250 MP Ultra High Resolution CMOS Sensor   Product Sheet

Capturing detail 125 times greater than in full HD resolution, the LI8020SA CMOS sensor from Canon offers remarkably high 250 MP resolution to uncover more detail than ever before. This innovative, APS-H format sensor leverages a square pixel arrangement of 1.5µm x 1.5µm pixels, achieving ultra-high resolution in a compact design for use in a wide range of applications. Discover new possibilities in unparalleled resolutions with the LI8020SA CMOS Sensor from Canon.

Ultra High Resolution and High Speed

Canon LI8020SA CMOS sensor minimizes noise without sacrificing speed by sharing floating diffusion capacitance between multiple pixels, resulting in shrunken readout circuitry and larger photodiode sizes. Progressive reading of small 1.5µm pixels occurs across 16 digital output channels to handle the enormous amount of image data created by roughly 250 million effective pixels. At full resolution, the LI8020SA CMOS sensor achieves a fast frame rate of 5 FPS. With single Region of Interest (ROI) windowing, faster frame rates can be achieved through reduced resolution, creating flexibility in performance.


Reference Standard	Effective Pixel Rows	Max Frame Rate
All Pixels	12588	5
8K	4320	24
4K	2160	30
FHD	1080	60

Readout Position and Frame Rate Control

The readout start position can be specified to allow flexibility in both frame rate and resolution depending on the application and required performance level. This feature allows the selection of a region of interest scalable to the final application requirements.

Evaluation Kit Available

The Canon LI8020SA Evaluation Kit allows integrators and end users to assess sensor performance and provides assets for image system designers to help accelerate development time. The Evaluation Kit features a camera with a pre-installed LI8020 CMOS sensor with raw data serial output via a CoaXPress interface. The evaluation kit has an open architecture design and gives developers the option to embed processing and software with the on-board FPGA.
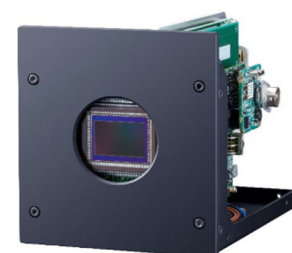
Specifications

	LI8020SAC	LI8020SAM
Filter Type	RGB	Monochrome
Sensitivity (e/lx/sec)	4,600	11,000
Sensor Size	29.35 mm x 18.88 mm	
Number of Effective Pixels	19568 x 12588 (Horizontal x Vertical)	
Pixel Size	1.5µm x 1.5µm	
Scan Type	Progressive Scan	
Shutter	Rolling Shutter	
Maximum Frame Rate (All Pixels)	5 fps	
Register Control Type	Serial Communication	
Package Type	228pin ceramic QFP	
Saturation	5,400 e	
Region Of Interest	Yes (one)	
Vertically sub-sampling	1/1, 1/3, 1/5, 1/7, and 1/9	
Dark Random Noise (Room Temp)	3.8 e- rms @ gain 12dB	
Dark Current	13 e/sec @ 60°C	
Drive Frequency	81 MHz	
Output Channels	Data 16 lanes, Clock 4 lanes	
Output Format	810 Mbps @ 10 bit, 972 Mbps @ 12bit	
Analog Gains	(-6 dB), 0 dB, 6 dB, 12 dB	
Power Consumption	2.0 W	
Power Supply Voltage	1.2 V, 3.3 V and 3.5 V	
Package Size (External Electrodes Not Included)	43.7 mm x 36.4 mm x 3.97 mm	

Quantum Efficiency Plot

LI8020SAC

LI8020SAM
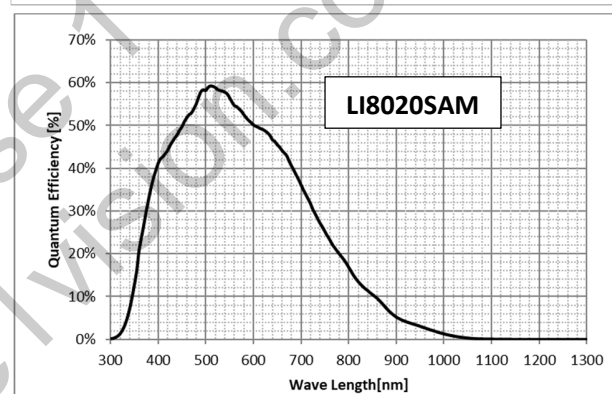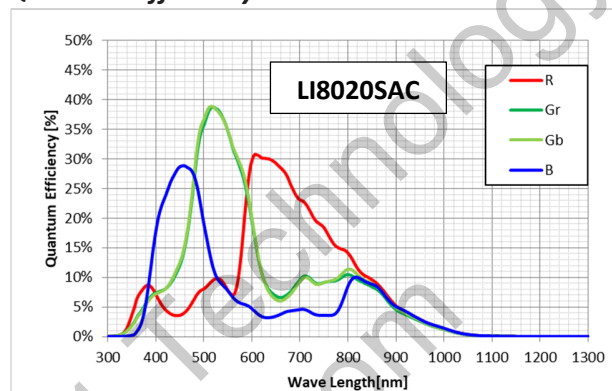
FUNCTIONAL BLOCK DIAGRAM

LI8020 Evaluation Kit

Color Filter Options	**Monochrome / RGB**
FPGA	**Intel Arria 10**
PC Interface	**CoaXPress 1.1 / GeniCAM**
Bit Depth / Frame Rate	**10 bit, 12 bit / 5 fps**
Lens Mount	**M48 (Lens Not Included)**
Features	**ROI, Exposure Control, Frame Rate Control, Bad Pixel Replacement**

Windows Software available for download

Please contact our representative for 2 weeks Free Loaner!
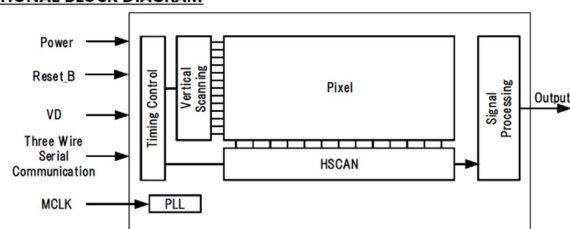
For more information visit https://canon-cmos-sensors.com/