Aesculap® Endoscopy Units and Accessories

for Minimal Invasive Surgery

Aesculap Endoscopic Technology

B BRAUN
SHARING EXPERTISE

The following features are valid for all units:

- Universal power supply (100-240 V AC, 50/60 Hz) unless stated otherwise
- Safety class I (acc. to EN 60601-1)
- Tested acc. to norm EN 60601-1, EN 60601-1-2

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3-Chip Full HD Camera System

Full HD 3 Chip camera system with latest chip technology for brilliant image display

- Full HD image quality (1920 x 1080 pixel) provides a crystal-clear image of unprecedented quality
- Full HD camera provides 16:9 widescreen images for increased lateral image viewing
- Up to 6 times higher image resolution compared to standard cameras
- Full HD camera with advanced High-Definition-3-Chip technology produces 3-D lifelike images with outstanding depth perception
- Progressive scan technology at 50/60 frames per second provides a lag-free image
- Speciality modes produce excellent images in every situation
- Multi-speciality HD camera works with most standard endoscope
- Optical parfocal zoom (2.5x) for improved detail enhancement
- Easy operation of camera functions via integrated control buttons in the camera head
- Ergonomic camera head to support fatigue-free working
- Included accessories of PV460: DVI-D cable (1x)

PV460	**Camera Control Unit only**
PV462	**Camera head with zoomcoupler**
PV463	**Camera head with fixed focus coupler**

CCD (Inch)	3 x 1/3"
Camera Resolution	1920 x 1080 Pixel
Scan mode	Progressive Scan 50/60 Hz
Modes	6 Presettings 3 User Settinges
Video Signal Outputs	2x DVI-D 1080p (50/60 Hz) 2x HD-SDI 1080i (50/60 Hz) 1x S-Video NTSC/PAL (16:9 aspect)
Buttons on Camera Head	2 (5 functions)
Shutter Speed	1/100 – 1/50 000 s
Focal length (PV462)	Optical 13-32 mm
Focal length (PV463)	Optical 14 mm
Colour Bars	Yes
Dimensions camera head with zoom (w x h x d)	50 x 62 x 129 mm
Dimensions CCU (w x h x d)	305 x 75 x 305 mm
Weight CCU	4.1 kg
Weight camerahead PV462 w/o cable	227 g
Weight camerahead PV463 w/o cable	184 g
Length Camera Cable	4 m
On-screen Display	Yes
Maximum Power Consumption	45 VA
Protection level acc. to EN 60601-1	CF
Classification acc. to directive 93/42/EEC	I

Accessories (to be ordered separately)

OP942	Communication cable between CCU and LED light source

3-Chip Camera System

High-end fully digital camera technology

- Fully digital image documentation and display for outstanding results
- Digital signal processing in the camera control unit for high contrast
- Additional analog video signal outputs for looping through the camera video signal to the analog monitor
- The three highly sensitive CCD chips produce true color rendition
- Extremely high light sensitivity for outstanding image luminosity
- Easy operation of camera functions via integrated control button in the camera head
- Ergonomic camera head to support fatigue-free working
- Integrated gain function for automatic brightness adjustment especially in critical light situations
- Special modes (e.g. Lap, Arthro, Small Scope and Fiber mode) produce high quality images in every situation
- Integrated digital zoom function (2x zoom) and optional mechanical zoom (2x)
- Included accessories:
  S-Video cable (1x)

PV420*	**PAL System, complete**
PV422*	**NTSC System, complete**

CCD (Inch)	3 x 1/2"
Horizontal Resolution (Lines)	> 800
Dynamic Gain Function	On/Off Selection, 0 - 9 dB
Detail Enhancement Function	Always "On" except Fibre Mode
Signal to Noise Ratio	62 dB
Minimum Light Sensitivity	0.2 Lx
Signal Processing	Digital
Modes	Laparoscopy (High) Arthroscopy (Medium) Small Scope (Low) Fibre Mode
Video Signal Outputs	Composite, 2 x Y/C, RGB, SDI
Buttons on Camera Head	1 (Dual activation)
Button Functions	1 x Remote, 1 x White Balance or Digital Zoom
Endolens	Exchangeable
Shutter Speed	1/50 – 1/10 000 s
Zoom Functions	Optical & Digital
Colour Bars	Yes
Dimensions camera head (w x h x d)	45 x 57 x 53 mm
Weight Camera Head w/o Endolens	113 g
Dimensions CCU (w x h x d)	305 x 75 x 305 mm
Weight CCU	4.5 kg
Length Camera Cable	3 m
On-screen Display	Yes
Maximum Power Consumption	55 VA
Protection level acc. to EN 60601-1	CF
Classification acc. to directive 93/42/EEC	I

Accessories (to be ordered separately)

	Endolens only for PV420/PV422
PV118	**Beamsplitter,** f = 28 mm, C-mount, free spinning, focusable
PV123S	**Endolens,** f = 30 mm, focusable
PV124S	**Zoom-Endolens,** f = 25-50 mm, focusable

*) Without Endolens

3-Chip Camera System

The standard camera for natural colors and clear images

- The three highly sensitive CCD chips produce true color rendition
- Digital signal processing in the camera control unit for high contrast
- Additional analog video signal outputs for looping through the camera video signal to the monitor
- High light sensitivity for outstanding image luminosity
- Integrated gain function for automatic brightness adjustment especially in critical light situations
- Special modes (e.g. Lap, Arthro and Small Scope) produce excellent images in every situation
- Ergonomic camera head to support fatigue-free working
- Easy operation of camera functions via control buttons in the camera head
- Included accessories:
  S-Video cable (1x)

PV430*	**PAL System, complete**
PV435**	**PAL System complete with zoom**
PV432*	**NTSC System, complete**

CCD (Inch)	3 x 1/3"
Horizontal Resolution (Lines)	750
Dynamic Gain Function	Always "On", 0 - 20 dB
Detail Enhancement Function	Always "On"
Signal to Noise Ratio	60 dB
Minimum Light Sensitivity	1 Lx
Signal Processing	Digital
Modes	Laparoscopy (High) Arthroscopy (Medium) Small Scope (Low)
Video Signal Outputs	Composite, 2 x Y/C, RGB
Buttons on Camera Head	2
Button Functions	1 x Remote 1 x White Balance
Endolens (PV430 – PV432) Endolens (PV435)	f=23 mm f=18 – 45 mm
Shutter Speed	1/50 — 1/100 000 s
Colour Bars	Yes
Dimensions camera head (w x h x d)	32 x 50 x 135 mm
Weight Camera Head and Endolens	200 g
Dimensions CCU (w x h x d)	305 x 75 x 305 mm
Weight CCU	4 kg
Length Camera Cable	3 m
On-screen Display	Yes
Maximum Power Consumption	25 VA
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	I

*) Including Endolens
**) Including Zoom-Endolens

1-Chip Camera System

PV140* PAL System, complete

PV142* NTSC System, complete

The basic camera for all essential standard functions

- Digital signal processing for high contrast
- Analog video signal outputs for looping through the camera video signal to the monitor
- Natural, true color rendition
- High light sensitivity for outstanding image luminosity
- Integrated gain function for automatic brightness adjustment especially in critical light situations
- Ergonomic camera head to support fatigue-free working
- Easy operation of camera functions via control buttons in the camera head
- Included accessories:
  S-Video cable (1x)

