

The 35MMFHDXS\_A CMOS sensor delivers high-sensitivity, low-noise imaging performance, even in exceptionally low-light environments. The sensor's pixels and readout circuitry employ new technologies that reduce noise, which tends to increase as pixel size increases. High sensitivity and increased well depth have been achieved through a larger pixel size of 19µm x 19µm (square) with proprietary device design technologies. It is available with an RGB color filter or in monochrome.

**Wide Angle of View**

With a full readout resolution of 2160×1280, as compared to the 1920×1080 imaging area of full HD, this CMOS sensor enables use in applications requiring large image capture areas such as astronomy. This added resolution also provides an option for a 6:4 aspect ratio (1920×1280) needed in surveillance applications and an option for a 1:1 aspect ratio (1280×1280) needed in industrial applications.



Vertical Resolution (total lines)	Max Frame Rate
1280	98
1080	115
720	165
360	300

**Readout Position and Frame Rate Control**

The vertical readout start position can be specified to allow flexibility in both frame rate and resolution depending on the application and required performance level. Horizontal cropping must be performed in post processing. Moreover, when a high resolution is not required, vertical blanking can reduce power consumption.

**Low Dark Current**

Canon has incorporated technology within this sensor to reduce dark current during long exposure times. This enables clean imaging over long exposures where only the faintest of light is present.



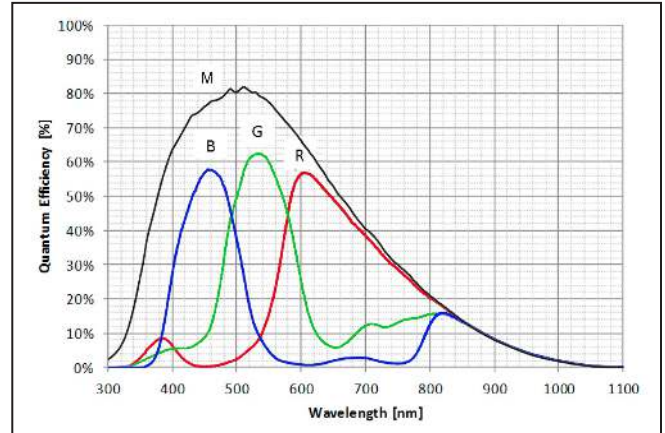
## 19 $\mu$ m Ultra High Sensitivity CMOS Sensor

Product Sheet

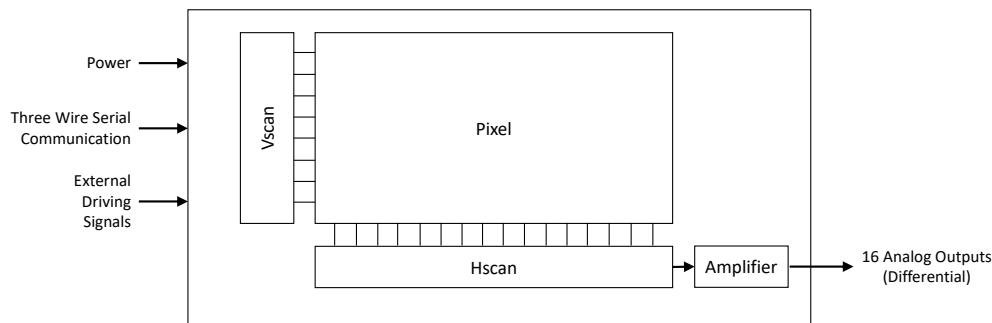
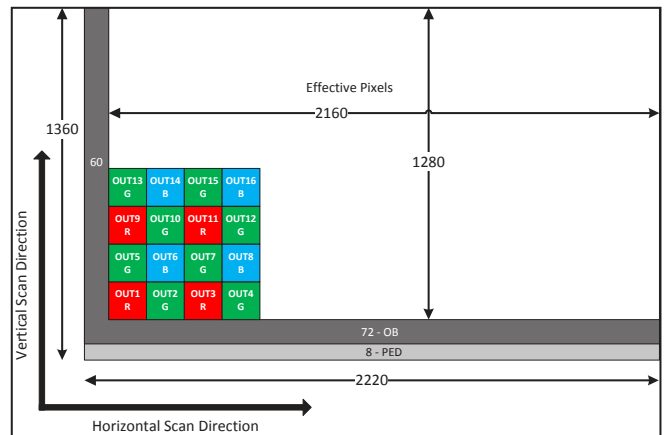
### Specifications

Part Number	35MMFHDXSCA	35MMFHDXSMA
Filter Type	RGB	Monochrome
Sensitivity (e/lx/sec @gain x1)	1,100,000 (green)	2,100,000
Sensor Size	41.04mm x 24.32mm	
Number of Effective Pixels	2160h x 1280v	
Pixel Size	19 $\mu$ m x 19 $\mu$ m	
Scan Type	Progressive Scan	
Shutter	Rolling Shutter	
Maximum Frame Rate (All Pixels)	98 fps	
Register Control Type	Three Wire Serial Communication	
Package Type	180 pin ceramic PGA	
Saturation	61,000e @gain x1	
Conversion Gain	5.6 $\mu$ V/e @gain x1	
Dark Random Noise (Room Temp)	2.2e rms @gain x16	
Dark Current (-20° C)	0.003 e/sec	
Dark Current (Room Temp)	60 e/sec	
Drive Frequency	16 ch x 21 MHz (Recommended)	
Readout	Simultaneous reading of vertical 4 lines	
Output Format	16 Channel Analog Outputs (Differential)	
Column Amplifier Gains	x1, x2, x4, x8, x16	
Power Consumption	1.7W Typ. (@ all pixels readout at 60 fps)	
Power Supply Voltage	5.0 V, 3.3 V	
Package Size (External Electrodes Not Included)	60.9mm x 44.6mm x 3.57mm	

### Quantum Efficiency Plot - RGB & Mono



### Pixel Arrangement



### Applications

- Astronomy
- Surveillance
- Security
- Industrial
- Machine Vision
- Life Sciences
- Medical

For more information visit <https://canon-cmos-sensors.com>