ILO electronic GmbH
ENDOSCOPY EQUIPMENT EXPERTISE

Manufacturer of endoscopy devices
Partner for OEM solutions
Standard units and custom systems

INDEX

LIGHT SOURCE

XENON LIGHT SOURCE 180W / 300W

- Low noise, low heat conduction
- Electronical light control via buttons
- Simple lamp replacement
- Waterproof touch control panel

Xenon

500 h   0 h
LAMP LIFE

0 %   100 %
INTENSITY

MAN
AUTO

Xenon Backup

500 h   0 h
LAMP LIFE

MAN
AUTO

0 %   100 %
INTENSITY

MAIN LAMP   BACKUP LAMP

STORZ   OLYMPUS   ACMI   WOLF

Multi connector option:
Wolf, Storz, Olympus, ACMI

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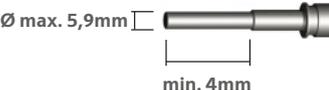| Series		Description
Single Version:	Xenon X 180-M	180 Watt xenon lamp, Storz adapter, manual light intensity control
	Xenon X 180-A	180 Watt xenon lamp, Storz adapter, automatic light intensity control
	Xenon X 300-M	300 Watt xenon lamp, Storz adapter, manual light intensity control
	Xenon X 300-A	300 Watt xenon lamp, Storz adapter, automatic light intensity control
	Xenon X 300-AT	300 Watt xenon lamp, turret adapter, automatic light intensity control
Backup version:	Xenon X300A-LED	300 Watt xenon lamp, Backup LED lamp, 2x Storz adapter automatic light intensity control
	Xenon X300M-LED	300 Watt xenon lamp, Backup LED lamp, 2x Storz adapter manual light intensity control
	Xenon X300AT-LED	300 Watt xenon lamp, Backup LED lamp, 2x turret adapter automatic light intensity control

Technical Data

Lamp:	Main:	Backup (optional):
	· Xenon arc lamp: 180 W / 300 W	· White LED lamp
	· Daylight quality, 5600 K	· Daylight quality, 6500 K
	· Lifetime: 500 hr (expected)	· Lifetime: > 20.000 hr
Light guide connection:	· Storz, Wolf, Olympus or turret adapter	
Voltage range (current consumption):	· 100-240 V (180W light source: 210 VA / 300W light source: 370 VA)	
Frequency:	· 50-60 Hz	
Device protection:	· 2x T6,3 A	
Video In (optional):	· 1x Video (automatic Version only)	
Protection class (acc.to IEC 60601-1):	· I	
Safety class:	· BF	
IP code:	· 20	
Standard:	· IEC 60601-1-2	
Device classification (acc. to MDD 93/42/EEC):	· I	
Dimensions (WxHxD):	· 355mm x 120mm x 340mm	
Weight:	· approx. 11,0 kg (180W) / approx. 12,5 kg (300W)	
Delivery contains:	· Light source, mains cable, user manual, BNC cable (optional)	
Options:	· Automatic light intensity control	
	· Backup LED lamp	
	· Multi connector option, turret:	

Wolf	
ACMI	
Olympus	
Storz	Ø max. 5,9mm
	min. 4mm

Exclusively pictured version!

LIGHT SOURCE

LED 1000 - HIGH INTENSITY LIGHTSOURCE

- Low noise, low heat conduction
- Electronical light control via buttons
- Pure daylight quality
- Waterproof touch control panel

Series	Description
LED 1000	Storz adapter, automatic light intensity control
LED 1000	Wolf adapter, automatic light intensity control
LED 1000	Olympus adapter, automatic light intensity control

Technical Data

Lamp:	· Daylight quality, 6500 K
	· Lifetime: > 20.000 hr
Light guide connection:	· Storz, Wolf adapter
Voltage range (current consumption):	· 100-240 V (130 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A
Video In:	· 1x BNC (Video)
Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I
Dimensions (WxHxD):	· 355mm x 103mm x 253mm
Weight:	· approx. 4,5 kg
Delivery contains:	· Light source, mains cable, user manual, BNC cable (optional)

1

LIGHT SOURCE

LED 3000 - HIGH INTENSITY LIGHTSOURCE

1

- PHASER® Technology Included
- Turret multi connector (optional)
- Low noise, low heat conduction
- Pure daylight quality

