ENDOCAM Logic 4K
Lenses

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 f = 14 mm	85261144
	RIWO lens 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 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 f = 14 mm	5257141
	RIWO angular lens f = 17 mm	5257171

ENDOCAM Logic HD
Camera controller

- 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		

ENDOCAM Logic HD
3-chip HD camera head
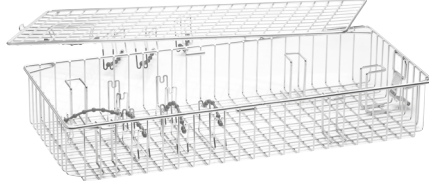

AUTOCLAVE
134° C / 273° F

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°

A13

ENDOLIGHT LED 2.2
LED light source

core LED Light

- 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

Light sources

5

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

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

9

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
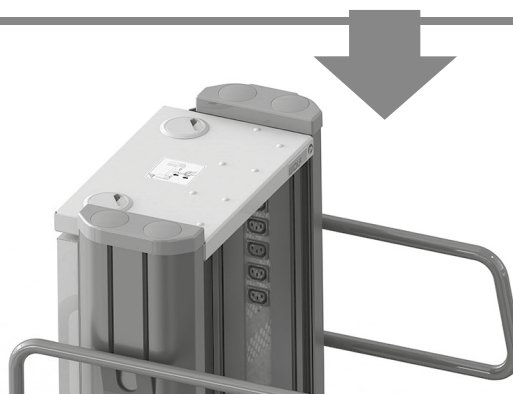
2. Which electrics variant?

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**e**

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**e**

RIWOmobil without electrical equipment
For mounting swivel arms **32116011**
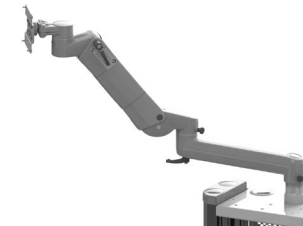
Without Electrics
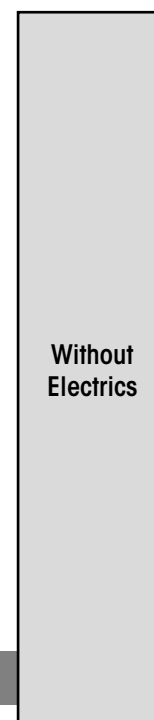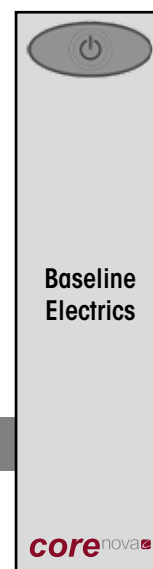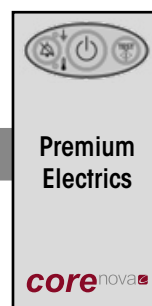
RIWOmobil
Swivel arm for bridge
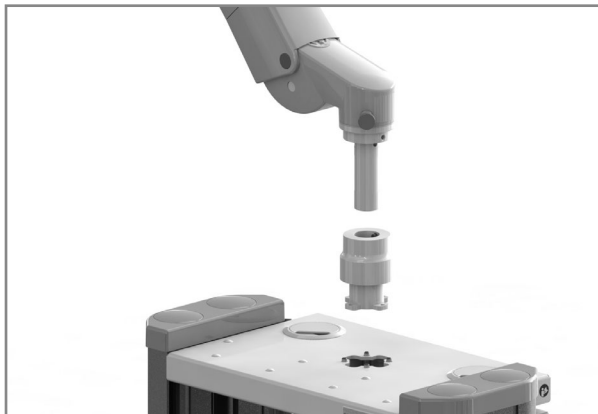
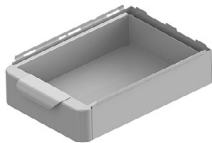**All Flexion-Port models for mounting on the bridge have the following properties in common:**
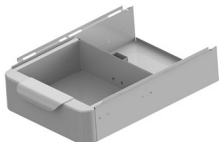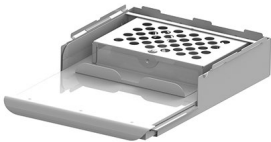
- VESA 100 mount
- Integrated cable duct
- Mechanical locking
- Swiveling range 340°. The area of the swiveling range can be defined individually during assembly
- Durable powder coating in white (RAL 9016)
- The specified length refers to the effective length between the swivel points
- Adapter for mounting on the bridge (32116474) is included in the set