CCD (Inch)	1/3"
Horizontal Resolution (Lines)	PAL 460 / NTSC 470
Dynamic Gain Function	Always "On", 0 - 20 dB
Detail Enhancement Function	Always "On"
Signal to Noise Ratio	44 dB
Minimum Light Sensitivity	1 Lx
Signal Processing	Digital
Modes	Laparoscopy (High) Small Scope (Low)
Video Signal Outputs	Composite, Y/C
Buttons on Camera Head	2 (1 x dual activation)
Button Functions	1 x Remote 1 x White Balance/Small scope
Endolens	Fixed, f=23 mm
Shutter Speed	1/50 – 1/100 000 s
Dimensions camera head (w x h x d)	32 x 50 x 135 mm
Weight Camera Head and Endolens	200 g
Dimensions CCU (w x h x d)	100 x 63 x 200 mm
Weight CCU	0.5 kg
Length Camera Cable	3 m
Maximum Power Consumption	10 VA
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	I

*) Including Endolens

Camera Accessories

Connecting Cables (to be ordered separately)

PV427 SDI/Composite-Connecting cable, 1.0 m

PV963 S-Video-Connecting cable, 2 m

PV424 D-sub 15 Pin/4 BNC cable, 1.8 m

PV416 4 BNC/4 BNC Cable, 2.0 m

PV425 D-sub 15 Pin/D-sub 15 Pin, 2.3 m
PV920201 D-sub 15 Pin/D-sub 15 Pin, 3.0 m
PV920202 DVI-Adapter

PV428 Serial Connecting cable, D-sub 9 Pin, 3.0 m

PV967 Remote control cable, 1.7 m
Cinch/3.5 mm Stereo Mini Jack

PV968 Remote control cable (for PV440 only), 2.0 m
3.5 mm/3.5 mm Stereo Mini Jack

PV436 DVI-D cable (for PV440 only), 2.0 m
PV820201 DVI-D cable (for PV440 only), 3.0 m

JG904

JG908SU

JG910

Additional Accessories

JG904 Sterile Camera drape, disposable, ring design
package of 25

JG908SU Closed sterile camera drape, package of 10

JG910 Sterile Anti Fog Solution, package of 10

LED Light Source

OP940 LED Light Source

System	LED module
Light guide cable receptacle	Aesculap/Storz/Olympus/Wolf
Integrated Spare lamp	No
Lamp Intensity Increase	Continuously
Maximum Power Consumption	550 VA
Dimensions (w x h x d)	305 x 125 x 305 mm
Weight	7.0 kg
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	II a

High performance LED technology for all indications

- A world's first – our light source provides an integrated measurement system for light cable transmission measurement
- LED technology provides a very high light intensity and allows an exceptional colour reproduction of the camera
- The life time of LED lamps is much longer compared to xenon lamps – a real cost saving aspect
- The light source is fully compatible to light guide cables of other make with the integrated light guide cable adapter
- The light intensity is continuously adjustable via an easy to use rotation knob
- Aesculap camera and LED light source communicate via bus system. With a push of a button the light source can go into standby (via camera head control button)
- The light cable output is equipped with an anti-dazzle protection.

Accessories (to be ordered separately)

OP941	Adapter
OP942	Communication cable between CCU and LED light source

Xenon Light Sources

180 W Light Source

- Xenon technology provides a very high light intensity and allows an exceptional colour reproduction of the camera due to the Xenon colour temperature of 6.000 K (daylight)
- Our light source sets new standards regarding the operating noise due to the integrated special "whisper ventilators"
- The light source is easy to use
- The light source design is compact and light
- The light intensity is continuously adjustable
- The life time of Xenon lamps is much longer compared to halogen lamps
- The light source is fully compatible to light guide cables of other make by using suitable adapters

OP930 AXeL 180 Xenon Light Source

System	Xenon
Light guide cable receptacle	Aesculap/Storz
Integrated Spare lamp	No
Lamp Output	180 W
Lamp Voltage	15 V/12 A
Lamp Intensity Increase	Continuously
Colour Temperature	6000 K
Maximum Power Consumption	360 VA
Dimensions (w x h x d)	305 x 125 x 305 mm
Weight	6.4 kg
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	II a

OP932 AXeL 300 Xenon Light Source

300 W Light Source

- Xenon technology provides a very high light intensity and allows an exceptional colour reproduction of the camera due to the Xenon colour temperature of 6.000 K (daylight)
- The light source is easy to use
- The light source design is compact and light
- The light intensity is continuously adjustable
- The life time of Xenon lamps is much longer compared to halogen lamps
- The light source is fully compatible to light guide cables of other make by using suitable adapters

System	Xenon
Light guide cable receptacle	Aesculap/Storz
Integrated Spare lamp	No
Lamp Output	300 W
Lamp Voltage	17 V/15 A
Lamp Intensity Increase	Continuously
Colour Temperature	6000 K
Maximum Power Consumption	550 VA
Dimensions (w x h x d)	305 x 125 x 305 mm
Weight	6.4 kg
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	II a

Accessories for Xenon Light Sources

To be ordered separately

OP931 Xenon replacement bulb 180 W

OP933 Xenon replacement bulb 300 W

Adapter for Xenon light source:

OP936 Wolf

OP937 Olympus (Xenon)

OP938 ACMI

Light guide cables, autoclavable, diam. 4.8 mm:

OP923 Full HD light guide cable, length: 250 cm

OP906 Length: 180 cm

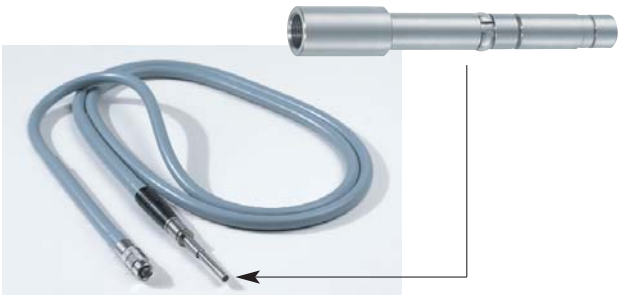
OP913 Length: 250 cm

OP914 Length: 350 cm

OP917 Light guide cables tester

Measures the light transmission of Aesculap/Storz/Olympus light guide cables with Ø 3.5 mm and 4.8 mm

Light guide cables adapter for light source of other make:



TE683R Olympus

TE688R Olympus-Xenon

TE684R Wolf

Documentation

PV840 Eddy Full HD Digital Documentation System

DVD System	DVD-R/-RW; DVD+R/+RW; DVD-RAM; DVD-RDL/+RDL
Full HD resolution	1920 x 1080 pixel
Double Layer Drive	Yes
Still image format Full HD	JPEG, Bitmap
Video format Full HD	MPEG-2
Number of MPEG-2 compression rates	3 (high quality, standard, long play)
Capturing of video sequence	On hard drive, DVD/CD, USB or network
Video Signal Inputs	1 x HD-SDI
Video Signal Outputs	1 x DVI-D, 1 x HD-SDI
Other Ports	6 x USB 2.0; 2 x USB 3.0 1 x RJ45 for Network 1 x 3.5 mm jack socket (Remote function) 1 x RS232 (9 pin D-sub)
System	Intel® Processor, 2 GB RAM
Hard drive capacity	500 GB
Operating System	Windows® XP embedded
Maximum Power Consumption	180 VA
Dimensions (w x h x d)	305 x 125 x 305 mm
Weight	6.5 kg
Classification acc. to directive 93/42/EEC	I

Cutting-edge Full HD documentation system

- Documents still images and/or video sequences in Full HD resolution (1920x1080 pixel)
- No need for secondary monitor if operated with 24" touch LCD monitor PV956
- Archiving of still images and video sequences on Double Layer DVD with a maximum storage capacity of 8.5 GB
- Very easy operation via camera head, mouse or touch screen monitor
- Can be integrated into any existing endoscopy tower
- Image data storage on DVD/CD-ROM, USB, hard drive or network after procedure. Burning on the fly (live recording) for Full HD images and video optionally
- Captures still images during video recording
- Search function for display of existing patient data
- Equipped with common video input and output types
- Fully network-compatible
- Data printout through local printer/net work printer
- Optional DICOM 3.0 compatibility
- Multi patient selection for copying, printing or deleting multiple patients in one process
- Included accessories:
  - DVI cable (1x)
  - HD-SDI cable (1x1 m, 1x3 m)
  - Optical USB mouse (1x)
  - Serial cable
  - Remote control cable
  - CD with MPEG-2 Codec (1x)

Accessories (to be ordered separately)

PV842 DICOM Upgrade Set

Documentation

Medically approved compact high-end A4 colour printer

- Archiving of still images
- Photorealistic quality prints
- Can be connected to EDDY DVD system via USB
- Laminating technology coats each print for long term storage
- Easy operation through remote pushbutton on the camera head
- Can be integrated into existing endoscopy towers
- Versatile digital video inputs and outputs
- Fast printing in A4 format

PV986 Digital A4 colour printer

Interface	USB 2.0
Printing method	Dye sublimation thermal printing
Print size A4	287 mm x 202 mm
Effective Print pixels A4	3400 x 2392
Colour gradation	> 16.7 million colours
Resolution	301 dpi
Printing time	approx. 76 sec.
Maximum Power Consumption	320 VA
Dimensions (w x h x d)	317 x 207 x 425 mm
Weight	11.5 kg
Classification acc. to directive 93/42/EEC	I
Accessories included	1 x USB cable 1 x Cleaning ribbon 2 x Paper holder CD (with printer driver)

Accessories (to be ordered separately)

PV987	2 x Paper roll for 50 prints each and 2 x ink ribbon

PV954 Analog A6 colour printer

High Quality A6 colour printer

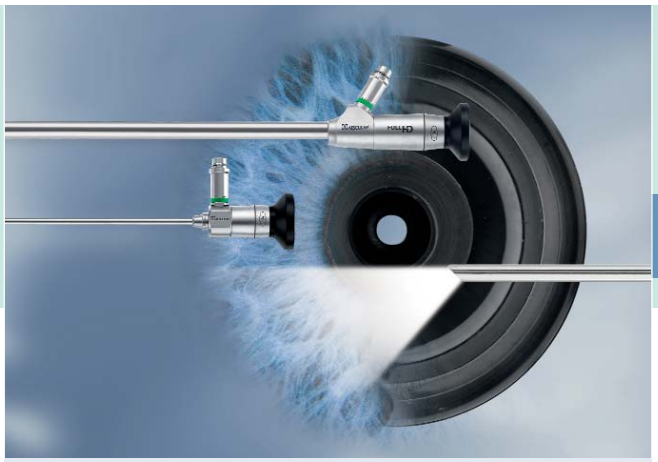
- Slim compact design
- Archiving of still images
- Photorealistic quality
- Easy operation through remote pushbutton on the camera head
- Can be integrated into any existing endoscopy tower
- 2-split and 4-split printing modes per page
- Designed with a convenient front panel for quick and easy insertion of print media
- LED notification of data transmission and print cartridge status
- Supports HD video signals (1080i and 720p) via HD-RGB input

HDTV In/Out Signals	1080/59.94i, 1080/50i 720/59.94p, 720/50p
Supported Colour Systems	PAL / NTSC
Printing technology	Dye sublimation
Paper size	148 mm x 105 mm (DIN A 6)
Image size	128 mm x 92 mm
Pixels	2132 x 1600
Colour gradation	> 16.7 million colours
Resolution	423 dpi (dots per inch)
Printing time	approx. 29 sec. (PV916)
Video inputs	1 x Composite 1 x S-Video 1 x RGB/RGB-HD 2 x Remote control
Video outputs	1 x Composite 1 x S-Video 1 x RGB
Maximum Power Consumption	240 VA
Dimensions (w x h x d)	212 x 98 x 398 mm
Weight	5.7 kg
Classification acc. to directive 93/42/EEC	I

Accessories (to be ordered separately)

PV916	Paper and ink ribbon, 200 sheets, for PV914 and PV954

Full HD Endoscopes



Aesculap Full HD Endoscopes

- Rust-proof steel outer casing for problem-free reprocessing
- The external tube is made from a high strength special alloy for superior breaking resistance
- Enhanced fibre optics provide more light
- Service-improved construction reduces maintenance costs
- Highly rectified optical systems
- Autoclavable

Aesculap Scope Trays

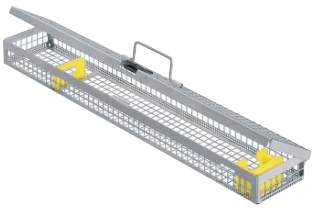
- Quick lock system for easy and fast handling
- Large perforations for exceptional washing results
- Smooth surfaces
- High stability at low weight
- Made from rust-proof stainless steel

Indication	Product Code	Description
Arthroscopy/ENT	PE185A	ENT optic
	PE182A	Mini arthroscope
	PE202A	Mini arthroscope
	PE225A	ENT optic
	PE484A	Arthroscope, short
	PE514A	Arthroscope, short
	PE524A	Arthroscope, short
	PE485A	Arthroscope/Sinuscope
	PE505A	Arthroscope/Sinuscope
	PE525A	Arthroscope/Sinuscope
Urology/Gynaecology	PE030A	Mini Hysteroscope (fibre optic)
	PE031A	Mini Hysteroscope
	PE218A	Hysteroscope
	PE522A	Cystoscope
	PE528A	Cystoscope/Hysteroscope
	PE508A	Cystoscope/Hysteroscope
	PE530A	Cystoscope
Laparoscopy	PE898A	Operating Laparoscope
	PE970A	N.O.T.E.S. Laparoscope
	PE590A	Laparoscope
	PE610A	Laparoscope
	PE889A	Laparoscope
	PE909A	Laparoscope
	PE969A	Laparoscope
Neurosurgery	PE206A	MINOP-TR Neuroscope
	PE184A	MINOP-TR Neuroscope
	PE204A	MINOP-TR Neuroscope
	PE486A	Neuroendoscope
	PE506A	Neuroendoscope
	PE526A	Neuroendoscope
	PE487A	MINOP Trend Neuroscope
	PE507A	MINOP Trend Neuroscope