LED 3000-A

0%   100%
INTENSITY

MAN
AUTO

PHASER® Technology Included

LED

Multi connector option:
Wolf, Storz, Olympus, ACMI

STORZ   OLYMPUS   ACMI   WOLF

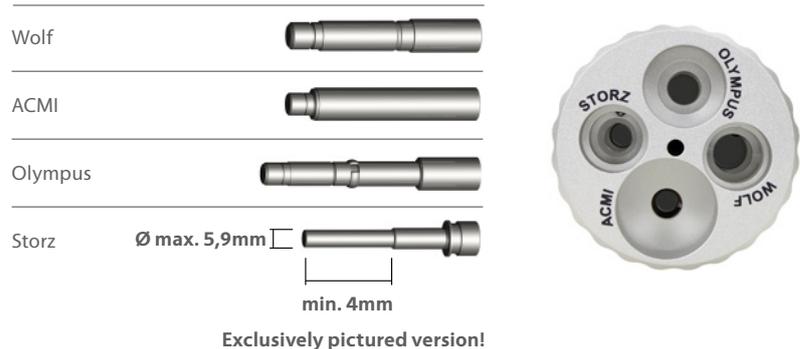| Series	Description
LED 3000	Storz adapter, automatic light intensity control
LED 3000	Wolf adapter, automatic light intensity control
LED 3000	Olympus adapter, automatic light intensity control
LED 3000 T	Turret adapter, automatic light intensity control

Technical Data

Light guide connection:	· Storz, (standard connection):

· Turret, multi connector (optional):

Wolf	
ACMI	
Olympus	
Storz	Ø max. 5,9mm

min. 4mm

Exclusively pictured version!

Lamp	· Daylight quality, 6000 K (+/-5oo K)
	· Lifetime: ≥ 30.000 hr

Voltage range (current consumption):	· 100-240 V (130 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T6,3 A
Video In:	· 1x BNC (Video)

Protection class (acc.to IEC 60601-1):130 VA	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I

Dimensions (WxHxD):	· 355mm x 120mm x 340mm
Weight:	· approx. 10 kg

Delivery contains:	· Light source, mains cable, user manual, BNC cable

LIGHT SOURCE

LED 1800 / LED 2500 - HIGH INTENSITY LIGHTSOURCE

- Low noise, low heat conduction
- Electronical light control via buttons
- Pure daylight quality

Series	Description
LED 1800 / 2500	Storz adapter, automatic light intensity control

Technical Data

LED module:	LED 2500: · LED CRI 70, Daylight quality, approx. 6500 K · Lifetime: > 20.000 hr
	LED 1800: · LED CRI 90, Daylight quality, approx. 5700 K · Lifetime: > 20.000 hr
Light guide connection:	· Storz, Wolf
Voltage range (current consumption):	· 100-240 V (130 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A
Video In:	· 1x Video, BNC
Other connections:	· Service (RJ45)
Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· 20
Standard:	· IEC 60601-1-2
Device classification (acc. to MDD 93/42/EEC):	· I
Dimensions (WxHxD):	· (WxHxD) 360 x 125 x 251 mm
Weight:	· approx. 5 kg
Delivery contains:	· Light source, mains cable, user manual, BNC cable (optional)

