



GERÄTE
UNITS



SURGICAL UNITS

Ackermann® offers a full array of surgical units and equipment.
From highly sophisticated to economic solutions, ideal for every operating theatre.

A comprehensive portfolio, consting of:

- ▶ Endoscopic Cameras
- ▶ Light Sources
- ▶ Insufflators
- ▶ Suction/Irrigation Systems
- ▶ HF Surgical Systems
- ▶ Athroscopic Shavers
- ▶ LCD Screens
- ▶ Photo and Video Documentation Equipment
- ▶ All Accessories necessary



CAMERAS



16-2018PAL	3CCD Full HD camera, 1/3" chip, PAL version
16-2018NTSC	3CCD Full HD camera, 1/3" chip, NTSC version

Technical Data	
Resolution	1920 x 1080 pixels
Definition	1930 lines
Sensitivity	0,1 lux
Signal / Noise ratio	85 dB
Electronic shutter	1/50 to 1/100 000 sec.
Auto exposure	Variable
White Balance	Automatic push
Video enhancement	Yes
Cable length	3 meters
Video Outputs	1 x RGB-S (HD15) / 1 x S-Video (Y/C) / 1 x DVI-D / 1 x Composite (BNC) / 2x HD-SDI (BNC)
Size of the control unit	300 x 311 x 125 mm
Weight of the control unit	2,5 kg
Main voltage	115-230 VAC
Power consumption	45 VA
Frequency	50 - 60 Hz
Fuses	2 T 2.5A - 250 V fuses
Standards	Classification 93/42 EG Protection Class 1 Type BF IEC 60601-1, 60601-2, 60614 and EN 980 MPG IPX 0

Features	
▶	Real 1080p Full HD Resolution
▶	16:9 widescreen format acquisition
▶	Progressive scan technology
▶	Digital zoom up to 2.5x
▶	Freeze & mirror
▶	Menu by application
▶	Digital processing 3 x 19 bits
▶	Automatic white balance
▶	5 languages (German, English, French, Spanish, Italian)
▶	Automatic and manual adjustment of color
▶	Electronic shutter with adjustable shutter area
▶	Automatic compensation function for the blemish pixels
▶	HD-SDI and DVI-D digital outputs
▶	Text generator with keybord connection
▶	Digital noise reduction (OFF/ LOW/ HIGH)
▶	Two peripheral triggerings
▶	3 programmable buttons
▶	Last video settings automatically saved

Including	
-	C-Mount camera head and camera control unit
-	Video scable
-	Peripheral cable
-	Power cord
-	User Manual



CAMERAS



- 16-2015PAL 3CCD HD camera, 1/4" chip, PAL version
- 16-2015NTSC 3CCD HD camera, 1/4" chip, NTSC version

Technical Data	
Resolution	3 x 752 x 582 PAL,; 3 x 768 x 494 NTSC
Definition	1155 lines
Sensitivity	0,18 lux
Signal / Noise ratio	60 dB
Electronic shutter	1/100 000 sec.
Auto exposure	Variable
White Balance	Automatic push
Video enhancement	Yes
Cable length	3.6 meters
Video Outputs	1 x RGB-S (HD15) / 1 x S-Video (Y/C) / 1 x DVI-D / 1 x Composite (BNC)
Size of the control unit	300 x 300 x 66 mm
Weight of the control unit	2.5 kg
Main voltage	115 - 230 VAC
Frequency	50 - 60 Hz
Fuses	2 x 800 mA - 250 V
Standards	Classification 93/42 EG Protection Class 1 Type BF IEC 601.1, IEC 601.2 MPG IPX 0

- Features
- ▶ 1080i HDTV standard
 - ▶ 18:9 wide screen acquisition
 - ▶ DVI digital output
 - ▶ Programmable buttons
 - ▶ Automatic shutter
 - ▶ Excellent resolution and sensitivity
 - ▶ High fidelity of colours

Including
- C-Mount camera head and camera control unit
- Silicone cable (3.6 m) with connector and waterproof cap
- RGB-S cable
- BNC video cable
- Y/C video cable
- Power cord
- User manual

CAMERAS



- 16-2011PAL 3CCD camera, 1/4" chip, PAL version
- 16-2011NTSC 3CCD camera, 1/4" chip, NTSC version
- 16-2011DV-PAL 3CCD camera, 1/4" chip, PAL version, with DV output (Firewire)
- 16-2011DV-NTSC 3CCD camera, 1/4" chip, NTSC version, with DV output (Firewire)

Technical Data	
Resolution	3 x 752 x 582 PAL; 3 x 768 x 494 NTSC
Definition	1155 lines
Sensitivity	0,18 lux
Signal / Noise ratio	60 dB
Electronic shutter	1/100 000 sec.
Auto exposure	Variable
White Balance	Automatic push
Video enhancement	Yes
Cable length	3.6 meters
Video Outputs	1 x RGB-S (HD15) / 1 x S-Video (Y/C) / 1 x Composite (BNC)
Size of the control unit	300 x 300 x 66 mm
Weight of the control unit	2,5 kg
Main voltage	115-230 VAC
Power consumption	25 VA
Frequency	50 - 60 Hz
Fuses	2 x 800 mA - 250 V
Standards	Classification 93/42 EG Protection Class 1 Type BF IEC 601.1, IEC 601.1.2 MPG IPX 0

