CMOS Camera

MV-D2048X1088-3D03-760-G2-8

2.2 Megapixel 3D CMOS camera for laser triangulation applications

Features

– CMOSIS CMV2000 CMOS image sensor
– 2048 x 1088 pixel resolution
– Realtime DUAL laserline Peak Detection algorithm on camera
– Additional peak information (width and quality) for scatter measurements
– Combined 3D and linescan mode
– Up to 8400 profiles/s @ 2048 x 16 resolution
– Global shutter
– Monochrome
– Gigabit Ethernet Interface
– 8 bit greyscale resolution with subpixel accuracy
– Boardlevel or OEM solution available

Advantages

– Dual Peak eliminates the need of a 2nd camera for various setups
– Scatter measurement with additional peak information possible
– Dual 2D single line for 2D surface inspection and overlay
– No additional calculations on CPU
– Reduction of vision system computer CPU load
– PF 3D Suite a free GUI for an easy system set up and visualisation of 3D scan
– Higher accuracy and robustness through new Peak Detection algorithm
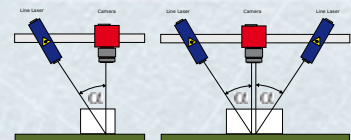
triangulation setups

PF 3D Suite

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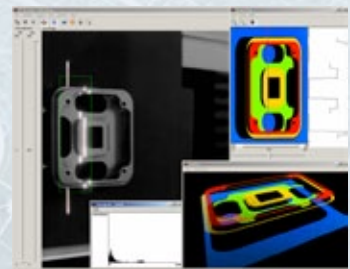
MV-D2048x1088-3D03-760-G2-8	
Image Sensor	
Image sensor	CMOSIS CMV2000
Technology	CMOS active pixel (APS)
Scanning system	Progressive scan
Optical format / diagonal	2/3" (12.76 mm diagonal)
Resolution	2048 x 1088 pixels (2048 x 1009 for 3D measurement)
Pixel size	5.5 µm x 5.5 µm
Active optical area	11.26 mm x 5.984 mm (maximum)
Dark current	125 e⁻/s @ 25°C
Full well capacity / SNR	~13.5 ke⁻
Spectral range	< 350 to 900 nm (to 10 % of peak responsivity)
Sensitivity	5.56 V / lux.s
Quantum Efficiency	60 % @ 550 nm with micro lenses
Optical fill factor	42 % without micro lenses
Dynamic range	60 dB in linear mode
Colour format	Monochrome
Characteristic curve	Linear, Piecewise linear
Shutter mode	Global shutter
Read out mode	Simultaneous read out (read out during exposure)

Camera	
Exposure time	1 µs … 0.35 s / 20.8 ns steps
Frame rate	340 fps[2] @ full resolution / 8400 fps[2] @ 2048 x 16 resolution
Pixel clock	48 MHz
Camera taps	1
Greyscale resolution	8 bit / 10 bit
Fixed pattern noise (FPN)	< 1 DN RMS @ 10 bit / gain = 1 / offset correction ON
Analogue gain	1
Digital gain	0.1 to 15.99 (Fine Gain)
Configuration interface	Gigabit Ethernet
Trigger modes	• Free running (non triggered) • Interface trigger • External trigger input
Features	• Region of Interest (ROI) • Constant frame rate • Extended trigger input and strobe output functionality • Dual Peak Detector with dual 2D single line for 2D surface inspection • A/B RS-422 shaft encoder interface
Interface	Gigabit Ethernet
Operating temperature	0°C … +50°C
Power supply	+12 V … +24 V DC (±10 %)
Power consumption	< 6 W
Lens mount	C-Mount (CS-Mount optional)
Dimensions (H x W x L)	55 x 55 x 51.5 mm³
Mass	260 g
Conformity	CE / RoHS / WEEE
Specials	Adjustable backfocus; isolated I/Os; A/B RS-422 shaft encoder interface; dual peak; combined 3D and linescan mode

Software	
Camera control	PF 3D Suite graphical user interface (GUI) and PF3DLib (SDK); Graphical user interface GEV Player and SDK; All 3rd party tools providing full support for GigE Vison and GenICam[1]
OS	Windows and Linux (32 & 64 Bit); other OS (QNX, etc) on request

[1] 3D and 2D data extraction must be done by the user
[2] Output 3D only with additional 2D line (max. 2048 x 1009)

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