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LIGHT SOURCE
HALOGEN HL 150

- Small compact design
- Exchangable lightguide adapter
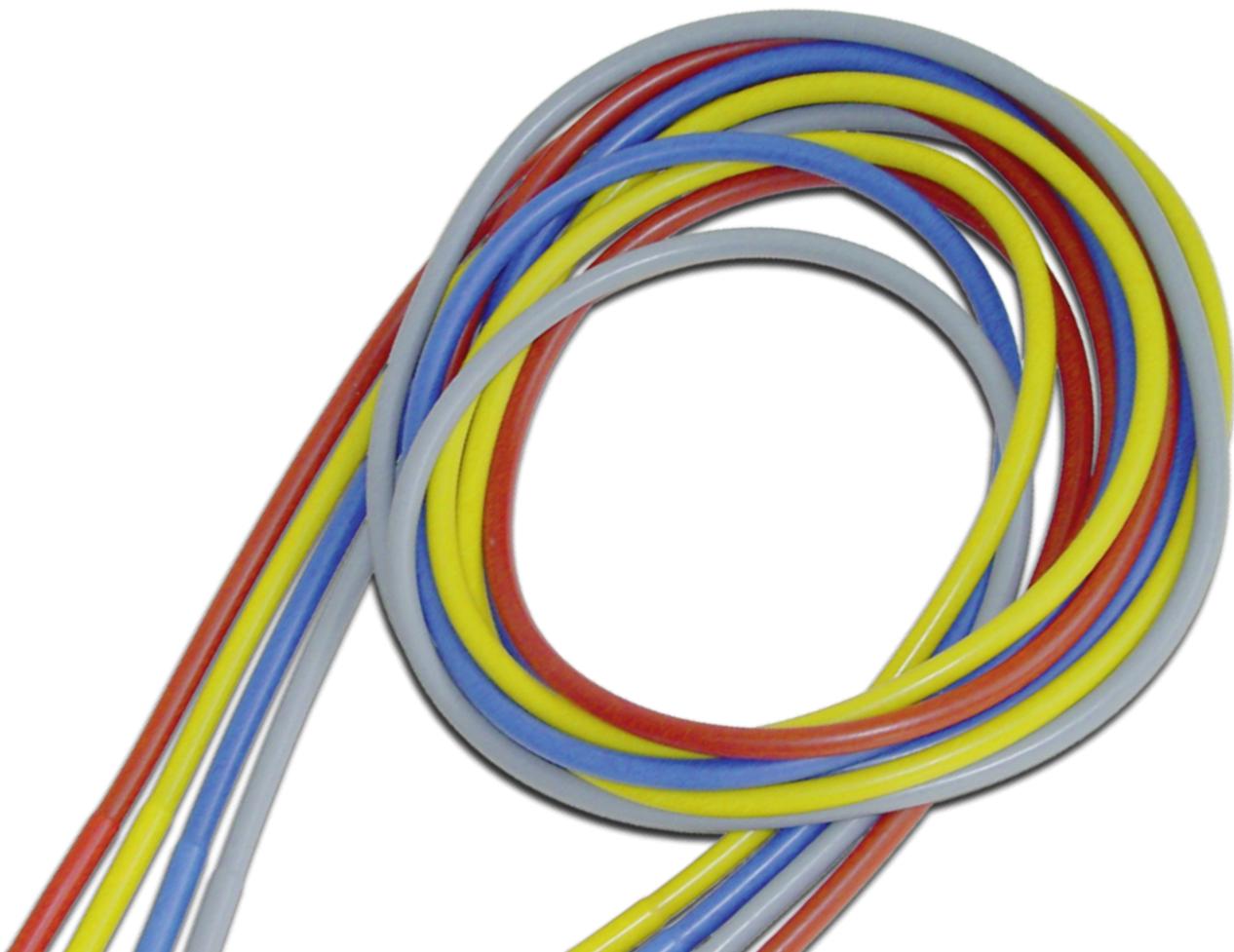- Mechanical diaphragm
- Low heat conduction

Technical Data

Lamp:	· 150 W (1 Halogen reflector lamp), 15 V
Light guide connection:	· Storz, Wolf, Olympus, ACMI
Intensity control:	· Stepless, mechanical diaphragm
System:	· Power supply: 115/230 V (+/- 10%) switchable
	· Fine fuses: 5x20mm (230 V: T1,6 A | 115 V: T3,15 A)
	· Power consumption: max. 190 VA
Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I
Dimensions (WxHxD):	· 175mm x 82,5mm x 202mm
Weight:	· approx. 2,5 kg
Delivery contains:	· Light source, mains cable, user manual

1

Illuminant	Description	Order number
ILO 300W 5H Xenon	300W Xenon lamp, 5-hole inlc. heat transfer copmound	125-0008
ILO 180W	180W Xenon bulb, X 180 ILO standard	770-1008
ILO 100W	100W Xenon bulb, X 100 ILO standard	770-1001
Halogen 150W	Halogen lamp 150W, 15V, type: Xenophot HLX 64634, OSRAM	126-0011
Halogen 250W	Halogen lamp 250W, 24V, type: Typ 13163 ILC, Philips	126-0010
Halogen 75W	Halogen lamp 75W, 12V, type: Xenophot HLX 64615, OSRAM	126-0003
Metal Halid bulb	Metal halid bulb X24, 24 Watt	770-0000
X 50 Spare lamp	X 50 Spare lamp ofr XL50, XE50 eco, X50 with mounting ring	770-0005

1

Liquid light guides	Diameter	Length	Color	Order number
18 FM 50	5,0 mm	1800 mm	grey	894-0000
23 FM 50	5,0 mm	2300 mm	grey	894-0001
30 FM 50	5,0 mm	3000 mm	grey	894-0002
18 FM 50	5,0 mm	1800 mm	stainless steel mantle	894-0008

Glass fibre light guides	Diameter	Length	Color	Order number
18 LW 35	3,5 mm	1800 mm	grey	890-0003
18 LW 48	4,8 mm	1800 mm	grey	890-0004
23 LW 35	3,5 mm	2300 mm	grey	890-0005
23 LW 48	4,8 mm	2300 mm	grey	890-0006
18 LC 35	3,5 mm	1800 mm	grey	891-0003
18 LC 48	4,8 mm	1800 mm	grey	891-0004
23 LC 35	3,5 mm	2300 mm	grey	891-0005
23 LC 48	4,8 mm	2300 mm	grey	891-0006
23 LC 35	3,5 mm	3000 mm	grey	891-0007
30 LC 48	4,8 mm	3000 mm	grey	891-0008
18 HLC 35	3,5 mm	1800 mm	grey	892-0000
18 HLC 48	4,8 mm	1800 mm	grey	892-0001
23 HLC 35	3,5 mm	2300 mm	grey	892-0002
23 HLC 48	4,8 mm	2300 mm	grey	892-0003
30 HLC 35	3,5 mm	3000 mm	grey	892-0004
30 HLC 48	4,8 mm	3000 mm	grey	892-0005