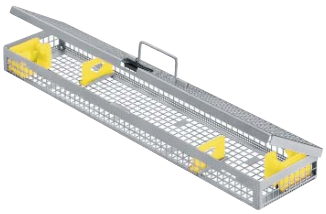
Storz* connection	Diameter	Working length	Viewing angle
Yes	2.7 mm	19 cm	0°
	2.7 mm	11 cm	0°
	2.7 mm	11 cm	30°
Yes	2.7 mm	19 cm	70°
	4.0 mm	14 cm	0°
	4.0 mm	14 cm	30°
	4.0 mm	14 cm	70°
Yes	4.0 mm	18 cm	0°
Yes	4.0 mm	18 cm	30°
Yes	4.0 mm	18 cm	70°
	2.0 mm	30 cm	0°
	2.0 mm	30 cm	30°
Yes	2.9 mm	30 cm	30°
Yes	4.0 mm	30 cm	0°
Yes	4.0 mm	30 cm	12°
Yes	4.0 mm	30 cm	30°
Yes	4.0 mm	30 cm	70°
	10.0 mm	28 cm	0°
	10.0 mm	57 cm	45°
	5.0 mm	31 cm	0°
	5.0 mm	31 cm	30°
	10.0 mm	33 cm	0°
	10.0 mm	33 cm	30°
	10.0 mm	33 cm	45°
	2.7 mm	18 cm	70°
	2.7 mm	18 cm	0°
	2.7 mm	18 cm	30°
	4.0 mm	16 cm	0°
	4.0 mm	16 cm	30°
	4.0 mm	16 cm	70°
	4.0 mm	19.5 cm	0°
	4.0 mm	19.5 cm	30°

*** other makes on request**

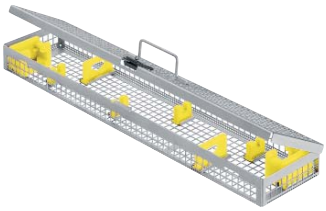
Scope Trays



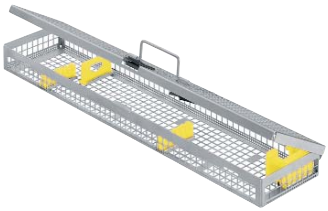
JF431R
Tray for one Scope,
Shaft length < 340 mm
Outer dimensions:
454 x 84 x 41 mm



JF432R
Tray for two Scopes,
Shaft length < 340 mm
Outer dimensions:
454 x 104 x 41 mm



JF433R
Tray for two Scopes,
Shaft length < 340 mm,
with additional support
Outer dimensions:
454 x 104 x 41 mm



JF434R
Tray for Mini Hysteroscope,
diam. < 4 mm
Outer dimensions:
454 x 104 x 41 mm

JF436R
Tray for one Scope,
Shaft diam. 2.7 mm/4 mm,
Shaft length 140 – 200 mm,
Outer dimensions:
273 x 84 x 41 mm

For more information see
our brochure
C26502 Scope Container

Full HD Monitors

PV959 26" Full HD flat panel display

Panel Quality	Active Matrix TFT
Viewable Diagonal (Inches)	26.0
Max. Brightness (cd/m²)	800
Resolution (Pixel)	1920 x 1080 (Full HD)
Viewing Angle Horizontal/Vertical	178°/178°
Aspect Ratio	16:9
Contrast Ratio	1000:1 (typical)
Video signal inputs	2xDVI (DVI-D and DVI-i) 2x SDI/HD-SDI (BNC) RGB/HD-RGB (5 x BNC or HD-15) 2x S-Video (DIN-4 or 2 x BNC) Composite (BNC) VGA (HD-15)
Video signal outputs	DVI (DVI-D) SDI/HD-SDI (BNC) RGB/HD-RGB (5 x BNC or DVI-I) S-Video (DIN-4)
Suitable stand	PV909 (optional)
Maximum Power Consumption	130 VA (typical)
Dimensions (w x h x d)	673 x 418 x 88 mm
Weight	8.2 kg
Classification acc. to directive 93/42/EEC	I

Ultra High Definition medical monitor with bright LED backlight

- Image lag reduction for super fast video imaging (8 ms typical response time)
- Wide viewing angle (178°)
- VESA 100 mounting Standard for adaptation to monitor stand, wall or ceiling mounting
- Multilingual user menu (language, color, brightness...)
- Low power consumption
- Lightweight construction
- Space-saving design
- Automatic selection of video signal
- Multi-Modality (PIP)
- 24 V DC power input power
- Included accessories:
  - DVI cable (1x)
  - S-Video cable (1x)
  - VGA cable (1x)
  - Composite cable (1x)

Accessories (to be ordered separately)

PV909	Stand for flat panel displays (100 mm VESA mounting)

PV956 24" Full HD touch panel display

High quality touch-screen flat panel monitor for live viewing and documentation

- In combination with the Eddy Full HD system PV840 this monitor can display live video and documentation in Full HD quality
- Wide viewing angle (178°)
- VESA 100 Standard for adaptation to monitor stand, wall or ceiling mounting
- Multilingual user menu (language, color, brightness ...)
- Low power consumption
- Automatic selection of video signal
- 24 V DC power input
- Included accessories:
  - S-Video cable (1x)
  - Composite cable (2x)
  - VGA cable (1x)
  - DVI cable (2x)

LCD Panel	Active Matrix with In Plane Switching
Viewable Diagonal (Inches)	24.0
Max. Brightness (cd/m²)	400
Resolution (Pixel)	1920 x 1200 (Full HD)
Viewing Angle Horizontal/Vertical	178°/178°
Aspect Ratio	16:10
Contrast Ratio	1000:1 (typical)
Video Signal Inputs	2x DVI-I (DVI-D and DVI-I) 2x HD-SDI (BNC) 1x HD-RGB (BNC x5) 1x VGA (HD-15) 1x S-Video (DIN-4) 1x Composite (BNC)
Video Signal Outputs	1x DVI-D 1x HD-SDI (BNC) 1x HD-RGB (BNC x5) 1x S-Video (DIN-4)
Suitable stand	PV909 (optional)
Touch Function	Yes
Maximum Power Consumption	115 VA (typical)
Dimensions (w x h x d)	597 x 401 x 100 mm
Weight	8.3 kg
Classification acc. to directive 93/42/EEC	I

Accessories (to be ordered separately)

PV909	Stand for flat panel displays (100 mm VESA mounting)

Monitors

High Definition medical monitor

- Image lag reduction for super fast video imaging (10-16 ms response time)
- Wide viewing angle (178°)
- VESA 100 Standard for adaptation to monitor stand, wall or ceiling mounting
- Multilingual user menu (language, color, brightness...)
- Low power consumption
- Lightweight construction
- Space-saving design
- Automatic selection of video signal
- Runs without fans (no bacteria spread)
- Picture-in picture (PIP)
- 24 V DC power input and output
- Included accessories:
  - DVI-D cable (1x)
  - S-Video cable (1x)
  - SXGA Video cable (1x)
  - Composite cable (1x)

