

The 3U5MGXS global shutter image sensor employs a new pixel design introducing new drive readout and gathering structures significantly reducing noise, and contributing to a wide dynamic range with a power consumption of 500mW. Equipped with a global shutter and all pixel progressive reading at 120fps, the 2/3" sensor size, and pixel size of 3.4 μ m with 5.33 million effective pixels (2592 x 2056) easily allow for applications in machine vision and other industrial environments where smaller size and high performance are required. It is available in RGB and Monochrome.

Low Power Consumption

Canon's proprietary circuit technology enables this sensor to perform at high frame rates while maintaining a low power consumption. With a power draw of only 500mW at 60fps, this sensor can be used for longer periods of time including applications requiring battery-powered operation such as remote sensing on drones. The low power consumption also generates less heat, reducing the need to increase the size of the camera body for thermal management, allowing for more compact designs.



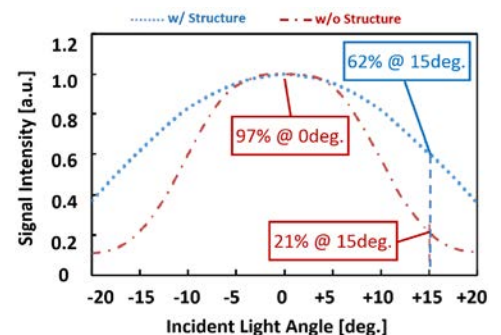
Reference Standard	Effective Pixel Rows	Max Frame Rate [fps]
All Pixels	2056	120
Full HD	1080	218
HD	720	312
VGA	480	437

Region of Interest

The 3U5MGXS can support up to 8 region of interest (ROI) areas, which can overlap, and which the size and position of each area can be independently defined to allow greater flexibility based on end user applications. By reducing the total amount of read information from the sensor, in either a single window, or throughout the maximum 8 ROI areas, the frame rate can also be increased to allow faster detection for more demanding applications.

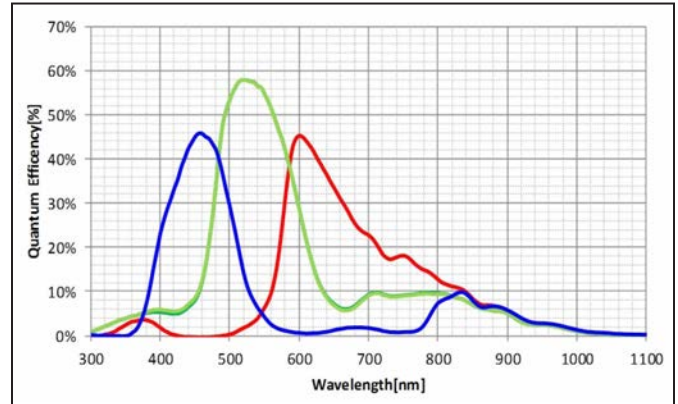
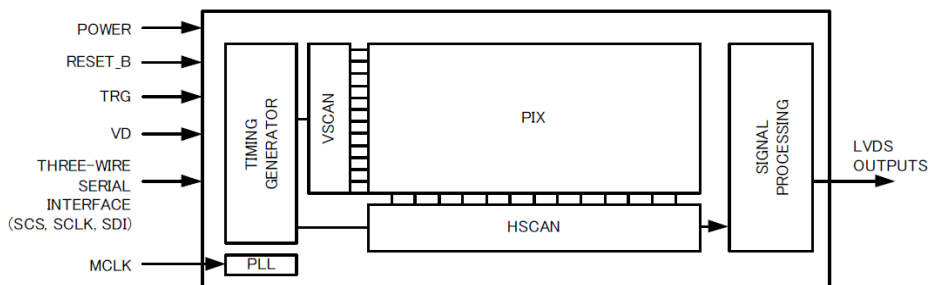
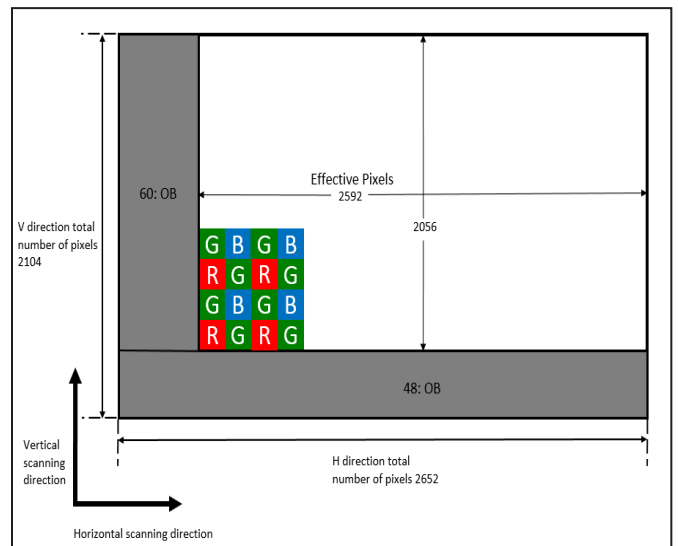
New Pixel Design and Drive Technology

The pixels of the Canon 3U5MGXS CMOS sensor includes a gathering structure which enables photons entering from wide incident angles to be re-directed into the photodiode which otherwise would be lost. The result is a CMOS image sensor with higher sensitivity, capable of capturing high quality images even in challenging low-light situations.



Specifications

	3U5MGXSC	3U5MGXSM
Filter Type	RGB	Monochrome
Sensitivity	30,000 e/lx/sec	47,000 e/lux/sec
Sensor Size	Approx. 2/3 inch (8.8mm x 7.0mm)	
Number of Effective Pixels	2592h x 2056v	
Pixel Size	3.4μm x 3.4μm	
Maximum Frame Rate	120fps	
Scan Type	Progressive Scan	
Shutter	Global electronic shutter function	
Package Type	180pin ceramic LGA	
Saturation	7,000e gain x1 (10 bit 60fps)	
Analog Gain	0 to 36dB	
Digital Gain	0 to 24dB	
Conversion Gain	0.28 LSB/e @Analog gain x1	
Dark Random Noise (Room Temp)	2.6e rms @ Analog gain x4	
Dark Current	1.3 e/sec @Analog gain x4, Room Temp	
Drive Frequency	36MHz(Recommended)	
Output Format	Data 12 lanes, Clock 2 lanes with a maximum output of 864Mbps at 120fps	
ROI	8 Regions	
Inverted Output Function	Horizontal and Vertical	
Power Consumption (Type)	500mW (Full pixel scan at 60fps)	
Power Supply Voltage	3.3V, 1.2V	
Package Size (External Electrodes Not Included)	18.96mm x 18.10mm x 2.51mm	
Exposure Control	Register setting or External Trigger	

Quantum Efficiency Plot

Pixel Arrangement

Applications

- Industrial
- Automotive
- Drone
- Embedded Vision
- Inspection
- Manufacturing
- Medical
- Surveillance

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