

Diagonal 56.73 mm (Type 3.6) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

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## Description

The IMX661-AAMR is a diagonal 56.73 mm (Type 3.6) CMOS active pixel type solid-state image sensor with a square pixel array and 128 M effective pixels. This chip features a global shutter with variable charge-integration time. This chip operates with analog 3.3 V, digital 1.2 V, and interface 1.8 V quadruple power supply. (Applications: FA cameras)

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## Features

- ◆ CMOS active pixel type dots
- ◆ Built-in timing adjustment circuit, H/V driver and serial communication circuit
- ◆ Global shutter function
- ