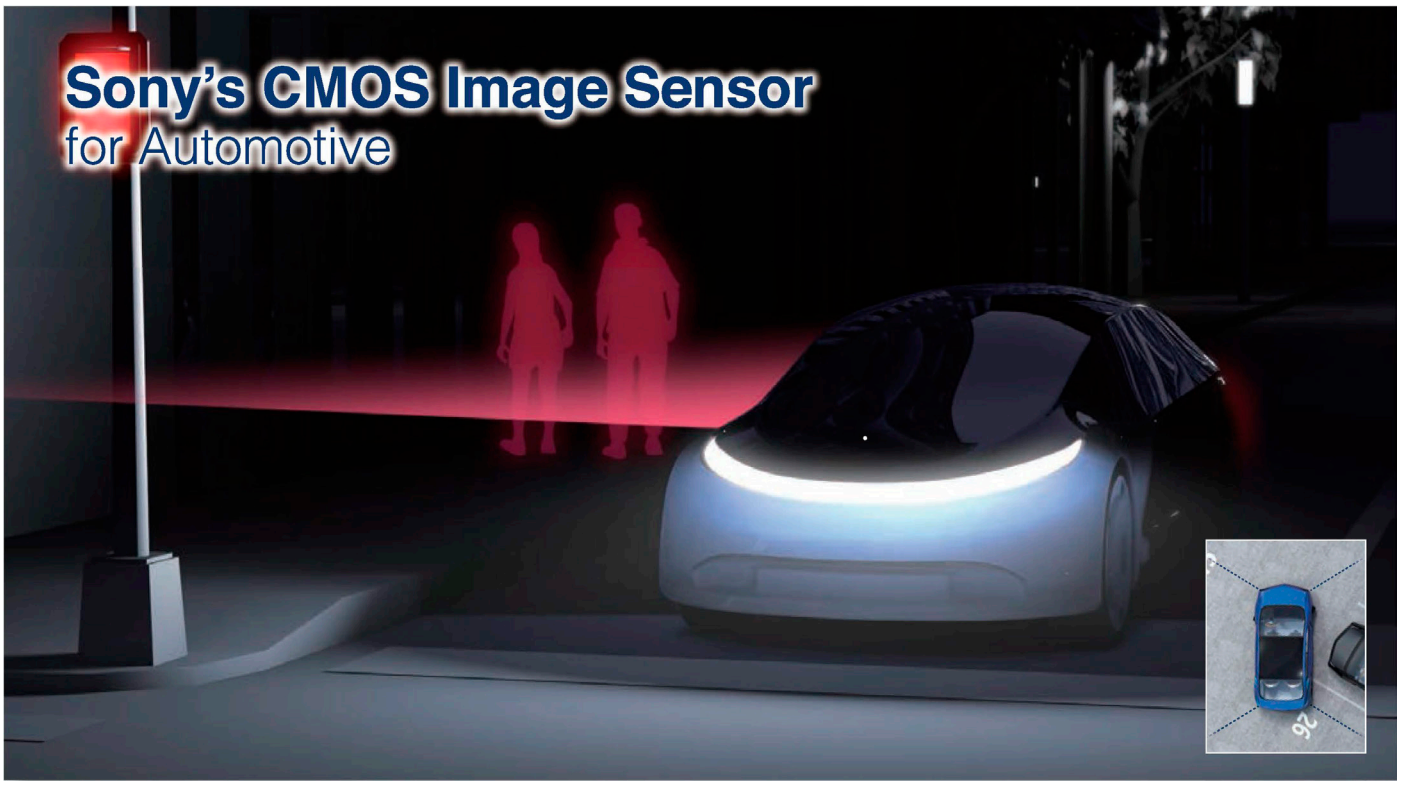
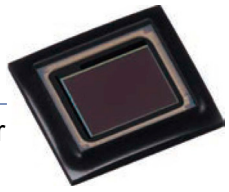
SONY




# ISX019

1/3.8 type 1.23megapixels CMOS image sensor
System-on-Chip



The ISX019 is a System on Chip with the stacked structure consists of a high performance image sensor and a processing engine for automotive surround and rear view camera use.

1. The image sensor uses a back-illuminated pixel technology to realize high sensitivity and low noise, and the logic chip realizes large-scale circuit by state-of-the-art process in smaller chip with low power consumption.

2. High Dynamic Range (HDR) function is realized by digital overlap method of combining multiple frames on chip.

3. "Super Contrast" is one of the built-in function, which enhances the contrast of picture.

## Product Features

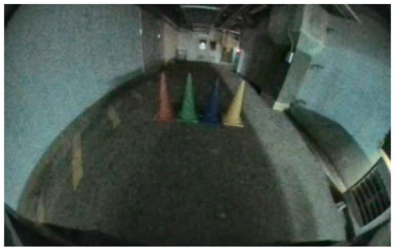
- Sensitivity 4x improvement than conventional product.
- Conversion Gain Switching (HCG mode / LCG mode)
- Power consumption 40% reduction than conventional product
- High Dynamic Range (HDR) function
  - 100dB@60fps by 2-frame combination
  - 120dB@30fps by 3-frame combination.
- Super Contrast function
- AE/AWB control function
- External communication interface: I2C
- Output interface:
  - CMOS Parallel / MIPI CSI-2 Serial
- Output format : YCbCr format
- 12-bit / 10-bit A/D converter
- Serial-NOR-Flash control function
- AEC-Q100 Grade 2 qualified

* According to Sony's research

## Product Specifications

| | | |
|---|---|---|
| Model name | | ISX019 |
| Number of recommended recording pixels | | 1280 (H) X 960 (V) approx. 1.23M pixels |
| Image size | | Diagonal 4.69mm (type 1/3.8) |
| Unit cell size | | 2.9µm (H) X 2.9µm (V) |
| Frame rate | QVGA | 60fps, 50fps, 30fps, 25fps |
| | V480 | 60fps, 50fps, 30fps, 25fps |
| Scaling Output mode | | VGA, WVGA, XGA, HD720, WXGA, Quad-VGA |
| Sensitivity (Standard value@ Lens F5.6, 1/30 second exposure time) | | 7.7V/lux • sec (HCG mode, green pixel) |
| Power supply | Analog | 2.9V |
| | Digital | 1.1V |
| | Interface | 1.8V |
| Power consumption | | 250mW (DOL3F@30fps) |
| Interface | | - CMOS parallel output (8-bit Multiplex)<br>- MIPI CSI-2 serial data output (4-lane / 2-lane) |
| Package | | 72pin BGA |
| Package size | | 6.65mm X 7.3mm |

## Image under low light



ISX019

Conventional Product

ISX019 can recognize color information of traffic cone on far side of the parking lot.

## Block Diagram