# ENDOCAM Logic 4K
## Lenses

**1**

| RIWO lens with snap-on mechanism and C-Mount thread, steam-sterilizable and reprocessable by machine | | Product no. |
|---|---|---|
| **AUTOCLAVE 134° C / 273° F** | RIWO lens<br>f = 14 mm | **85261144** |
| | RIWO lens<br>f = 24 mm | **85261244** |
| **RIWO zoom lens with snap-on mechanism and C-Mount thread, steam-sterilizable and reprocessable by machine** | | |
| **AUTOCLAVE 134° C / 273° F** | RIWO zoom lens<br>f = 13-29 mm | 85261504 |
| **RIWO angular lens with rotatable snap-on mechanism and C-Mount thread, suspension function, suitable for reprocessing by machine and low-temperature procedure** | | |
| | RIWO angular lens<br>f = 14 mm | 5257141 |
| | RIWO angular lens<br>f = 17 mm | 5257171 |

# ENDOCAM Logic HD
## Camera controller



core | Full HD | 1080p | 3G-SDI | HDMI | USB | dialog

- Various equipment variants. The variants exclusively refer to the configuration of output and input signals
- Digital signal processing
- Outstandingly wide range of application due to integration of various applied parts and diagnostic methods
- updates can be applied at any time via USB port
- Storage of high-resolution images and HD videos on USB storage media
- Integration of further image signals via picture-in-picture port (3G-SDI)
- Specialized for use in integrated operating rooms as a central **core nova module**

- User-friendly. Clinically-devised presets are pre-programmed for various disciplines. This includes applications using standard and fiber endoscopes as well as sensor endoscopes with chip-on-the-tip technology. Personal settings can easily be saved as well
- Maximum flexibility: The resolution of all signal outputs can be adapted individually to the connected system
- Patient data can be entered using the connected USB keyboard
- Direct printing possible
- Modern, clearly arranged on-screen menu
- Dialog function:
  1. Control of connected ENDOLIGHT light source for optimum illumination with maximum protection for the endoscope
  2. Monitor display of major device parameters for further devices (pressure indication, set flow, residual gas display, etc.)

**ENDOCAM Logic HD controller bndl**
Comprising:
1x ENDOCAM Logic HD controller ........................................... 552510x
1x hand-held remote control USB .......................................... 5525401
1x USB flash memory 8 GB .................................................. 56540028
1x CAN-BUS terminator ...................................................... 5590.989
1x HDMI / DVI-D cable, lockable, 3.0 m .................................... 103843
1x power cable ............................................................. 2440.03

**Controller equipment variants:**
2x HDMI out ................................................................... **55251011**
2x HDMI out / 2x 3G-SDI out ............................................... **55251051**
2x HDMI out / 2x 3G-SDI out / PIP in .................................... **55251061**
2x HDMI out / 2x 3G-SDI out / analog out............................. **55251071**
2x HDMI out / 2x 3G-SDI out / PIP in / analog out ................. **55251081**

# ENDOCAM Logic HD
## Technical data of camera controller

| Camera controller | 552510x | | |
|---|---|---|---|
| **Device properties** | | | |
| Type of controls | Touchscreen | | |
| Max. video signal resolution | 1920 x 1200 pixels | | |
| White balance, color temperature range | 2300 K to 7000 K | | |
| Noise level | 34 dB to 48 dB max. | | |
| Digital zoom | 1.5x max. | | |
| Individually configurable profiles | at least 5 profiles | | |
| Brightness control | Automatic shutter control + automatic gain control | | |
| Image format of saved pictures / videos | JPEG, TIFF (max. 1920 x 1080) / MPEG4 (max. 1920 x 1080) | | |
| Operating conditions | +10°C to +40°C, 30% to 75% rel. humidity, atmospheric pressure 700 hPa to 1060 hPa | | |
| Operating mode | Continuous operation | | |
| **Equipment** | | | |
| IP rating | IP20 | | |
| Cooling method | Controlled fan | | |
| **Power supply** | | | |
| Mains + frequency | 100-240 VAC, 50/60 Hz | | |
| Power consumption | 100 VA | | |
| Current rating | max. 1.0 A | | |
| **Regulatory standards** | | | |
| Safety | US/ CA: UL 2601-1 / CSA C22.2 NO.601.1, EU: EN 60601 | | |
| EMC | EN 60601-1-2 / IEC 601-1-2 | | |
| Medical device class | Class 1 | | |
| Classification of applied part | CF | | |
| **Interfaces** | | | |
| Video outputs | 2x 3G-SDI, 2x HDMI, 1x YC, 1x CV | | |
| PiP input | 1x 3G-HD-SDI | | |
| Remote output | 2 x 3.5 mm jack, stereo | | |
| USB port (on front panel, for external storage media) | USB 2.0 (FAT32/NTFS formatting) | | |
| Resolution (HDMI output) | Adjustable in the user menu | | |
| | 1280 x 1024/60P (5:4) | 1920 x 1080/60P (16:9) | 1920 x 1200/60P (16:10) |
| Resolution (3G-SDI output) also supports HD-SDI | Adjustable in the user menu | | |
| | 1280 x 720/50P (16:9) 1280 x 720/60P (16:9) | 1920 x 1080/50I (16:9) 1920 x 1080/60I (16:9) | 1920 x 1080/50P (16:9) 1920 x 1080/60/P (16:9) |
| Resolution of SD outputs for video (Composite) and S-Video (Y/C) | Adjustable in the user menu PAL 720 x 576/50/I (4:3) NTSC 720 x 486/59.94/I (4:3) | | |
| Resolution of picture-in-picture input (3G-SDI) | 1280 x 720/50P (16:9) 1280 x 720/60P (16:9) | 1920 x 1080/50I (16:9) 1920 x 1080/60I (16:9) | 1920 x 1080/50P (16:9) 1920 x 1080/60P (16:9) |
| **Dimensions and weights** | | | |
| Weight | 6.2 kg | | |
| Dimensions (W x H x D) | 300 x 120 x 416 mm | | |

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# ENDOCAM Logic HD
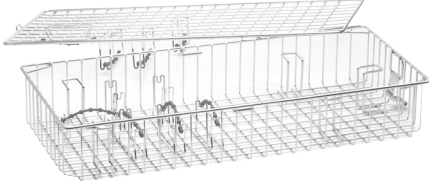## 3-chip HD camera head



AUTOCLAVE
**134° C / 273° F**

HD
High Definition

- Digital image processing and digital signal transmission
- 2 programmable camera head buttons with 4 available functions
- Universal C-Mount lens connection
- Cable outlet angled at 30°

- Camera head cable can be replaced in the hospital by technicians
- Steam-sterilizable
- Can be reprocessed by machine
- Suitable for low-temperature procedure

**ENDOCAM Logic HD camera head** ......................... 85525922
3-chip type, cable length 3 m

| Recommended accessories | | Product no. |
|---|---|---|
| **RIWO lens** | C-Mount, f = 14 mm | **85261144** |
| | C-Mount, f = 24 mm | **85261244** |
| **RIWO zoom lens** | C-Mount, f = 13 - 29 mm | **85261504** |
|  | Perforated basket for camera head (L x W x H) 448 x 200 x 73 mm | **38002** |

