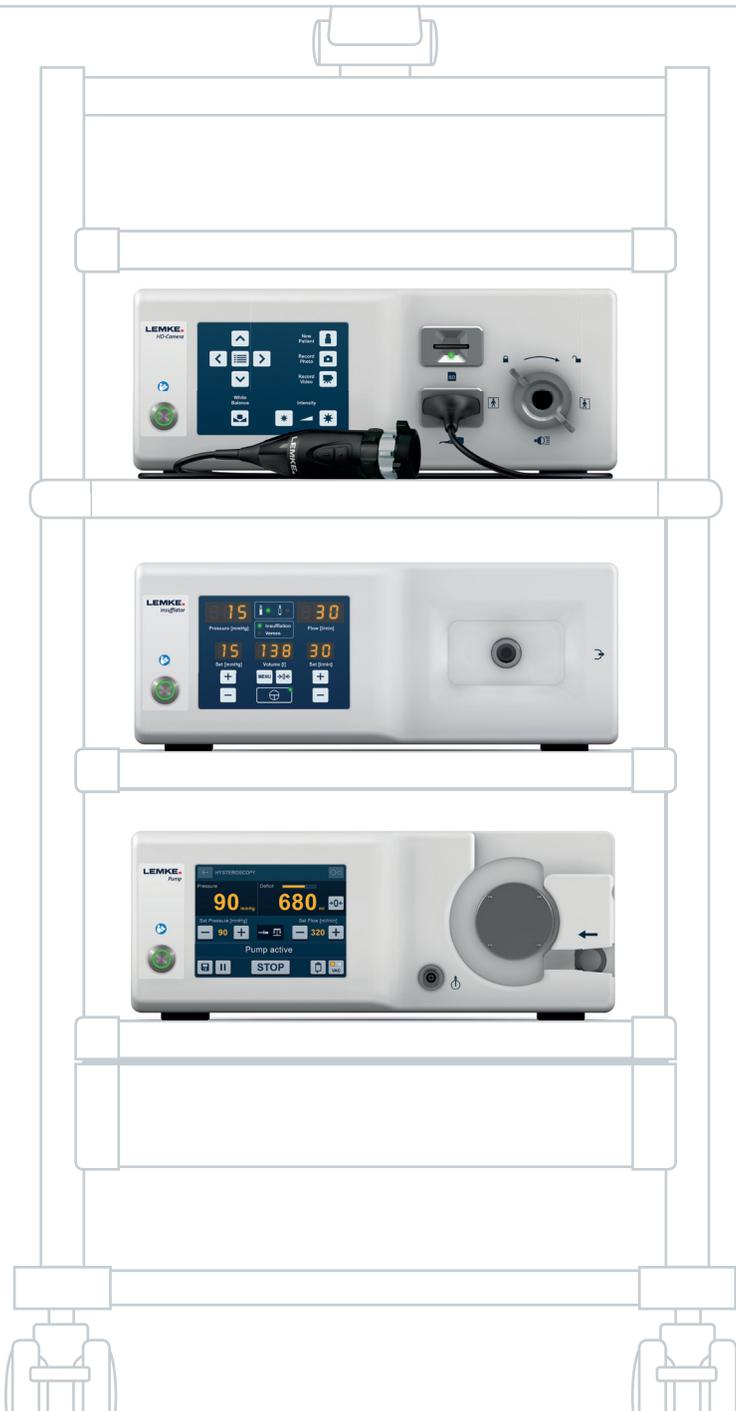


LEMKE.

PRODUCT CATALOGUE



HD CAMERAS
INSUFFLATORS
PUMP SYSTEMS
LIGHT SOURCES
DOCUMENTATION
MEDICAL MONITORS
OR TROLLEYS



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COMPANY INFORMATION

LEMKE – Built on Strength

LEMKE draws on a wealth of experience collected over more than 40 years in the development of medical-technical devices for Minimally Invasive Medicine. Behind the brand is WOM – a strong partner considered one of the leading international companies in the field of Minimally Invasive Medicine. Throughout the years, extensive know-how has been accumulated in the development of Cameras, Pumps, and Insufflators – for such applications as laparoscopy, arthroscopy, hysteroscopy and urology.

Made in Germany, globally successful

LEMKE is a global brand. Our products are used in over 30 countries and are designed for more than 25 languages. Our portfolio covers the entire range of products for minimally invasive surgery. All products are developed in close cooperation with renowned doctors and conform to international safety regulations (e. g. FDA, CE, PMDA, CFDA).

With products from LEMKE, our customers rely on – **Made in Germany** – quality.

LEMKE stands for Reliability

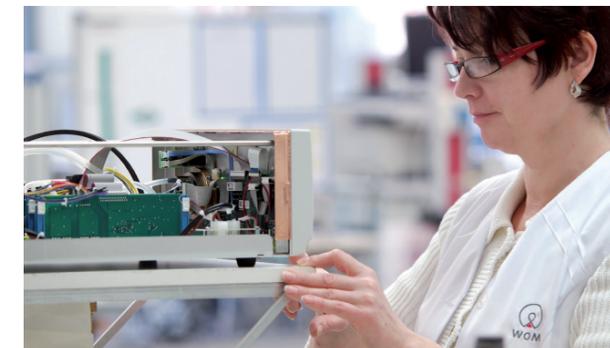
The past 40 years have been characterized by dynamism and technological progress. Even today, we continue to develop. For example: We have completely revised and redesigned our product portfolio.

We ardently focus our activities on global markets. We concentrate on the aspects of absolute reliability – **Made in Germany** – highest safety standards, and an optimal price-performance ratio.

Our service departments offer prompt technical support like preventive maintenance and repair of defective devices by certified service engineers. Service trainings and technical support complete our range.

40 Years of Innovation

- 1972 First hysteroscopy Insufflator
- 1982 One of the first arthroscopy Pump systems
- 1985 First electronic Laparoflator
- 1996 First 40 L-Insufflator worldwide
- 2007 3-chip Medical-HD® Camera
- 2010 Autoclavable 3-chip Medical-HD® Camera
- 2012 Suction-irrigation Pump for hysteroscopy
- 2014 All new LEMKE products
- 2016 Full HD-Camera, 50 L-Insufflator



COMPANY INFORMATION

Always at your Side

Our Locations

Berlin, Germany
Headquarters, Research & Development,
Marketing & Sales, Financing, Regulatory
Affairs, Compliance

Ludwigsstadt and Reichenbach, Germany
Production sites, Purchasing and Quality
Management

Orlando, FL, USA
Sales subsidiary, Marketing & Sales,
Technical Service

Hong Kong, China
Sales subsidiary, Marketing & Sales,
Technical Service



VIDEO MANAGEMENT SYSTEM

HD-CAMERA | LED-LIGHT SOURCE | HD-CAPTURING



FULL HD-CAMERA

AVAILABLE
Q1 / 2016

Full HD-Camera

What matters today: Full HD resolution, impressive handling, good economical solution

- Full HD-Camera
- Integrated LED-Light-Source
- Photo and video documentation in Full HD

What the players in the field of minimally invasive medicine expect today from a camera is the combination of great resolution, natural color reproduction, high quality manufacturing, and the greatest ease of use possible. The LEMKE Full HD-Camera is the result of all these requirements. It produces sharp, true-color images, and is characterized by a high degree of user-friendliness. The Full HD-Camera provides targeted profiles that enable the diagnosis and treatment of the most important medical applications: laparoscopy, arthroscopy, hysteroscopy and urology.

