

TemCam-F216

TemCam CMOS Camera (2k, 16 μ m, 16bit)

Introducing a new generation of TEM cameras, TVIPS launches TemCam-F216, the latest 4 MegaPixel camera, covering an image area of 32 x 32 mm². Custom designed CMOS architecture resulting in a large fill factor, high sensitivity and superior resolution combines the advantages of classical slow scan 2k CCD cameras with an exceptional acquisition speed. The CMOS sensor, showing absolutely no blooming or smearing on intensive illumination and the high quality 16 bit analog-to-digital converter, makes this camera an excellent choice for all types of applications requiring high dynamic range, such as for the acquisition of diffraction patterns.

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TemCam-F216 features and benefits

Field of view

Image area of 32 x 32 mm².

Fast readout

Two readout ports, each sampling with 10 MPixel/sec, digitize the image information at full resolution within 1.8 sec. For a subarea of 2k x 1k, frame rates of 3 fps can be achieved.

Rolling shutter mode

For even faster readout the sensor can be operated in the rolling shutter (RS) mode whereby no beam shutter is needed. Frame rates of up to 8.5 fps for a 1k x 1k subarea can be achieved.

This mode is well suited for searching the object of interest.

Fiber-optical coupling

Fiber-optical coupling of the electron-sensitive layer (scintillator) with the sensor increases the amount of light collected in comparison with lens-optical coupling and, as a result, the sensitivity of the camera.

Optimized scintillators

TVIPS optimizes the scintillator for individual demands. For each high tension up to 400 kV, two standard types (scintillator thicknesses) are available: optimized for high resolution (HR) or for high sensitivity (HS).

On customer request individual scintillators can be manufactured.

	TemCam-F216
Sensor type	CMOS
Format	2048 x 2048
Pixel size	15.6 x 15.6 μm ²
Fill factor	72%
Field of view	31.9 x 31.9 mm ²
Readout rate (16 bit)	2 x 10 MPixel/sec
Frame rates	1.8 fps, full resolution, 1x binning 3.0 fps, subarea, 1k x 1k, 1x binning 4.5 fps, full area, 2k x 2k, RS 8.5 fps, subarea, 1k x 1k, RS 8.5 fps, subarea, 2k x 1k, RS
Post-magnification	0.8x – 1.4x
Electron-optical coupling	1:1 fiber-optics
Scintillator type	polycrystalline phosphor
Sensor cooling	-10°C (regulated)
Binning factors	1x, 2x, 4x
Gain factors	1x
Dynamic range (maximum/noise)	10 000 : 1
Non-linearity (after flatfield correction)	<1%
Sensitivity (for a single electron @ 200 kV)	~ 60 counts (HR) ~ 100 counts (HS)
SNR (for a single electron @ 200 kV)	~14:1 (HR) ~22:1 (HS)
Resolution @ 200 kV (NTF at Nyquist frequency)	~11%
Anti-blooming	blooming not present
Bottom mounted	on-axis
System requirements	Windows XP, Intel DualCore CPU, Optical Gigabit Ethernet, PCI Express x4 slot
Software	EM-MENU, tomography, single particle collection, EM-SPECTRO, recording to hard disk

Data in this brochure is typical and not binding.

製造元

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日本総代理店

ADS 株式会社 アド・サイエンス

〒273-0005 千葉県船橋市本町2-2-7サンテックビル
TEL:047-434-2090 FAX:047-434-2097
[http:// www.ads-img.co.jp](http://www.ads-img.co.jp)