# ENDOCAM Logic HD
## Technical data of camera head

| Camera head | 85525922 |
|---|---|
| **Device properties** | |
| Sensor | 3x 1/3" CCD |
| Operation | 2 programmable head buttons with 4 functions |
| Operating conditions | +10°C to +30°C, 20% to 75% rel. humidity, atmospheric pressure 700 hPa to 1060 hPa |
| **Equipment** | |
| Thread for objective lens | C-Mount |
| Degree of protection against the ingress of moisture | IPX7 |
| Service | Cable and eyepiece snap-in coupling can be replaced on site |
| **Dimensions and weight** | |
| Camera head weight (without cable) | 170 g |
| Housing dimensions (W x H) - without cable and anti-kink protection | 43 x 53 mm |
| Camera head length (without cable) | 105 mm |
| Cable length | 3 m / 5 m |
| Cable outlet | 30° |

# Accessories
## Keyboards - storage media

| Keyboards | | Product no. |
|---|---|---|
|  | **Mini CleanBoard USB**<br>German version (QWERTZ) | **103823** |
| | **Mini CleanBoard USB**<br>US / English version (QWERTY) | **103824** |

● **Keyboards**

Wipe-clean USB keyboard incl. mouse pad. Magnets integrated on the underside for reliable surface contact. IP65 splash-water protected, suitable for common disinfectants.
Dimensions (W x H x D): 300 x 22.4 x 180 mm

| USB flash memory | | Product no. |
|---|---|---|
|  | **USB flash memory**<br>8 GB<br>Formatting: FAT32 | **56540028** |
| | **USB flash memory**<br>32 GB | **72321829** |

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# ENDOLIGHT LED 2.2
## LED light source

- The light output is comparable to a 300-watt xenon illuminant
- The LED service life is at least 30,000 hours
- The LED light source reduces power consumption by up to 80% compared to an equivalent xenon light source
- Extremely quiet heatpipe ventilation concept at only 25 dB(A) noise level
- Light cables from different manufacturers (Richard Wolf, Storz, Olympus, ACMI) can directly be connected to the multi-port socket

- Automatic dimming of the light cable socket if the light cable is removed
- Very homogenous illumination of the endoscopic surgical area. No drop in brightness in the peripheral area and no "black spot" in the center
- Very stable color temperature (6500 Kelvin) over the entire LED service life
- Dialog function in conjunction with ENDOCAM Logic camera systems
- Compatible with core nova

**Light source ENDOLIGHT LED 2.2 bndl** ................... **51640011**

Comprising:
1x ENDOLIGHT LED 2.2 ......................................................... 5164001
1x patch cable, RJ45 SFTP, 0.5 m ......................................... 72325378
1x power cable ..................................................................... 2440.03

# ENDOLIGHT LED 2.2
## Technical data

| ENDOLIGHT LED 2.2 | 5164001 |
|---|---|
| **Device properties** | |
| Type and number of lamps | 1x high-power LED |
| Lamp service life | 30,000 h |
| Brightness in Lumen | 1900 lm |
| Light output compared to xenon in W | 300 W |
| Color temperature | 6500 K |
| Brightness control | 0 - 100% |
| Noise level | 25 dB(A) |
| Operating mode | Continuous operation |
| Operating conditions | +10ºC to +40ºC, 30% to 75% rel. humidity, atmospheric pressure 700 hPa to 1060 hPa |
| **Equipment** | |
| Supported light cables | Wolf, Storz, Olympus, ACMI |
| IP rating | IP20 |
| Cooling method | Passive heatpipe, fan |
| **Power supply** | |
| Mains + frequency | 100-240 VAC, 50/60 Hz |
| Power consumption | 150 VA |
| Current rating | 1.1-0.6 A |
| **Regulatory standards** | |
| Safety | EU: EN 60601-1 |
| EMC | EN 60601-1-2 / IEC 601-1-2 |
| Medical device class | Class 1 |
| Classification | CF |
| **Dimensions and weight** | |
| Weight | 10.5 kg |
| Dimensions (W x H x D) | 300 x 160 x 421 mm |

Light sources

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# fusion
## Fiber light cable

| Fusion Fiber light cable, complete | Color coding on endoscope side | Ø of **fiber bundle** and color code | Length | Fiber light cable without adapter Product no. | Complete Product no. |
|---|---|---|---|---|---|
| **Fiber light cable, bndl** Comprising: Fiber light cable, Adapter, projector side (8095.07), and adapter, endoscope side (809509) | | 5.0 mm gray | 2.3 m | 80655023* | **806550231** |
| | | | 3.0 m | 80655030* | 806550301 |
| | | | 3.5 m | 80655035* | **806550351** |

\* The *fusion* light cables can also be ordered without adapter. Adapters for connecting products from other manufacturers are offered as separate items in our product range.

# Universal device cart RIWOmobil

**All RIWOmobil variants**
**have the following properties in common:**

- Integrated cable duct
- 3 shelf units (width 370 mm), 2 of which continuously adjustable
- 4 double casters, 2 of which with dual-function locking (directional locking/freewheeling/full locking)
- Side profiles made of aluminum with mounting points for installing swivel arms and attaching a wide range of accessories
- Dimensions (W x H x D): 720 x 1518 x 700 mm
- 2 casters with dual conductivity
- Color: White, RAL 9016

**RIWOmobil** features the following advantages:

- Order-specific production
  Each cart is configured and built according to the customer's individual demands.
  Any additionally selected shelf units and drawers are installed, adjusted and tested directly in the production process.
- Quality and value preservation
  All components are designed for longevity and high loads.
- Safety
  All mechanical and electrical components are subjected to our permanent quality control process.
- Ergonomics
  On all RIWOmobil variants, the monitor position can be adapted to the demands of the operating team.
  Height-adjustable shelf units and device handles on the cart provide individual adaptation options.

Device carts

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# Universal device cart RIWOmobil

## Your optimum RIWOmobil in just 3 steps

### 1. Where to place the monitors?

**RIWOmobil** provides the option of positioning a swivel arm either in the center on the bridge or laterally in the side profile.
As an alternative, a monitor mount can also be used to position a monitor in the center of the bridge.

**Bridge**
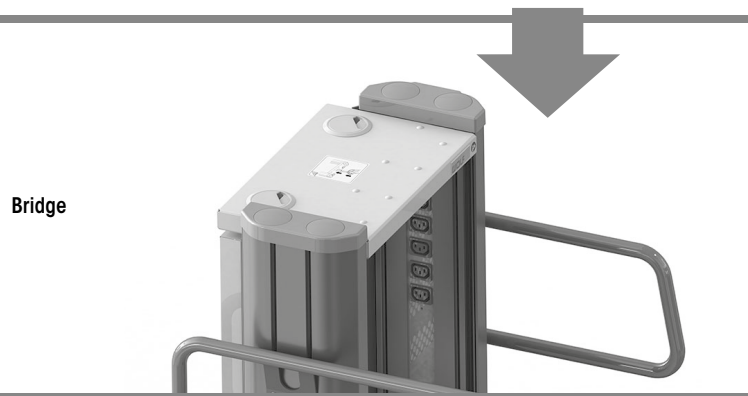
### 2. Which electrics variant?

The b**aseline electrics with a main switch i**ntegrated in the aluminum profile, distributor strip with 12 device connections.
The p**remium electrics variant for highest demands includes the following elements in addition to the b**aseline equipment: isolating transformer and insulation monitoring unit with safety monitoring.

### 3. Which operating voltage?

**RIWOmobil with premium electrics**
(for accessories, see section Device cart accessories)
Comprising:
Basic housing (premium version) with integrated isolating transformer,
insulation monitoring unit, socket strip with main switch module,
insulation monitor display and 12 sockets, 6 device connection cables,
power cable 5.5 m,
Isolating transformer 220-230V, 2000VA...........................**32116015**
Isolating transformer 100-120V, 1700VA............................**32116013**

**Premium Electrics**

*core*nova

**RIWOmobil with baseline electrics**
(for accessories, see section Device cart accessories)
Comprising:
Basic housing (baseline version), socket strip with 12 sockets and
integrated main switch module, 6 device connection cables,
power cable 5.5 m,
Version with 220-240V, 2000VA ......................................**32116014**
Version with 100-120V, 1700VA ......................................**32116012**

**Baseline Electrics**

*core*nova

**Without Electrics**

**RIWOmobil without electrical equipment**
For mounting swivel arms ..................................................**32116011**
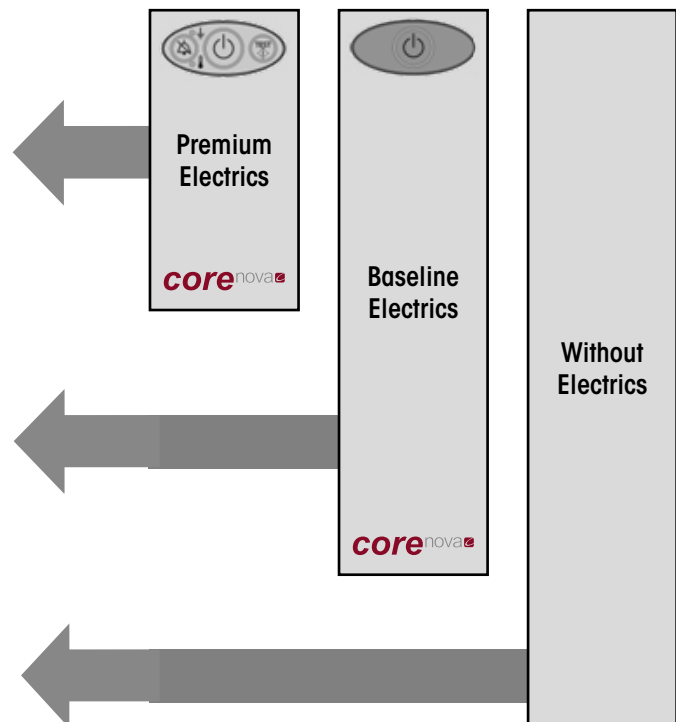
# RIWOmobil
## Swivel arm for bridge
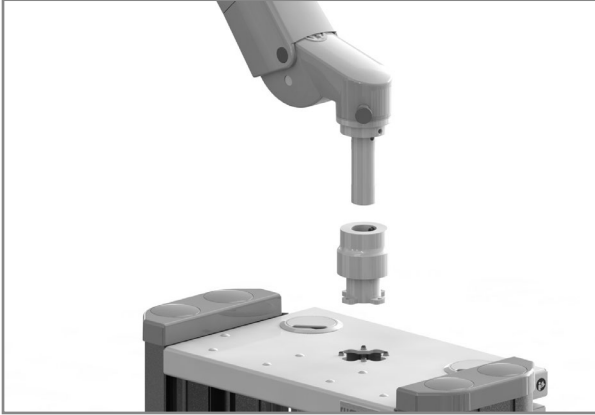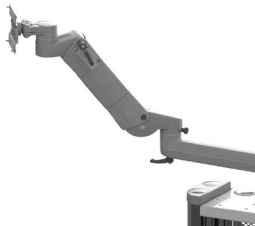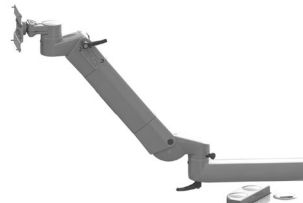
**All Flexion-Port models for mounting on the bridge have the following properties in common:**

- VESA 100 mount
- Integrated cable duct
- Mechanical locking
- Swiveling range 340°. The area of the swiveling range can be defined individually during assembly
- Durable powder coating in white (RAL 9016)
- The specified length refers to the effective length between the swivel points
- Adapter for mounting on the bridge (32116474) is included in the set

**Device carts**

**9**

| | Product no. |
|---|---|
| **FLEXION-PORT 300 (58 cm) bndl**<br>Load capacity: 3 - 10 kg<br>Comprising:<br>1x FLEXION-PORT 300 (58 cm) .......................................... 32116058<br>1x swivel arm mount for bridge .......................................... 32116474 | 321160582 |
| **FLEXION-PORT 400 (68 cm) bndl**<br>Load capacity: 8 - 14 kg<br>Comprising:<br>1x FLEXION-PORT 400 (68 cm) .......................................... 32116068<br>1x swivel arm mount for bridge .......................................... 32116474 | 321160682 |
| **FLEXION-PORT 350+300 (93 cm) bndl**<br>Load capacity: 8 - 12 kg<br>Comprising:<br>1x FLEXION-PORT 350+300 (93 cm) .................................. 32116093<br>1x swivel arm mount for bridge .......................................... 32116474 | 321160932 |
| **FLEXION-PORT 350+400 (103 cm) bndl**<br>Load capacity: 3 - 9 kg<br>Comprising:<br>1x FLEXION-PORT 350+400 (103 cm) ................................ 32116103<br>1x swivel arm mount for bridge .......................................... 32116474 | 321161032 |
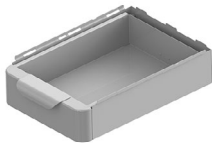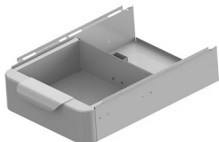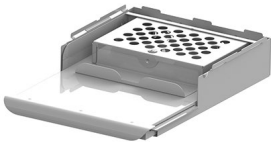
# RIWOmobil
# Accessories
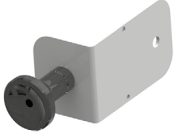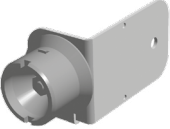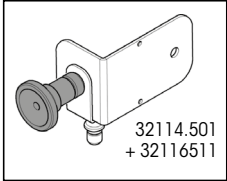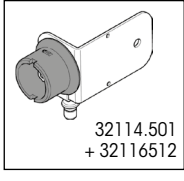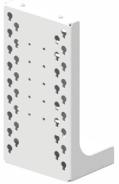
**The accessories listed on this page is available in two variants:**