The 3-in-1 solution, combining camera, light source and HD capturing, means only one device is needed. This saves space in the operating room and relieves budget pressures. Rounding out the benefits of the Full HD-Camera is a contemporary, sophisticated design. The compelling, reliable technology makes the LEMKE Full HD-Camera the perfect choice for demanding target groups.

We offer services worldwide for the Full HD-Camera.

Full HD-Camera

The Camera head features an ergonomic design and is ideally suited for all indications. The pre-set application profiles make the camera a plug and play device. The brilliant image quality makes it the perfect camera for the main endoscopic applications. However, the user has the possibility to adjust the image as desired.



LED-Light Source

The LED-Light Source has a universal fiber optic cable receptacle compatible with Storz, Olympus, ACMI, and Wolf light cable adapters. The intensity of the Light Source is adjustable. The light intensity is 1,400 lumens. After an operating time of 10,000 hours, LEMKE guarantees a minimum light output of at least 90 %.



HD-Capturing

The capture unit comes with a USB flash/hard drive interface in which images and videos are recorded in Full HD quality. An external keyboard is used to conveniently input patient data. In addition, every image and video has a time stamp as well as the patient data on it. Through the "New Patient" function it is easy to separate cases and to summarize all videos and photos.



The right product for the right market.



HD-CAMERA

HD-Camera

The one for all cases: high quality, easy to use, best cost

- HD-Camera
- Integrated LED-Light-Source
- Photo and video documentation in HD

The classic three-in-one HD Camera for cost-sensitive markets in proven LEMKE quality. New customer demands require new solutions. In fast growing markets, device costs can be adjusted flexibly to the individual circumstances of the hospital or doctor's practice.

The new HD-Camera does exactly this. It is suitable for the fields of laparoscopy, arthroscopy, hysteroscopy and urology. The three-in-one solution: HD-Camera, LED-Light Source and HD-Capturing are available in one device. The HD-Camera, however, is still user-friendly and intuitive to use. The picture quality is brilliant.

The device is approved worldwide and service is available globally.

HD-Camera

The Camera head features an ergonomic design and is ideally suited for all indications. The pre-set application profiles make the camera a plug and play device. The brilliant image quality makes it the perfect camera for the main endoscopic applications. However, the user has the possibility to adjust the image as desired.



LED-Light Source

The LED-Light Source has a universal fiber optic cable receptacle compatible with Storz, Olympus, ACMI, and Wolf light cable adapters. The intensity of the Light Source is adjustable. The light intensity is 1,400 lumens. After an operating time of 10,000 hours, LEMKE guarantees a minimum light output of at least 90 %.



HD-Capturing

An SD storage card interface is available when selecting the capture option to record camera and video images. Photos and videos are saved in HD quality. The amount of memory needed and the speed of saving the data are reduced with an optimal image quality.



Three connections for three devices in one, easily aligned for quick set up.

ACCESSORIES

Zoom coupler

- Focal length: 16-34 mm
- Image size from circular to full size
- C-Mount camera connection
- Sterilization methods: autoclavation



Keyboard

- Medical keyboard (english) for patient data input
- Housing material: Silicon
- Interface: PS/2
- Color: grey



Light cable

- Autoclavable
- Flexible
- Light weighted
- Bend protected



Devices

Item No.	Description
HDC1100-L04	Full HD-Camera Head
HDC1100-L01	Full HD-Camera Control Unit, LED-Light Source, HD-Capturing
HDC1000-L04	HD-Camera Head
HDC1000-L01	HD-Camera Control Unit, LED-Light Source, HD-Capturing

Accessories

Part No.	Description
ZOOM-L01	Videocoupler Zoom, Focal length = 16-34 mm (LAP, ARTHRO, HYS, URO, ENT), autoclavable
URO-L01	URO-Videocoupler 18 mm, 90°

Keyboard-L01 Medical Keyboard (EN)

ALC-L01	Adapter for light cable, Light Source, Olympus
ALC-L02	Adapter for light cable, Light Source, Storz
ALC-L03	Adapter for light cable, Light Source, Wolf

ALC-L04	Adapter for light cable, endoscope, Storz/Olympus
ALC-L05	Adapter for light cable, endoscope, Wolf
ALC-L06	Adapter for light cable, endoscope, ACMI

LC-L01	Light cable, 1.8 m, Ø 4.8 mm
LC-L02	Light cable, 2.3 m, Ø 4.8 mm
LC-L03	Light cable, 3.0 m, Ø 4.8 mm

Power supply cord and further accessories available upon request.

INSUFFLATOR

50L-INSUFFLATOR

Technical Data	Full HD-Camera	HD-Camera
Frame rate	60 Hz	60 Hz
Image sensor	1/3" CMOS-Chip	1/3" CMOS-Chip
Resolution (h x v)	1920 x 1080 pixels, output	1280 x 720 pixels, output
Dimensions	Ø = 39.5 mm, L = 123.5 mm	Ø = 39.5 mm, L = 123.5 mm
Weight	300 g/10.5 oz (incl. cable)	300 g/10.5 oz (incl. cable)
Coupling mechanism	C-mount	C-mount
Cable length	3 m/9.8 ft	3 m/9.8 ft
Disinfection/Sterilization	Soakable, STERRAD®	Soakable, STERRAD®
Power supply	100-240 V~	100-240 V~
Power consumption	148 VA	148 VA
Outputs	HDMI, DVI for Full HD, S-Video for ext. capture/printers, PC interface USB 2.0, PS/2, Remote	2x HDMI, PC interface USB 2.0, PS/2, Remote
LED-Light Source		
Lamp	LED	LED
Color temperature	6.500 K	6.500 K
Lumen maintenance	90 % after 10,000 hours	90 % after 10,000 hours
Size	Optimized for light guides Ø 4.8 mm	Optimized for light guides Ø 4.8 mm
Adapter compatibility	Storz, Olympus, Wolf, ACMI	Storz, Olympus, Wolf, ACMI
HD-Capturing		
Memory interface	Records to USB flash drive and/or external USB hard drive	SD memory card
Image format	JPEG	JPEG
Video Codec	MPEG-4, H.264	MPEG-4, H.264
Resolution	1920 x 1080 pixels	1280 x 720 pixels
Complete system		
Operating conditions	10-40 °C/50-104 °F	10-40 °C/50-104 °F
Protection against electrical shock	Body Float	Body Float
Video Codec Means of protection against electrical shock	Class I	Class I
Dimensions (w x h x d)	381 x 149 x 379 mm	381 x 149 x 379 mm
Weight	5.8 kg	5.8 kg



INSUFFLATOR

AVAILABLE
Q1 / 2016

50 L-Insufflator

Multi-mode Powerhouse

- Three additional modes – Bariatric, Pediatric and Vessel Harvesting
- High-end performance
- Gas heating – reusable and disposable

Higher performance enhances safety in the operating room

The new LEMKE 50 L-Insufflator adds even more safety during minimally invasive surgeries delivering the performance needed – even under extreme conditions such as obesity of the patient – to maintain a stable pneumoperitoneum.

In pediatric or vessel harvesting mode, the insufflator optimally controls according to the different anatomical requirements.

Another plus for all surgical procedures is its ease of use. The LEMKE 50 L-Insufflator has a color touchscreen for a high degree of user-friendliness.



A connector for standard insufflation tube sets. Disposable and autoclavable tube sets available.

