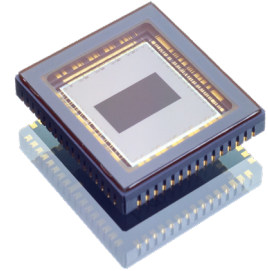


# HWK1910

## High definition image sensor with sCMOS 2.0 technology



The HWK1910 image sensor is a high definition format, ultra low-noise sCMOS image sensor.

Intended for surveillance and intelligent transportation applications requiring high quality imaging under extremely low-light and wide dynamic range conditions. The device features an array of five transistor (5T) pixels on a 5.04  $\mu\text{m}$  pitch with an active imaging resolution of 1920(H) x 1080(V) pixels. The sensor has circuitry that enables high dynamic range data collection in a single frame.

The HWK1910 image sensor supports user-programmable row start/stop control for region of interest (ROI) readout mode. The HWK1910 image sensor delivers extreme low-light sensitivity with a read noise of one electron Root Mean Square (RMS). These features combined with 2.1 megapixel resolution, 60 fps, and the ability for auto calibration makes the HWK1910 easy to integrate into a variety of systems, and ideally suited for a variety of high throughput, low-light level imaging applications.

### Key features and benefits

- 1 e- RMS read noise at 60 fps | 0.7 e- RMS at lower frame rate enables imaging in darker scenes
- Single frame high dynamic range
- 87 dB single frame dynamic in wide dynamic range | 120 dB single frame dynamic range in ultra dynamic range shows more detail in high contrast scenes
- High frame rate of 60 fps in wide dynamic range | 30 fps in ultra dynamic range reduces blur

### Applications

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

# Ideal for capturing scenes in extreme lighting conditions

## Specifications

### Sensor

Optical format	2/3"
Configurations	RGB and Monochrome
Active array	1920 (H) X 1080 (V)
Active area	9.68 mm X 5.44 mm
Active diagonal	11.10 mm
Frame rates	60 fps (WDR), 30 fps (UDR)
ADC resolution	16 bits (WDR) 16 bit companded (UDR)

### Pixel

Pixel size	5.04 μm x 5.04 μm
Shutter types	Rolling Shutter
Read noise <sup>1</sup>	1 e- RMS at 60 fps 0.7 e- RMS at lower frame rate
Dynamic range	>87 dB (WDR) >120 dB (UDR)
Peak QE	61%
Full Well Capacity	≥ 23,000 e-
Dark Current	<20 e-/ pixel/ sec at 20°C

### Interface

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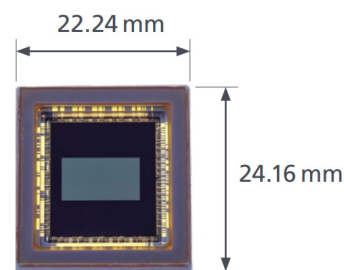
### Operating

Power consumption	~1W at 30 fps ~1.5W at 60 fps
Supply voltages	1.8V, 2.8V, 3.3V
Operating temp	-30°C to +70°C (at junction)

### Packaging

Package	64 Pin CLCC
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### Dimensions



<sup>1</sup>Median value: WDR = Wide Dynamic Range; UDR = Ultra Dynamic Range



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