

Fairchild Imaging

CIS1910

HD image sensor with sCMOS 2.0 technology

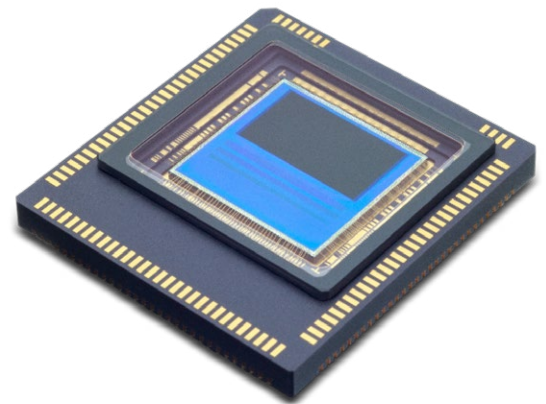
The CIS1910 is a large-format, ultra low-noise sensor intended for applications requiring high-quality imaging under extremely low-light conditions.

The CIS1910A imaging device delivers HD imaging for a variety of low-light-level camera applications, including professional video, security/surveillance, industrial, and medical uses. This HD sensor delivers extreme low-light sensitivity with read noise less than 1.2e- RMS in Rolling Shutter and less than 4e- RMS in Global Shutter modes. Housed in a 105-pin ceramic LGA package, the sensor incorporates sCMOS 2.0 technology utilizing a five transistor (5T) and 6.5 μ m pixel architecture delivering greater than 50 percent quantum efficiency.

CIS1910 has two ADC channels per column with one optimized for low-light levels and the other optimized for high-light levels, enabling intra-scene high dynamic range of over 88dB. The sensor supports user-programmable row start/stop control for region of interest (ROI) readout mode. These features, combined with 2.1 megapixel resolution and 100 fps imaging rates ensure high-quality imagery across many different applications.

Key features and benefits

- Rolling Shutter (RS) and Global Shutter (GS) offer additional operational modes for more application flexibility
- Superior low light image quality allow for reduced illumination requirements
- 88 dB intra scene dynamic range shows more detail in high contrast scenes
- 100 fps at full HD 1080P creates no motion blur

**Applications**

- Scientific
- Medical
- Industrial
- Professional video
- High-end security

Ideal for capturing scenes in extreme lighting conditions

Specifications

Sensor

Optical format	1 in.
Active array size	1920 (H) x 1080 (V)
Active area	12.5 mm x 7.0 mm
Diagonal of active area	14.32 mm
Chroma	RGB or monochrome
Maximum frame rate	100 fps (RS), 50 fps (GS)
ADC resolution	22 bits (2 x 11-bit)

Pixel

Pixel size	6.5 μm x 6.5 μm
Shutter types	Rolling shutter and global shutter
Read noise ¹	<1.2 e- RMS (RS) <4 e- RMS (GS)
Dynamic range	>88 dB
Peak QE	>50%
Full well capacity	>30,000 e-
Dark current ²	<25 e-/pixel/sec

Interface

I/O Interface	Digital: 1.8V LVCMOS and 1.8V HSTL
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Operating

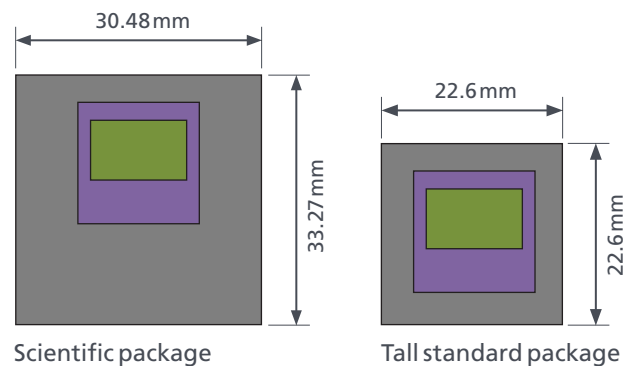
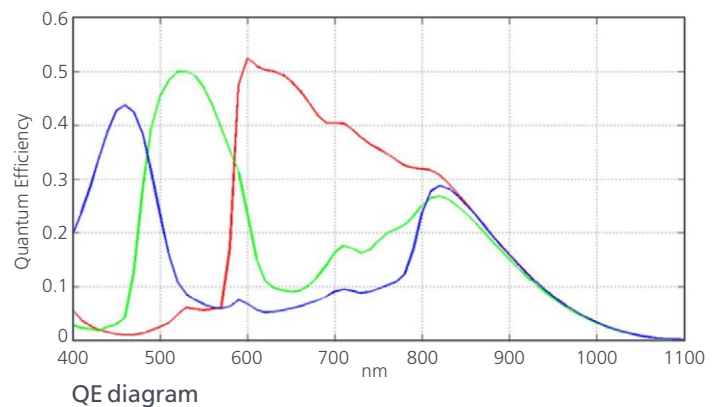
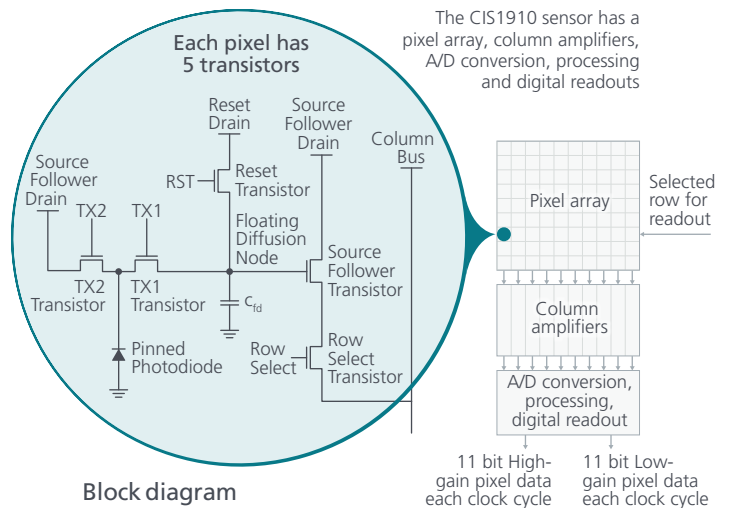
Power consumption	<0.8 with dual ADC channels (100 fps)
Supply voltages	-0.4V, 1.8V, 3.0V, 3.3V
Operating temperature	-40°C to +55°C

Packaging

Package type	105-pin CLCC (tall standard package) 101-pin CLCC (scientific package)
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¹Median value, high gain output (30x)

²At 20°C



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