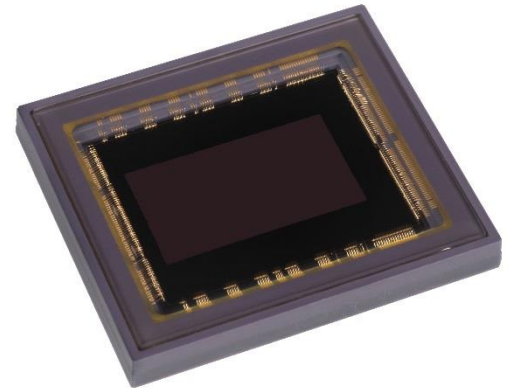


MST4323

4/3" 10MP BSI sCMOS 3.0
4K – 120fps Color Sensor

The MST4323 is a high performance 4K resolution CMOS image sensor with 86dB dynamic range and extremely low noise. The greater than 14 stop dynamic range ensures capturing every scene detail under demanding lighting conditions. Outstanding low light performance is achieved through high sensitivity combined with extremely low noise. The MST4323 delivers the performance demanded by today's imaging professionals for pro-video and cinema systems, machine vision, and industrial applications.



The 4/3" optical format MST4323 has a 4432 x 2368 pixel resolution which provides a 336 x 208 pixel overscan beyond DCI-4K (4096 x 2160) resolution. The overscan can be utilized for digital image stabilization or increased field of view. Incorporating a backside illuminated (BSI) process implementation enables the MST4323 to achieve high quantum efficiency (QE), and combined with low 1.0e- noise performance, results in outstanding low light sensitivity.

Fairchild Imaging's proven dual gain amplifier architecture results in 16 bits per pixel to encompass the full dynamic range. Low gain and high gain signal paths provide analog to digital conversions at multiple gain factors on a pixel by pixel basis. This process optimizes both dynamic range and low light noise. The 4.6um pixel incorporates new design techniques combined with state of the art BSI processing to dramatically lower color crosstalk and boost MTF resulting in high color fidelity and sharpness.

This sensor supports both conventional rolling shutter and global reset operating modes. Global reset mode is perfect for machine vision applications with controlled lighting. Read noise and dynamic range are optimized in either mode.

The MST4323 consumes only 1.8 watts at 120 fps, which is ideal for portable professional camera systems. The sensor is housed in a CLGA package with high quality double-AR coverglass.

Key features and benefits

10.5Mp (4432 x 2368)

4/3" Optical Format

86dB Dynamic Range

1.0 RMS Read Noise

Superior Low Light Performance

4K @ 120 fps | 1080p @ 240 fps

Applications

Professional Video

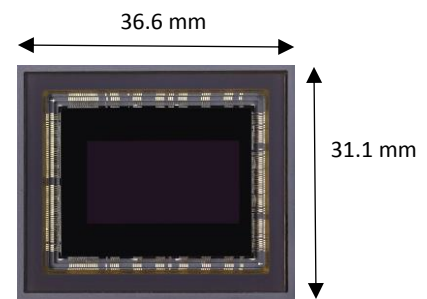
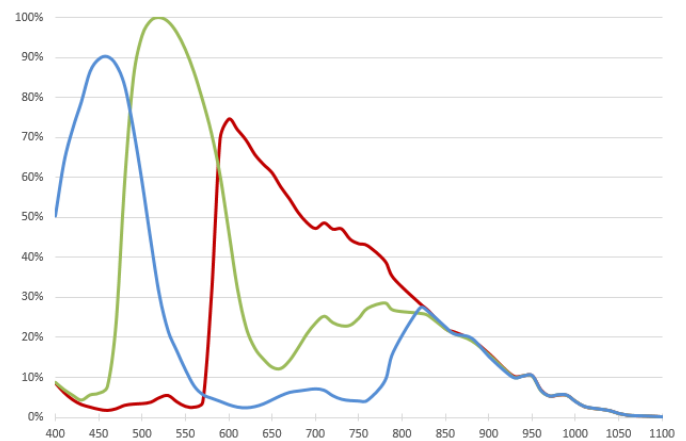
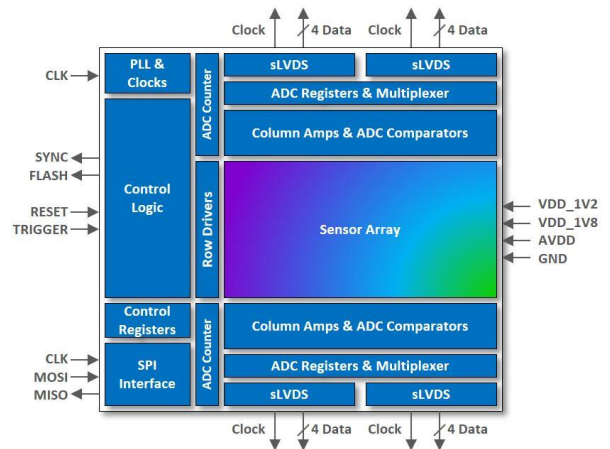
Aerial Systems

Machine Vision

Ideal for capturing scenes in extreme lighting conditions

Preliminary Specifications

Sensor	
Optical Format	4/3"
Configurations	Bayer RGB
Active Array	4432 x 2368 (10.5MP)
Active Area	20.3 mm x 10.9 mm
Active Diagonal	23.1 mm
Frame Rates	120 fps @ Full Frame 240 fps @ 1080p (ROI)
ADC Resolution	12 bit @ ≤ 60 fps 11 bits @ 120 fps
Programmable Gain	LG: 1x HG: 8x, 16x, 32x
Pixel	
Pixel Size	4.6 x 4.6 μm
Shutter Types	Rolling Shutter or Global Reset
Read Noise	1.0 e- RMS @ 120 fps
Dynamic Range	86 dB
Dark Current	2 e-/sec @ 30° C
Non-linearity	< 1%
Interface	
Temperature Sensor	Analog & Digital Outputs
Output Data Interface	10 sub-LVDS @ 60 fps 20 sub-LVDS @ 120 fps
Data Type	11 or 12 bit RAW 16 bit LG/HG merged
Control Interface	SPI 20MHz
Operating	
Power	1.8W @ 120 fps
Operating Temp	-30° to + 70° C
Power Supply	3.3V, 2.5V, 1.8V, 1.2V
Packaging	
Package	256 Pin CLGA
Coverglass	Double Sided-AR Coated



MST4323
Standard CLGA Package
(Actual Size)



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