

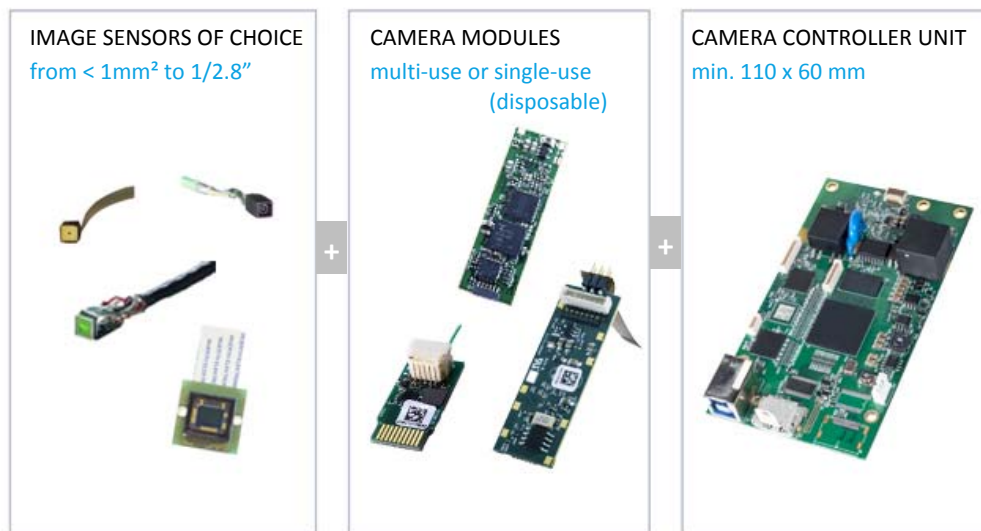
HDselect

COMPACT HD BOARD-LEVEL CAMERA

OVERVIEW

- Small form factor for medical and industrial applications
- Camera controller unit with variable camera heads for image resolutions from 250x250 px up to Full HD
- HDMI and USB3.0 interfaces for real-time transfer of HD signals
- For type BF rated medical applications

MODULAR CAMERA DESIGN



Images not to scale

HDselect is a compact HD board-level camera with a modular design for single-use and multi-use applications. It is offered with different high-sensitive CMOS color image sensors for excellent image quality. NET’s product engineering enables smallest camera designs for minimally-invasive applications, and unmatched image improvement in comparison to out-of-the-box sensors. The transmission over large distances of native video signals in 1080p/60 quality is realized in several steps from sensor to video out of the camera controller unit, which leads to superior application flexibility. The camera meets highest medical safety regulations as image data is transmitted safely over an electrically non-conducting border. NET offers custom optimization of the entire video chain in regard of software and hardware.