- Features
- ▶ Electronic shutter for camera controlled brightness regulation
 - ▶ Noise free image resolution
 - ▶ HAD chip technology (Hyper Active Digital)
 - ▶ No flickering image or loss of signal data due to digital processing
 - ▶ Easy and safe handling due to user friendly design and function
 - ▶ One hand quick focusing
 - ▶ For left and right hands use
 - ▶ Many parameters (like brightness, aperture, red shift, blue shift etc.) can be adjusted via on-screen-menu.
 - ▶ 10 different users can save their own settings
 - ▶ Programmable buttons on the camera head
 - ▶ Automatic white balance
 - ▶ Water proof camera head

Including
- C-Mount camera head with TV coupler and cable (3,6 m)
- RGB cable
- BNC cable
- Y/C cable
- Firewire connection cable (on DV models only)
- Power cord
- Operating Manual



CAMERAS



Please note that coupler has to be ordered separately (see page 16-8)

Technical Data	
Resolution	752 x 582 PAL; 768 x 494 NTSC
Definition	855 lines
Sensitivity	0,23 lux
Signal / Noise ratio	49 dB
Electronic shutter	1/100 000 sec.
Auto exposure	5 window areas
White Balance	Automatic push
Video enhancement	Yes
Cable length	3.6 meters
Video Outputs	2 x S-Video (Y/C) / 2 x Composite (BNC)
Size of the control unit	300 x 300 x 66 mm
Weight of the control unit	2,5 kg
Main voltage	115 - 230 VAC
Power consumption	25 VA
Frequency	50 - 60 Hz
Fuses	2 x T 800 mA - 250 V
Standards	Classification 93/42 EG Protection Class 1 Type BF IEC 601.1, IEC 601.1.2 MPG IPX 0

16-2010PAL	1CCD camera, 1/3"chip, PAL version
16-2010NTSC	1CCD camera, 1/3"chip, NTSC version
16-2010DV-PAL	1CCD camera, 1/3"chip, PAL version, with DV output (Firewire)
16-2010DV-NTSC	1CCD camera, 1/3"chip, NTSC version, with DV output (Firewire)

Features	
▶	Electronic shutter for camera controlled brightness regulation
▶	Noise free image resolution
▶	HAD chip technology (Hyper Active Digital)
▶	No flickering image or loss of signal data due to digital processing
▶	Easy and safe handling due to user friendly design and function
▶	One hand quick focusing
▶	For left and right hands use
▶	Many parameters (like brightness, aperture, red shift, blue shift etc.) can be adjusted via on-screen-menu.
▶	10 different users can save their own settings
▶	Programmable buttons on the camera head
▶	Automatic white balance
▶	Water proof camera head
Including	
-	Input Voltage: 100 - 230 VAC @50/60 Hz
-	Power Consumption: 45 VA
-	2 T 2.5A - 250 V fuses (Only fuses marked UR)
-	Continuous Service

CAMERAS



Please note that coupler has to be ordered separately (see page 16-8)

Technical Data	
Resolution	752 x 582 PAL; 768 x 494 NTSC
Definition	825 lines
Sensitivity	0,9 lux
Signal / Noise ratio	64 dB
Electronic shutter	1/100 000 sec.
White Balance	Automatic push
Cable length	3.0 meters
Video Outputs	1 x S-Video (Y/C) / 1 x Composite (BNC)
Size of the control unit	300 x 300 x 66 mm
Weight of the control unit	2,5 kg
Main voltage	115 - 230 VAC
Power consumption	25 VA
Frequency	50 - 60 Hz
Fuses	2 x T 800 mA - 250 V
Standards	Classification 93/42 EG Protection Class 1 Type BF IEC 601.1, IEC 601.1.2 MPG

16-2008PAL	Economy 1CCD camera, 1/3" chip, PAL version
16-2008NTSC	Economy 1CCD camera, 1/3" chip, NTSC version

Features	
▶	Electronic shutter for camera controlled brightness regulation
▶	Noise free image resolution
▶	HAD chip technology (Hyper Active Digital)
▶	No flickering image or loss of signal data due to digital processing
▶	Easy and safe handling due to user friendly design and function
▶	One hand quick focusing
▶	For left and right hands use
▶	Aperture and boost function
▶	Automatic white balance
▶	Water proof camera head
Including	
-	C-Mount camera head with cable (3 m)
-	BNC cable
-	Y/C cable
-	Power cord
-	Operating Manual



TV COUPLER



15-1702CLD	TV coupler	F = 23 mm
15-1702CLD-26	TV coupler	F = 26 mm
15-1702CLD-28	TV coupler	F = 28 mm



15-1702ZM	Zoom TV coupler	F = 25-40 mm
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15-1705	Beam splitter	F = 25 mm
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VIDEO LAPAROSCOPE



16-2032PAL	Video Laparoscope 10mm 0°, PAL Version
16-2032NTSC	Video Laparoscope 10mm 0°, NTSC Version