Accessories



Tube set, insufflation and gas heating, reusable, 100 uses (Z0280)



High pressure hose CO₂ gas connection, bottle DIN/ device US (Z5044-01)



CO₂ gas connector, angled (Z5077-01)



NIST adapter for universal gas connector (Z5074-01)

The gas port can be connected with all major gas supply systems. Various adapters and supply hoses are available for this purpose. Opening the device is not required.

Devices

Item No.	Description
FM134-L01	50 L-Insufflator

Accessories

Part No.	Description
Z0452-01	Tube set, insufflation, reusable, 20 uses
Z0280	Tube set, insufflation and gas heating, reusable, 100 uses
Z0293	Tube set, insufflation with filter, disposable, sterile
Z0260	Tube set, insufflation and gas heating, disposable, sterile
Z0536	Filter, single use, sterile, ISO-ISO
Z5044-01	Hose for CO ₂ gas bottle DIN/US, 1.5 m
Z0499-01	Hose for CO ₂ gas bottle Pin/US, 1.5 m
Z5030-01	Hose for CO ₂ central gas DIN/NIST, 3 m
Z5031-01	Hose for CO ₂ central gas DIN/NIST, 5 m
Z5074-01	NIST adapter for universal gas connector (central gas supply EU)
Z5077-01	CO ₂ gas connector, angled
Z5072-01	Sinter filter for universal gas connector (5 pcs.)

Power supply cord and further accessories available upon request.

Technical Data	
Insufflation medium	Med. CO ₂
Max. gas flow	50 l/min
Pressure range	1-30 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	150 VA
Current consumption	100 V: 1.5 A 240 V: 0.63 A
Classifications	Protection Class I, Type BF, IP 21
Dimensions (w x h x d)	406 x 150 x 395 mm
Weight	10 kg

INSUFFLATOR

30L-INSUFFLATOR



INSUFFLATOR

30 L-Insufflator

Safe technology that adapts to the patient

- Reliable base unit
- Highest safety
- Mature technology

Easy to use, universal, efficient

A highly reliable device for demand of daily hospital routines. Easy to use by the staff and comprehensive safety components to protect patients.

The maximum flow capacity is 30 liters per minute. The start settings for flow and pressure are customized individually. The Insufflator has a reliable venting system that safely reduces excess pressure in the abdomen. A exchangeable gas filter protects the device from gas supply contamination.



A connector for almost all standard insufflation tubes. Disposable and autoclavable tube sets available.

Accessories



Tube set with ISO-connector and filter, disposable (Z1422-01)



High pressure hose CO₂ gas connection, bottle DIN/ device US (Z5044-01)



Gas connector, angled (Z5071-01)



NIST adapter for universal gas connector (Z5074-01)

The gas port can be connected with all major gas supply systems. Various adapters and supply hoses are available for this purpose. Opening the device is not required.

Devices

Item No.	Description
F128-L01	30 L-Insufflator

Accessories

Part No.	Description
Z0452-01	Tube set, insufflation, reusable, 20 uses
Z1422-01	Tube set, insufflation with filter, disposable, sterile
Z0536	Filter, single use, sterile, ISO-ISO
Z5044-01	Hose for CO ₂ gas bottle DIN/US, 1.5 m
Z0499-01	Hose for CO ₂ gas bottle Pin/US, 1.5 m
Z5030-01	Hose for CO ₂ central gas DIN/NIST, 3 m
Z5031-01	Hose for CO ₂ central gas DIN/NIST, 5 m
Z5074-01	NIST adapter for universal gas connector (central gas supply EU)
Z5071-01	Gas connector, angled
Z5072-01	Sinter filter for universal gas connector (5 pcs.)

Power supply cord and further accessories available upon request.

Technical Data

Insufflation medium	Med. CO ₂
Max. gas flow	30 l/min
Pressure range	1-30 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	50 VA
Current consumption	100 V: 0.5 A 240 V: 0.2 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	381 x 149 x 379 mm
Weight	7.5 kg



PUMP

MULTI-INDICATION PUMP



PUMP

Multi-Indication Pump

Thinking ahead: Four devices in one

- Laparoscopy
- Arthroscopy
- Hysteroscopy
- Urology

Resource-saving, simple, innovative

Different Pump Systems have been used for each indication up until now. This means hospitals increasingly face problems pertaining to training time and effort, as well as logistics.

The Multi-Indication Pump facilitates everyday routine hospital activities. The ingenious device combines a streamlined design, easy operation, and maximum safety. Key parameters are seen at a glance, allowing for quick and correct actions by personnel. Clinical tests have shown that the device – and with all four indications – can be operated with confidence after just one training session.

Stringent safety measures reliably prevent overpressure in the application area. Each device is the culmination of over 40 years of expertise and experience in the field of developing pumps.



Innovative: The Pump head is integrated in the housing and allows easy insertion of the tube.

Patient safety

The Pump can be used with up to four indications. Each indication can be unlocked individually as well as combined with one another. The automatic instrument recognition optimally adjusts the Pump to the instrument to be used. A transponder in the tube ensures the highest level of patient safety and maximizes pump output. The device is also equipped with a vacuum pump for suction, a 5.7" touch screen display, and an optional foot switch. The Pump is designed for more than 15 languages.



An original LEMKE tube set with transponder protection.

Devices

Item No.	Description
APUH302-L01	Pump

Accessories

Part No.	Description
T0505-01	Tube set for Irrigation, disposable
T0506-01	Tube set for Irrigation, reusable, 20 uses
T0500-01	Day patient tube set for Irrigation, disposable*
T0501-01	Day tube for Irrigation, disposable*
T0502-01	Tube set for Suction, disposable
T0503-01	Tube set for Suction, 2 connectors, disposable
T0504-01	Tube set for Vacuum, incl. Filter, disposable
T0550-01	Transponder, Indications LAP, ARTHRO, HYS and URO
T0551-01	Transponder, Indication LAP
T0552-01	Transponder, Indication ARTHRO
T0553-01	Transponder, Indication HYS
T0554-01	Transponder, Indication URO
Z0223-01	Differential volume scale for HYS and URO

*Indications LAP, ARTHRO

Power supply cord and further accessories available upon request.



Tube set for Irrigation, disposable (T0505-01)

Tube set for Irrigation, reusable, 20 uses (T0506-01)

Transponder

Differential volume scale (Z0223-01)

PUMP

Technical Data	
Pressure range	Laparoscopy: not adjustable Arthroscopy: 5-150 mmHg Hysteroscopy: 15-150 mmHg Urology: 15-150 mmHg
Flow range	Laparoscopy: 1.0-1.8 l/min Arthroscopy: 0.1-1.8 l/min Hysteroscopy: 50-500 ml/min Urology: 50-500 ml/min
Suction capacity	Max. 2 l/min (depending on outflow cannula)
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	80 VA
Current consumption	100 V: 0.8 A 240 V: 0.3 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	381 x 149 x 379 mm
Weight	6.3 kg

Laparoscopy

All functions required of the Pump can be adjusted via the touch screen with easy to use controls. Unambiguousness ensures maximum safety during surgery.



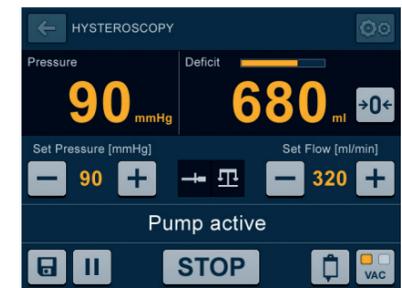
Arthroscopy

The clearly arranged and intuitive graphical user interface makes it possible to see all key parameters at a glance. The wash function optimizes the visual conditions in the joint. Flow and pressure are adjustable. Highly stringent safety standards prevent overpressure within the joint.