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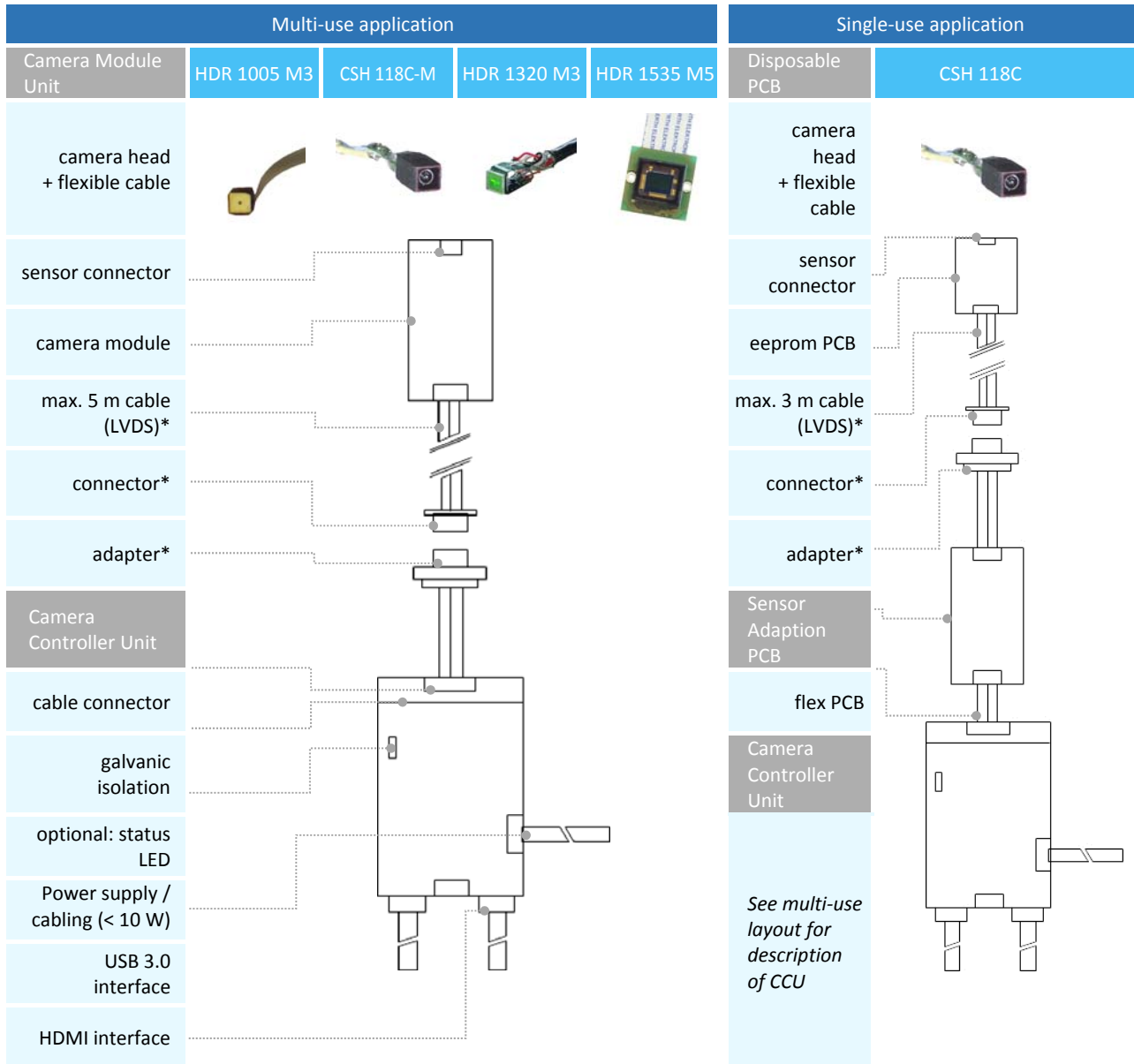
TECHNICAL DATA

Type of Application	Multi-use				Single-use	
Camera Module Unit	HDR 1005 M3	CSH 118C-M	HDR 1320 M3	HDR 1535 M5	Disposable PCB	CSH 118C
Sensor size	1 x 1 mm	1/18"	1/9"	1/2.8"	1/18"	
Native resolution [pixel]	250 x 250	400 x 400	1280 x 720	1920 x 1080	400 x 400	
Max. display resolution [pixel]	500 x 500 or 750 x 750	1080 x 1080	1280 x 720	1920 x 1080	1080 x 1080	
Camera head size [mm]	1 x 1	1 x 1	3.2 x 3	12.8 x 11.6	1 x 1	
Max. cable length: camera module to head	3 m	2 m	3 m	50 mm	2 m	
Type	CMOS					
Color depth	10 bit	tbd	10 bit	12 bit	tbd	
Frame rate [fps]	60	60	60	60	60	
Board size [mm]	45 x 14.5	45 x 14.5	34 x 18	34 x 18	n.a.	
Operating temperature	0 to 40°C					
Cable from Camera Module to Camera Controller Unit					Cable from Disposable PCB to Sensor Adaption PCB	
Max. length [m]	3	3	5	5	3	
Diameter [mm]	6.8				3	
					Size of Sensor Adaption PCB	
					52 x 14.5 mm	
Camera Controller Unit	HDR 1330 CH1	HDR 1330 CH2		HDR 1330 CH2		
Cable connector	6 pin (NET specific configuration: power, GND, I2C, LVDS, program)					
Power consumption	P < 10 W, U = 12 V ±10 %					
Power supply connector	3 pin ELCO, NET standard					
Power LED	optional					
Board size [mm]	110 x 60					
Interfaces						
HDMI	1080p/60					
USB 3.0	up to 3 m					
Software						
Direct Show Filter (Direct-X)	For use camera in non-NET specific software, e.g. VLC media player, amcap					
Graphic card	Applicable for conversion of YUV to RGB > less CPU usage (Core i5: less than 20%). Compatible with Windows 7/8/10 - 32/64 bit					
NET Viewer	Viewer with built in vectorscope applicable for easy color calibration. EEPROM read/write procedure to store configuration. Shows framerate, bad and good frames.					
Settings	Brightness, contrast, white balance, saturation, hue, horizontal flip, color control, AE settings (e.g. long exposure)					

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LAYOUT



*optional upon request
 Drawings and images not to scale

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