1

LIGHT SOURCES - ACCESSORIES
LIGHT GUIDE ADAPTER

Adapter source side	Description	Order number
input, Storz	Light guide adapter light source side, for LW-, LC-Type	896-0008
input, Olympus	Light guide adapter light source side, for LW-, LC-Type	896-0009
input, Wolf	Light guide adapter light source side, for LW-, LC-Type	896-0010
input, ACMI	Light guide adapter light source side, for LW-, LC-Type	896-0011
input, Storz HLC	Light guide adapter light source side, for HLC-Type	896-0016
input, Olympus HLC	Light guide adapter light source side, for HLC-Type	896-0017
input, Wolf HLC	Light guide adapter light source side, for HLC-Type	896-0018
input, ACMI HLC	Light guide adapter light source side, for HLC-Type	896-0019

Adapter instrument side	Description	Order number
output, Storz,	Light guide adapter instrument side, for LW-, LC-, HLC-, FM-type	896-0000
output, Olympus	Light guide adapter instrument side, for LW-, LC-, HLC-, FM-type	896-0001
output, Wolf	Light guide adapter instrument side, for LW-, LC-, HLC-, FM-type	896-0002
output, ACMI	Light guide adapter instrument side, for LW-, LC-, HLC-, FM-type	896-0003

1

EcoCAM 750 - DIGITAL VIDEO CAMERA (1CCD)

- Natural colour reproduction
- Single chip
- Anti-moiree-filter
- High image quality

2

Technical Data

Camera head:	· Aspect ratio: 4:3
	· Image sensor: 1/3" CCD
	· Immersible (using the attached cap)
Voltage range (current consumption):	· 100-240 V (25 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A
Video System:	· PAL/NTSC
	· Image resolution: PAL 752 x 582/ NTSC 768 x 494
	· TV resolution: > 470 lines
	· Sensitivity: < 1 lux (1/1.4)
	· White balance automatically, with data hold
	shutter speed PAL (NTSC): 1/50 (1/60) to 1/100.000 sec
Video out terminal	· 2x Video; 2x S-Video; 1x Y-Pb-Pr (Component); 1x SDI; 1x USB 2.0
Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I
Dimensions (WxHxD):	· 354mm x 105mm x 337mm
Weight:	· approx. 4,4 kg
Delivery contains:	· CCU, camera head with 3,05m (10ft) cable, mains cable,
	User manual, Y/C cable, BNC cable

2

Options

Freeze function:	· Freeze the image via footswitch

EcoCAM 750 camera head

Weight: 80 g
Size: d= 29 mm; l= 55 mm

CAMERA

SWIFTCAM - DIGITAL VIDEO CAMERA (1CCD)

- Multilingual on-screen-menu
- Digital zoom
- Camera control with keyboard
- Character generator

2

Technical Data

Camera head:	· Aspect ratio: 4:3 · Image sensor: 1/3" CCD · Immersible (using the attached cap)
Voltage range (current consumption): Frequency: Device protection:	· 100-240V (25 VA) · 50-60 Hz · 2x T3,15 A
Video system:	· PAL/NTSC · Image resolution: PAL 752 x 582/ NTSC 768 x 494 · TV resolution: > 470 lines · Sensitivity: < 1 lux (1/1.4) · White balance automatically, with data hold shutter speed PAL (NTSC): 1/50 (1/60) to 1/100.000 sec
Video out terminal:	· 2x Video; 2x S-Video; 1x Y-Pb-Pr (Component); 1x SDI; 1x USB 2.0
Protection class (acc.to IEC 60601-1): Safety class: IP code: Standard: Device classification (acc. to MDD 93/42/EEC):	· I · BF · IP 20 · IEC 60601-1-2 / IEC 60601-1-1 · I
Dimensions (WxHxD): Weight:	· 354mm x 105mm x 337mm · 4,4 kg

Delivery contains	· CCU, camera head with 3,05m (10ft) cable, mains cable, User manual,
	  Y/C cable, BNC cable, HDMI - DVI cable (optional), HDMI cable (optional),
	  USB Stick (optional)