Hysteroscopy

Pressure and flow are controlled intuitively via setting keys. A scale to measure the deficit is an available option. The display prominently depicts the status of the fluid deficit.



Urology

Security is the alpha and omega in the field of Minimally Invasive Surgery. The display design optimally supports handling of the Pump. Important data immediately catch the eye and action prompts facilitate proper operation of the Pump, thereby increasing safety considerably. A deficit measurement is an available option.



HD CAMERAS

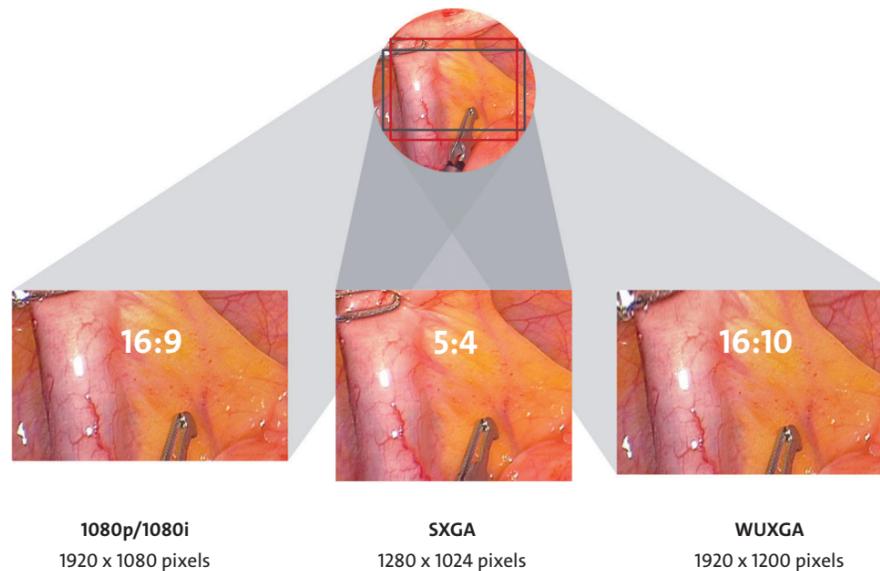
CLASSIC LINE



HD CAMERAS

Choose your HD format

In terms of image resolution High Definition video technology has been established in the field of Minimally Invasive Surgery. The switch from the classic 5:4 monitor format to the latest 16:9 or 16:10 widescreen monitors is ongoing. Thus customers find different HD video formats on the market, each with individual benefits and pitfalls for endoscopic imaging. The LEMKE Cameras offer all formats, so users are free to select their personally preferred format.



16:9 – format with the highest impact on the video market HD video standards 1080p and 1080i

5:4 – the ideal video format for Minimally Invasive Surgery

16:10 – optimum format for latest medical grade monitors HD video standard WUXGA (1920 x 1200 pixels)

Video modes

The HDC907*Optimum* supports 1080i and 1080p.

Progressive scan (p) is a method transmitting moving images in which all the lines of each frame are drawn in sequence. Benefits of this technology are higher vertical resolution video images.

It is the ideal mode for LCD monitors, but unfortunately not supported by current HD capture systems, which are limited to 1080i.

With the **interlace (i)** technology only every second horizontal line per frame is transmitted.

Two serial complementary images in sequence deliver the necessary visual information needed for a complete video image. Pitfalls of this technology are several “interlaced” effects, e. g. motion artifacts, interline twitter and blurring.



Interlace Progressive scan

Intuitive user guidance via optimized on screen display

- Appropriate for all MIS applications guaranteeing excellent image quality
- Seven selectable application-optimized camera settings
- Ten individually adjustable user settings

Latest output options

- Digital output of image data for modern capture systems and clinical networks
- 2x HDMI/1x HDMI*, 1x DVI, 1x HD-SDI



Easy to change: objective, camera head and camera cable

*depends on model variation

HD CAMERAS

From input to output: the HD chain



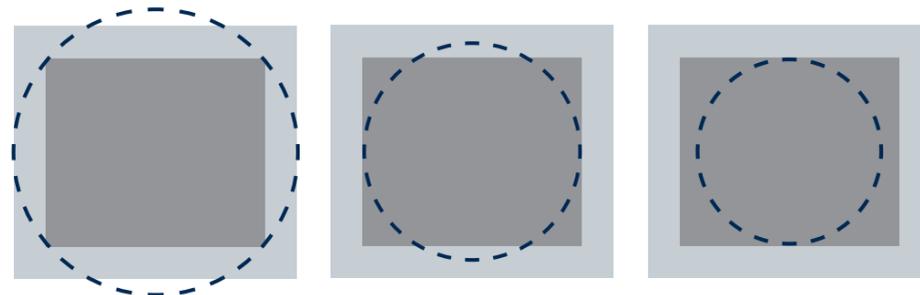
Videocoupler Zoom

- Focal length: 16-34 mm
- Parfocal*
- Brilliant optic
- Quick coupler
- Waterproof
- Autoclavable
- C-mount
- Ergonomic Design



Videocoupler Zoom

One coupler for optimum indication settings



LAP

ENT

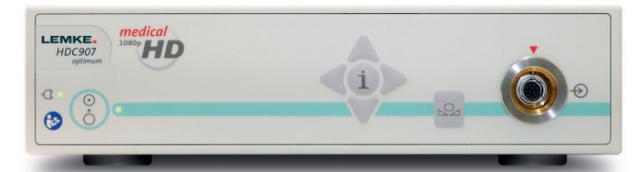
ARTHRO, HYS, URO

*A parfocal lens is a lens that stays in focus when magnification/focal length is changed

HDC907optimum

3CCD Medical-HD® Camera

- Fully digital 3CCD Camera Head
- Optional: autoclavable Camera Head
- Moderate operating temperature
- Exchangeable camera cable
- C-mount thread for easy coupler exchange and free choice of couplers



Devices

Item No.	Description
HDC907-L01	HDC907optimum Control Unit
HDC907-L02	HDC907optimum Camera Head PAL or NTSC (non-autoclavable)
HDC907-L03	HDC907optimum Camera Head PAL or NTSC (autoclavable)

Accessories

Part No.	Description
ZOOM-L01	Videocoupler Zoom, Focal length = 16-34 mm, (LAP, ARTHRO, HYS, URO, ENT), autoclavable
URO-L01	URO-Videocoupler, 18 mm, 90°
CCB-L02	Camera cable, black

Power supply cord and further accessories available upon request.



Technical Data	HDC907optimum
Camera Head Unit (CHU)	Medical-HD® 1080p 3CCD Camera Head
Video standards	SXGA 1280 (H) x 1024 (V), horizontal resolution 1024 lines WUXGA 1920 (H) x 1200 (V), horizontal resolution 1200 lines 1080p 1920 (H) x 1080 (V), horizontal resolution 1080 lines
Sensitivity	1.5 lux
Minimum illumination	3 x 0.9 lux
AGC-Max	+18 dB
Operation	2 programmable remote head keys (user defined settings with 10 variable key functions)
Safety	Waterproofed according to IEC529, classification IPX7, completely soakable with attached EFO and camera cable (with screwed on sealing cap), Classification CF (Degree of protection against electric shock: applied part of type CF), Isolation resistance test max 500 V DC between applied part and CCU housing, autoclavable
Dimension	Ø 40 mm, L = 120 mm/Ø 1.57 in, L = 4.72 in (length incl. zoom and quick coupling)
Weight	210 g/7.4 oz (incl. zoom and quick coupling)
URO-Videocoupler	f = 18 mm, easy focusing – focus ring can be operated from left or right
Zoom objective	f = 16-34 mm
Digital zoom	2 x
Quick coupling	Fits rigid endoscopes (ocular), ISO eye piece compatible (ISO 8600-1)
Camera cable	3 m/9.8 ft highly flexible special cable, waterproof, replaceable w/o special tools short circuit proof
Camera Control Unit (CCU)	Digital signal process, +6 dB with interference suppression, continuous shutter: 1/50 to 1/16000 s, automatic signal amplification up to 400 %, automatic system check routine, setup menu for all settings, automatic white balance with digital long time memory. COLORAMA color adjustments, measuring areas SPOT and INTEGRAL, adjustable video
Signal/Noise ratio	> 62 dB
Horizontal resolution	1024 lines (SXGA), 1080 (1080i/1080p), 1200 (WUXGA)
Operation	Easy operation with membrane key: ON/OFF, WHITE BALANCE, 3 measuring areas selectable (SPOT large/small, INTEGRAL), test pattern, video level, manual COLORAMA color fine balance
Outputs	1x HD-DVI, 2x HDMI/1x HDMI*, 1x HD-SDI, 2x BNC (FBAS), 2x Y/C (S-VHS)
Interfaces	PC Interface RS 232 C, Remote (3.5 mm/1/8 in stereo jack)
Mains	Medical global power adapter 100-240 V AC +/-10 %, 50-60 Hz
Current consumption	Max. 400 mA
Classifications	Protection Class I, Type CF, IP 20
Fuses	2 x 250 V, T 0.8 A
Dimensions (w x h x d)	267 x 69 x 360 mm/10.5 x 2.7 x 14.2 in
Weight	3.9 kg/8.6 lb

*depends on model variation

LIGHT SOURCES

CLASSIC LINE



LIGHT SOURCES

LED320

LEMKE's LED320 is a high brightness single white light LED-Light Source for Minimally Invasive Medicine. It's lumen output surpasses 180 W Xenon-Light Sources. Due to its extremely long life expectancy (up to 10 years) the cost intensive bulb replacements as known from Xenon-Light Sources are no longer necessary.

The LED320 exceeds the light output of 180 W Xenon-Light Sources without emitting UV or IR light. This leads to less heat transmission to the endoscope and reduces the risk of burning tissue. Additional advantages of the LED320 are the uniformly distributed illumination and the bright and more homogeneous light spot.

The LED320 is instantly ready for use as no warm up or cool down is necessary. The multi light cable socket enables the use of light cables from different manufacturers.

LEMKE's LED320 has not only reduced the need for service while increasing performance, additionally it also contributes to saving the environment as no Lead (Pb) or Mercury (Hg) is used.

High performance endoscopic LED-Light Source

- High lumen output (superior to 180 W Xenon)
- Cost savings due to extremely long life expectancy and power saving
- No annual bulb change is necessary
- Instant ON/OFF (no warm up or cool down)
- Applicable for all endoscopic indications
- Up to 10 years of bulb life

Device

Item No.	Description
LED-L01	Light Source LED320 with multi light cable socket

Power supply cord and further accessories available upon request.

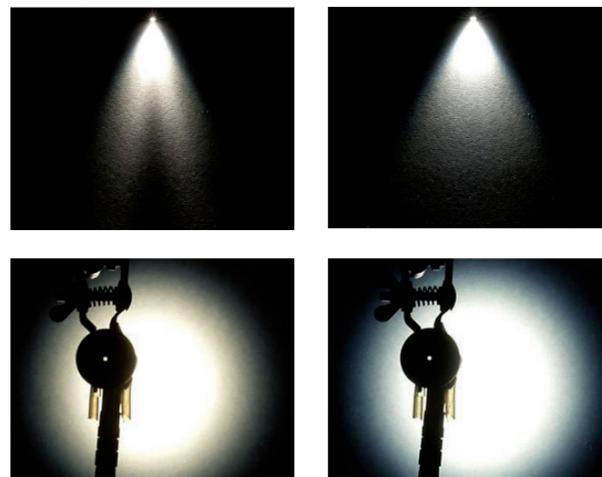
Ease of use

- Multi light cable socket enables use of light cables from different manufacturers (Storz, Wolf, ACMI, Olympus)
- Single-handed exchange of light cable



LED vs. Xenon

- LED light spot is brighter and more homogeneous than Xenon
- Brighter and whiter light; optimized for CCD and CMOS sensors
- Uniformly distributed illumination
- Reduced heat transmission to the endoscope due to the elimination of UV and IR light



180 W Xenon

LED320



Technical Data

Lamp	LED
Color temperature	6.500 K
Lumen maintenance	90 % after 10.000 h
Operation	Power switch ON/OFF
Mains	Medical world power supply, 100 to 120 V AC and 220 to 240 V AC ± 10 %, 47/63 Hz
Power consumption	175 VA
Current consumption	115 V: 1.4 A 230 V: 0.8 A
Fuse designation	T 4.0 AH, 250 V, UL-recognized
Classifications	Protection Class I, Type BF, IP 20
Dimensions (w x h x d)	268 x 122 x 370 mm
Weight	4.9 kg

LIGHT SOURCES

XL300

Top performance endoscopic Xenon-Light Source with micro-processor control and LCD display

- 300 W Xenon lamp
- Lamp-Life LCD display and electronic lamp change indicator
- Multi standard exchangeable light cable socket
- Easy lamp replacement
- Brightness control



Devices

Item No.	Description
XL300-L01	Light Source with light cable socket, Storz
XL300-L03	Light Source with light cable socket, Wolf

Accessories

Part No.	Description
ALC-L01	Adapter for light cable, Light Source, Olympus
ALC-L02	Adapter for light cable, Light Source, Storz
ALC-L03	Adapter for light cable, Light Source, Wolf
ALC-L04	Adapter for light cable, endoscope, Storz/Olympus
ALC-L05	Adapter for light cable, endoscope, Wolf
ALC-L06	Adapter for light cable, endoscope, ACMI

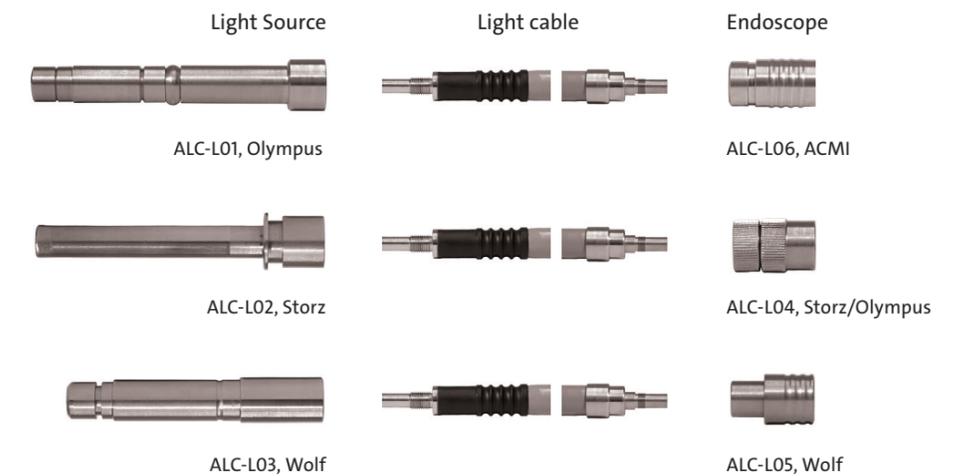
LC-L01	Light cable, 1.8 m, Ø 4.8 mm
LC-L02	Light cable, 2.3 m, Ø 4.8 mm
LC-L03	Light cable, 3.0 m, Ø 4.8 mm

XBO-L03 Replacement lamp module XL300

Power supply cord and further accessories available upon request.

