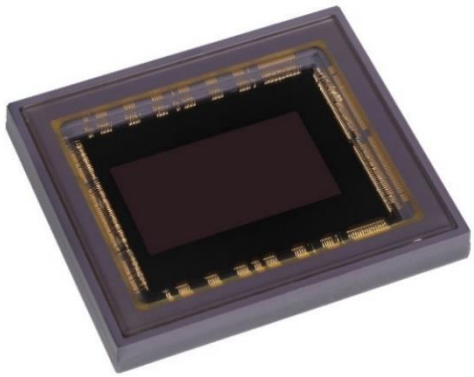
BAE SYSTEMS

PRELIMINARY

LTN4323

4/3" 10MP BSI sCMOS 3.0
4K-120fps Monochrome Sensor



Fairchild Imaging's new BSI sCMOS 3.0 sensors define the next horizon in professional imaging.

The BSI sCMOS 3.0 LTN4323 is a high performance sensor with market leading 0.7e- RMS read noise. Outstanding low light performance is achieved through combining extremely low noise with the high quantum efficiency BSI process. The LTN4323 delivers the performance demanded by today's imaging professionals for scientific, machine vision, and industrial applications.

The LTN4323 has 4432 x 2368 pixel resolution and employs new BSI sCMOS 3.0 pixel engineering to realize extremely low noise, enhance MTF, boost NIR-QE, and reduce dark current. The increased MTF is achieved through reduced pixel to pixel cross-talk that dramatically improves sharpness. Compared to typical FSI sensors, an innovative BSI process enhancement delivers a broad spectrum NIR-QE with >2x sensitivity. Dark current at 30C is <2e/sec enabling compact camera designs without the need for TE cooling.

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.

This sensor supports conventional rolling shutter and global reset operating modes. Global reset mode is perfect for machine vision applications with controlled lighting.

The LTN4323 consumes only 1.8 watts at 120 fps, which is ideal for non-TE cooled applications. However, the sensor is housed in a CLGA package which can accommodate a TE cooler for critical high performance applications.

Key features and benefits
10.5MP (4432 x 2368)
4/3" Optical Format
0.7e- RMS Read Noise
89dB Dynamic Range
Enhanced NIR QE Process
Extremely Low Dark Current
120fps Frame Rate
High Pixel MTF

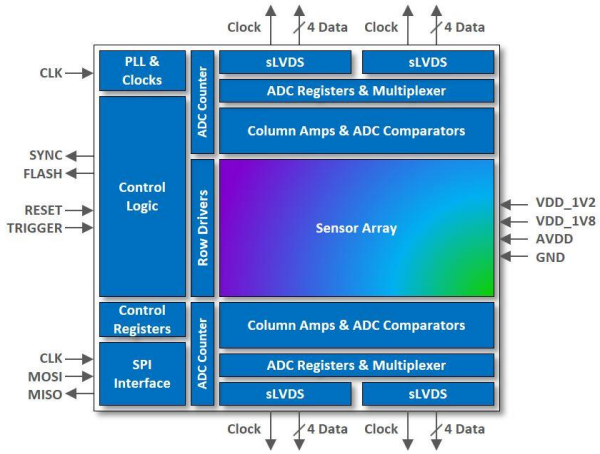
Applications
Scientific
Machine Vision
Medical
Industrial

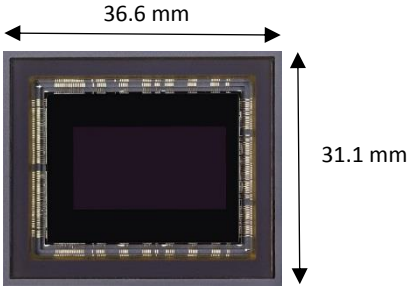
PRELIMINARY

Ideal for capturing images in extreme low-light conditions

Preliminary Specifications

Sensor	
Optical Format	4/3"
Configurations	Monochrome
Active Array	4432 x 2368 (10.5MP)
Active Area Active Diagonal	20.3 mm x 10.9 mm 23.1 mm
Frame Rates	120 fps @ Full Frame 240 fps @ 1080p (ROI)
ADC Resolution	12 bits @ ≤ 60 fps 11bits @ 120 fps
Programmable Gain	LG: 1x | HG: 8x, 16x, 32x
Pixel	
Pixel Size	4.6 x 4.6 µm
Shutter Types	Rolling Shutter and Global Reset
Read Noise	0.7 e- RMS @ 5 fps
Dynamic Range	89 dB
Dark Current	2 e-/sec @ 30° C
Non-linearity	< 1%
Interface	
Temperature Sensor	Analog & Digital Output
Output Data Interface @ 1.2 Gbps	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 20 MHz
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





LTN4323
Standard CLGA Package
(Actual Size)

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