1. Mounting, adjustment and final check
   during the production process
2. Retrofit kit for assembly by customer

| Drawers | | Product no. |
|---|---|---|
| | Assembly during RIWOmobil production **Drawer** | 32116412 |
| | Retrofit kit **Drawer** | 321164121 |
| | Assembly during RIWOmobil production **Drawer, short, with compartment for power supply unit** | 32116414 |
| | Retrofit kit **Drawer, short, with compartment for power supply unit** | 321164141 |
| | **Pull-out keyboard with mousepad** | 32116413 |
| | Retrofit kit **Pull-out keyboard with mousepad** | 321164131 |
| **Shelf unit to accommodate large devices** | | |
| Dimensions: width: 370 mm, depth: 526 mm | Assembly during RIWOmobil production **Shelf unit** | 32116401 |
| | Retrofit kit **Shelf unit** | 321164011 |
| Dimensions: width: 370 mm, depth: 626 mm | Assembly during RIWOmobil production **Shelf unit, long** | 32116402 |
| | Retrofit kit **Shelf unit, long** | 321164021 |

Device carts

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# RIWOmobil
## Accessories

| Camera holding bracket for universal use with standard and RIWO lenses | | Product no. |
|---|---|---|
| | **Camera holding bracket** <br><br> For universal use with standard and RIWO lenses | 32116511 |
| | **Camera holding bracket** <br><br> for mounting 3DHD camera heads | 32116512 |
| **Light cable holder for mounting light cables with R.Wolf connection** | | |
| 32114.501 + 32116511    32114.501 + 32116512 | **Light cable holder** | 32114501 |
| **Monitor mounting bracket** | | |
| Front view    Rear view | **Monitor mounting bracket VESA 75 x 100** <br> Monitor mounting bracket for installation on the bridge. | 321165001 |
| Front view    Rear view | **Monitor mounting bracket VESA 200 x 400** <br> Monitor mounting bracket for installation on the bridge. | 32116472 |
| | **Monitor mounting bracket, lateral, VESA 75/100** <br><br> incl. adapter plate for lateral installation on RIWOmobil. <br> Inclining or swiveling, <br> maximum load: 15 kg, length: 5.5 cm | 32116451 |

Device carts

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# RIWOmobil
## Accessories

| Infusion bottle holder | | Product no. |
|---|---|---|
|  | **Infusion bottle holder**<br>adjustable from 1.6 m to 2.6 m,<br>load capacity max. 8 kg | **32114.521** |
| **CO$_2$** | | |
| <br>CO$_2$ bottle holder, 1 L | **CO$_2$ bottle holder, 1 L**<br>for bottle ø up to max. 90 mm,<br>load capacity max. 5 kg | **32114.531** |
| <br>CO$_2$ bottle holder, 10 L | **CO$_2$ bottle holder, 10 L**<br>for bottle ø up to max. 160 mm,<br>load capacity max. 35 kg | **32114.535** |
| **Lateral holder** | | |
|  | **Holder**<br>for hand-held remote control<br>or camera head connector | **64030.106** |
| **Footswitch tray and bracket** | | |
| <br>Footswitch tray     Universal holder | **Footswitch tray**<br>load capacity max. 3 kg | **32114.541** |
| | **Universal holder**<br>load capacity max. 3 kg | **32114.545** |

Device carts

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# INSUFFLATOR HIGHFLOW 45 BASIC

| | Product no. |
|---|---|
| **Insufflator 45 BASIC bndl**<br>consisting of:<br>Insufflator 45 BASIC FR 45 l/min (2235001),<br>Insufflation tube set L 2.5 m (8170.101),<br>Hygiene filter, sterile, disposable (PACK= 10 PCS) (4171.111)<br>and power cable 3 m long (2440.03) | 22350011 |
| **Accessories: Tube sets for insufflation** | |
| **Insufflation tube set L 2.5 m**, High Flow, D = 8 mm, autoclavable | 8170.232 |
| **Insufflation tube set L 2.5 m**, autoclavable | 8170.101 |
| **Insufflation tube set L 2.7 m**, with integrated hygiene filter, disposable, (PACK= 10 PCS) in individual sterile packaging | 4170.501 |
| **Hygiene filter**, sterile, disposable (PACK= 10 PCS) in individual sterile packaging | 4171.111 |
| **Accessories for gas supply** | |
| **$CO_2$ connection tube 1.5 m NIST-NIST** | 74021038 |
| with | |

| | | Product no. |
|---|---|---|
| **Pressure reducer for $CO_2$ connector DIN 477-1** | DIN 477-1 | 74007054 |
| **Pressure reducer for $CO_2$ connector DIN EN ISO 407** | DIN EN ISO 407 | 74007055 |
| **Pressure reducer for $CO_2$ connector ISO 5145** | ISO 5145 | 74007056 |

| | Product no. |
|---|---|
| or | |
| **Connection tube for $CO_2$ 5.0 m DIN** for centralized $CO_2$ gas supply (Dräger) | 74021039 |
| **Connection tube for $CO_2$ 5.0 m NF** for centralized $CO_2$ gas supply (Liquid Air) | 74021040 |
| **Software modules (optional)** | |
| **Software module CAN bus** CAN bus interface for integration in CORE | 2235101 |
| **Software module BABY MODE** BABY MODE for special use in pediatrics | 2235102 |
| **Software module VIDEO DISPLAY:** video display using DIALOG via CAN bus | 2235103 |

DEVICES / ACCESSORIES

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BDE97

# TECHNICAL DATA

## INSUFFLATOR HIGHFLOW 45 BASIC

| Insufflator 45 BASIC | 2235001 |
|---|---|
| **Device properties** | |
| Operating mode | Continuous operation |
| Operating conditions | +10°C to +40°C, 30% to 75% rel. humidity, atmospheric pressure 700 hPa to 1,060 hPa |
| Storage and transport conditions | -20ºC to +60ºC, 10% to 90% rel. humidity, atmospheric pressure 700 hPa to 1,060 hPa |
| **Power supply** | |
| Mains + frequency | 100–240 V~, 50/60 Hz |
| Power consumption | 60 VA |
| Current rating | 0.6–0.2 A |
| Fuse | T 3.15 AH 250 V |
| **Regulatory standards** | |
| Protection class to IEC/EN 60601-1 (UL 60601-1/CSA C222 No6011 – for USA) | I |
| Electromagnetic compatibility (EMC) | IEC/EN 60601-1-2 |
| Medical Devices Directive 93/42/EEC | Class IIb |
| Protection against electric shock | Type CF applied part |
| Degree of protection against the ingress of liquids | IP 20 (not protected) |
| Degree of protection in the presence of flammable mixtures | Device is not protected against explosions (do not operate this device in explosive atmospheres) |
| **Dimensions and weights** | |
| Weight | 8.9 kg (19.5 lbs) |
| Dimensions (W x H x D) | 300 mm x 160 mm x 455 mm |

| Relevant application parameters | |
|---|---|
| Insufflation medium | Medical-grade $CO_2$ (degree of purity > 99.5%) |
| Intraabdominal pressure | 3 mmHg to 25 mmHg (± 2 mmHg) selectable in increments of 1 mmHg |
| Gas flow rate primary filling | 1 l/min (± 50%) |
| Gas flow rate, High Flow | 2 l/min to 45 l/min (± 20%) selectable in increments of 1 l/min |
| Consumption indicator | 0 l to 9,999 l (± 20%) |

DEVICES / ACCESSORIES

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# SPECTRUM – TECHNICAL SPECIFICATIONS