Technical Data	
Lamp	Cermax Xenon LX 300 BF 300 W
Color temperature	5.600 K
Service life	Min. 600 h
Operation	Membrane keys OFF Xenon (ON)
Mains	Medical world power supply, (AVS: automatic voltage switch), 100 to 120 V AC and 220 to 240 V AC ± 10 %, 50/60 Hz
Current consumption	4.8 to 2 A (at the end of the Xenon lamp lifespan up to 6 to 2.7 A)
Peak current	Max. 10 to 5 A (on ignition)
Fuses	2 x 250 V T 6.3 A (SB)
Classifications	Protection Class I, Type CF, IP 20
Dimensions (w x h x d)	267 x 138 x 360 mm/10.5 x 5.4 x 14.2 in
Weight	7.8 kg/17.2 lb

Combination example



INSUFFLATORS

CLASSIC LINE



INSUFFLATORS

F102

Insufflator for laparoscopy

- 20 l/min flow
- Easy set up
- High safety
- ISO standard at patient exit
- User-programmable



Devices

Item No.	Description
F102-L04	Insufflator for laparoscopy, gas connection CO ₂ , US

Accessories

Part No.	Description
Z0452-01	Tube set, insufflation, reusable, 20 uses
Z1422-01	Tube set, insufflation with filter, disposable, sterile
Z0536	Filter, single use only, sterile, ISO-ISO
Z5044-01	High pressure hose CO ₂ , Bottle connection: DIN, Device connection: US, Length: 1.5 m
Z5030-01	High pressure hose CO ₂ for central gas supply, 3 m, NIST/DIN
Z5031-01	High pressure hose CO ₂ for central gas supply, 5 m, NIST/DIN
Z5010-01	Connector CO ₂ NIST for central gas supply (EU standard)
Z5020-01	Connector CO ₂ DISS for central gas supply (US standard)
Z5070-01	Gas connector US, angled standard (F102/F104)
Z5072-01	Sinter filter for universal gas connection (1 packaging = 5 pcs.)

Power supply cord and further accessories available upon request.

Note: The use of non-medical CO₂ may damage the device.
Always use sterile filter when operating with reusable tube set.

Technical Data	
Insufflation medium	Med. CO ₂
Max. gasflow	20 l/min
Pressure range	1-30 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	75 VA
Current consumption	100 V: 0.7 A 240 V: 0.3 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	267 x 138 x 410 mm
Weight	7 kg

F104

Insufflator for laparoscopy

- 40 l/min flow
- High safety
- Easy set up
- Large text display (multi-lingual)
- User-programmable
- Integrated gas heating
- Pressure relief system and integrated fluid sensor



Devices

Item No.	Description
F104-L01	Insufflator for laparoscopy, gas connection CO ₂ , US Language: English, German, French, Spanish
F104-L02	Insufflator for laparoscopy, gas connection CO ₂ , US Language: Italian, Greek, Danish, Dutch

Accessories

Part No.	Description
Z0452-01	Tube set, insufflation, reusable, 20 uses
Z1422-01	Tube set, insufflation with filter, disposable, sterile
Z1415-01	Tube set, insufflation and gas heating, reusable, 100 uses
Z0536	Filter, single use only, sterile, ISO-ISO
Z5044-01	High pressure hose CO ₂ , Bottle connection: DIN, Device connection: US, Length: 1.5 m
Z5030-01	High pressure hose CO ₂ for central gas supply, 3 m, NIST/DIN
Z5031-01	High pressure hose CO ₂ for central gas supply, 5 m, NIST/DIN
Z5010-01	Connector CO ₂ , NIST for central gas supply (EU standard)
Z5020-01	Connector CO ₂ , DISS for central gas supply (US standard)
Z5070-01	Gas connector US, angled standard (F102/F104)
Z5072-01	Sinter filter for universal gas connection (1 packaging = 5 pcs.)

Power supply cord and further accessories available upon request.

Technical Data	
Insufflation medium	Med. CO ₂
Max. gasflow	40 l/min
Pressure range	1-30 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	145 VA*
Current consumption	110 V: 1.3 A* 230 V: 0.6 A*
Classifications	Protection Class I, Type BF, IP 40
Dimensions (w x h x d)	267 x 138 x 410 mm
Weight	7 kg

*with reusable heater tubing

INSUFFLATORS

Tube sets and filter



Tube set, insufflation with filter,
disposable, sterile
(Z1422-01)



Tube set, insufflation,
reusable, 20 uses
(Z0452-01)



Tube set, insufflation and gas heating,
reusable, 100 uses
(Z1415-01)



Filter, single use only,
sterile, ISO-ISO
(Z0536)

Note: Always use sterile filter when operating with reusable tube set.

Further accessories available upon request.

Gas connectors and high pressure tubes



Connector CO₂, US
(broad standard)
(Z0175-01)



Connector CO₂, NIST for central
gas supply (EU standard)
(Z5010-01)



Connector CO₂, DISS for central
gas supply (US standard)
(Z5020-01)



High pressure hose CO₂,
bottle connection: DIN/
device connection: US,
length: 1.5 m
(Z5044-01)



High pressure hose CO₂
for central gas supply,
NIST/DIN, length: 3 m
(Z5030-01)

Further accessories available upon request.

PUMP SYSTEMS

CLASSIC LINE



PUMP SYSTEMS

A127

Pump for arthroscopy

- 1.5 l/min max. flow
- Optimized flow regulation done by automatic instrument detection and software control
- Wash function to improve visibility within the joint
- Flexible use due to pole mounting
- Highest patient safety due to transponder protected tube set



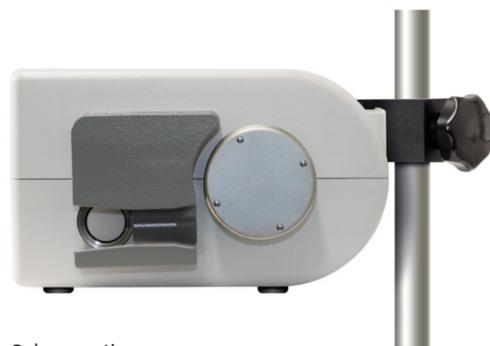
Device

Item No.	Description
A127-L01	Pump for arthroscopy

Accessories

Part No.	Description
T0449-01	Tube set with Spike and Luer-Lock connector male: Disposable, only Inflow, transponder protection (1 packaging = 10 pcs.)
T0454-01	Reusable tube set, only inflow, 20 uses, transponder protection

Power supply cord and further accessories available upon request.