Series	SwiftCAM	SwiftCAM-C	SwiftCAM-D	SwiftCAM-CD
On-screen-display	x	x	x	x
Menu	x	x	x	x
Titel generator option (USB)	x	x	x	x
Capture module (image, video)	-	x	-	x
HDMI out	-	-	x	x
Zoom function	x	x	x	x

Options

Freeze function: Remote camera head: Remote footswitch:	· Freeze the image via push buttons · With programmable push buttons (zoom, freeze) · With programmable push buttons

SwiftCAM camera head

Weight: 80 g
Size: d= 29 mm; l= 55 mm

Without push buttons

Weight: 105 g
Size: d= 34 mm; l= 73 mm

With push buttons

CAMERA
eco HD - HIGH DEFINITION CAMERA (1MOS)

2

- Full HD resolution
- High speed shutter
- Multilingual menu
- 3 user setting storable

Technical Data

Camera head:	· Aspect ratio: 16:9
	· Image sensor: 1/3" MOS
	· Immersible (using the attached cap)

Voltage range (current consumption):	· 100-240 V (25 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A

Video system:	· Image resolution: full HD 1920 x 1080
	· TV resolution: > 1000 lines
	· Sensitivity: < 3 lux (1/1.4)
	· White balance automatically, with data hold
	shutter speed: 1/50 (1/60) to 1/100.000 sec

Connections	Video out terminal:	Other connections:
	· 1x HDMI	· 1 x USB (A) (USB-keyboard)
		· 1 x Remote IN (footswitch)
		· 1 x Remote OUT (video printer, video recorder,...)
		· 1 x RJ45 (Service)

Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· 20
Standard:	· IEC 60601-1-2
Device classification (acc. to MDD 93/42/EEC):	· I

Features:	· White balance, boost function
	· On-screen-menu
	· 3 user settings storable
	· 2.5 digital zoom
	· Freeze function
	· Character generator

Dimensions (WxHxD):	· 360mm x 124mm x 335mm
Weight:	· approx.4,7 kg

Delivery contains:	· CCU, camera head with 3,05m (10ft) cable, mains cable, HDMI - DVI cable, HDMI cable, user manual

Options

Optional accessories:	· Waterproof keyboard
	· Footswitch

Swift 1HD camera head

Weight: approx. 150g
Diameter: 36,5mm
Length: 65,2mm (without grommet)

CAMERA
SWIFT 1HD - HIGH DEFINITION CAMERA (1MOS)

・ Full HD resolution
・ High speed shutter
・ Multilingual menu
・ Remote camera head

Technical Data

Camera head:	· Aspect ratio: 16:9
	· Image sensor: 1/3" MOS
	· Immersible (using the attached cap)
Voltage range (current consumption):	· 100-240 V (25 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A
Video system:	· Image resolution: full HD 1920 x 1080
	· TV resolution: > 1000 lines
	· Sensitivity: < 3 lux (1/1.4)
	· White balance automatically, with data hold
	shutter speed: 1/50 (1/60) to 1/100.000 sec
Recording (optional)	· Image format: JPG 1920 x 1080
	· Video format: Full HD 1920 x 1080; Mpeg-4 (H.264 Codec); Image rate 60fps
	· Connection: USB (A)

Connections:	Video out terminal:	Other connections:
	· 1x HDMI / DVI	· 1 x USB (A) (USB-keyboard)
	· 1x Y-Pb-Pr (Component)	· 1 x Remote IN (footswitch)
	· 1x Video (PAL / NTSC)	· 1 x Remote OUT (videoprinter, videorecorder,...)
	· 1x S-Video (PAL / NTSC)	· 1 x RJ45 (Service)
	· 2x HD SDI (optional)	

Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I
Features:	· White balance, boost function
	· On-screen-menu
	· 3 user settings storable
	· 2.5 digital zoom
	· Freeze function
	· Character generator
Dimensions:	· Control unit: 354mm x 105mm x 337mm (WxHxD); Weight: approx. 4,5 kg
Delivery contains:	· CCU, camera head with 3,05m (10ft) cable, Y/C cable, BNC cable, HDMI - DVI cable, HDMI cable, user manual

Options

Features:	· Image capture, video capture
Optional accessories:	· Waterproof keyboard
	· Footswitch

Swift 1HD camera head

Weight: 105 g
Size: d= 34 mm; l= 73 mm

With push buttons

CAMERA

TRISTAR HD - HIGH DEFINITION CAMERA (3MOS)

- Full HD resolution
- High speed shutter
- Multilingual menu
- Remote camera head

