

## CMOS Smart Camera

# SM2-D1024 SERIES

1 Megapixel smart camera with programmable DSP

### Features

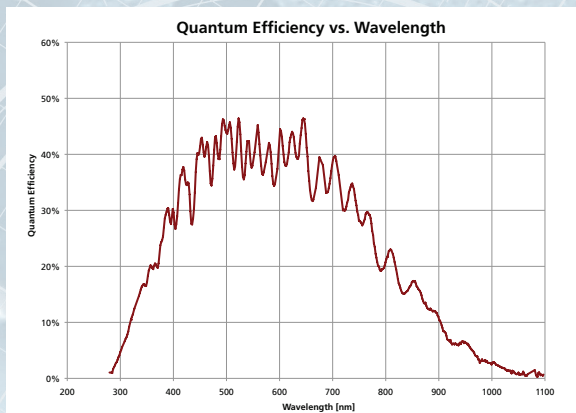
- Photonfocus A1024B CMOS image sensor
- 1024 x 1024 pixel resolution
- Programmable Texas Instruments DSP
- HALCON Embedded compatible
- Dynamic range up to 120 dB via LinLog®
- Up to 75 fps @ full resolution
- Global shutter
- Monochrome
- GigE interface
- 12 bit greyscale resolution



Compatible with



### Spectral response of the Photonfocus A1024B CMOS image sensor



SM2-D1024-80-GB-12  
VisionCam P5 Type 1\*

Image sensor	
Image sensor	Photonfocus A1024B (2. Generation)
Technology	CMOS active pixel (APS)
Scanning system	Progressive scan
Optical format / diagonal	1" (15.42 mm diagonal)
Resolution	1024 x 1024 pixels
Pixel size	10.6 µm x 10.6 µm
Active optical area	10.9 mm x 10.9 mm (maximum)
Dark current	2 fA/pixel @ 30°C
Full well capacity	~200 ke <sup>-</sup>
Spectral range	< 400 to 900 nm
Responsivity	120 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 610 nm / 8 bit / gain = 1 (approximately 350 DN / (lux s) @ 610 nm / 8 bit / gain = 1)
Quantum Efficiency	45 % @ 550 nm
Optical fill factor	35 % (geometrical)
Dynamic range	60 dB in linear mode; 120 dB with LinLog®
Colour format	Monochrome
Characteristic curve	Linear, LinLog®, Skimming
Shutter mode	Global shutter
Read out mode	Sequential or simultaneous read out (read out during exposure)

Camera	
Exposure time	10 µs ... 0.83 s / 50 ns steps
Frame rate	75 fps
Pixel clock	40 MHz
Camera taps	2 (internal)
Greyscale resolution	8 bit / 10 bit / 12 bit
Fixed pattern noise (FPN)	< 1 DN RMS @ 8 bit / gain = 1 / offset correction ON
Analogue gain	1
Digital gain	1 / 2 / 4
Configuration interface	Built-in Webserver
Trigger modes	<ul style="list-style-type: none"> <li>Free running (non triggered)</li> <li>Interface trigger</li> <li>External trigger input</li> </ul>
Features	<ul style="list-style-type: none"> <li>Region of Interest (ROI)</li> <li>16 Multiple ROI (MROI)</li> <li>Decimation Y</li> <li>Image correction</li> <li>Look-up table (LUT)</li> <li>Constant frame rate</li> <li>Image information</li> <li>Realtime clock</li> <li>FTP Server</li> <li>Extended trigger input and strobe output functionality</li> </ul>
CPU / RAM / Storage	Texas Instruments TMS320 C6415 @ 1GHz, 8000 MIPS / 256 MB SDRAM / 2 GB SD Card
Interface	GigE
Operating temperature	0°C ... +50°C
Power supply	+12 V DC (±10%)
Power consumption	8.0 W
Lens mount	C-Mount (CS-Mount optional)
Dimensions (H x W x L)	60 x 60 x 127 mm <sup>3</sup>
Mass	532 g
Conformity	CE / RoHS / WEEE
Specials	Adjustable backfocus; Opto-isolated I/Os; JTAG, RS232 Interface, RS422 Interface

Software	
Camera control	Built-in webserver
DSP Development tools	Texas Instruments Code Composer Studio 3.3, HALCON Embedded

\* Product name used by Imago Technologies

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