Pole mounting

Technical Data	
Pressure range	5-150 mmHg
Max. flow	1.5 l/min ± 10 %
Mains	Medical world power supply, 100-240 V AC, 50-60 Hz
Power consumption	60 VA
Current consumption	100 V: 1.2 A 240 V: 0.6 A
Fuse designation	2x T 3.15 AH, 250 V
Classifications	Protection class I, Type BF, IP 41
Dimensions (w x h x d)*	240 x 103 x 221 mm
Weight	2.8 kg

*without toggle screw

A106

Pump for arthroscopy

- Easy set up
- Automatic instrument calibration
- Clear visualization of operating site
- High safety standards avoid overpressure in the joint
- Remote control from sterile field

Note: The automatic instrument calibration finds the perfect set-up for each instrument.



Device

Item No.	Description
A106-L01	Pump for arthroscopy

Accessories

Part No.	Description
Z0449-01	Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male: Disposable, sterile (1 packaging = 10 pcs.)
Z0454-01	Reusable, 20 uses, incl. 10 membranes
Z1424-01	Disposable, sterile, Safe-Lock (1 packaging = 10 pcs.)
Z0106-01	Foot pedal for Irrigation Pump for arthroscopy
Z0545-01	Cable remote control

Note: Wash function only available when remote control or foot pedal is connected.

Power supply cord and further accessories available upon request.

Technical Data	
Pressure range	0-200 mmHg
Flow range	0.1-1.5 l/min
High pressure safety	300 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	75 VA
Current consumption	100 V: 1.0 A 240 V: 0.2 A
Classifications	Protection Class I, Type BF, IP 20
Dimensions (w x h x d)	265 x 137 x 390 mm
Weight	7.1 kg

PUMP SYSTEMS

P101

Pump for laparoscopy

- Simple set up and operation
- Easy to load tube set
- Vacuum suction included

Devices

Item No.	Description
P101-L01	Pump for laparoscopy, power supply: 220-240 V
P101-L02	Pump for laparoscopy, power supply: 110-115 V

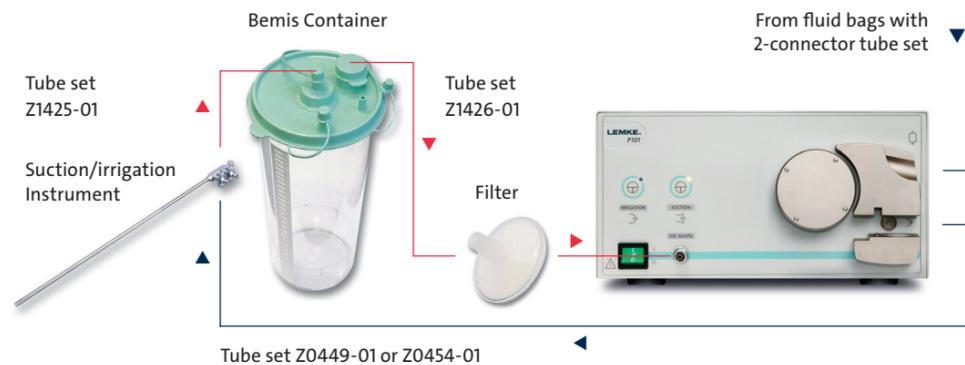
Accessories

Part No.	Description
	Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male:
Z0449-01	Disposable, sterile (1 packaging = 10 pcs.)
Z0454-01	Reusable, 20 uses, incl. 10 membranes
Z1425-01	Tube set, suction, reusable, 20 uses
Z1426-01	Tube set, vacuum, reusable, 20 uses
Z0553-01	Wire Hoop for Bemis Container
Z0554-01	Bemis Container, 3 L, disposable (1 packaging = 2 pcs.)
Z0555-01	Bemis Container, 3 L, disposable (1 packaging = 36 pcs.)
Z0556-01	Filter P06, sterile

Power supply cord and further accessories available upon request.



Technical Data	
Max. Flow Rate Irrigation	1.8 l/min (± 10 %)
Suction	1.8 l/min (+ 0.4/- 0.1 l/min)
Max. Pump Capacity	400 mmHg (± 50 mmHg)
Suction	Between -50 kpa and -60 kpa
Power Supply	100 V~/110-115 V~/220-240 V~
Frequency	50-60 Hz
Power consumption	55 VA
Current consumption	100 V: 0.5 A 230 V: 0.3 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	280 x 137 x 408 mm
Weight	5.9 kg



UP100

Pump for urology

- Easy set up
- Automatic instrument calibration
- Precise control and regulation of pressure
- Clear visualization of operating site

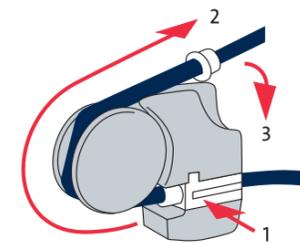
Device

Item No.	Description
UP100-L01	Pump for urology

Accessories

Part No.	Description
	Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male:
Z0449-01	Disposable, sterile (1 packaging = 10 pcs.)
Z0454-01	Reusable, 20 uses, incl. 10 membranes
Z1406-01	Tube set, outflow, disposable, sterile (1 packaging = 10 pcs.)

Power supply cord and further accessories available upon request.



Easy to load tube set in three steps.

Technical Data	
Pressure range	15-150 mmHg
Flow range	30-500 ml/min
High pressure safety	200 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	82 VA
Current consumption	100 V: 0.9 A 240 V: 0.3 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	360 x 130 x 305 mm
Weight	6.3 kg

H108

Pump for hysteroscopy

- Easy set up and quickest start-up time
- Automatic instrument calibration
- Advanced safety for pressure and flow meeting highest international standards
- Optional fluid deficit monitoring



Device

Item No.	Description
H108-L01	Pump for hysteroscopy

Accessories

Part No.	Description
	Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male:
Z0449-01	Disposable, sterile (1 packaging = 10 pcs.)
Z1424-01	Disposable, sterile, Safe-Lock (1 packaging = 10 pcs.)
Z0454-01	Reusable, 20 uses, incl. 10 membranes
Z1406-01	Tube set, outflow, disposable, sterile (1 packaging = 10 pcs.)
Z0123-01	Bottle scale
Z0554-01	Bemis Container, 3 L, disposable (1 packaging = 2 pcs.)
Z0555-01	Bemis Container, 3 L, disposable (1 packaging = 36 pcs.)

Power supply cord and further accessories available upon request.

Technical Data	
Pressure range	15-150 mmHg
Flow range	30-500 ml/min
High pressure safety	200 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	45 VA
Current consumption	100 V: 0.3 A 240 V: 0.2 A
Classifications	Protection Class I, Type BF, IP 41
Dimensions (w x h x d)	265 x 137 x 390 mm
Weight	4 kg

HM4

Fluid Management System for hysteroscopy

- Optimized flow using FluidMatic
- Easy use and patient safety
- Large deficit and volume display for precise monitoring of fluid loss
- Several bag hooks and container holder
- Easy bag and container change



Device

Item No.	Description
HM4-L01	HM4 (H100 – Name of Pump, M100 – Name of scale unit)

Accessories

Part No.	Description
	Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male:
Z0449-01	Disposable, sterile (1 packaging = 10 pcs.)
Z0454-01	Reusable, 20 uses, incl. 10 membranes
Z1406-01	Tube set, outflow, disposable, sterile (1 packaging = 10 pcs.)
Z0553-01	Wire Hoop for Bemis Container
Z0554-01	Bemis Container, 3 L, disposable (1 packaging = 2 pcs.)
Z0555-01	Bemis Container, 3 L, disposable (1 packaging = 36 pcs.)

Power supply cord and further accessories available upon request.

