12G) or HDMI 2.0 output up to 4K.



Image Processing System

Mode select switch configuration allows for quick setup.

Meets medical certification requirements.

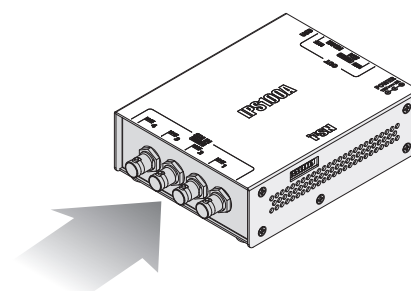
Controls and settings are accessed through a USB interface.

Firmware updates are fast and easy.

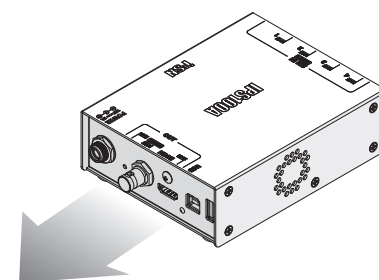
TECHNICAL DATA	
Input Signal	4 x SDI (SD/HD/3G/12G)
Output Signal	1 x HDMI (2.0) 1 x SDI (HD/3G/12G)
External Control	USB (2.0)
Power Supply	12Vdc
Power Consumption	20W max
Mode Select	Manual control: switch 8 is off, switches 1-7 are active. Software/service control: switch 8 is on, switches 1-7 are inactive, USB A and B are active.
Unit Dimension	130.5(W) x 103(H) x 40(D) mm 5.13(W) x 4.05(H) x 1.57(D) inch
Package Dimension	242(W) x 187(H) x 72(D) mm 9.53(W) x 7.36(H) x 2.83(D) inch
Weight	0.48Kg, 1.06 lbs. (IPS100A) 1.01Kg, 2.23 lbs. (shipping package)

Video Signal Converter

Art.No. FSNO/IPS100A *



Quad SDI
(3G or 12G)
input up to 4K



Single SDI (3G or 12G)
or HDMI 2.0
output up to 4K

* Original Manufacturer Product of FSN

Notes

Notes



· WORLD WIDE DISTRIBUTION NETWORK ·



TONTARRA Medizintechnik GmbH

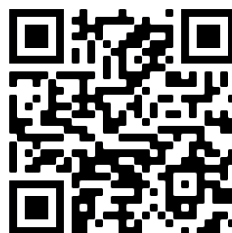
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