Technical Data

Camera head:	· Aspect ratio: 16:9
	· Image sensor: 3x 1/3" MOS
	· Immersible (using the attached cap)
Voltage range (current consumption):	· 100-240 V (40 VA)
Frequency:	· 50-60 Hz
Device protection:	· 2x T3,15 A
Video system:	· Image resolution: full HD 1920 x 1080
	· TV resolution: > 1000 lines
	· Sensitivity: < 3 lux (1/1.4)
	· White balance automatically, with data hold
	shutter speed: 1/50 (1/60) to 1/100.000 sec
Recording (optional)	· Image format: JPG 1920 x 1080
	· Video format: Full HD 1920 x 1080; Mpeg-4 (H.264 Codec); Image rate 60fps
	· Connection: USB (A)

Connections

Video out terminal:	Other connections:
· 2x HD SDI	· 1 x USB (A) (USB-keyboard)
· 1x HDMI / DVI	· 1 x Remote IN (footswitch)
· 1x Y-Pb-Pr (Component)	· 1 x Remote OUT (videoprinter, videorecorder,...)
· 1x Y/C (PAL / NTSC)	· 1 x RJ45 (Service)
· 1x CVBS (PAL / NTSC)	

Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 20
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· I
Features:	· White balance, boost function
	· On-screen-menu
	· 3 user settings storable
	· 2.5 digital zoom
	· Freeze function
	· Character generator
Dimensions:	· Control unit: 354mm x 105mm x 337mm (WxHxD); 4,5 kg
Delivery contains:	· CCU, camera head with 3,25m cable, mains cable, Y/C cable, BNC cable,
	HDMI - DVI cable, HDMI cable, user manual

Camera head with push buttons

Weight: 145 g
Size: d= 38,5 mm; l= 81 mm

Options

Features	· Image capture, video capture
Optional accessories	· Waterproof keyboard
	· Footswitch

CAMERA

TRIstar 4K - ULTRA HIGH DEFINITION CAMERA (3MOS)

- 4K UHD resolution
- Zoom, freeze, fog reduction
- Image enhancement of colour and structure
- 10 USER Presets for surgical application
- Multilingual menu

Technical Data

Camera head:	· Aspect ratio: 16:9 · Image sensor: 3x 1/3" MOS · Immersible (using the attached cap)
Voltage range (current consumption): Frequency: Device protection:	· 100-240 V (50 VA) · 50-60 Hz · 2x T3,15 A
Video system:	· Image resolution: UHD 3840 x 2160 · TV resolution: 1600 lines · White balance automatically, with data hold
Video output:	· 1 x HDMI 4K (3840 x 2160) · 1 x HDMI Full HD (1920 x 1080) · 1 x SDI 4K (4 x BNC) (3840 x 2160) · 1 x SDI Full HD (1 x BNC) (1920 x 1080)

Video format:	· HDMI output: 3840x2160/59.94p, 3840x2160/50p,
	                       1920x1080/59.94p, 1920x1080/59.94i,
	                       1920x1080/50p, 1920x1080/50i
	· SDI output: 3840x2160/59.94p, 3840x2160/50p,
	                       1080/59.94p, 1080/59.94i,
	                       1080/50p, 1080/50i

Protection class (acc.to IEC 60601-1): Safety class: IP code: Standard: Device classification (acc. to MDD 93/42/EEC):	· I · BF · IP 20 · IEC 60601-1-2 / IEC 60601-1-1 · I
Dimensions (WxHxD): Weight:	· 360mm x 124mm x 335mm · approx. 6,2kg
Delivery contains:	· CCU, camera head with 3,05m cable (10ft), mains cable, HDMI cable, User manual

Options
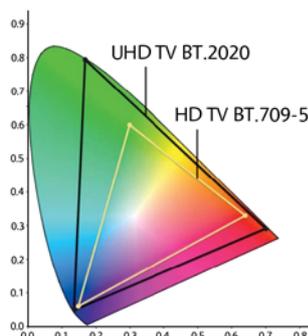
· Image capture, video capture

TRIstar 4K camera head

Weight: approx. 200g
Diameter: 43mm
Length: 85,7mm (without grommet)

With 4 push buttons

Colour space

The camera is able to reproduce the extended color space BT.2020 in addition to the BT.709 color space for HDTV. (Prerequisite is a BT.2020 compatible monitor)

