# 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



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



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.

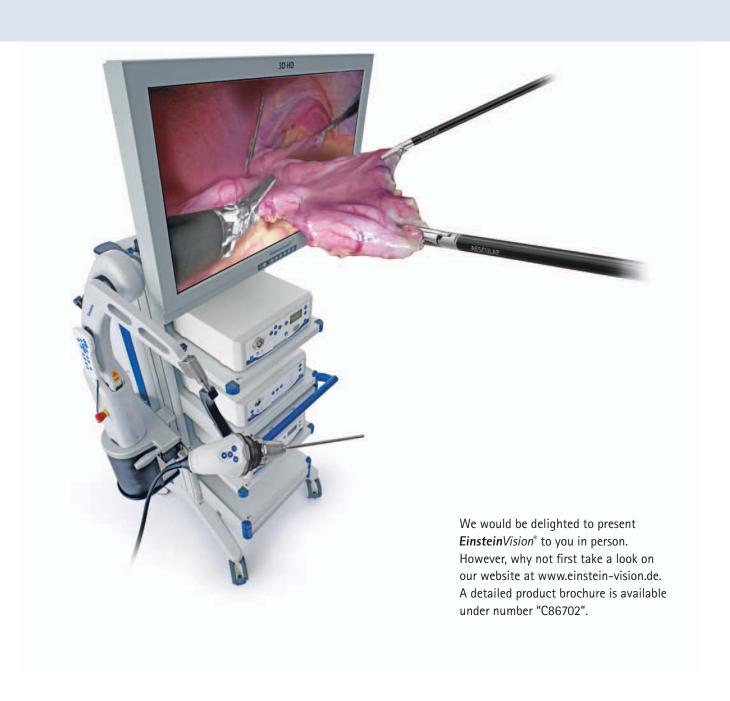
#### **Full HD documentation**

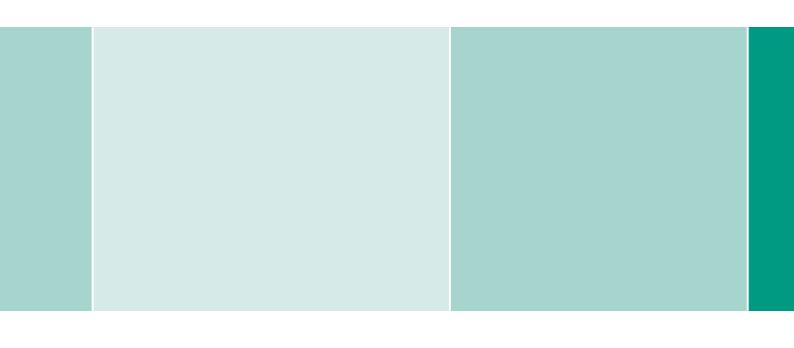
It makes sense that a surgeon would want to save and reproduce the impressive image quality of the Full HD Camera at any time.

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 - Einstein Vision®, a completely new dimension





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)

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
(w

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) f=13-32 mm Focal length (PV463) f=14 mm Colour Bars Yes Dimensions CCU 305 x 75 x 305 mm  $(w \times h \times d)$ Length Camera Cable 4 m On-screen Display Yes

65 VA

Maximum Power

Consumption









PV470	Camera	Control	Unit only	,
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#### PV471 Camera head with 90° endocoupler

#### PV472 Camera head with zoomcoupler

#### PV473 Camera head with fixed focus coupler

1/50 - 1/10 000 s

Shutter Speed

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	Focal length (PV473)	Optical 14 mm
	50/60 Hz	Digital Zoom	2.5x
Modes	5 Presettings	Colour Bars	Yes
	3 User Settinges	Dimensions CCU	305 x 75 x 305 mm
Video Signal Outputs	2x DVI-D	$(w \times h \times d)$	
	1080p (50/60 Hz) 2x HD-SDI 1080i (50/60 Hz)	Length Camera Cable	4 m
		On-screen Display	Yes
	1x S-Video NTSC/PAL	Maximum Power	75 VA
	•	Consumption	
Buttons on Camera Head	4 (5 functions pre-installed)		









#### **OP941 Sterile adapter**

System LED module Lamp Intensity Increase Continuously
Light guide cable Aesculap/Storz/ Maximum Power 550 VA
receptacle Olympus/Wolf Consumption

Integrated Spare lamp No Dimensions (w x h x d) 305 x 125 x 305 mm

#### PV840 Eddy Full HD Digital Documentation System





#### PV959 26" Full HD flat panel display

Panel Quality	Active Matrix TFT	Video signal inputs	2 x DVI (DVI-D and DVI-i)
Viewable Diagonal (Inches)	26.0		2 x SDI/HD-SDI (BNC)
Max. Brightness (cd/m²)	800		1 x RGB/HD-RGB
Resolution (Pixel)	1920 x 1080 (Full HD)		(5 x BNC or HD-15)
Viewing Angle Horizontal/Vertical	178°/178°		2 x S-Video (DIN-4 or 2 x BNC)
Aspect Ratio	16:9		1 x Composite (BNC)
Contrast Ratio	1000:1 (typical)		1 x VGA (HD-15)
Video signal outputs	1x DVI (DVI-D)	Maximum Power Consumption	130 VA
	1x SDI/HD-SDI (BNC)	D: ( )	

Dimensions (w x h x d)



#### PV956 24" Full HD touch panel display

1x RGB/HD-RGB (5 x BNC or DVI-I) 1x S-Video (DIN-4)

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		
Max. Brightness (cd/m²)	400		
Resolution (Pixel)	1920 x 1200 (Full HD)		
Viewing Angle	178°/178°	Touch Function	Yes
Horizontal/Vertical		Maximum Power	115 VA
Aspect Ratio	16:10	Consumption	
Contrast Ratio	1000:1 (typical)	Dimensions (w x h x d)	597 x 401 x 100 mm
Video Signal Outputs	1 x DVI-D 1 x HD-SDI (BNC) 1 x HD-RGB (BNC x5)		

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1 x S-Video (DIN-4)

673 x 418 x 88 mm