PV949 19" HD flat panel display

Panel Quality	With anti-reflection safety glass
Viewable Diagonal (Inches)	19.1
Brightness (cd/m²)	450
Resolution (Pixel)	1280 x 1024 (SXGA)
Viewing Angle Horizontal/Vertical	178°/178°
Aspect Ratio	5:4
Contrast Ratio	650:1
Supported Colour Systems	PAL, NTSC
Video signal inputs	SDI/HD-SDI (BNC) DVI (DVI-D) RGB (4 x BNC or HD-15) S-Video (DIN-4 and 2x BNC) Composite (BNC) VGA (HD-15)
Video signal outputs	SDI/HD-SDI (BNC) DVI (DVI-D) RGB (4 x BNC or HD-15) S-Video (DIN-4) Composite (BNC)
Suitable stand	PV909 (optional)
Maximum Power Consumption	65 VA
Dimensions (w x h x d)	465 x 395 x 98 mm
Weight	6.8 kg
Classification acc. to directive 93/42/EEC	I

Accessories (to be ordered separately)

PV909	Stand for flat panel displays (100 mm VESA mounting)

All Aesculap endoscopy products
on our Internet homepage:

...just a click away!

Insufflation

High-flow insufflator with central info display

- With integrated gas preheating
- Paediatric flow rate
  (from 1 l to 5 l in steps of 0.5 l/min)
- Automatic overpressure gas release
- Intuitive and simple operation
- Pressure pre-selection in mmHg
- Pre-selectable flow rate
- Gas connection to gas cylinder or central supply
- Gas cylinder fill level display
- Display of gas consumption, in litres
- Info line for error messages
- Update-enabled through interface

PG080 Flow 40 – CO_2 High Flow Insufflator

Insufflation medium	Pure medical CO_2 gas
Maximum gas flow	40 l/min.
Pressure range	1 - 30 mm Hg
User menu	5 languages
Central Information Display	Yes
Dimensions (w x h x d)	305 x 175 x 340 mm
Weight	11 kg
Maximum Power Consumption	125 VA
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	IIa

PG120 Flow 20 – CO_2 Insufflator

Insufflation medium	Pure medica CO_2 gas
Maximum gas flow	20 l/min.
Pressure range	5 - 25 mm Hg
Dimensions (w x h x d)	300 x 145 x 320 mm
Weight	5 kg
Maximum Power Consumption	34 VA
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	II a

Easy to operate basic insufflator

- Fully automatic insufflator
- Ready at a push of a button
- Pressure pre-selection in mmHg
- Display of gas consumption, in liters
- Gas cylinder fill level indicator
- Audiovisual error alarm (e.g. overpressure)

Insufflation Accessories

To be ordered separately

PG003	VERESS Cannula, length 100 mm, diam. 2.1 mm
PG008	VERESS Cannula, length 120 mm, diam. 2.1 mm
PG011	VERESS Cannula, length 150 mm, diam. 2.1 mm
EJ995	VERESS Cannula, length 120 mm, single use Package of 20 pieces
EJ996	VERESS Cannula, length 150 mm, single use Package of 20 pieces

PG086	High pressure tube, 1 m Unit side US Connector, Bottle side DIN Connector

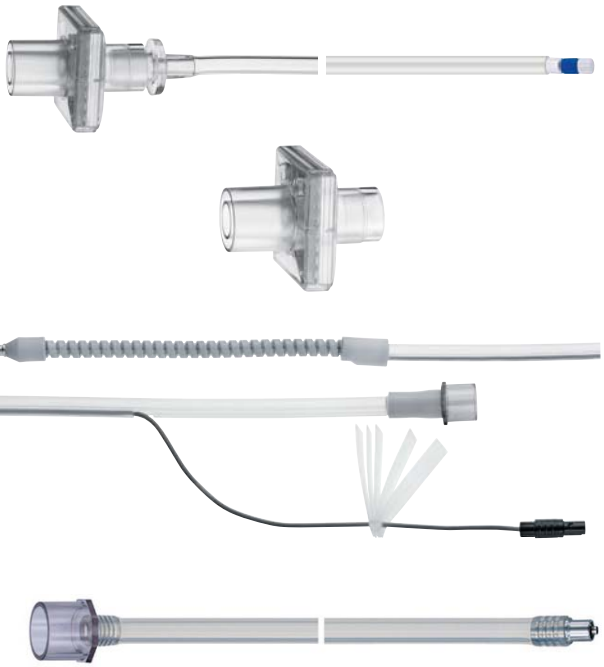
PG087	High pressure tube, 1 m Unit side US Connector, Bottle side ISO Connector

PG088	High pressure tube, 1 m Unit side US Connector, Bottle side PIN Connector

PG121	High pressure tube for central gas supply, 5 m (only Flow 20)
PG083	NIST Connector for central gas supply (only Flow 40)

PG084	High pressure tube for central gas supply, 3 m (only Flow 40)
PG085	High pressure tube for central gas supply, 5 m (only Flow 40)

To be ordered separately



PG012	Disposable tube set incl. CO_2 filter, sterile, package of 10 pieces
PG019	Disposable CO_2 filter, sterile, package of 25 pieces
PG082	Reusable silicone tube with gas warming for PG080 only, (100 x autoclavable)
PG014	Reusable silicone tube without gas warming (20 x autoclavable)

Multi Flow Pump

PG130 Irrigation

PG145 Suction/Irrigation

High end multiindication pump

Multifunctional

- Four specialities covered by one device
- Individual irrigation and suction performance

Safety aspects

- Cutting-edge transponder technology
- Intelligent irrigation bag monitoring system
- Hygienic disposable tube sets

Very easy to operate

- Large colour display
- Sensitive touch screen
- Comprehensive tube portfolio
- Single hand tube fitting

PG130	**Multi Flow Pump**
PG145	**Multi Flow Pump Plus**

Max. flow rate/pressure	
Laparoscopy	3.5 l/min
Arthroscopy	2.5 l/min / 15-200 mmHg
Hysteroscopy	0.5 l/min / 15-150 mmHg
Ureteroscopy	0.5 l/min / 15-150 mmHg
Negative suction pressure vaccum pump (only PG145)	700 mbar
Max. suction rate	4.0 l/min
Dimensions (w x h x d)	305 x 175 x 305 mm
Weight	8.2 kg
Max. Power Consumption	90 VA
Protection level acc. to EN 60601-1	Typ BF
Classification acc. to directive 93/42/EEG	II b