Technical Data	
Diameter	10 mm
Direction of view	0°
Working length	350mm
Image Sensor	1CCD 1/4"
Resolution	752 x 582 PAL; 768 x 454 NTSC
Definition	520 Lines
Video Outputs	2 x S-Video (Y/C) / 2 x Composite (BNC)
Signal / Noise Ratio	> 46 dB
High-Speed-Shutter	max. 1/100.000 sec
White balance	Automatic push
Illumination	Standard : 2.500 lux F8 (3.000K) Minimum : 3 lux / F 1.4 (AGC on)
Main voltage	115 – 230 VAC
Power consumption	20 W
Frequency	50 - 60 Hz
Fuses	2 x T 2 A – 250 V
Weight control unit	2,5 kg, Scope: 500g
Dimensions	Control unit 60 x 300 x 300 mm
Standard camera cable	3 m
Protection class	I
Classification	BF without function group with 1 Patient circuit
Test standard	IEC 601-1, IEC 601-1-2, MPG

Features	
▶	Chip-on-tip technology provides a rod-lens-free image
▶	The optical quality has reached a new level, due to dramatically reduced number of optical interfaces
▶	Provides a brilliant depth of focus
▶	Extremely bright picture
▶	Excellent sharpness of the picture
▶	Very good reproduction of the colours and a high contrast
▶	Modular system
▶	Fully autoclavable

Including	
-	C-Mount camera head with TV coupler and cable (3,6 m)
-	RGB cable
-	BNC cable
-	Y/C cable
-	Firewire connection cable (on DV models only)
-	Power cord
-	Operating Manual



LIGHT SOURCES

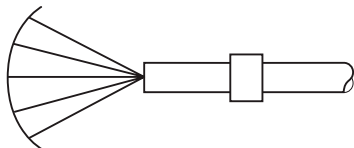


16-2022	300 W Xenon light source
16-2021	180 W Xenon light source
16-2020	100 W Xenon light source

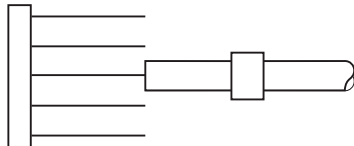
Technical Data	
Type of lamp	Xenon lamp
Lamp geometry	Ackermann® Xenon lamp with focusing mirror
Colour temperature	6200° Kelvin
Lamp lifetime	500 hours (Average value: 30 min ON / 15 min. OFF)
Light cable connection	Ackermann (Wolf, Olympus with other adapters)
Main voltage	100 - 230 VAC
Power Consumption	260 VA
Frequency	50 - 60 Hz
Dimensions	300 x 311 x 125 mm
Weight	5.0 kg
Fuses	2 x T 4A
Temperature range	+10° C to + 40° C - in function
Max. relative air humidity	85% - in function
Temperature range	-20° C to +45° C - in storage
Max. relative air humidity	85% in storage
Classification	CF (cardiac floatation)
Electr. protection class	IPX0, not protected against waterfalls
Safety measurements	Not adapted to a use close to a mixture of inflammable anaesthetic with air, oxygen or nitrous oxide

- Features
- ▶ Manual increase and decrease of light intensity
 - ▶ Stand by function to protect the lamp for longer life
 - ▶ Power on/off LED indicator
 - ▶ LCD display for the technical functions
 - ▶ Mechanical iris = constant colour temperature
 - ▶ Indication of the minimal and maximal levels of light
 - ▶ Continuous service
 - ▶ All Electromagnetic Compatibility (EMC) requirements were hold into account in the development of this light source.
 - ▶ Simple and fast lamp change

Including
- Power cord
- Operating Manual



High focus light equivalent to 300 W/ 600 W/ 900 W light sources due to parabolic mirror focusing the light.



Competitors (no focus)

LIGHT SOURCES



16-2027	Power LED Light Source
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Technical Data	
Type of lamp	LED
Performance	2800 lm / comparable with 600 W
Lamp geometry	Ackermann® high power LED emitter with focusing mirror
Colour temperature	6500° Kelvin
Lamp lifetime	50,000 hours (Average value: 100 min ON / 15 min. OFF)
Light cable connection	Ackermann (Wolf, Olympus with other adapters)
Main voltage	90 - 263 VAC
Power Consumption	180 VA
Frequency	50 - 60 Hz
Dimensions	306 x 330 x 96 mm
Weight	5.6 kg
Fuses	2 x T 2A L 250 V
Temperature range	+10° C to + 40° C - in function
Max. relative air humidity	90 % - in storage
Temperature range	-20° C to +45° C - in storage
Classification	Class I, Type BF / CF
Electr. protection class	IPX0, not protected against waterfalls
Safety measurements	Not adapted to a use close to a mixture of inflammable anaesthetic with air, oxygen or nitrous oxide

- Features
- ▶ New LED technology allows for enhanced patient safety, reduced costs and improved ecological efficiency
 - ▶ More than 50,000 hours of life tim expectancy - equals up to 250 halogen or 100 Xenon light bulbs
 - ▶ Brightness comparable to a 1980 W Xenon or 250 W Halogen light source
 - ▶ Daylight color temperature due to electronic intensity adjustment