## Electrosurgery Argon ThermoStapler®

SmartDevice System – detects and identifies the connected instrument

10 inches touch screen

Wireless footswitch

Voice communication

Different languages available

Possibility of storing up to 105 programs under different names

Remote program change

Special endoscopic modes

ThermoStapler® - bipolar sealing of blood vessels – up to 7mm

Power monitor

Easy software upgrade

SpectrumLine trolley

CE 2274

### SAFETY FEATURES

Protection against electric shock:

| | |
|---|---|
| Class / Grade | I / CF |
| Low-frequency leakage currents | in accordance with EN 60601-1 |
| High-frequency leakage currents | in accordance with EN 60601-2-2 |
| Generator working frequency | 333 kHz |
| Defibrillation proof | in accordance with EN 60601-2-2 |
| NEM System | neutral electrode control |
| | optical indication 7 levels, required restistance < 240 $\Omega$ |

### MONOPOLAR CIRCUIT

| | | |
|---|---|---|
| Mono Cut (300$\Omega$) | | 9 effects/400W |
| Precise Cut (300$\Omega$) | | 9 effects/50W |
| Mixed Cut (60$\Omega$) | | 9 effects/150W |
| Polipo Cut (50$\Omega$) | (S) | 9 levels/400W |
| Papillo Cut (60$\Omega$) | (S) | 9 levels/400W |
| Artro Cut (300$\Omega$) | (S) | 9 levels/400W |
| Uro Cut (300$\Omega$) | (S) | 9 levels/400W |
| Hystero Cut (300$\Omega$) | (S) | 9 levels/400W |
| Argon Cut (200$\Omega$) | (S) | 9 effects/350W |
| Muco Cut (100$\Omega$) | (S) | 9 levels/400W |

### MONOPOLAR COAGULATION

| | | |
|---|---|---|
| Soft Coag (50$\Omega$) | | 9 effects/200W |
| Forced Coag (300$\Omega$) | | 9 effects/200W |
| Spray Coag (1250$\Omega$) | | 80W |
| Hybrid Coag (300$\Omega$) | | 9 effects/200W |
| Endo Spray (1250$\Omega$) | (S) | 30W |
| Standard Argon (1250$\Omega$) | (S) | 80W |
| Endo Argon (1250$\Omega$) | (S) | 40W |
| Pulse Argon (1250$\Omega$) | (S) | 80W |
| Uro Coag (60$\Omega$) | (S) | 9 levels/200W |
| Artro Coag (60$\Omega$) | (S) | 9 levels/200W |
| Hystero Coag (60$\Omega$) | (S) | 9 levels/200W |

### BIPOLAR CUTTING

| | | |
|---|---|---|
| Bi-Cut (300$\Omega$) | (S) | 9 effects/120W |
| Uro Bi-Cut (200$\Omega$) | (S) | 9 effects/400W |
| Hystero Bi-Cut (200$\Omega$) | (S) | 9 effects/400W |
| Artro Bi-Cut (50$\Omega$) | (S) | 9 levels/400W |
| Uro Bi-Vapor (200$\Omega$) | (S) | 9 effects/400W |

### BIPOLAR COAGULATION

| | | |
|---|---|---|
| Soft Bi-Coag (50$\Omega$) | | 9 effects/120W |
| | | AutoStart/AutoStop |
| Forced Bi-Coag (300$\Omega$) | | 9 effects/120W |
| Uro Bi-Coag (10$\Omega$) | (S) | 9 effects/400W |
| Hystero Bi-Coag (10$\Omega$) | (S) | 9 effects/400W |
| Artro Bi-Coag (10$\Omega$) | (S) | 9 effects/400W |
| Sciss Bi-Coag (25$\Omega$) | (S) | 9 effects/350W |

### ARGON

| | |
|---|---|
| Argon grade | 4.8 (99,998%) or higher |
| Gas input pressure | 4-5 Bar |
| Gas outflow | 0.1-10.0 [l/min], regulated 0.1 [l/min] in whole range |
| Pressure | Regulator with an 0.45 MPa (4.5 Bar) manometer on the argon cylinder |

| | |
|---|---|
| **ThermoStapler®** bipolar blood vessel sealing system (10$\Omega$) | 9 effects/300W |
| **ThermoStapler® LAP** laparoscopic bipolar blood vessel sealing system (10$\Omega$) | 9 effects/60W |

### OTHER FEATURES

| | |
|---|---|
| SpectrumResult system | automatic power regulation |
| Program memory | 105 different memory locations in 7 groups |
| Wireless footswitch | easy operation, without a cable |
| Outputs | various configuration of the sockets available |

### WEIGHT AND DIMENSIONS

| | |
|---|---|
| Lenght | 495 mm |
| Width | 415 mm |
| Height | 225 mm |
| Weight | 12,2 kg |

### POWER SUPLLY

| | |
|---|---|
| Supply voltage | 220-240 [V] +/- 10% 50/60 [Hz] |
| | or 110-120 [V] +/- 10% 50/60 [Hz] |
| Rated power input | 1350 [VA] |

(S) - Specialized mode available only for dedicated SDS cable / instrument connected

# reusable neutral electrodes
## elektrody neutralne wielokrotnego użycia

| | Ref. No.<br>Kod | dimensions<br>wymiary | cable length<br>dł. kabla | plug<br>wtyk | |
|---|---|---|---|---|---|
| | 242-008 | 30x17 cm | 4 m | EMED plug<br>wtyk EMED | Neutral silicone electrode, reusable, for adults<br>Elektroda neutralna silikonowa, wielorazowa, dla dorosłych |
| | 242-003 | 30x17 cm | 0.5 m | | Neutral silicone electrode, reusable, for adults<br>Elektroda neutralna silikonowa, wielorazowa, dla dorosłych |

# footswitches
## włączniki nożne

| | Ref. No. Kod | cable length dł. kabla | |
|---|---|---|---|
| | 100-336 | | Three-pedal footswitch, MultiSwitch, wireless<br>Włącznik nożny 3-przyciskowy, MultiSwitch, bezprzewodowy |
| | 100-316 | 5 m | Three-pedal footswitch, 6-pin plug<br>Włącznik nożny 3-przyciskowy, wtyk 6-pinowy |
| | 100-313 | | MultiSwitch, two-pedal footswitch, wireless<br>Włącznik nożny 2-przyciskowy MultiSwitch, bezprzewodowy |
| | 100-303 | 5 m | MultiSwitch, two-pedal footswitch, 6-pin plug<br>Włącznik nożny 2-przyciskowy MultiSwitch, wtyk 6-pinowy |
| | 100-302 | 5 m | Two-pedal footswitch, 6-pin plug<br>Włącznik nożny 2-przyciskowy, wtyk 6-pinowy |
| | 100-315 | | One-pedal footswitch, for COAGULATION, wireless<br>Włącznik nożny 1-przyciskowy, do KOAGULACJI, bezprzewodowy |
| | 100-305 | 5 m | One-pedal footswitch, for COAGULATION, 6-pin plug<br>Włącznik nożny 1-przyciskowy, do KOAGULACJI, wtyk 6-pinowy |
| | 100-314 | | One-pedal footswitch, for CUTTING, wireless<br>Włącznik nożny 1-przyciskowy, do CIĘCIA, bezprzewodowy |
| | 100-304 | 5 m | One-pedal footswitch, for CUTTING, 6-pin plug<br>Włącznik nożny 1-przyciskowy, do CIĘCIA, wtyk 6-pinowy |
| | 100-311 | | One-pedal footswitch, wireless<br>Włącznik nożny 1-przyciskowy, bezprzewodowy |
| | 100-301 | 5 m | One-pedal footswitch, 6-pin plug<br>Włącznik nożny 1-przyciskowy, wtyk 6-pinowy |

