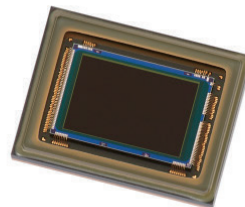


Sony's CMOS Image Sensor for Automotive

IMX490

1/1.55-type 5.44megapixels CMOS image sensor



1. The IMX490 back-illuminated stacked CMOS Product Features image sensor achieves simultaneous HDR shooting and LED flicker*¹ mitigation and features industry's highest*² 5.4 effective megapixels,*³ enabling wide-angle shooting for ADAS/autonomous driving.
2. 120dB*⁴ HDR function three times that of conventional product, plus motion artifact mitigation*⁵.
3. High sensitivity of 2280 mV (standard value: F5.6) improved by approximately 15% over that of conventional product.

*1: LED flickering that occurs when photographing LED indicators, traffic lights, etc.

*2: As of announcement on December 18, 2018

*3: Based on image sensor effective pixel specification method

*4: In accordance to the EMVA 1288 standard. 140dB when set to prioritize dynamic range.

*5: Depends on conditions. A function introduced with the IMX390 (current model).

*6: Conforms to ASIL-D. A portion of the failure rate metric has been tailored.

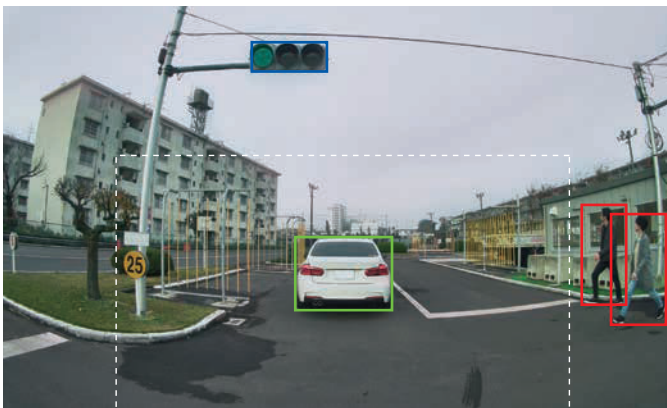
Product Features

- 1/1.55-type back-illuminated stacked CMOS image sensor
- Unit cell size: 3.0µm
- Number of recommended recording pixels: 2896 (H) X 1876 (V) approx. 5.40M pixels
- Maximum frame rate in full pixel reading: AD10bit 40fps, AD12bit 30fps
- High dynamic range (HDR) function with 120dB (EMVA 1288 standard, 140dB when set to prioritize dynamic range.)
- LED flicker mitigation function
- Variable speed shutter function
- MIPI CSI-2 serial output (4 lane / 2 lane)
- Temperature sensor
- Support security feature for automotive
- ISO 26262/ASIL-D*⁶
- AEC-Q100 Grade 2

Product Specifications

Model name		IMX490
Number of effective pixels		2896 (H) × 1876 (V) 5.40 megapixels
Image size		Diagonal 10.36 mm (Type 1/1.55)
Unit cell size		3.0 μm (H) X 3.0 μm (V)
Frame rate	Full pixel reading	AD10bit 40fps, AD12bit 30fps
Sensitivity (F5.6 Standard Value, 1/30 sec. exposure time)		2280mV (Green pixel)
Dynamic range (EMVA Standard 1288)		120dB (140dB when prioritizing dynamic range)
Power supply	Analog	3.3V
	Digital	1.1V
	Interface	1.8V
Interface		MIPI CSI-2 serial output (4 lane / 2 lane)
Package		124pin Plastic BGA
Package size		15.35 mm X 11.68 mm

Field of view comparison



IMX490



Equivalent to 2.0M image sensor

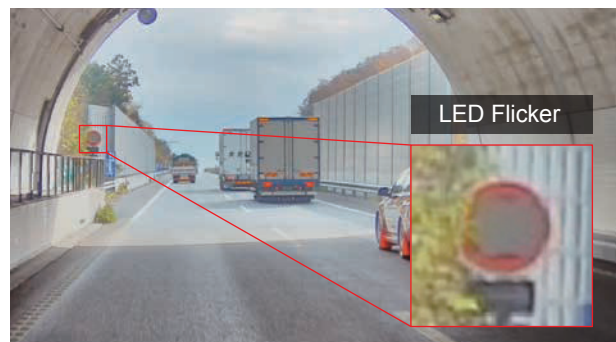
LED flicker comparison

Image captured with IMX490



Simultaneous HDR & LFM

Image Captured with Equivalent to 2.0M image sensor



HDR function only