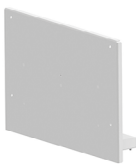|	Product no.
FLEXION-PORT 300 (58 cm) bndl Load capacity: 3 - 10 kg Comprising: 1x FLEXION-PORT 300 (58 cm) .... 32116058 1x swivel arm mount for bridge 32116474	321160582
FLEXION-PORT 400 (68 cm) bndl Load capacity: 8 - 14 kg Comprising: 1x FLEXION-PORT 400 (68 cm) .... 32116068 1x swivel arm mount for bridge 32116474	321160682
FLEXION-PORT 350+300 (93 cm) bndl Load capacity: 8 - 12 kg Comprising: 1x FLEXION-PORT 350+300 (93 cm) .... 32116093 1x swivel arm mount for bridge 32116474	321160932
FLEXION-PORT 350+400 (103 cm) bndl Load capacity: 3 - 9 kg Comprising: 1x FLEXION-PORT 350+400 (103 cm) .... 32116103 1x swivel arm mount for bridge 32116474	321161032

Device carts

9
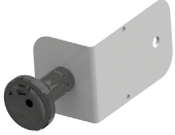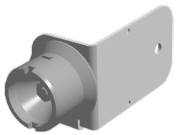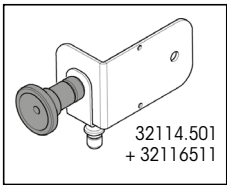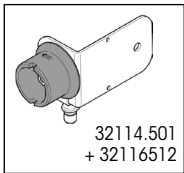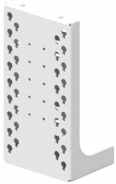
RIWOmobil
Accessories

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

9

RIWOmobil
Accessories

Camera holding bracket for universal use with standard and RIWO lenses		Product no.
	Camera holding bracket For universal use with standard and RIWO lenses	32116511
	Camera holding bracket 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** Monitor mounting bracket for installation on the bridge.	321165001
 Front view Rear view	**Monitor mounting bracket VESA 200 x 400** Monitor mounting bracket for installation on the bridge.	32116472
	Monitor mounting bracket, lateral, VESA 75/100 incl. adapter plate for lateral installation on RIWOmobil. Inclining or swiveling, maximum load: 15 kg, length: 5.5 cm	32116451

Device carts

9

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 Ω

MONOPOLAR CIRCUIT

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

MONOPOLAR COAGULATION

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

BIPOLAR CUTTING

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

BIPOLAR COAGULATION

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

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ThermoStapler® bipolar blood vessel sealing system (10Ω)	9 effects/300W
ThermoStapler® LAP laparoscopic bipolar blood vessel sealing system (10Ω)	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. Kod	dimensions wymiary	cable length dł. kabla	plug wtyk	
	242-008	30x17 cm	4 m	EMED plug wtyk EMED	Neutral silicone electrode, reusable, for adults Elektroda neutralna silikonowa, wielorazowa, dla dorosłych
	242-003	30x17 cm	0.5 m		Neutral silicone electrode, reusable, for adults Elektroda neutralna silikonowa, wielorazowa, dla dorosłych