For ES120 unit and WATERFALL pump
Do aparatu ES120 i pompy WATERFALL

# EMED electrosurgical units
## aparaty elektrochirurgiczne EMED

| | Ref. No.<br>Kod | |
|---|---|---|
|  | 100-013 | Electrosurgical unit SPECTRUM<br>Aparat elektrochirurgiczny SPECTRUM |
|  | 100-620 | Electrosurgical unit ATOM<br>Aparat elektrochirurgiczny ATOM |
|  | 100-600 | Electrosurgical unit ENDO<br>Aparat elektrochirurgiczny ENDO |
|  | 100-610 | Electrosurgical unit ARTRO<br>Aparat elektrochirurgiczny ARTRO |
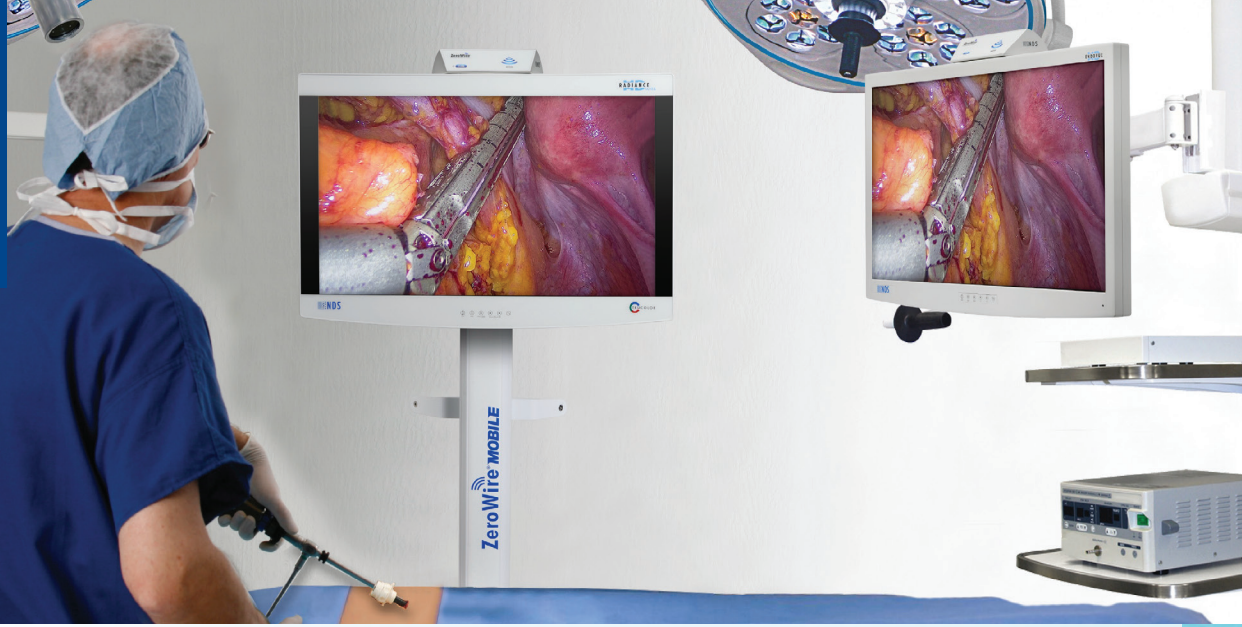
# ZEROWIRE® G2

- Optimized for endoscopy applications
- Promotes ergonomics and safety
- 2D & 3D video support
- Auto-tracking optimizes reliability
- User feedback with on-screen messages
- Compatible with ZeroWire Mobile

## MEDICAL-GRADE HD-VIDEO WIRELESS SYSTEM

ZeroWire® G2 is a revolutionary third-generation advanced wireless HD-video system with the aim to transform technology into a clinical solution that supports the drive to improve patient outcomes, improve efficiency, and lower operating costs.

Designed for user-friendly operation, ZeroWire G2 delivers full HD-video without noticeable video delay. Clinical teams can now enjoy greater mobility and positioning flexibility with wireless video imaging. The elimination of cables can enhance safety and patient care while promoting quicker turnaround times.

Once the simple link process is completed between a ZeroWire G2 pair, an automatic pairing logic keeps the two units linked between power cycles. An advanced, built-in video scaler processor in ZeroWire G2 enables virtually any HD-video source to be plug-and-play compatible. The upward angled front face of the ZeroWire G2 directs the Radio Frequency (RF) signal above obstructions towards the ceiling to maximize continuous wireless performance even under the most demanding conditions.

# TECHNICAL SPECIFICATIONS

## SPECIFICATIONS/FEATURES

| | |
|---|---|
| Frequency Band | 57-64 GHz |
| Transmitter (Tx) Video Input | DVI-D, 3G-SDI |
| Receiver (Rx) Video Output | DVI-D |
| Maximum Video Resolution Supported | 1080p60 |
| 3D Video Support [1] | Interleaved (Line-by-Line), Top/Bottom, Side-by-Side via DVI-D |
| Compression Technology | None |
| Chroma Subsampling Performance | 4:4:4 (DVI-D), 4:2:2 (3G-SDI) |
| Transmission Range [2] | <30'/9.14m |
| Pairs Per Room | Up to 2 |
| Patient Privacy Data Encryption | 256-bit AES |

## GENERAL

| | |
|---|---|
| Dimensions (W x H x D) | 9.3 x 3.4 x 2.0 in / 236 x 87 x 52 mm (Single)** |
| Warranty | 1 Year |
| Weight (Single) | 1.0 lbs/0.45 kg  (Single) |
| Shipping Weight* | 2.5 lbs/1.1 kg  (Single) <br> 4.5 lbs/2 kg (Pair) |
| Shipping Dimensions | 22" x 11" x 4"/56 x 28 x 10 cm (Pair) |
| Green Compliance | REACH, RoHS-3, WEEE |

## REGULATORY COMPLIANCE

ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, EN 60601-1, EN 60601  1-2, Conflict Minerals, FCC Part 15 Class A, ICES-003, VCCI V-3, MDR Class I, MDR 2017/745, FDA Class II, FDA 510(K) Cleared, including RF module model SII-SK63102 and SII-SK63101, (RE-D) Directive 2014/53/EU, EN 302-567, EN 301 489, CE, FCC ID: UK2-SII-SK6310 or 2ASUJ-SII-SK63101 and UK2-SII-SK63102 or 2ASUJ-SII-SK63102, IC ID: 6705A-SIISK63101 or 25001-SII-SK63101 and 6705A-SIISK63102 or 25001-SII-SK63102, 007AA106

## ORDERING INFORMATION

| | | |
|---|---|---|
| ZeroWire G2 | 90T2070 | ZeroWire G2 Pair (Transmitter and Receiver) |
| | 90T2071 | ZeroWire G2 Receiver Only |
| | 90T2072 | ZeroWire G2 Transmitter Only |
| ZeroWire G2 Accessory Kit [3] | 90Z0152 | **Pair:** Radiance 24", 26", EndoVue 24" |
| | 90Z0154 | **Pair:** Radiance G2 HB 26" |
| | 90Z0156 | **Pair:** Radiance Ultra 27" |
| | 90Z0162 | **Pair:** Radiance Ultra 32", EndoVue Plus 4K 32" |
| | 90Z0153 | **Single:** Radiance 24", 26", EndoVue 24" |
| | 90Z0155 | **Single:** Radiance G2 HB 26" |
| | 90Z0157 | **Single:** Radiance Ultra 27" |
| | 90Z0163 | **Single:** Radiance Ultra 32", EndoVue Plus 4K 32" |

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Transmitter (Tx)



Receiver (Rx)



[1] 3D support is only available to SMPTE compliant video timings at 1080p 59.94/50 Hz via DVI-D.

