

Aesculap[®] Visual System Full HD

Camera – Endoscopes – Light source – Documentation – Monitors



Aesculap Endoscopic Technology

Aesculap® Visual System Full HD

Full HD in 2D – a proven technology

Full HD technology has quickly established itself as the standard for quality.

It has the following advantages when compared to the previously used PAL/NTSC formats:

- up to six times higher image resolution of the camera image (1920 x 1080 pixels)
- significantly improved contrast, sharpness and resolution resulting in true-to-life detail
- wide-screen viewing – the Full HD 16:9 image format matches the natural field of vision
- the progressive scan image renders a smoother, reduced-noise image

Aesculap offers a compelling, total solution for Full HD image reproduction. The components in the video chain are specially tuned to work together and meet the demanding Full HD quality standards. The video chain consists of the camera, the light source, the endoscope, the documentation system and the monitor.

Going forward, Aesculap's objective as an innovative supplier is to further meet the market needs of its customers in this segment. By introducing a next generation **3-Chip Full HD Camera**, a unique **LED light source** and an easily and intuitively operated **Full HD documentation system**, Aesculap has positioned itself as a genuine contender in this market segment.



LED light source

After having captured the consumer industry, LED technology is now also emerging in medical products and subsequently in light sources. A fundamental requirement for any endoscopic procedure is the availability of sufficient light. Possible deficiencies of used and no longer fully-functioning optics and fibre optics therefore need to be compensated.

The LED light source is characterised by the following:

- an exceedingly high light yield in conjunction with a long service life
- a universal adapter for all common fibre optics
- an innovative integrated light measurement system for fibre optics



3-Chip Full HD Camera

The camera is the centre-piece of the video chain. Large amounts of image data must be processed within fractions of a second. More than six million pixels in the camera head are 'fed' with information from inside the body and are then transmitted to the display as a high resolution image. All of these tasks can only be accomplished if the most modern technology is used and the manufacturer can count on decades of expertise in this field. This is Aesculap's commitment to you.

The new 3-Chip Full HD Camera as well as the new CMOS Full HD Camera offer:

- state of the art technology
- remotely controlled camera functions, directly via the camera head
- the option of controlling a new Aesculap LED light source directly via the camera



Full HD endoscope

Endoscopes are one of the most critical components in the video chain. Their preparation, sterilisation and transportation influence their quality and service life.

By consistently furthering the technological development of Aesculap endoscopes, the above-mentioned needs are met whilst also implementing the premium Full HD Standard. These optics are distinguished by bright, high-contrast images with outstanding depth of field and are identified by the „Full HD Logo“.

Full HD image reproduction

The user ultimately assesses the system quality via the display. The monitor is the last link in the video chain but it makes an essential contribution to the overall result.

Aesculap therefore believes that only the very best will do. Any compromises, especially during image reproduction, diminish the overall quality. Aesculap displays are designed to reproduce the high-resolution image data from the camera in true-to-life colours and in a wide-screen image format.

Full HD documentation

It makes sense that a surgeon would want to save and reproduce the impressive image quality of the Full HD Camera at any time.

Aesculap addresses this need with the new „Eddy Full HD“ documentation system.

- record and playback in Full HD quality (1920 x 1080 pixels)
- simple and intuitive user operation: a feature that was already highly prized in previous Eddy systems
- image reproduction and operation via a primary monitor: a secondary monitor is no longer mandatory

Full HD in 3D - *EinsteinVision*[®],
a completely new dimension



We would be delighted to present *EinsteinVision*[®] to you in person. However, why not first take a look on our website at www.einstein-vision.de. A detailed product brochure is available under number "C86702".

Manufacturer acc. MDD 93/42/EEC

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Aesculap® Visual System Full HD

Technical Data and Ordering Information



PV460 Camera Control Unit only

PV462 Camera head with zoomcoupler

PV463 Camera head with fixed focus coupler

CCD (Inch)	3 x 1/3"	Buttons on Camera Head	2 (5 functions)
Camera Resolution	1920 x 1080 Pixel	Shutter Speed	1/100 – 1/50 000 s
Scan mode	Progressive Scan 50/60 Hz	Focal length (PV462)	f=13-32 mm
Modes	6 Presettings 3 User Settings	Focal length (PV463)	f=14 mm
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)	Colour Bars	Yes
		Dimensions CCU (w x h x d)	305 x 75 x 305 mm
		Length Camera Cable	4 m
		On-screen Display	Yes
		Maximum Power Consumption	65 VA



PV470 Camera Control Unit only

PV471 Camera head with 90° endocoupler

PV472 Camera head with zoomcoupler

PV473 Camera head with fixed focus coupler

Image Sensor (Inch)	CMOS 1/3"	Focal length (PV471)	Optical 14 mm
Camera Resolution (native)	1920 x 1080 Pixel	Focal length (PV472)	Optical 14-28 mm
Scan mode	Progressive Scan 50/60 Hz	Focal length (PV473)	Optical 14 mm
Modes	5 Presettings 3 User Settings	Digital Zoom	2.5x
Video Signal Outputs	2x DVI-D 1080p (50/60 Hz) 2x HD-SDI 1080i (50/60 Hz) 1x S-Video NTSC/PAL	Colour Bars	Yes
Buttons on Camera Head	4 (5 functions pre-installed)	Dimensions CCU (w x h x d)	305 x 75 x 305 mm
Shutter Speed	1/50 – 1/10 000 s	Length Camera Cable	4 m
		On-screen Display	Yes
		Maximum Power Consumption	75 VA



OP940 LED Light Source

OP941 Sterile adapter

System	LED module	Lamp Intensity Increase	Continuously
Light guide cable receptacle	Aesculap/Storz/ Olympus/Wolf	Maximum Power Consumption	550 VA
Integrated Spare lamp	No	Dimensions (w x h x d)	305 x 125 x 305 mm



PV840 Eddy Full HD Digital Documentation System

DVD System	DVD-R/-RW DVD+R/+RW DVD-RAM DVD-RDL/+RDL	Video Signal Inputs	1 x HD-SDI
Full HD resolution	1920x1080 pixel	Video Signal Outputs	1 x DVI-D, 1 x HD-SDI
Double Layer Drive	Yes	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)
Still image format Full HD	JPEG, Bitmap	System	Intel® Processor, 2GB RAM
Video format Full HD	MPEG-2	Hard drive capacity	500 GB
Number of MPEG-2 compression rates	3 (high quality, standard, long play)	Operating System	Windows® XP embedded on Solid State Disk
Capturing of video sequence	On hard drive DVD/CD USB or network	Maximum Power Consumption	180 VA
		Dimensions (w x h x d)	305 x 125 x 305 mm



PV959 26" Full HD flat panel display

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



PV956 24" Full HD touch panel display

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