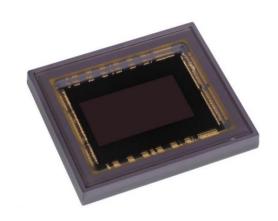
LTN4323

4/3" IOMP BSI sCMOS 3.0 4K-I20fps 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.

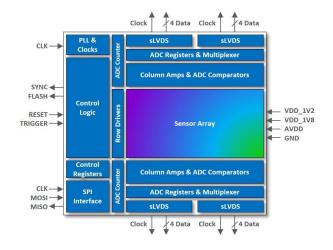
The LTN4323 consumes only 1.8 watts at 120 fps, which is ideal for non-TE cooled applications. However, the sensor is housed in a CLGA package which can accommodate a TE cooler for critical high performance applications.

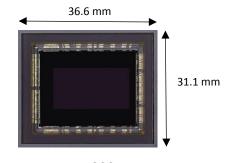
Key features and benefits	Applications
10.5MP (4432 x 2368)	Scientific
4/3" Optical Format	Machine Vision
0.7e- RMS Read Noise	Medical
89dB Dynamic Range	Industrial
Enhanced NIR QE Process	
Extremely Low Dark Current	
120fps Frame Rate	
High Pixel MTF	

Ideal for capturing images in extreme low-light conditions

Preliminary Specifications

Optical Format4/3"ConfigurationsMonochromeActive Array4432 x 2368 (10.5MP)Active Area20.3 mm x 10.9 mmActive Diagonal23.1 mmFrame Rates120 fps @ Full Frame240 fps @ 1080p (ROI)ADC Resolution12 bits @ ≤ 60 fps11bits @ 120 fpsProgrammable GainLG: 1x HG: 8x, 16x, 32xPixelPixel SizeShutter TypesRolling Shutter and Global ResetRead Noise0.7 e- RMS @ 5 fpsDynamic Range89 dBDark Current2 e-/sec @ 30° CNon-linearity< 1%Interface10 sub-LVDS @ 60 fps@ 1.2 Gbps20 sub-LVDS @ 120 fpsData Type11 or 12 bit RAW 16 bit LG/HG MergedControl InterfaceSPI 20 MHzOperatingPowerPower1.8W @ 120 fpsOperating Temp-30° to + 70° CPower Supply3.3V, 2.5V, 1.8V, 1.2V	Sonsor	
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Non-linearity < 1% Interface Temperature Sensor Analog & Digital Output Output Data Interface 10 sub-LVDS @ 60 fps @ 1.2 Gbps 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	Dynamic Range	89 dB
Interface Temperature Sensor Output Data Interface @ 1.2 Gbps Data Type Control Interface Operating Power Operating Power Power Supply Analog & Digital Output 10 sub-LVDS @ 60 fps 20 sub-LVDS @ 120 fps 11 or 12 bit RAW 16 bit LG/HG Merged SPI 20 MHz Operating 1.8W @ 120 fps -30° to + 70° C 3.3V, 2.5V, 1.8V, 1.2V	Dark Current	2 e-/sec @ 30° C
Temperature Sensor Analog & Digital Output Output Data Interface ② 1.2 Gbps 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 Analog & Digital Output 10 sub-LVDS @ 60 fps 20 sub-LVDS @ 120 fps 11 or 12 bit RAW 16 bit LG/HG Merged SPI 20 MHz Operating 1.8W @ 120 fps 3.3V, 2.5V, 1.8V, 1.2V	Non-linearity	< 1%
Output Data Interface ② 1.2 Gbps Data Type 10 sub-LVDS ② 60 fps 20 sub-LVDS ② 120 fps 11 or 12 bit RAW 16 bit LG/HG Merged Control Interface SPI 20 MHz Operating Power 1.8W ② 120 fps Operating Temp -30° to + 70° C Power Supply 3.3V, 2.5V, 1.8V, 1.2V	Interface	
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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	@ 1.2 Gbps	20 sub-LVDS @ 120 fps
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Power 1.8W @ 120 fps Operating Temp -30° to + 70° C Power Supply 3.3V, 2.5V, 1.8V, 1.2V	Control Interface	SPI 20 MHz
Operating Temp -30° to + 70° C Power Supply 3.3V, 2.5V, 1.8V, 1.2V	Operating	
Power Supply 3.3V, 2.5V, 1.8V, 1.2V	Power	1.8W @ 120 fps
	Operating Temp	-30° to + 70° C
Packaging	Power Supply	3.3V, 2.5V, 1.8V, 1.2V
	Packaging	
Package 256 Pin CLGA	Package	256 Pin CLGA
Coverglass Double Sided-AR Coated	Coverglass	Double Sided-AR Coated





LTN4323 Standard CLGA Package (Actual Size)



Fairchild Imaging 1841 Zanker Rd., Ste. 50 San Jose, CA 95112 USA

T: 1-650-479-5749

E: cams.sales@baesystems.com

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