TV ADAPTER

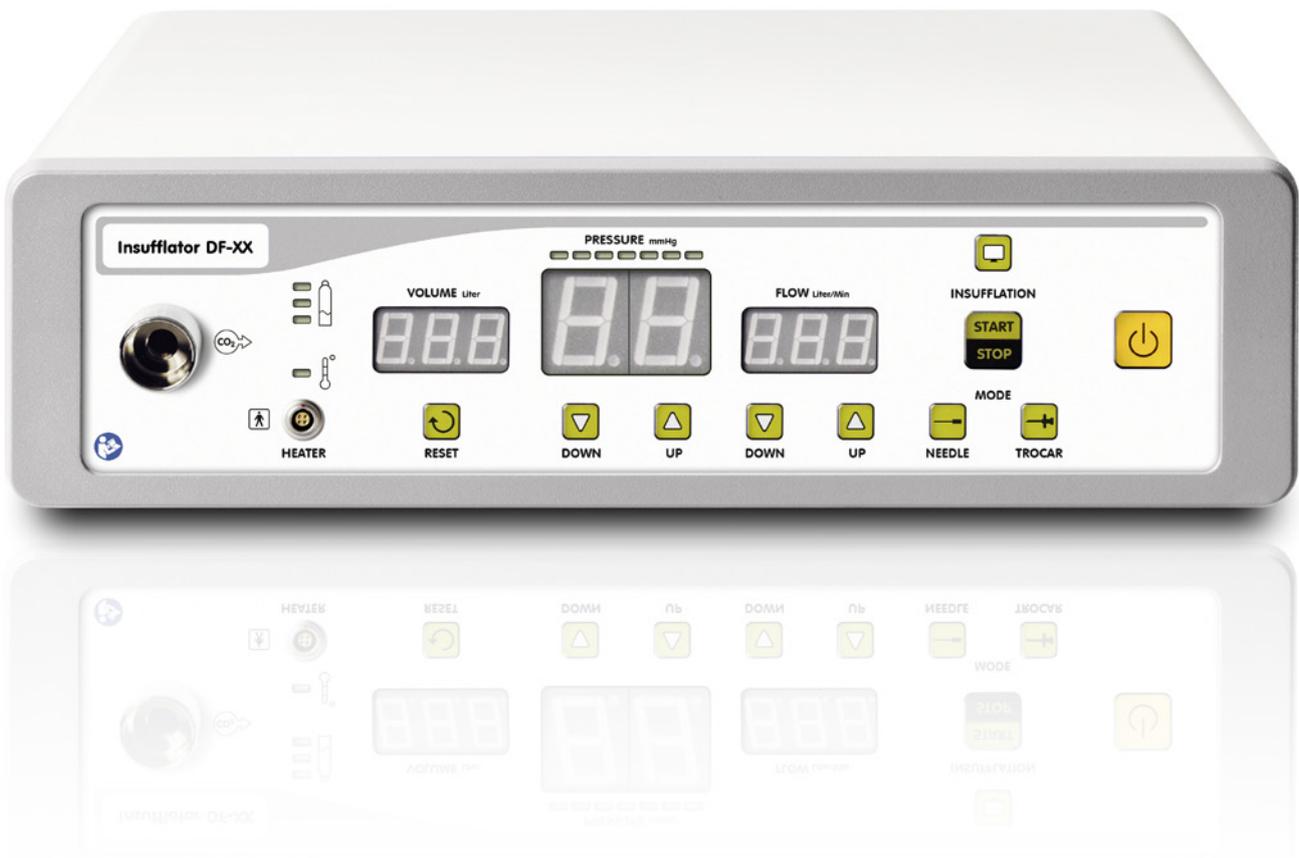| Series	Description	Order number
TV-ILO 21 WP	Adapter f = 21.0 mm, c-mount, soakable	870-0000
TV-ILO 28 WP	Adapter f = 28.0 mm, c-mount, soakable	870-0001
TV-ILO 35 WP	Adapter f = 35.0 mm, c-mount, soakable	870-0002
TV-ILO 15 WP	Adapter f = 15.0 mm, c-mount, soakable	870-0003
TV-ILO 40 WP	Adapter f = 40.0 mm, c-mount, soakable	870-0006
TV-Zoom 1535 PWP	Adapter, vario-zoom, f = 15.0 - 35.0 mm, c-mount, soakable	870-0016
TV-Zoom 1525 WP	Adapter, f = 15.0 - 25.0 mm, c-mount, soakable	870-0004
TV-Zoom 2540 WP	Adapter, f = 25.0 - 40.0 mm, c-mount, soakable	870-0005
TV-28 HDWP	Adapter f = 28.0 mm, S-design, c-mount, soakable	870-0027
TV-25 HDWP	Adapter f = 25.0 mm, S-design, c-mount, soakable	870-0029
TV-14 HDWP	Adapter f = 14.0 mm, S-design, c-mount, soakable	870-0029
TV-21 HDWP	Adapter f = 21.0 mm, S-design, c-mount, soakable	870-0031
TV-Adapter angled	Adapter, angled 90°, f = 30.0 mm, c-mount, soakable	870-0008
TV-Adapter angled	Adapter, angled 90°, f = 25.0 mm, c-mount, soakable	870-0009
TV-Adapter angled	Adapter, angled 90°, f = 18.0 mm, c-mount, soakable	870-0010
TS-ILO 30 WP	Beamsplitter TV-Adapter, f = 30.0 mm c-mount, soakable	873-0000
TS-ILO 25 WP	Beamsplitter TV-Adapter, f = 25.0 mm c-mount, soakable	873-0001
TS-ILO 18 WP	Beamsplitter TV-Adapter, f = 18.0 mm c-mount, soakable	873-0002
TS-ILO 35 WP	Beamsplitter TV-Adapter, f = 35.0 mm c-mount, soakable	873-0003
TV-14 UHDWP, HE-design	Adapter f = 14.0 mm, c-mount, soakable	870-0040
TV-18 UHDWP, HE-design	Adapter f = 18.0 mm, c-mount, soakable	870-0041
TV-22 UHDWP, HE-design	Adapter f = 22.0 mm, c-mount, soakable	870-0042
TV-25 UHDWP, HE-design	Adapter f = 25.0 mm, c-mount, soakable	870-0043
TV-28 UHDWP, HE-design	Adapter f = 28.0 mm, c-mount, soakable	870-0044