Including
- Power cord
- User Manual



LIGHT SOURCES



16-2023 2 x 250 W Halogen light source

Technical Data	
Type of lamp	Halogen lamp
Performance	2 x 250 W
Colour temperature	3200° Kelvin
Lamp lifetime	50 hours (Average value at: 30 min. ON and 15 min. OFF)
Light cable connection	Storz/Ackermann (others on request)
Electrical requirements	105 or 230 V ~ / 50 or 60 Hz (manual switch on the rear panel)
Power Consumption	maximum 270 VA
Dimensions	300 x 311 x 90 mm
Weight	3.9 kg
Fuses	2 x T 4A
Temperature range	+10°C to +35°C - in function
Max. relative air humidity	85% - in function
Temperature range	-20°C to +45°C - in storage
Max. relative air humidity	85% in storage
Electr. protection class	(IPXO) Not protected against water
Safety measurements	Not adapted to a use close to a mixture of inflammable anaesthetic with air, oxygen or nitrous oxide

- Features
- ▶ In case of malfunction of one lamp you can easy changeover to the second lamp by an ergonomic front switch.
 - ▶ Mechanical iris = constant colour temperature
 - ▶ Simple and fast lamp change

- Including
- Power cord
 - Operating Manual

LAPAROSCOPY INSUFFLATOR



16-2040N Insufflator 20 L
16-2041N Insufflator 30 L
16-2042N Insufflator 45 L

Technical Data	
Main voltage	100-240 VAC
Power consumption	40 VA
Frequency	50 – 60 Hz
Fuses	2 x 2,5 AT – 250 V time-lag fuses - UR
Dimensions	300 x 340 x 145 mm
Weight	5.0 kg
Max. gas flow	20 L / 30 L / 45 L
Pressure selection	0 – 24 mmHg (accuracy of 1 mmHg)
Temperature range	+10°C to +40°C - in function
Max. relative air humidity	30 to 75 % - in function
Temperature range	+10°C to +40°C – in storage
Max. relative air humidity	20 to 85 % - in storage
Standards	Classification 93/43 EG Protection Class 1 Type BF IEC 601.1 MPG IPX 0

- Features
- ▶ Inbuilt gas pre-heating system
 - ▶ External desufflation valve to avoid cross-contamination
 - ▶ Pressure controlled insufflation
 - ▶ Large display showing all the important measures during operation
 - ▶ Bottle pressure monitoring
 - ▶ Adjustment and pre-selection possibilities
 - ▶ In screen new on monitor 30/45 L

- Including
- 4 pcs. disposable Y-tubing set fitted with a viral filter
 - Open-end spanner
 - Power cord
 - Operating Manual

Accessories	
16-2040-2000	High pressure hose with US bottle connection
16-2040-2001	High pressure hose with DIN bottle connection
16-2040-2002	High pressure hose with Pin Index bottle connection
16-2040-100YD	Disposable Y-Tubing set with viral filter (10 pcs.)



LAPAROSCOPY SUCTION / IRRIGATION PUMP
-FOR USE WITH IRRIGATION BAGS-



16-2080 Double roller pump

Technical Data	
Main voltage	100 - 240 VAC Mains fuse T3, 15 A
Power consumption	36 VA
Frequency	50-60 Hz
Device type	BF
Safety class	II a
Construction	DIN EN 60601-1 (03.1996)
Radio interference suppression	DIN EN 60601-1-2 (10.2002)
Irrigation capacity	0 – 3.000 ml/min
Suction capacity	0 – 3.000 ml/min
Max. pressure	0 – 1.000 mm Hg
Dimensions (w x h x d)	300 mm x 93 mm x 260 mm
Weight	approx. 6.5 kg
Protection against sprinkler water	IPX 1
Temperature range	+10 to +40°C
Humidity	30% - 70%

- Features
- ▶ The device, a suction-irrigation pump without pressure monitoring is used in minimal invasive surgery.
 - ▶ It can be utilized in all areas of endoscopic surgical operation procedures where the body cavities are not completely filled with fluid and where the volume of rinsing fluid is small in proportion to the volume of the anatomical cavity.
 - ▶ The pump system is well suited for utilization in the abdomen and in the thorax.

- Including
- Silicone suction / irrigation tubing set, non sterile, autoclavable
 - Suction/irrigation cannula diam. 5 mm / 10 mm, autoclavable
 - Adapter duct, autoclavable
 - Pneumatic manual control with double-lumen control tube autoclavable
 - Fuses
 - Power cord
 - Operating Manual

Accessories	
16-2080-100	Autoclavable tubing set
16-2080-1000	Pneumatic double footswitch
16-2080-200	Pneumatic manual control, autoclavable
16-2080-201	Suction / Irrigation cannula 5 mm
16-2080-202	Suction / Irrigation cannula 10 mm
16-2080-203	Adapter duct, autoclavable
16-2080-204	Double lumen control tube, autoclavable

ARTHROSCOPY DOUBLE HEAD PUMP



16-2082 Arthro Double Head Pump

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 125 x 365 mm
Weight	9 kg
Casing safety standard	IPX 1
Flow rate	0 - 500 ml/min
Pressure range	10 - 200 mm Hg
Temperature range	+10°C to +40°C
Humidity	30% - 70%
Standards	DIN EN 60601-1:2005, DIN EN 60601-1-2:2007
Suction capacity	0 - 1000 ml/min
Irrigation capacity	0 - 2500 ml/min