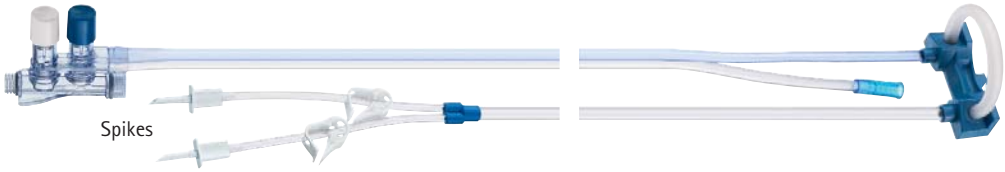
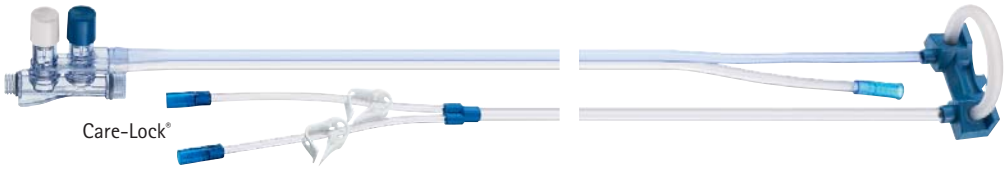
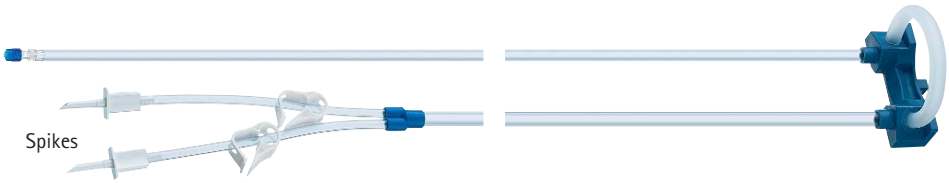
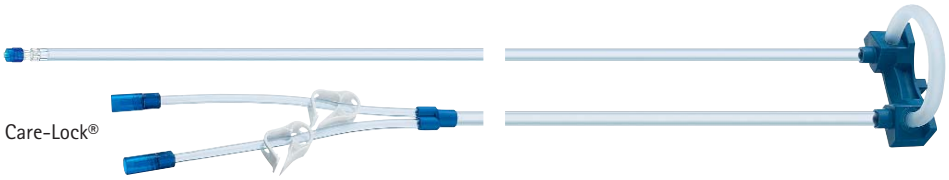
Accessories

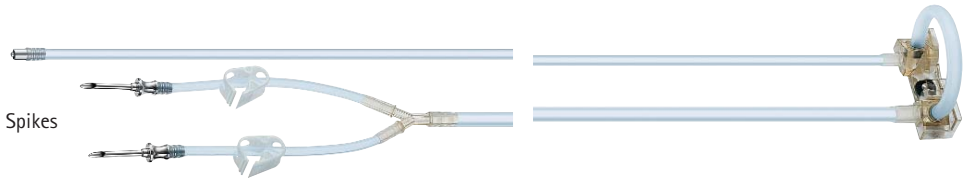
Art. no.	Software Transponder	pcs. per pack	LAP	ARTHRO	HYS	URO
PG140	LAP Transponder*	1	●			
PG141	ARTHRO Transponder*	1		●		
PG142	HYS Transponder*	1			●	
PG143	URO Transponder*	1				●

*) Every transponder is supplied with three PG132SU tubes

Art. no.	Accessories	pcs. per pack	LAP	ARTHRO	HYS	URO
PG124	Foot control "WASH"	1		●		
PG125	Wireless remote control	1	●	●	●	●
PG126SU	Sterile cover for remote control	10	●	●	●	●
PG144	Difference-in-volume scale, max. load: 7 kg	1			●	

Multi Flow Pump Tube Sets

Art. no.	Single Use Sets	Length	pcs. per pack	LAP	ARTHRO	HYS	URO
	Suction/irrigation tubing with transponder, with sution/irrigation trumpet valve handle without probe, with multi-adapter suction connector	450 cm	10	●			
PG122SU	 Spikes						
PG123SU	 Care-Lock®						
	Irrigation tubing with tranponder	450 cm	10	●	●	●	●
PG132SU	 Spikes						
PG133SU	 Care-Lock®						
	Y-tubing	300 cm	10		●	●	●
PG138SU							

Art. no.	Reusable Sets	Length	pcs. per pack	LAP	ARTHRO	HYS	URO
	Irrigation tubing with transponder	450 cm	1	●	●	●	●
PG131							
	Vacuum suction tube, with hydrophobic filter, with multi-adapter suction connector, for PG145 only	200 cm	10	●	●	●	●
PG139							

Art. no.	Arthro Day Tubing Set	Length	pcs. per pack
	Irrigation day tubing set with transponder	450 cm	10 + 1
PG134SU			
PG135SU			
	Irrigation day tubing with transponder suitable for up to 10 uses within 24 hours	165 cm	10
PG136			
PG137			

Irrigation

Standard irrigation pump for laparoscopy

- Very easy to operate
- Pressure-controlled pump
- Simple installation of the irrigation tube
- Reusable and single-use tube sets available
- Suction through conventional O.R. suction device
- Smart adaptation of the pump to the equipment cart
- Hand or foot controlled

PG070 Fluid3 Irrigation Pump

Maximum Irrigation Rate	1.8 l/min.
Maximum Pump Capacity	400 mm Hg
Selectable Power Supply	100V/115V/230V
Dimensions (w x h x d)	143 x 317 x 170 mm
Weight	5.5 kg
Maximum Power Consumption	36 VA
Protection level acc. to EN 60601-1	BF
Classification acc. to directive 93/42/EEC	II a

Accessories (to be ordered separately)

Reusable tube set (20 x autoclavable)	**PG052**
Sterile single use inflow tubing set, PVC, with Care-Lock® connection (pack of 10)	**PG072SU**
Sterile single use inflow tubing set, PVC, with insert pins (pack of 10)	**PG073SU**
Foot switch	**PG071**
Fluid 3 pole clamp	**PG076**
Fluid 3 holding rail	**PG078**
Suction-/Irrigation Instrument, diam. 5 mm, 330 mm long	**PG027R**
Suction-/Irrigation Instrument, diam. 3.5 mm, 310 mm long	**PG028R**

Electrosurgery

GN640 Nelson® deluxe* Electrosurgical Unit

High end electrosurgical generator

- Ready to start at the touch of a button
- Individually programmable e.g. according to indication or surgeon
- 14 memory locations
- Innovative, clearly laid out colour information display
- Monopolar and bipolar cutting and coagulation
- Freely selectable cutting quality
- Various safety features you can expect from a high end unit
- Nelson deluxe recognises coded instruments immediately
- CF protection level

Monopolar Output	Watt	Ohm
POWERCUT 1	300	500
POWERCUT 2	250	500
POWERCUT 3	200	500
POWERCUT 4	150	500
MICROCUT 1 + 2	300	500
SEALCUT	100	150
SOFT COAG	100	300
CONTACT COAG	120	500
FORCED COAG	120	1000
SPRAY COAG	120	800

Bipolar Output	Watt	Ohm
BICUT 1	100	600
BICUT 2	100	100
BICOAG	100	100

Maximum Power Consumption	470 VA
Frequency	447 kHz
Modulation frequency monopolar	20 kHz
Modulation frequency bipolar	1 kH
Weight	8.6 kg
Dimensions (w x h x d)	305 x 175 x 305 mm
Tested acc. to norm	EN 60601-1, EN 60601-2-2
Classification acc. to directive 93/42/EEC	II b

* The product mark Nelson® deluxe is a registered mark of Aesculap AG.