footswitches
włączniki nożne

	Ref. No. Kod	cable length dł. kabla	
	100-336		Three-pedal footswitch, MultiSwitch, wireless Włącznik nożny 3-przyciskowy, MultiSwitch, bezprzewodowy
	100-316	5 m	Three-pedal footswitch, 6-pin plug Włącznik nożny 3-przyciskowy, wtyk 6-pinowy
	100-313		MultiSwitch, two-pedal footswitch, wireless Włącznik nożny 2-przyciskowy MultiSwitch, bezprzewodowy
	100-303	5 m	MultiSwitch, two-pedal footswitch, 6-pin plug Włącznik nożny 2-przyciskowy MultiSwitch, wtyk 6-pinowy
	100-302	5 m	Two-pedal footswitch, 6-pin plug Włącznik nożny 2-przyciskowy, wtyk 6-pinowy
	100-315		One-pedal footswitch, for COAGULATION, wireless Włącznik nożny 1-przyciskowy, do KOAGULACJI, bezprzewodowy
	100-305	5 m	One-pedal footswitch, for COAGULATION, 6-pin plug Włącznik nożny 1-przyciskowy, do KOAGULACJI, wtyk 6-pinowy
	100-314		One-pedal footswitch, for CUTTING, wireless Włącznik nożny 1-przyciskowy, do CIĘCIA, bezprzewodowy
	100-304	5 m	One-pedal footswitch, for CUTTING, 6-pin plug Włącznik nożny 1-przyciskowy, do CIĘCIA, wtyk 6-pinowy
	100-311		One-pedal footswitch, wireless Włącznik nożny 1-przyciskowy, bezprzewodowy
For ES120 unit and WATERFALL pump Do aparatu ES120 i pompy WATERFALL	100-301	5 m	One-pedal footswitch, 6-pin plug Włącznik nożny 1-przyciskowy, wtyk 6-pinowy

EMED electrosurgical units
aparaty elektrochirurgiczne EMED

	Ref. No. Kod	
	100-013	Electrosurgical unit SPECTRUM Aparat elektrochirurgiczny SPECTRUM
	100-620	Electrosurgical unit ATOM Aparat elektrochirurgiczny ATOM
	100-600	Electrosurgical unit ENDO Aparat elektrochirurgiczny ENDO
	100-610	Electrosurgical unit ARTRO Aparat elektrochirurgiczny ARTRO
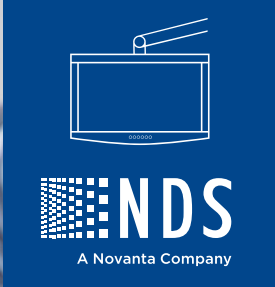
RADIANCE® ULTRA 27"

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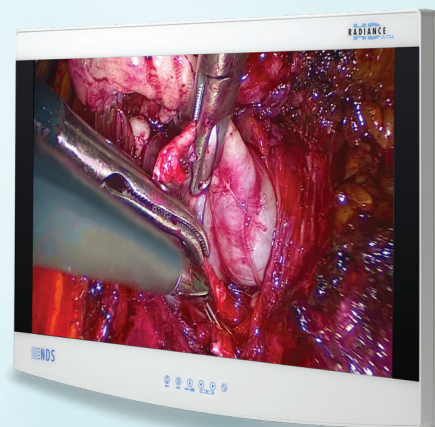
PREMIUM VISUALIZATION

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
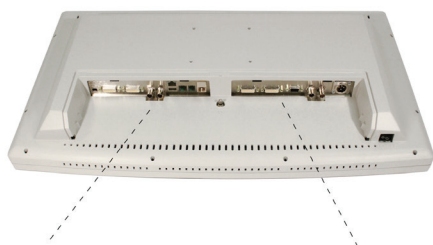
Primary Board
90R0104: Primary Board Only

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

CONTACT INFORMATION

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Shipping weights are approximate.