[2] Follow user manual guidelines to achieve optimum performance and maximum range.

[3] Single or Pair kit includes display mounting bracket(s), power cable display/ZeroWire splitter(s) (24"-32"), and DVI-D cable(s).

* Shipping weights are approximate

** Tolerance +/- 0.3 mm

NDS
A Novanta Company

Buteliile pentru gaze comprimate sunt destinate transportului, stocarii si distributiei unei game variate de gaze cum ar fi: oxigen, hidrogen, azot, metan, amestec de gaze, oxid de carbon, heliu, etc.
Aceste butelii sunt utilizate în mod curent în procesele de sudare, taiere oxigaz si procese conexe, ca rezervoare de combustibil, de oxigen (pentru aparatele medicale), etc.

Forma si dimensiunile recipientelor – butelii sunt prezentate în tabelul urmator.

| Capacitate Cilindru | Diametrul Exterior | Presiunea Hidraulică | Lungimea Cilindrului | Masa | Material |
|---|---|---|---|---|---|
| (litri) | D (mm) | (bar) | L (mm) | (kg) | |
| 4 | 115 | 300 | 515 | 6,8 | |
| 5 | 140 | 300 | 470 | 7,2 | |
| 6 | 140 | 300 | 545 | 8,1 | |
| 7 | 140 | 300 | 620 | 9 | |
| 8 | 140 | 300 | 695 | 10,1 | |
| 10 | 140 | 300 | 840 | 12,2 | 34CrMo4 |
| 20 | 204 | 300 | 785 | 27,5 | |
| 30 | 204 | 300 | 1125 | 37 | |
| 40 | 229 | 300 | 1195 | 51,5 | |
| 50 | 229 | 300 | 1470 | 62 | |

# Rolling rack UNI-Cart

**Equipment cart UNI-Cart** ..................................... 32113202

Mechanically height-adjustable

■ Device cart UNI-CART
Base rack, monitor mount, handle, power supply unit bracket, IEC socket strip cable winder, power cable with Schuko plug and IEC socket, IEC cable

Device carts

9

| Device cart | 32113202 |
|---|---|
| Basic rack | with 4 double casters, Ø=100 mm |
| Monitor mount | VESA 75/100 |
| Holding bracket for power supply unit | large, for supply units with max. 420 mm circumference |
| IEC socket strip | 3 sockets with switch |
| IEC socket | Length 5 m |
| IEC cable | Length 1.5 m |
| max. load | 14 kg |
| Adjustment range (VESA top edge) | 1330 - 1630 mm, mechanically height-adjustable |
| Dimensions (W x H x D) | 540 x 1690 x 580 mm |
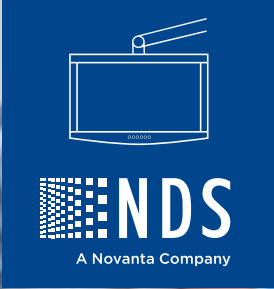
# RADIANCE® ULTRA 27"

- **Advanced imaging capabilities**
- **High brightness and color calibrated**
- **Cleanable splash-proof design**
- **10-year scratch-resistant-glass guarantee**
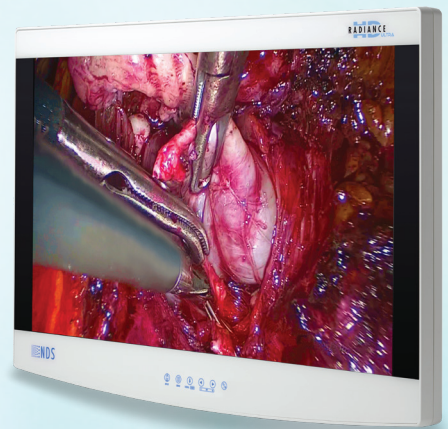
## PREMIUM VISUALIZATION

The Radiance® Ultra series leads the industry as a revolutionary display with the aim to transform advanced visualization technology capabilities and features into a clinical solution that supports the drive to improve patient outcomes, improve workflow efficiency, and lower operating costs.

Enhanced visualization is accomplished with an LED backlight technology that produces the brightest typical luminance level to enable deep abdominal illumination, overcoming glare and reflection in high ambient light environments. Medi-Match™ color calibration assures consistent image quality and accurate color reproduction. The result is outstanding video image performance.

With a focus to improve workflow efficiency and workplace safety, the Radiance Ultra series is available with an optional built-in ZeroWire receiver. When paired with the ZeroWire Mobile battery-powered stand, the combination becomes the world's first and only truly cordless and wireless mobile solution. To eliminate display scratches caused by IV poles or surgical light heads, the Radiance Ultra series uses scratch-resistant, splash-proof edge-to-edge glass that includes an industry-exclusive 10-year scratch-resistance guarantee.

## TECHNICAL SPECIFICATIONS

### IMAGE PERFORMANCE

| | |
|---|---|
| Diagonal Size | 27 inches |
| Image Size (W x H) | 24" x 13"/598 x 336 mm |
| Native Resolution (H x V) | 1920 x 1080 |
| Aspect Ratio | 16:9 |
| View Angle | 178° |
| Luminance | 900 cd/m² (Typical @ 6500°K) |
| Contrast Ratio | 1000:1 (Nominal) |
| Number of Colors | 1.07 Billion (10-bit) |
| Color Calibration | NDS Medi-Match™ |
| Color Gamut | BT.709 or SMPTE-C |
| Response Time | 14 ms (Typical) |

### GENERAL

| | |
|---|---|
| Dimensions (W x H x D) | 26.7" x 17.5" x 3.3"/678mm x 445mm x 84 mm |
| Protective Front Panel | Bezel Protected, Edge-to-Edge, Chemically Strengthened Glass |
| Scratch Resistant Guarantee | 10 Years |
| Warranty | 3 Years |
| Display Weight | 19.5 lbs/8.9 kg (Primary board only) |
| Shipping Weight* | w/ Secondary Digital Board – 32 lbs/14.5 kg w/ Secondary Analog Board – 31 lbs/14 kg |
| Shipping Dimensions | 33" x 9" x 22"/84 x 23 x 56 cm |