- Features
- ▶ Redunant pressure measuring system
 - ▶ Hydrostatic pressure compensation
 - ▶ High flow rate
 - ▶ Lavage mode triggered by foot switch

- Including
- Autoclavable tubing set
 - Fuses
 - Foot switch
 - Power cord
 - Operating Manual

Accessories	
16-2082-100	Tubing set autoclavable
16-2082-200	Tubing set disposable (10 pcs.)
16-2082-300	Tubing set patient disposable (20 pcs.)
16-2082-400	Measuring chamber, autoclavable
16-2082-500	Foot switch
16-2082-600	Power cord
16-2082-700	Spare fuses (10 pcs.)



MEMBRANE SUCTION IRRIGATION PUMP



16-2083 MSI-Pump

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 115 x 345 mm
Weight	8 kg
Casing safety standard	IPX 1
Vacuum maximal	525 mm Hg
Pressure maximal	750 mm Hg
Suction capacity	3000 ml/min
Irrigation capacity	3000 ml/min
Temperature range	+10°C to +40°C
Humidity	30% - 70%
Standards	DIN EN 60601-1:2005, DIN EN 60601-1-2:2007

- Features
- ▶ High but precise measuring
 - ▶ Automatic switch-off of measuring
 - ▶ Continuous comparison between setpoint value and real value
 - ▶ Also suitable for ENT and Micro Surgery
 - ▶ Optionally: foot switch
 - ▶ Simple and intuitive handling

- Including
- Autoclavable tubing set (suction and irrigation)
 - Fluid bottle, autoclavable and holding device
 - Spare fuse
 - Power cord
 - Operating Manual
 - Hydrophobic sterile filter, disposable
 - Injection spike, autoclavable

- Accessories
- 16-2083-101 Fluid bottle, autoclavable
 - 16-2083-102 Irrigation tubing set, autoclavable
 - 16-2083-103 Suction tubing set, autoclavable
 - 16-2083-104 Power cord
 - 16-2083-105 Spare fuses (10 pcs.)
 - 16-2083-106 Holding device for bottle (1L)
 - 16-2083-107 Holding device for bottle (2L)
 - 16-2083-108 Hydrophobic sterile filter, disposable (10 pcs.)
 - 16-2083-109 Injection spike
 - 16-2083-110 Foot switch

LAPAROSCOPY SUCTION / IRRIGATION PUMP
-FOR USE WITH IRRIGATION BOTTLES



15-1730 Suction / irrigation pump (240 VAC)
15-1730-110V Suction / irrigation pump (100 VAC)

Technical Data	
Main voltage	100 or 240 VAC
Power consumption	120 VA
Frequency	50-60 Hz
Safety class	1
Dimensions	320 x 300 x 145 mm
Weight	5.0 kg
Rinsing performance	up to 3000 ml/min
MedGeVO-Group	3
Standards	Made of UL listed components VDE 0750, IEC 601, GS, TÜV, CE

- Features
- ▶ Highest efficiency
 - ▶ Aspirates and irrigates at up to 3 l / min
 - ▶ Special filters ensure sterility
 - ▶ No special adjustment necessary. Aspiration and irrigation are regulated and selected by the instrument controls
 - ▶ "Stand-by" function for low noise level
 - ▶ High quality components

- Including
- Bottle holder for 2 L suction receptacle
 - Bottle holder for 1 L rinsing bottle
 - Reusable 2 L suction receptacle
 - 2 Sterile filters with LL-connectors at both sides
 - Puncture tube
 - Autoclavable tubing set
 - Power cord
 - Operating Manual

- Accessories
- 15-1730-1000 Disposable filter (50 pcs.)
 - 15-1730-1001 Autoclavable tubing set
 - 15-1730-1002 Disposable suction receptacle (25 pcs.)
 - 15-1730-1003 Reusable suction receptacle



UROLOGY IRRIGATION PUMP



15-1715 UroSurgiSystem

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 115 x 345 mm
Weight	7.0 kg
Casing safety standard	IPX 1
Flow rate	0 - 1000 ml/min
Pressure range	10 - 150 mm Hg
Temperature range	+10 to +40° C
Humidity	30% - 70%
Standards	in accordance with DIN 60601-1:2005, DIN EN 60601-1-2:2007

Features	
▶	Touch free pressure measurement
▶	Leakage liquid compensation
▶	Preselection of pressure and flow
▶	Continuous pressure roller pump system

Including	
-	Autoclavable tubing set
-	Fuses
-	Power cord
-	Operating Manual

Accessories	
15-1720-100N	Tubing set autoclavable
15-1720-300DN	Tubing set disposable (20 pcs.)
15-1720-301DN	Tubing set patient, disposable (40 pcs.)
15-1720-500N	Measuring chamber with pump segment, autoclavable
15-1720-800	Power cord
15-1720-900	Spare fuses (10 pcs.)