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

NDS
A Novanta Company
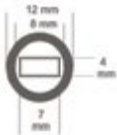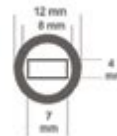
monopolar cables
kable monopolarne

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

max. 134°C STERILIZATION

FLUID CONTROL Arthro 2204

Irrigation and suction pump for arthroscopy with automatic tube recognition

Day-patient tube set

From two interventions/patients per day:

Use the **day-patient tube set,** which comprises a day tube and a connected patient tube. The day tube remains in the pump throughout the day, while the patient tube has to be changed for each operation. The irrigation fluid bag can remain on the pump until it has been completely

used up. **This significantly reduces the amount of waste and cuts costs. Further tube versions are available to complement the system.**

Note: The use of the day-patient tube set has not been approved for the Spine Mode application.
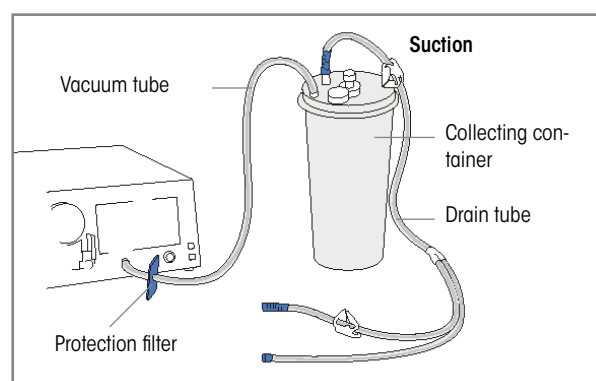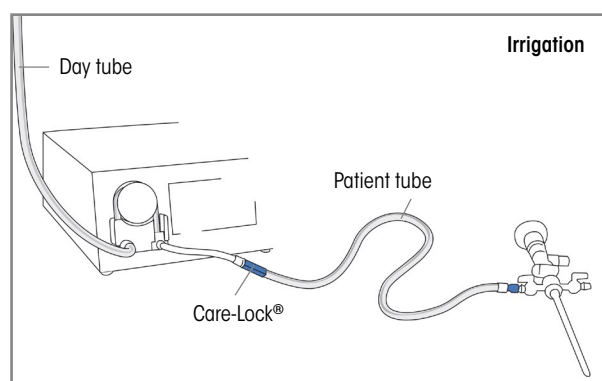
Irrigation			Product no.
Accessories – reusable	**Irrigation tube set spike**	With Luer-Lock connection, autoclavable, incl. 10 spare membranes, reusable for 20 reprocessing cycles	**8171223**
Accessories – disposable	**Irrigation tube set with spike L 3 m**	(PACK= 10 PCS), with Luer-Lock connection, sterile, disposable product	**4171223**
	Irrigation tube set CARE-LOCK, L 3 m	(PACK= 10 PCS), sterile, disposable product	**4171224**
	Day irrigation tube set	(PACK= 10 PCS), with piercing spike, sterile disposable product, PVC	**4171226**
	Patient irrigation tube set L 3m	(PACK= 10 PCS), with Luer-Lock connection, sterile, disposable product, PVC	**4171227**

Note: Day tube and patient tube can only be used together. A new patient tube is required for each patient – the day tube can be used for up to 20 patients.

Suction			Product no.
Accessories – reusable	**Tube set for vacuum, incl. filter**	with integrated hygiene filter, PACK= 10 PCS, service life of 30 days (connected to irrigation pump)	**2206207**
Accessories – disposable	**Secretion container, 2 L**	2 liters, no lid	**8170.6551**
	Secretion container, 2.5 L	2.5 liters (PACK= 2 PCS)	**41706566**
	Tube set for suction (with 2 ports)	sterile, disposable, (PACK= 10 PCS) for connecting instruments to collecting container	**T0503-01**

FLUID CONTROL 2225

One pump. Three disciplines. No license fee.

The new **FLUID CONTROL 2225** suction and irrigation pump from Richard Wolf always offers you excellent sight and monitoring.

Independently of the area of application, whether in gynecology, urology or general surgery, you have a license for flexibility. One click guides you to the relevant intervention – without any expensive fees.