Technical Data	
Pressure range	15-150 mmHg
Flow range	30-500 ml/min
High pressure safety	200 mmHg
Power supply	100-240 V~
Frequency	50-60 Hz
Power consumption	82 VA
Current consumption	100 V: 0.9 A 240 V: 0.3 A
Classifications	Protection Class 1, Type BF, IP 41 (pump), IP 21 (scale)
Dimensions (w x h x d)	710 x 1400 x 810 mm
Weight	27 kg

PUMP SYSTEMS

Accessories available for A106, P101, UP100, H108 and HM4



Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male, disposable, sterile (Z0449-01)



Tube set with pressure chamber, Irrigation, with Spike and Luer-Lock connector male*, reusable, 20 uses, incl. 10 membranes (Z0454-01)

Accessories A127



Tube set with Spike and Luer-Lock connector male, disposable, only Inflow, transponder protection (T0449-01)



Tube set with Spike and Luer-Lock connector male, reusable, only inflow, 20 uses, transponder protection* (T0454-01)

* Spikes, Luer-Lock and membranes as separate spareparts available
Further accessories available upon request.

Accessories HM4, H108, P101



Bottle scale (Z0123-01, for H108 only) and Bemis Container (disposable, Z0554-01/Z0555-01)



Filter, sterile (Z0556-01, for P101 only)

Accessories A106



Cable remote control (Z0545-01)



Foot pedal for Irrigation Pump for arthroscopy (Z0106-01)

Note: Wash function only available when remote control or foot pedal is connected.

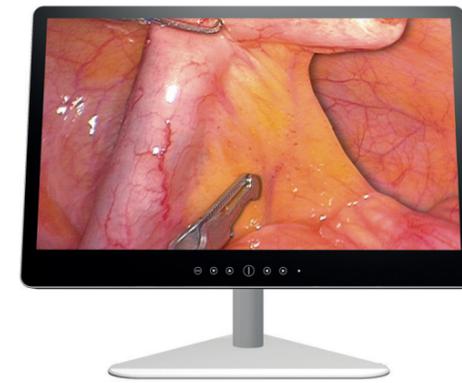
Further accessories available upon request.



LEMKE.

made in germany

ADDITIONAL EQUIPMENT



ADDITIONAL EQUIPMENT

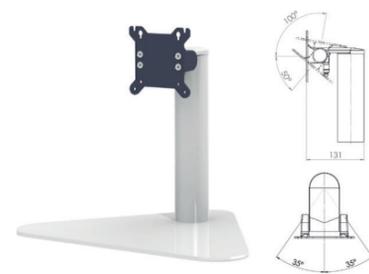
Medical Monitors

The solution you are looking for

- TFT-Displays with wide-screen-format
- Display with all-round viewing angle
- Hygienic design with full glass front

Due to the completely closed metal housing, hygienic-optimized design and the anti-reflective coated safety glass, these displays provide you with the ability to easily disinfect the monitor as well as offering perfect protection for the high-performance hardware inside.

Monitor stand available upon request.



MD-32



MD-27



MD-23

Technical Data	MD-23	MD-27	MD-32
Design	23" TFT-widescreen display	27" TFT-widescreen display	32" TFT-widescreen display
Protective pane	integrated (touchscreen/in planning*)		
Dimensions (w x h x d)	ca. 557 x 357 x 60 mm	ca. 655 x 432 x 60 mm	ca. 770 x 510 x 70 mm
Mounting	Built-in VESA-100 interface extensive mounting solutions available as accessories		
Weight	7.4 kg (without accessory)	10.5 kg (without accessory)	17 kg (without accessory)
Power supply unit	100-240 V/ 50-60 Hz intern 80 W		
Front keypad	ON/OFF button, six controls for OSD		
Display module			
Active area	509 x 286 mm	597 x 335 mm	698.4 x 392.9 mm
Native resolution	1920 x 1080 pixel	1920 x 1080 pixel	1920 x 1080 pixel
Brightness	250 cd/m ²	350 cd/m ²	400 cd/m ²
Contrast	1000:1		1300:1
Viewing angle (h/v)	178°/178°		
Response time	< 14 ms (G-to-G)	8 ms (G-to-G)	8 ms (G-to-G)
Colors	16.7 millions		
Interface			
Analog	VGA D-SUB-15		
Digital	DVI-I	DVI-D	
S-Video	4-pole mini DIN		
Composite Video	RCA (PAL/NTSC)		
OSD			
Language selection	German (English, French, Italian, Spanish, Polish*)		
VGA	Size and position, clock and phase		
Viewing settings	Brightness, contrast, color temperature, gamma, input signal		
Scope of delivery			
Device	MD-23	MD-27	MD-32
Cable kit	DVI-D (VGA, Component Video, S-Video, Composite-Video*)		
Acceptable ambient conditions			
Temperature	0 to +60 °C/+5 to +35 °C when stored/in operation		
Relative humidity	5% to 95%/ 20% to 80% non-condensing when stored/in operation		
Supplementary standard			
DIN EN 60601-1: 2007	Medical electrical equipment: General requirements for basic safety and essential performance		
DIN EN 60601-1-2: 2007	Medical electrical equipment: General requirements for basic safety and essential performance Collateral standard: Electromagnetic compatibility – Requirements and tests		

*optional

ADDITIONAL EQUIPMENT

OR Trolley

The right solution for every requirement

Maximum dependability, long service life and operational safety are the result of deploying high-quality materials in conjunction with precise manufacture. Quality that is value for money – **Made in Germany**. The product design looks good and demonstrates its many strengths in the details – features like hygiene are particularly important for the medical sector: all surfaces are as smooth as possible, with easy-wipe cleaning and resistant to disinfection agents.

The two-column cart features a load capacity up to 150 kg, easy-roll twin swivel castors measuring 100 mm in diameter for maximum mobility and maneuverability, universal monitor holder with VESA 75/100 adapter – up to 14 kg, Gas bottle holder – up to 38 kg and a lockable drawer.

- Long service life
- Gliding wheels with locking brakes
- Metal-powder coating surface: easy-cleaning, resistant to disinfection agents



Device	Description
Trolley-L01	OR Trolley

Technical Data	
Dimensions (w x h x d)	710 x 1390 x 700 mm
Distances between stands	185 mm
Space for units (w x d)	600 x 480 mm
Stand for gas bottle (w x d)	180 x 190 mm
Stand for suction/irrigation container (w x d)	225 x 180 mm
Weight	57 kg

COOPERATION PARTNERS

Surgical Instruments



Surgical instruments on top quality levels. Produced using state-of-the-art manufacturing technologies by highly motivated skilled workers and surgical product experts. All this together made in Germany. Surgical instruments 'made by TONTARRA' stands for outstanding quality and precision for over 40 years. This success and worldwide recognition, which has been earned through products and services based on innovative power, motivation and dedication to TONTARRA's tradition of exceeding customers' expectations.

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Mobile carrier systems



Maximum dependability, long service life and operational safety are the result of deploying high-quality materials in conjunction with precise manufacture. ITD creates quality that is value for money – Made in Germany. The modular structure of the building-block system allows ITD products to be tailored individually to all customer requirements.

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Medical Media Solution



Novel applications based on the unique combination of multimodal information from a broad variety of sources (image, audio, measurement and control data etc.) with intelligent processing and visualization in an open platform.

NUCLEUS™ – The Smart Digital Operating Room
 The NUCLeUS™ smart digital operating room is a state-of-the-art control platform, assisting clinicians during surgery.

NeBULA™ – Medical Video Documentation Platform
 NeBULA™ is a user-friendly medical image recorder, developed by and for medical professionals.

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