2

INSUFFLATOR

CO$_2$-INSUFFLATOR D-FLOW

· Full automatic
· Filter system for sterility
· Up to 45 liters/ minute
· Microprocessor controlled

Series	Description
DF-315	Maximum gasflow: 15 l/min
DF-320	Maximum gasflow: 20 l/min
DF-330	Maximum gasflow: 30 l/min
DF-345	Maximum gasflow: 45 l/min

Options

Version H	· With gas heater
Version V	· With OSD - On-Screen-System
	(only available with connected ILO OSD Camera)

Technical Data

Insufflator pressure:	· 0 - 30 mmHg
Power supply:	· 100 - 240 VAC, 50 - 60 Hz
Power consumption:	· 25 - 40 VA (25-105 VA with gas heating)
Protection class (acc.to IEC 60601-1):	· I
Safety class:	· BF
IP code:	· IP 31
Standard:	· IEC 60601-1-2 / IEC 60601-1-1
Device classification (acc. to MDD 93/42/EEC):	· IIb
Gas:	· Carbon dioxide (medical)
Gas connection:	· UNF 7/16"
Dimensions:	· Control unit: 355mm x 105mm x 253mm (WxHxD); 6,5 kg
Delivery contains:	· Insufflator, mains cable, CO2 high pressure tube UNF to German gas connection, wrench set: SW14/ SW30, sterile filter, standard silicone tube (not H version), system gas heater with tube set (only H version), user manual
Features:	· Flexible gas supply: The device can be used with gas bottles or central gas supply systems. The gas supply mode can be changed very easily by integrated software.

· System gas heater: For reduction of post surgery problems the DF Series is available with a high efficient gas heater. The gas heater is preadjusted and works on a plug and play base full automatically. The heat exchanger can be autoclaved with the tube set.

· OSD: The On-Screen-Display gives the surgeon the possibility to display the important values on the monitor.

· ACF: The DF Series stands for Advance-Continuous-Flow-Insufflation. That means no more disruption between gasflow and pressure reading phases.

· Safety: The automatic self check is activated each time the unit is switched on to ensure that all electronic and pneumatic components are in good running order. This safety feature carries a guarantee for lifetime of the unit. The changeable sterile filter prevents reflux of liquids and contamination of the gas way.

· Differantial pressure indicator: A colored LED arrey shows the actual-setpoint pressure difference between setted value and factual value in the patient.

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INSUFFLATOR
ACCESSORIES

Insufflator Accessories	Description	Order Number
Heating Device	Heater source for insufflators with heating, autoclavable	952-0012
Filter	single sterilized filter for insufflator, single use	952-0009
Filter	50 sterilized filter for insufflator, single use	952-0007
Filter	100 sterilized filter for insufflator, single use	952-0005
Filter	250 sterilized filter for insufflator, single use	952-0006
Filter	500 sterilized filter for insufflator, single use	952-0008
High-pressure-tube	DIN GER/ DIN GER, 1m	952-1020
High-pressure-tube	UNF/ UNF, 1m	952-1022
High-pressure-tube	UNF/ PIN Index, 1m	952-1025
High-pressure-tube	UNF/ ISO, 1m	952-1026
High-pressure-tube	UNF/ GER, 1m	952-1021
Tubing	For laparoscopy insufflator without heating, 8mm x 2,5m	952-0004
Tubing	For laparoscopy insufflator with heating, 8mm x 2,5m	952-0003

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