Flexibility

- **One pump. Three disciplines.**
  Interdisciplinary application in gynecology, urology and general surgery

- **No license fee**
  Interdisciplinary application without any additional costs

- **Individual instrument presets**
  for maximum irrigation performance

- **Mobile balancing module**
  Easy switching between operating theaters

- **Compatible with endoscopes from other manufacturers**
  when standard mode is selected

- **One tube set for all applications**
  as a disposable or reusable solution

- **Integrated core nova interface**
  Control via core nova operating integration system possible

FLUID CONTROL 2225

Ordering Information

FLUID CONTROL 2225
Irrigation pump for HYS / URO / LAP

Fluid management for irrigation of irrigation fluids into the uterus and the upper and lower urinary tract and for the suction-irrigation function in the abdomen

FLUID CONTROL 2225 .... **2225001**
FLUID CONTROL 2225, incl. power cable ……..**22250011**

Technical data

Voltage range (V)	100 - 240 V~	
Supply frequency (Hz)	50/60 Hz	
Power consumption	Current (A)	Power consumption (VA)
100 V / 60 Hz	1.10 A	110 VA
240 V / 50 Hz	0.50 A	118 VA
Protection class (I, II)	I	
Operating conditions	+10 to +40 °C 30 to 75 % rel. atmospheric humidity 70 to 106 kPa air pressure 3000 m max. operating altitude above sea level	
Storage, transport and shipping conditions	-20 to +60 °C 10 to 90 % rel. atmospheric humidity 70 to 106 kPa air pressure	
Maximum suction negative pressure	-60 kPa	
Adjustable values / ranges		
Nominal flow range	Hysteroscopy: 800 ml/min (max. flow, not adjustable)	
	Endourology: 10 - 800 ml/min (max. flow)	
	Laparoscopy: 0.1- 1.8 l/ min (max. flow)	
Suction power	max. 2 l/min	
Output nominal pressure range	Hysteroscopy: 15 - 200 mmHg	
	Endourology: 15 - 90 mmHg / 20 - 125 cmH20	
	Laparoscopy: 370 mmHg (fixed setting)	
Pressure	0 - 300 mmHg	
Deficit / Consumption	-9990 to +9990 ml / 0 to 99.9 l	
Dimensions (W x H x D)	300 mm x 157 mm x 436 mm	
Weight	8.8 kg	

Balancing module

for hysteroscopy and endourology,
fluid management for fluid balancing in combination with FLUID CONTROL 2225, mobile stands with integrated load cells and accommodation
for up to 4 irrigation fluid bags **2225023**

Technical data

Operating conditions	+10 to +40 °C 30 to 75 % rel. atmospheric humidity 70 to 106 kPa air pressure 3000 m max. operating altitude above sea level
Storage, transport and shipping conditions	-20 to +60 °C 10 to 90 % rel. atmospheric humidity 70 to 106 kPa air pressure
Maximum load for the vessel scales	16 kg / 4 containers with 3 l each
Maximum load for bag scales	23 kg / 4 bags with 5 l each
Dimensions (W x H x D)	618 mm x 1064 mm x 618 mm

Footswitch

only usable in urology and
within the indication TUR / enucleation,
possibility of short-term increase of pressure
if visualization conditions are poor
("Flush" function) **2204901**

Technical data

Voltage range	max. 24 V
Power consumption	Electricity (A): max. 0.1 A
Plug	7-pole circular connector
Cable length	4.5 m
Dimensions (W x H x D)	66 mm x 27 mm x 91 mm
Weight	300 g

CERTIFICATE

EN ISO 13485:2016

DEKRA Certification GmbH hereby certifies that the organization

Richard Wolf GmbH

Scope of certification:

Design and development, production, distribution, installation and service of systems, active medical devices (sterile, non-sterile), non-active medical devices (sterile, non-sterile) for human medicine, in particular for endoscopy and extracorporeal shockwave application.
Design and development, production, and distribution of non-active implants in urology and surgery as well as accessories for processing (cleaning, disinfection, sterilization)

Certified location:

Pforzheimer Straße 32, 75438 Knittlingen, Germany

(further locations see annex)

has established and maintains a quality management system according to the above mentioned standard. The conformity was adduced with audit report no. 50593-R2-00.