SPINE IRRIGATION PUMP



15-1718 SpineSurgiSystem

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 115 x 345 mm
Weight	7.0 kg
Casing safety standard	IPX 1
Flow rate	0 - 750 ml/min
Pressure range	10 - 100 mm Hg
Temperature range	+10°C to +40°C
Humidity	30% - 70%
Standards	in accordance with DIN 60601-1:2005, DIN EN 60601-1-2:2007

Features	
▶	Touch free pressure measurement
▶	Leakage liquid compensation
▶	Preselection of pressure and flow
▶	Continuous pressure roller pump system

Including	
-	Autoclavable tubing set
-	Fuses
-	Power cord
-	Operating Manual

Accessories	
15-1720-100N	Tubing set autoclavable
15-1720-300DN	Tubing set disposable (20 pcs.)
15-1720-301DN	Tubing set patient, disposable (40 pcs.)
15-1720-500N	Measuring chamber with pump segment, autoclavable
15-1720-800	Power cord
15-1720-900	Spare fuses (10 pcs.)



HYSTEROSCOPY IRRIGATION PUMP



15-1719 HysteroSurgiSystem

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 115 x 345 mm
Weight	7.0 kg
Casing safety standard	IPX 1
Flow rate	0 - 500 ml/min
Pressure range	10 - 200 mm Hg
Temperature range	+10°C to +40°C
Humidity	30% - 70%
Standards	in accordance with DIN 60601-1:2005, DIN EN 60601-1-2:2007

Features	
▶	Touch free pressure measurement
▶	Leakage liquid compensation
▶	Preselection of pressure and flow
▶	Continuous pressure roller pump system

Including	
-	Autoclavable tubing set
-	Fuses
-	Power cord
-	Operating Manual

Accessories	
15-1720-100N	Tubing set autoclavable
15-1720-300DN	Tubing set disposable (20 pcs.)
15-1720-301DN	Tubing set patient, disposable (40 pcs.)
15-1720-500N	Measuring chamber with pump segment, autoclavable
15-1720-800	Power cord
15-1720-900	Spare fuses (10 pcs.)

ARTHROSCOPY IRRIGATION PUMP



15-1720 ArthroSurgiSystem

Technical Data	
Main voltage	100 - 230 VAC
Power consumption	80 VA
Frequency	50 - 60 Hz
Device type	BF
Safety class	II a
Dimensions	304 x 115 x 345 mm
Weight	7.0 kg
Casing safety standard	IPX 1
Flow rate	0 - 1500 ml/min
Pressure range	10 - 150 mm Hg
Temperature range	+10 to +40° C
Humidity	30% - 70%
Standards	in accordance with DIN 60601-1:2005, DIN EN 60601-1-2:2007

Features	
▶	Touch free pressure measurement
▶	Leakage liquid compensation
▶	Preselection of pressure and flow
▶	Continuous pressure roller pump system

Including	
-	Autoclavable tubing set
-	Fuses
-	Power cord
-	Operating Manual

Accessories	
15-1720-100N	Tubing set autoclavable
15-1720-300DN	Tubing set disposable (20 pcs.)
15-1720-301DN	Tubing set patient, disposable (40 pcs.)
15-1720-500N	Measuring chamber with pump segment, autoclavable
15-1720-800	Power cord
15-1720-900	Spare fuses (10 pcs.)



SHAVER SYSTEM



16-2050	Shaver system complete with foot switch and hand piece
16-2050-100	Hand piece only
16-2050-200	Foot pedal only

Technical Data	
Dimensions	90 x 360 x 268 mm
Weight	6.0 kg
Power input	230 V AC / 50 Hz
Capacity	50 VA
Primary fuse	2 x 1,6 AT
Type	Type B
Operating mode	Continuous operation
IP Protection class	IXP 0
EN-class	2a
Connections	2 x hand piece 1 x foot switch
Power cord	230 V, 10 A, 3-pole

Features	
▶	Speed adjustable from 800 – 8000 RPM
▶	Ergonomic and light weight hand piece
▶	Silent and smooth motion
▶	Hand piece (with cable) autoclavable
▶	All functions can be either commanded on the control unit or with the foot switch
▶	Shaver offers the possibility to connect 2 tools at the same time (for example hand piece and saw)

SONY DVD-RECORDER



15-1736	DVD-Recorder Sony DVO-1000MD
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Technical Data	
Main voltage	100 - 240 VAC
Power consumption	35 W
Frequency	50 - 60 Hz
Operating temperature	+5°C to +40°C
Storage Temperature	-20°C to +60°C
Operating Humidity	20% to 80%
Dimensions	212 x 128.5 x 382 mm
Weight	6.0 kg
Recording System	DVD Recording, NTSC/PAL Switchable
Recording Format (Video)	MPEG-2 compression
Audio	Dolby Digital format
Recordable Media	DVD+RW (2.4 x and 4 x speed)
Recording Time	HQ Mode: 60 minutes
	SP Mode 120 minutes
	LP Mode 180 minutes
Medical Standards:	EN60601-1, EN60601-1-2, UL60601-1, CSA C22.2 No.60601.1

Quick Recording with Internal HDD	
The DVO-1000MD is equipped with an internal HDD (Hard Disk Drive) so that recording always starts the moment the record button is pressed. The DVO-1000MD begins recording to its HDD while the inserted DVD disc is initialising itself for recording. Once the DVD disc is ready to record, the DVO-1000MD starts writing onto the DVD disc using the data temporarily stored on the HDD.	
This mechanism, not available on typical DVD recorders, means it is possible to start recording right after the DVD disc is inserted, as well as when resuming the unit from „stop“ mode. The HDD can also be used for data recovery in the unlikely event that a recording fails on the DVD disc.	