Electrosurgery

Standard electrosurgical generator

- Easy operation
- Monopolar and bipolar cutting and coagulation
- Cutting quality remains constant with different tissue types
- Skin-to-plate monitoring system when using split monopolar patient electrodes
- Safe and gentle coagulation with no tissue adhesion
- No current leakage outside the bipolar application field
- Power setting can be saved in 3 memory locations
- Comprehensive safety concept
- CF protection level

GN300 Electrosurgical Unit

Monopolar Output	**Watt**	**Ohm**
POWERCUT 1	300	250 - 600
POWERCUT 2	200	250 - 600
POWERCUT 3	150	250 - 600
POWERCUT 4	100	250 - 600
CONTACT COAG	120	250 - 600
SPRAY COAG	80	700 -1200

Bipolar Output	**Watt**	**Ohm**
BICUT	80	700 -1300
BICOAG	80	70 - 250

Maximum Power Consumption	550 VA
Frequency	447 kHz
Modulation frequency monopolar	20 kHz
Modulation frequency bipolar	1 kHz
Weight	9.3 kg
Dimensions (w x h x d)	305 x 155 x 305 mm
Tested acc. to norm	EN 60601-1, EN 60601-2-2
Classification acc. to directive 93/42/EEC	IIb

Foot switches and accessories for electrosurgical unit (to be ordered separately)

GN324 Double foot switch, explosion proof, cable 4 m

GN325 Vario double foot switch, explosion proof, cable 4 m

GN326 Lateral foot limiter, only

GN327 Transport bracket, only

Endoscopy Carts

"Metro Junior"

Standard Cart

- Applied cable management with hinges for opening the cable ducts
- Separate cable ducts for video and power cables.
- Very versatile gas cylinder holder for two gas cylinders (main and reserve), which can even be of different size.
- Novel multifunction handles for easy and controlled maneuvering
- Rear cart columns provide high stability of the equipment cart
- Modular construction for a multitude of possible variations
- Antistatic smooth-running double castors for easy maneuvering even when the cart is fully loaded
- Anti-slip shelf surface for good grip of the expensive devices on the cart
- Shelf surface with all-round safety edge, for additional slide-off protection of devices
- Solid wheel bumpers prevent damage to doors, walls and furniture
- Lockable drawer for smart storage of small parts
- Cleaning-friendly – all materials are disinfectant- and solvent-proof
- A comprehensive range of accessories offers useful solutions for everyday tasks

Product Code	PV880	PV881
Power Supply	220-240 V, 50-60Hz	220-240 V, 50/60Hz
Maximum Allowable Current Input	10 A	6 A
IEC-320 Socket Strip (number of sockets)	9	9
Antistatic double-wheel castors	Yes	Yes
Front castors lockable	Yes	Yes
Cable channel with hinges	Yes	Yes
Dimensions (w x h x d)	835 x 1580 x 750 mm	835 x 1580 x 750 mm
Standing Area (w x d)	560 x 440 mm	560 x 440 mm
Weight (without load)	76 kg	89 kg
Maximum Load Capacity of Cart	210 kg	210 kg
Maximum Load Capacity of Shelf	40 kg	40 kg
Output Power Isolating Transformer	-	1120 VA
System Monitoring	-	Integrated
Tested acc. to norm	EN 60601-1 EN 60601-1-1 EN 60601-1-2	EN 60601-1 EN 60601-1-1 EN 60601-1-2
Classification acc. to directive 93/42/EEC	I	I

Integrated System Monitoring

Endoscopy Carts

"Metro Classic"

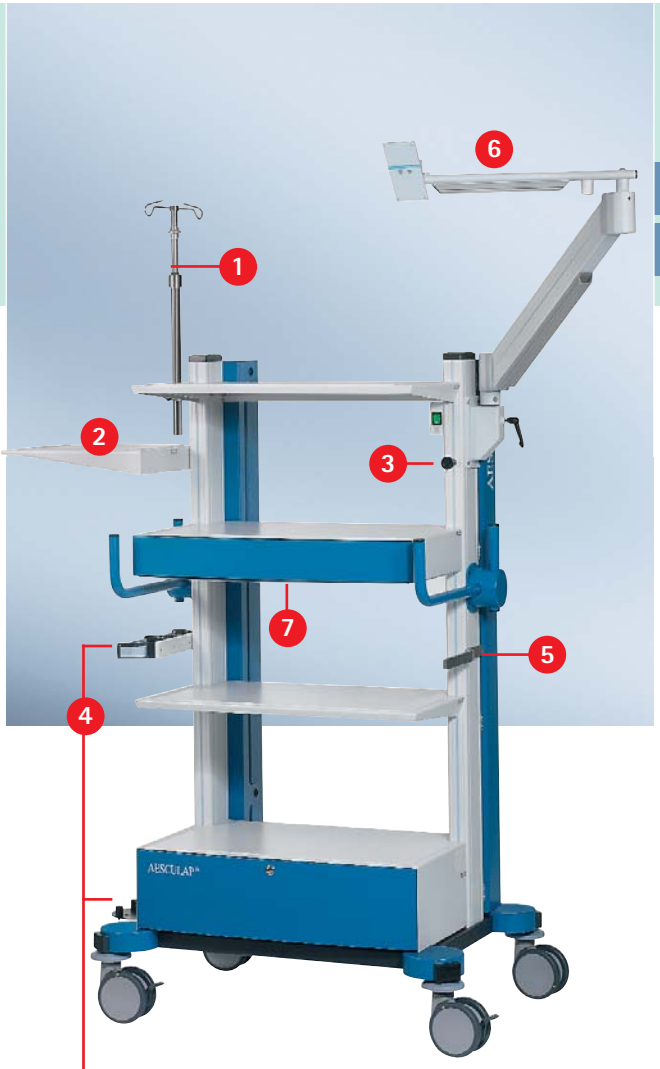
XXL Cart

- Two devices fitting next to each other on each level
- Applied cable management with hinges for opening the cable ducts
- Separate cable ducts for video and power cables.
- Very versatile gas cylinder holder for attaching two gas cylinders (main and reserve), which can even be of different size.
- Novel multifunction handles for easy and controlled maneuvering
- Rear cart columns provide high stability of the equipment cart
- Modular construction for a multitude of possible variations
- Antistatic smooth-running double castors for easy maneuvering even when the cart is fully loaded
- Anti-slip shelf surface for good grip of the expensive devices on the cart
- Shelf surface with all-round safety edge, for additional slide-off protection of devices
- Solid wheel bumpers prevent damage to doors, walls and furniture
- Lockable drawer for smart storage of small parts
- Cleaning-friendly – all materials are disinfectant- and solvent-proof
- A comprehensive range of accessories offers practical solutions for everyday tasks