Certificate registration no.:	50593-14-02	Certificate valid from:	2021-11-29
Validity of previous certificate:	2021-11-28	Certificate valid to:	2024-11-28

Ruth Delbeck-Bayer
DEKRA Certification GmbH, Stuttgart, 2021-11-29

(((DAkkS
Deutsche
Akkreditierungsstelle
D-ZM-16029-08-00

Annex to the Certificate No. 50593-14-02

Revision status: 0

valid from 2021-11-29 to 2024-11-28

The following locations / companies belong to the certificate above:

Headquarter	Certified location	Scope of certification
Richard Wolf GmbH	Pforzheimer Straße 32 75438 Knittlingen Germany	see page 1
at the following locations / at the companies at the following locations		**Scope of certification**
1. Richard Wolf GmbH	Reuchlinstraße 10-11 10553 Berlin Germany	Manufacture of flexible and rigid endoscopes

Ruth Delbeck-Bayer
DEKRA Certification GmbH, Stuttgart, 2021-11-29

EC CERTIFICATE

for the Quality Assurance System

according the Directive 93/42/EEC, Annex II excluding section (4)

As a Notified Body of the European Union, DEKRA Certification GmbH certifies, that the company

Richard Wolf GmbH

Pforzheimer Straße 32, 75438 Knittlingen, Germany

Certified location:

Pforzheimer Straße 32, 75438 Knittlingen, Germany

applies a quality assurance system according to the Directive 93/42/EEC Annex II for the medical devices listed in the annex. The approval is based on the result of the re-certification audit report no. 50593-Z7-00, the decision dated 2020-04-01 and is only valid in connection with the successful performance of the annual surveillance audits.

This certificate is valid from 2020-04-01 to 2024-05-26

Registration No.: 50593-16-05

Ruth Delbeck-Bayer
DEKRA Certification GmbH Stuttgart; 2020-04-01
Notified Body ID-number: 0124

Benannt durch/Designated by
Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
ZLG-BS-295.10.02

Annex to the EC Certificate No. 50593-16-05

Valid from 2020-04-01 to 2024-05-26

Revision status of the annex: 0 dated 2020-04-01

Devices/device categories included in the certificate:

Class I s:

For the products listed below, review of the Quality Assurance System refers exclusively to aspects of manufacture concerned with securing and maintaining sterile conditions.

- Endoscopic suction valve, single-use, sterile
- Suction system filter, plume particulate
- Suction/irrigation tubing, single use

Class II a:

- Basic endotracheal tube, reusable
- Basic roller pump
- Bone cutting forceps
- Bone graft funnel
- Bronchoscopy tube
- Cannulated surgical drill bit, reusable
- Endoscope assembly adaptor
- Endoscope sheath, reusable
- Endoscopic electrosurgical handpiece/electrode, bipolar, reusable
- Endoscopic electrosurgical handpiece/electrode, monopolar, reusable
- Endoscopic insufflation tubing set, single-use
- Endoscopic insufflation tubing set, sterile, reusable
- Flexible fibreoptic cystourethroscope
- Flexible fibreoptic hysteroscope
- Flexible fibreoptic nasopharyngoscope
- Flexible fibreoptic ureterorenoscope
- Flexible video bronchoscope, reusable
- Flexible video cystoscope, reusable
- Flexible video ureterorenoscope, reusable
- Fluted surgical drill bit, reusable
- General-purpose endoscopic needle, reusable
- General-purpose endoscopic needle, single-use
- Haemorrhoid ligator
- High-pressure medical gas tubing
- Laparoscopic access cannula, reusable
- Laparoscopic multi-instrument access port, reusable
- Laparoscopic multi-instrument access port, single-use
- Laser fibre
- Line-powered surgical power tool system motor
- Medical air low pressure tubing
- Microbial medical gas filter, sterile, single-use
- Operating room audiovisual data/device management system application software
- Orthopaedic bur, reusable
- Orthopaedic bur, single-use
- Resectoscope
- Rigid bronchoscope
- Rigid cystourethroscope
- Rigid endoscope telescope
- Rigid endoscopic grasping forceps, reusable
- Rigid optical hysteroscope
- Rigid intubation laryngoscope, reusable

