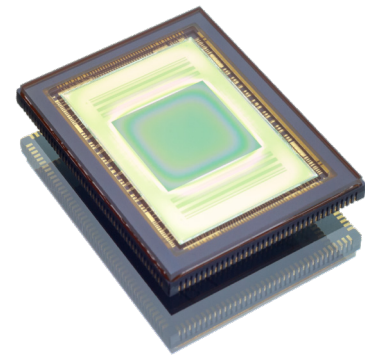


CIS2020

4.2MP Ultra low-noise image sensor
with sCMOS 2.0 technology



The CIS2020 is a large format, ultra low-noise CMOS image sensor intended for applications requiring high quality imaging under extremely low-light conditions.

The device features an array of four transistor (4T) pixels on a $6.5\mu\text{m}$ pitch with an active imaging area of 2048(H) x 2048(V) pixels. The CIS2020 delivers extreme low-light sensitivity with read noise of 1 electron Root Mean Square (RMS), quantum efficiency above 70 percent, and a low dark current.

The sensor has two ADC channels per column with one optimized for low light levels and the other optimized for high light levels, enabling high dynamic range data collection in a single image. Housed in a 168-pin Ceramic Leadless Chip Carrier (CLCC) package, CIS2020 supports user-programmable row start/sto control for region of interest readout.

These features, combined with 4.2MP resolution and 100 fps imaging rates, make the sensor an imaging device ideally suited for applications including security and surveillance, industrial, professional video, scientific, and medical uses.

Key features and benefits

- Superior low light image quality allows for reduced illumination requirements
- >90 dB intra scene dynamic range shows more detail in high contrast scenes
- 100 fps at 4.2MP creates no motion blur

Applications

- Scientific
- Medical
- Industrial
- High-end security

Ideal for capturing scenes in extreme lighting conditions

Specifications

Sensor

Optical format	4/3"
Configurations	Monochrome
Active array	2048 (H) X 2048 (V)
Active area	13.3 mm X 13.3 mm
Active diagonal	18.83 mm
Frame rates	100 fps
ADC resolution	22 bits (2 x 11-bit)

Pixel

Pixel size	6.5 μm x 6.5 μm
Shutter types	Rolling Shutter
Read noise ¹	1 e- RMS
Dynamic range	>90 dB
Peak QE	>70%
Full Well Capacity	>30,000 e-
Dark Current	<35 e-/ pixel/ sec

Interface

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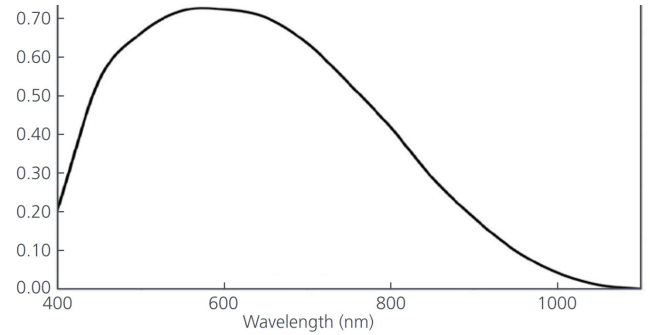
Operating

Power consumption	<1.5W at 100 fps
Supply voltages	-0.4V, 1.8V, 3.0V, 3.3V
Operating temp	-40°C to +55°C

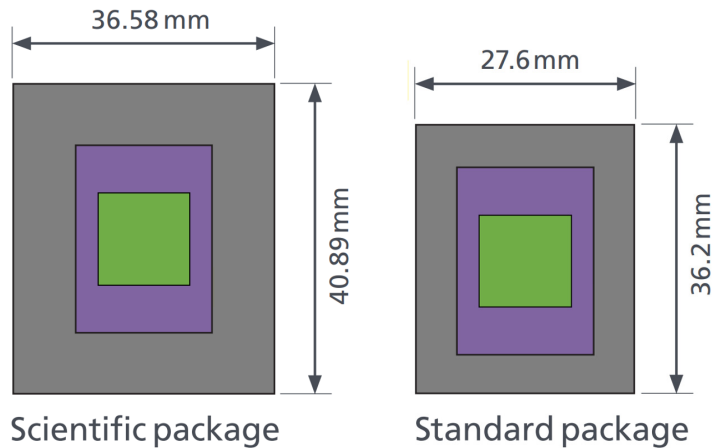
Packaging

Package	168 Pin CLCC
Coverglass	AR coated sealed window; temporary window

QE Curve



Dimensions



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