Product Code	PV890	PV891
Power Supply	220-240 V, 50-60Hz	220-240 V, 50-60Hz
Maximum Allowable Current Input	10 A	12 A
IEC-320 Socket Strip (number of sockets)	12	12
Antistatic double-wheel castors	Yes	Yes
Front castors lockable	Yes	Yes
Cable channel with hinges	2 x	2 x
Dimensions (w x h x d)	935 x 1580 x 700 mm	935 x 1580 x 700 mm
Standing Area (w x d)	710 x 440 mm	710 x 440 mm
Weight (without load)	82 kg	95 kg
Maximum Load Capacity of Cart	210 kg	210 kg
Maximum Load Capacity of Shelf	40 kg	40 kg
Output Power Isolating Transformer	-	2000 VA
System Monitoring	-	Integrated
Tested acc. to norm	EN 60601-1 EN 60601-1-1 EN 60601-1-2	EN 60601-1 EN 60601-1-1 EN 60601-1-2
Classification acc. to directive 93/42/EEC	I	I

Integrated System Monitoring

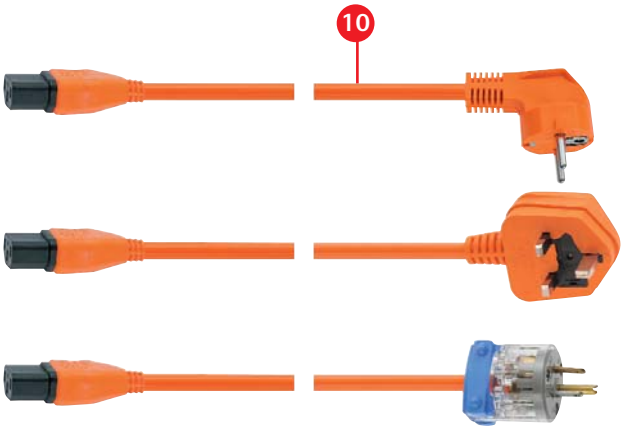
Endoscopy Carts



Optional Accessories (to be ordered separately)

Description		Product Code
1 Infusion bottle holder		**PV883**
Total height, adjustable (single-hand operation)		500 - 900 mm
Max. allowable load		5 kg
2 Additional side shelf		**PV886**
Dimensions (W x D)		390 x 390 mm
Weight (unloaded)		4 kg
Max. allowable load		15 kg
3 Camera holder		**PV884**
Dimensions (Ø x D)		32 x 35 mm
Max. allowable load		1 kg
4 CO_2 gas cylinder holder		**PV882**
Cylinder diameter		80 - 150 mm
Weight (unloaded)		2.5 kg
Max. allowable load		35 kg
5 Standard rail		**PG077**
Total length		430 mm
Effective length		300 mm
Weight (unloaded)		0.8 kg
Max. allowable load		15 kg
6 Extension arm for flat panel display with VESA 100 Fixation	**PV875**	**PV885**
Weight (unloaded)	6 kg	10 kg
Adjustable load range	4 - 8 kg	4 - 8 kg
Max. extension length	0.36 m	1.25 m
Swivelling radius	0.3 m	1 m

Description	Product Code
7 Cart shelf with integrated keyboard drawer	**PV889**
Dimensions (W x H x D)	550 x 106 x 463 mm
Weight (unloaded)	7 kg
Max. allowable load	20 kg
Suitable for	PV880, PV881
8 Second cable duct	**PV887**
Dimensions (W x H x D)	100 x 1340 x 155 mm
Weight (unloaded)	8 kg
Suitable for	PV880, PV881
9 Side fixture with round tube	**PV888**
Dimensions (W x H x D)	143 x 256 x 90 mm
Weight (unloaded)	1.2 kg
Max. allowable load	15 kg
10 Power cable, 5 m, orange	
Power-Euro Plug	**PV893**
Great Britain/Ireland	**PV894**
USA/Canada/Japan	**PV895**



Power Cables

Cables for Aesculap Endoscopy Units

On the device side

TE780 Euro power cable, 1.5 m
TE730 Euro power cable, 5.0 m

TE734 Great Britain and Ireland, 5.0 m

TE735 USA, Canada and Japan, 3.5 m

TE676 Special power cable, IEC 60320 connector, 1.0 m
TE736 Special power cable, IEC 60320 connector, 2.5 m
(Suitable for Carts PV880, PV881, PV890, PV891)

TA008205 Potential equalization cable, 0.8 m
GK535 Potential equalization cable, 4.0 m

Service

Surgeons carry out frequent operations which demand intensive concentration and sometimes complicated procedures. They demand equipment that gives both functional and a trouble free use, throughout their intensive work loads. Their requirements apply to an extensive range of technical equipment which include cameras, optics, insufflators, HF units and surgical instruments.

Aesculap provides a range of services, which meet preconditions demanded by hospitals today. This is achieved by utilising teams of highly qualified service and medical technicians. These teams provide information to the customer on issues such as: how to maintain the value of equipment and how to maintain the equipment.

By providing an individual and service orientated concept, customers will receive both economical maintenance and repair services that ensures the intrinsic value and functionality of these valuable assets. With financial resources now under increasingly greater scrutiny, service has become and will continue to be one the most important factors to hospitals now and in the future.

The Aesculap Service Package

Repairs

- Expertise from over 140 years of production experience
- All types of repair work carried out
- One year guarantee on all repair work

Loaner Pool

- We can provide loan equipment whilst your units are being repaired.

Pick-up and Delivery Service

- Logistics concept for all products to be repaired
- A personal service

Maintenance

- Regular on-site inspections and maintenance service of your equipment

General Contracts

- A "One-stop" SERVICE!
- Allows service budgeting
- Payment by flat-rate installments
- Transparent service costs

Sharing Expertise

Horizons of Knowledge – Competence to Master the Future

Innovative developments in the field of medical technology, sophisticated new treatment methods, increasingly more stringent requirements for hospital and quality management and, last but not least, a healthy interest in acquiring new knowledge have given raise to an enormous and ever-increasing demand for further and advanced training.

The Aesculap Academy enjoys a world-wide reputation as a leading forum for medical training and answers the demands of physicians and medical staff in OR, anaesthesia, ward, outpatient care and hospital management.
The course program comprises a wide range of hands-on workshops, management seminars and international symposia.

Aesculap Academy courses are of premium quality and are accredited by the respective medical societies and international medical organizations. A scientific advisory board guarantees the perfect selection of speakers and topics.

Our training facilities in Tuttlingen (Aesculapium) and Berlin (Langenbeck-Virchow-Haus), offer up to 10 workstations for a maximum of 20 participants. Different training modules have been developed for "dry" and "wet" lab training in laparoscopic procedures.

Intensive hands-on sessions on animal models prepare for the real case and small working teams are the ideal set-up for an intensive exchange of knowledge.

"I prefer the friendly spirit and the practice with the specimen."

"The lab is brilliant!"

"Very professional, pleasure to take part in."

"Personal instructions from faculty during wet lab session – excellent guidance!"

www.aesculap-academy.com

AESCULAP ACADEMY

Consecutive Winner 2005, 2006 & 2007

2005 FROST & SULLIVAN
2006 FROST & SULLIVAN
2007 FROST & SULLIVAN
Global Medical Professional Education Institution of the Year Award

AESCULAP ACADEMY

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PV963	8
PV967	8
PV968	8
PV986	14
PV987	14
TA008205	40
TE676	40
TE683R	12
TE684R	12
TE688R	12
TE730	40
TE734	40
TE735	40
TE736	40
TE780	40

Notice

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