Including	
- Operation Manual, Protocol Manual	

Accessories	
15-1736-102	SVRM-100A, Remote Control



VIDEO PRINTER



15-1735 Video printer Sony UP 21 MD

Technical Data	
Printing method	Dye Sublimation
Inputs / Outputs	Video, S-Video, RGB
Graduation	256 graduations, over 16 millions colours
Resolution	403 dpi
Printed area (NTSC)	S Size: Full 95,8 x 72,4 mm L Size: Full 126,9 x 91,5 mm
Print speed (NTSC)	UPC-21S approx. 16 sec. UPC-21L approx. 25 sec.
Paper capacity	S Size tray: max. 80 sheets L Size tray: max. 50 sheets
Power consumption	100 - 120 V 1,8 A 220 - 240 V 1,0 A
Dimensions	212 x 125 x 395 mm
Weight	6.5 kg
Paper Size	S Size: 100 x 90 mm L Size: 144 x 100 mm
Effectively printed pixels	S Size: 1524 x 976 mm L Size: 2032 x 1452 mm
Safety standards	UP 2601-1, CSA C22.2 No. 601.1, EN60601-1CE, LVD, MDD

Features

The 15-1735 Sony videoprinter is the ideal choice for the endoscopy application, it is very compact and will help to free the space in medical carts.

Including

- Colour printing set
- Paper tray
- Power cord
- Operating Manual

32" FULL HD LCD MONITOR



16-2033HD-32 Full-HD LCD Monitor 32"

Technical Data	
Screen	32"
Max. output resolution	1920 x 1080 (WUXGA)
Aspect ratio	16 : 9
Panel Type	IPS-Pro
Number of colours	16,77 million
Contrast ratio	1200 : 1
Response time (G-to-G)	8 ms / 8 ms
Pixel pitch	0.2865 (H)mm x 0.2865 (H)mm
Viewing angle	V: 178°, H: 178°
Color depth	10 bit
Input	HD-SDI2 / DVI-D2
Dimensions	473 x 776 x 114 mm
Weight	15 kg
Input power	100 - 240 V, 1,44 A, Oi69A
Power supply	External
Standards	UL 60601-1, CAN/CSA-C22.2 No 601.1-M90: 2005, EN 60601-1, IEC 60601-1, CE, EN 60601-1-2. FCC-B, VCCI, RoHs compliant
OSD language	English, Spanish, Italian, German, French, Japanese

Features

- ▶ High-resolution liquid panel
- ▶ Fastest image transmission and highest broadcast quality imaging
- ▶ Flexible Picture-in-Picture capabilities
- ▶ Advanced image processing algorithms
- ▶ Touch screen setting menu
- ▶ 178° viewing angle
- ▶ Broad input connectivity
- ▶ Medical grade standard

Including

- AC Adaptor
- Power cord
- Mounting screws and metal fitting
- User Manual

Accessories

16-2033HD-26FUSS Foot stand for 32" LCD monitor



26" FULL HD LCD MONITOR



16-2033HD-26 Full-HD Monitor 26"

Technical Data	
Screen	26"
Max. output resolution	1920 x 1080 (WUXGA)
Aspect ratio	16 : 9
Panel type	IPS-Pro
Number of colours	1.07 billion
Contrasst ratio	1400 : 1
Response time (G-to-G)	10 ms / 8 ms
Pixel pitch	0.2865 (H)mm x 0.2865 (H)mm
Viewing angle	V: 178°, H: 178°
Color depth	10 bit
Input / Output	HD-SDI 1/ DVI-D2
Dimensions	396 x 643 x 87 mm
Weight	7.7 kg
Input power	DC 24V, 69 W
Power supply	External
Standards	Standards complies with EN60601-1-2 : 2001, IEC 60601-1, Rule 12, MDD 93/42/EEC, IEC 50950-1 : 2001, FCC Part 15 subpart B Class B, UL 60601-1, CAN/CSA-C22.2 No. 601.1-M90, FDA 510(k)
OSD language	English, Spanish, Italian, German, French

- Features
- ▶ High-resolution liquid panel
 - ▶ Multiple video connectors (HD-SCI, DVI, HD 15, etc.)
 - ▶ Picture-in-Picture, Picture out of Picture, Pan / Zoom, Freeze
 - ▶ Acrylic anti-scratch protective screen
 - ▶ Medical grade standard
 - ▶ To be mounted securely on most stands, boom arms, ceiling mounts and / ot darts on standard VESA mounting patterns

- Including
- AC Adaptor
 - Power cord
 - Mounting screws and metal fitting
 - User Manual

- Accessories
- 16-2033HD-26FUSS Foot stand for 26" LCD monitor

24" FULL HD LCD MONITOR



16-2033HD-24 Full-HD LCD Monitor 24"

