

CMOS Camera

HD1 SERIES

1.4 or 4.3 Megapixel resolution with Photonfocus sensor

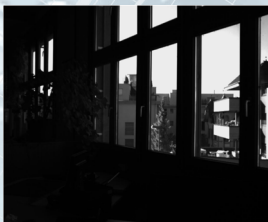
Features

- Photonfocus A1312 or A2080 CMOS image sensor
- 1312 x 1082 or 2080 x 2080 pixel resolution
- Odd/even rows with independent exposure time and response curve
- Good NIR spectral response
- Exceptional SNR up to 300:1
- Dynamic range up to 120 dB via LinLog[®], extended dynamic range with odd/even HDR
- Up to 108 fps (1.4 MP), 577 fps (VGA) or 34 fps (4MP) @ full resolution over single standard GigE Interface
- Global shutter
- Monochrome
- Extended features
- CameraLink[®] and GigE interface
- 12 bit greyscale resolution
- Configuration via register based ASCII protocol possible
- Boardlevel or OEM solution available

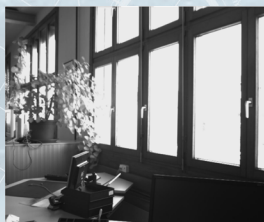


Advantages

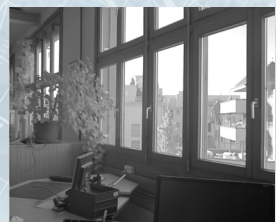
- Odd/even HDR results in a linear response curve



Odd image



Even image



Combined image



HD1-D1312-160-CL-12 HD1-D1312-80-G2-12	HD1-D2080-160-CL-12*
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	Image Sensor	
	Photonfocus A1312 (3. Generation)	Photonfocus A2080 (3. Generation)
Image sensor	CMOS active pixel (APS)	
Technology	Progressive scan	
Scanning system	Progressive scan	
Optical format / diagonal	1" (13.6 mm diagonal) maximum resolution 2/3" (11.6 mm diagonal) 1024 x 1024 resolution 1312 x 1082 pixels	23.5 mm diagonal @ max. resolution (< 25 mm image circle) 2080 x 2080 pixels
Resolution	8 µm x 8 µm	
Pixel size	16.64 mm x 16.64 mm (maximum)	
Active optical area	0.65 fA/pixel	
Dark current	~90 ke ⁻ (Max SNR > 300:1)	
Full well capacity / SNR	< 370 to 1000 nm (to 10% of peak responsivity)	
Spectral range	210 x 10 ³ DN / (J/m ²) @ 625 nm / 8 bit / gain = 1 (approximately 620 DN / (lux s) @ 625 nm / 8 bit / gain = 1)	
Responsivity	> 50% > 60%	
Quantum Efficiency	60 dB in linear mode; 120 dB with LinLog®	
Optical fill factor	Monochrome	
Dynamic range	Linear or LinLog® can be set for for odd/even rows independent	
Colour format	Global shutter	
Characteristic curve	Sequential read out	
Shutter mode		
Read out mode		

	Camera	
Exposure time	10 µs ... 0.41 s / 25ns steps	10 µs ... 0.33 s / 25ns steps
Frame rate	108 fps (CL); 55fpd (GigE)	34 fps (full resolution)
Pixel clock	40 MHz	
Camera taps	4	
Greyscale resolution	8 bit / 10 bit ⁽¹⁾ / 12 bit ⁽¹⁾	
Fixed pattern noise (FPN)	< 1 DN @ 8 bit / correction ON	
Analogue gain	1	
Digital gain	0.1 to 15.99 (Fine Gain)	
Configuration interface	CL SERIAL (Baudrate user selectable)	
Trigger modes	<ul style="list-style-type: none"> • Free running (non triggered) • Interface trigger • External trigger input • Software trigger 	
Features	<ul style="list-style-type: none"> • Region of Interest (ROI) • 512 Multiple ROI (MROI) • Decimation Y • Image correction • 2 Look-up tables (LUT) • Constant frame rate • Crosshair • Convolver 3x3 • Temperature • Image information • Extended trigger input and strobe output functionality • Modulation can be disabled to transmit original image data 	
Interface	CameraLink® Base	
Operating temperature	0°C ... +50°C	
Power supply	+12 V DC (±10%)	
Power consumption	< 3.3 W	
Lens mount	C-Mount (CS-Mount optional)	M42x1, F-Mount, C-Mount 1.3"
Dimensions (H x W x L)	60 x 60 x 45 mm ³	60 x 60 x 47 mm ³
Mass	265 g	222 g
Conformity	CE / RoHS / WEEE	
Specials	Adjustable backfocus; Opto-isolated I/Os Application example software for the HD1 technology	

	Software
Camera control	PFRremote™ graphical user interface (GUI) and PFLib (SDK); GigE: graphical user interface GEV Player and SDK;
OS	All 3rd party tools providing full support for GigE Vison and GenICam Windows and Linux (32 & 64 Bit); other OS (QNX, etc) on request

⁽¹⁾ If DR Mode active, 8 bit greyscale output only
* Model available upon request