Annex to the EC Certificate No. 50593-16-05

Valid from 2020-04-01 to 2024-05-26

Revision status of the annex: 0 dated 2020-04-01

Devices/device categories included in the certificate:

- Rigid mediastinoscope
- Rigid nephroscope
- Rigid optical laparoscope
- Rigid ureterorenoscope
- Spinal needle, single-use
- Spring-loaded pneumoperitoneum needle, reusable
- Surgical drill guide, reusable
- Surgical fluid/smoke waste management system suction unit
- Surgical guillotine
- Surgical irrigation tubing set, reusable
- Surgical irrigation tubing set, single-use
- Surgical irrigation/aspiration handpiece, reusable
- Surgical irrigation/aspiration tubing set
- Surgical power tool system control unit, line-powered
- Tissue extraction bag
- Tissue morcellation system
- Tissue morcellation system handpiece, line-powered
- Uterine manipulator cervical cup/transilluminator
- Uterine manipulator, reusable
- Uterine probe

Class II b:

- Electrosurgical system generator
- Endoscopic electrosurgical electrode, bipolar, reusable
- Endoscopic electrosurgical electrode, bipolar, single-use, sterile
- Endoscopic electrosurgical handpiece/electrode, monopolar, reusable
- Endoscopic electrosurgical electrode, monopolar, single-use
- Endoscopic electrosurgical handpiece/electrode, bipolar, reusable
- Endoscopic electrosurgical handpiece/electrode, monopolar, reusable
- Endoscopic electrosurgical handpiece/electrode, monopolar, single-use
- General/multiple surgical diode Laser system
- Hysteroscopic irrigation/insufflation system
- Laparoscopic insufflator
- Laser lithotripsy system
- Operating room audiovisual data/device management system application software
- Piezoelectric lithotripsy system
- Soft-tissue/mesh anchor, non-bioabsorbable
- Ultrasonic lithotripsy system
- Electromechanical orthopaedic extracorporeal shock wave therapy system

Ruth Delbeck-Bayer
DEKRA Certification GmbH, Stuttgart, 2020-04-01
Notified Body ID-number: 0124

EC CERTIFICATE

for the Quality Assurance System

according the Directive 93/42/EEC, Annex V

As a Notified Body of the European Union, DEKRA Certification GmbH certifies, that the company

Richard Wolf GmbH

Pforzheimer Straße 32, 75438 Knittlingen, Germany

Certified location:

Pforzheimer Straße 32, 75438 Knittlingen, Germany

applies a quality assurance system according to the Directive 93/42/EEC Annex V for the medical devices listed in the annex. The approval is based on the result of the re-certification audit report no. 50593-Z7-00, the decision dated 2020-04-01 and is only valid in connection with the successful performance of the annual surveillance audits.

This certificate is valid from 2020-04-01 to 2024-05-26

Registration No.: 50593-17-04

Ruth Delbeck-Bayer
DEKRA Certification GmbH Stuttgart; 2020-04-01
Notified Body ID-number: 0124

Benannt durch/Designated by
Zentralstelle der Länder
für Gesundheitsschutz
bei Arzneimitteln und
Medizinprodukten
ZLG-BS-295.10.02

Annex to the EC Certificate No. 50593-17-04

Valid from 2020-04-01 to 2024-05-26

Revision status of the annex: 0 dated 2020-04-01

Devices/device categories included in the certificate:

Class I s:

For the products listed below, review of the Quality Assurance System refers exclusively to aspects of manufacture concerned with securing and maintaining sterile conditions.

- Endoscope inflation bulb
- Proctoscope, single-use
- Rectoscope, single-use

Ruth Delbeck-Bayer
DEKRA Certification GmbH, Stuttgart, 2020-04-01
Notified Body ID-number: 0124