### VIDEO BOARD CONFIGURATIONS

| | |
|---|---|
| Primary Board – Digital & Analog | DVI-I Input/Output (Supports VGA/RGB/YPbPr/SoG), 3G-SDI Input/Output |
| Secondary Board – Digital | DVI-D Input/Output, VGA/RGB/YPbPr/SoG, 3G-SDI Input/Output |
| Secondary Board – Analog | DVI-D Input/Output, VGA/RGB/YPbPr/SoG, S-Video, Composite |

### CONFIGURATION
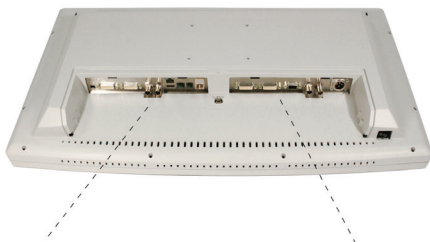


**Primary Board**
90R0104: Primary Board Only

**Secondary Board* (optional)**
90R0100: Primary + Digital Board
90R0102: Primary + Analog Board

### COMPLIANCE

| | |
|---|---|
| Regulatory Compliance | ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, Conflict Materials, FCC Class B, EN60601-1, EN60601-1-2, CE, MDR 2017/745, Class I Medical Device, designed to meet IPX6, CCC |
| Regulatory Compliance with ZeroWire Embedded | ANSI/AAMI ES60601-1, CAN/CSA C22.2 No. 60601-1, FCC Class B, CAN ICES-3(B) / NMB 3(B); EN60601-1, EN60601-1-2, MDR 2017/745, EU Class I Medical Device, US Class II Medical Device, (RE-D) Directive 2014/53/EU, this device contains module: SII-SK63101, EN 302 567, CE, FCC ID: UK2-SII-SK63101 or 2ASUJ-SII-SK63101, IC ID: 6705A-UK2-SII-SK63101 or 25001-SII-SK63101, 007AA106, FDA cleared |
| Green Compliance | REACH, RoHS-3, WEEE |

### ACCESSORIES

| | |
|---|---|
| Included Accessories | Power Supply, 100-240 VAC, 50-60 Hz to 24 VDC, 6.25 A AC power cord, region appropriate |
| Optional Accessories | Fiber Converter 5 VDC Power Cable (90Z0221) |

### ORDERING INFORMATION

| | |
|---|---|
| 90R0104 | RU 27" with Primary Board |
| 90R0109 | RU 27" with Embedded ZeroWire |
| 90R0100 | RU 27" with Primary and Secondary Digital Board |
| 90R0102 | RU 27" with Primary and Secondary Analog Board |

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*Shipping weights are approximate.*

NDS Quality System
ISO 13485 FDA Registration #2954921
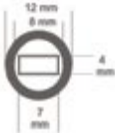Document 72D0038 Rev K

**NDS**
A Novanta Company

# monopolar cables
## kable monopolarne
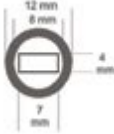
| SDS plug / wtyk SDS | Ref. No. Kod | cable length dł. kabla | | | max. 134°C STERILIZATION |
|---|---|---|---|---|---|
| | 280-03S 280-05S | 3 m 5 m | 4mm female gniazdo żeńskie 4 mm | Monopolar laparoscopic cable Kabel monopolarny do laparoskopu | |
| | | | Ø 4 mm | | |
| | 281-03S | 3 m | 3mm female gniazdo żeńskie 3 mm | Monopolar endoscopic cable Kabel monopolarny do narzędzi endoskopowych | |
| | | | Ø 3 mm | | |
| | 405-04S | 4.5 m | 2mm male wtyk męski 2 mm | Monopolar cable for resectoscope Kabel monopolarny do resektoskopu | |
| | | | Ø 2 mm | 8 mm / 2 mm | |
| | 408-14S | 4.5 m | angled connector złącze kątowe | Monopolar cable for STORZ resectoscope Kabel monopolarny do resektoskopu STORZ | |
| | 409-04S | 4.5 m | 3 mm male wtyk męski 3 mm | Monopolar cable for OLYMPUS resectoscope Kabel monopolarny do resektoskopu OLYMPUS | |
| | | | | 9,7 mm / 7 mm / 3 mm | |

# bipolar cables
## kable bipolarne

| SDS plug<br>wtyk SDS | Ref. No.<br>Kod | cable length<br>dł. kabla | |
|---|---|---|---|
| | 351-03S<br>351-05S | 3 m<br>5 m | Bipolar cable, straight connector<br>Kabel bipolarny, złącze proste |
| | 351-13S<br>351-15S | 3 m<br>5 m | Bipolar cable, angled connector<br>Kabel bipolarny, złącze kątowe |
| | 401-03S<br>401-05S | 3 m<br>5 m | Bipolar cable 2x2.6mm, for ThermoStapler® clamps<br>Kabel bipolarny 2x2,6mm, do klemów ThermoStapler® |
| | 348-04S | 4.5 m | Bipolar cable for STORZ resectoscope<br>Kabel bipolarny do resektoskopu STORZ |
| | 354-04S | 4.5 m | Bipolar cable for resectoscope<br>Kabel bipolarny do resektoskopu |

max.
134°C
STERILIZATION

**Cablu Video Cablexpert CC-HDMI-DVI-7.5MC, HDMI (M) - DVI-I (M), 7,5m, Negru**



**Rezumat**

Lungime cablu: **7,5 m**
Interfață Video: **HDMI to DVI**
Conector 1: **HDMI (M)**
Conector 2: **DVI-I (M)**

# Memorie USB Transcend JetFlash 790, 32GB, Negru



**Rezumat**

Capacitate stocare: **32 GB**

Interfață: **USB 3.1 Gen 1**

Materiale: **Plastic ABS**

Viteza maximă de citire: **90 MB/s**

Viteza de scriere maximă: **25 MB/s**

Design Unitate Flash: **Conector glisant**

# Fiber light cable



**Anti-kink protection under the sheath for** optimum hygiene properties

**"Snap-on" quick release coupling**

The color ring s**ystem** for the handle at the endoscope side allows you to easily and quickly assign the matching light cable to the endoscope in use.

| ø 1.6 mm | blue |
|----------|--------|
| ø 2.5 mm | green |
| ø 3.5 mm | orange |
| ø 5.0 mm | gray |

**Innovative color coding system**

- High-performance fiber optic material "made in Germany"
- Fast "snap-on" precision connection between endoscope and light cable
- Anti-kink protection made of steel allows for a particularly high number of usage cycles
- Suitable for low-temperature procedure
- Steam-sterilizable
- Standardized color coding of light cables and endoscopes based on their diameters
- Adapters for compatibility with light sources and endoscopes from different manufacturers

**To whom it may concern**
**Moldova**



spirit of excellence

Knittlingen, August 15, 2023

## Letter of Confirmation

We, **Richard Wolf GmbH, Pforzheimer Str. 32, 75438 Knittlingen, Germany,** a manufacturer and supplier of Medical Endoscopic Equipment, duly organized under the laws of Germany, hereby confirm that the numerical value of the zoom of item code 85261504 is the factor 2,23 (29mm/13mm = ~2,23)

Yours faithfully,
**RICHARD WOLF GMBH**

RICHARD WOLF
GmbH
75438 KNITTLINGEN

Marco Schlenker
*Sales Director International EMEA*

Sebastian Breit
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Geschäftsführer/Managing Directors: Jürgen Pfab, Jürgen Steinbeck