Technical Data	
Screen	24"
Max. output resolution	1920 x 1200 (WUXGA)
Aspect ratio	16 : 10
Color support	16,7 million
Brightness	400
Contrast ratio	1000 : 1
Response time (G-to-G)	5 ms
Pixel pitch	0.2700 (H)mm x 0.2700 (H)mm
Viewing angle	89 / 89 / 89 / 89
Color depth	8 bit
Input / Output	HD-SCI, DVI, CVBS, VGA, RGB, S-Video
Dimensions	584 x 394 x 108 mm
Weight	10.9 kg
Mounting	100 mm, 200 mm VESA
Input power	100 - 250 V, 130 W
Power supply	External
Endosure ratingh	IPX 1
Standards	UL 60601-1, CAN/CSA-C22.2 No 601.1-M90: 2005, EN 60601-1, IEC 60601-1, CE, EN 60601-1-2. FCC-B, VCCI, RoHs compliant

- Features
- ▶ High-resolution liquid panel
 - ▶ Fastest image transmission and highest broadcast quality imaging
 - ▶ Flexible Picture-in-Picture capabilities
 - ▶ Advanced image processing algorithms
 - ▶ Touch screen setting menu
 - ▶ 178° viewing angle
 - ▶ Broad input connectivity
 - ▶ Medical grade standard

- Including
- Video cables
 - Power cord
 - External power supply
 - User Manual



FLAT SCREENS



16-2031 Flat screen for medical applications 19"

Technical Data	
Screen	19"
Definition	1090 lines
Max. output resolution	1280 x 1024 Pixels
Max. numbers of colours	16,7 Mio
Automatic selection	PAL / SECAM / NTSC / M-NTSC
Input	Y/C, RGB
Dimensions	442 x 338 x 123 mm
Weight	6.6 kg
Power supply	85 - 265 Volt, 47 - 63 Hz
Power consumption	35 VA
Standards	Complies with IEC 601 / VDE 0750

- | Features | |
|----------|--|
| ▶ | For medical cameras |
| ▶ | Many parameters can be adjusted via on-screen-menu |

Including	
-	Power transformer
-	Y/C and RGB connection cable
-	Power cord
-	Operating Manual

EQUIPMENT TROLLEY



15-1740 Equipment trolley

Technical Data	
Dimensions	142,8 x 71,4 x 62,5 cm
Load	50 kg
Colour	light grey

Including	
-	4 shelves
-	1 deposit console 60 x 49 cm adjustable, with handle
-	3 deposit consoles 60 x 49 cm, adjustable
-	1 drawer unit with storage tray 60 x 49 cm
-	4 wheels, 2 with brakes

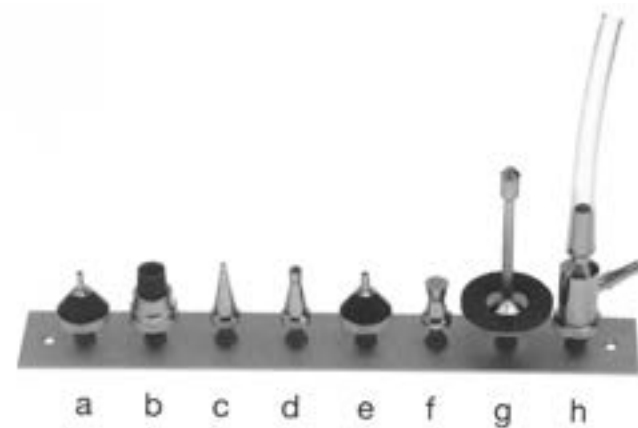
Accessories	
15-1741-100	Holder for gas bottles (5 and 10 L)
15-1741-200	Holding arm for flat screens
15-1741-400	Holder for camera head
15-1741-500	Cable/tube holding arm
15-1741-600	Holder for infusion bottles
15-1741-700	Isolating Transformer



CLEANING ACCESSORIES



15-1681 Cleaning gun



15-1680 Adapters for cleaning gun



- 13-1678** Cleaning brush for 3 mm instruments, 330 mm
- 13-1678-45** Cleaning brush for 3 mm instruments, 450 mm
- 13-1679** Cleaning brush for 5 mm instruments, 330 mm
- 13-1679-45** Cleaning brush for 5 mm instruments, 450 mm
- 13-1680** Cleaning brush for 10 mm instruments, 330 mm
- 13-1680-45** Cleaning brush for 10 mm instruments, 450 mm

CLEANING ACCESSORIES



15-1690 Aluminium container for endoscopes
465 x 280 x 135 mm



15-1695 Endoscope case, 44 x 9 x 5 cm



15-1696 Instrument-sterilizing case, 52 x 25 x 17 cm



15-1697	290 x 80 x 52 mm with silicone position pad
15-1697-100	460 x 80 x 52 mm with silicone position pad
15-1697-200	670 x 80 x 52 mm with silicone position pad

15-1697-100 460 x 80 x 52 mm with silicone position pad

15-1699	Instrument-sterilizing case for 16 instruments, Ø 5 or 10 mm and 64 x 31 x 15 cm
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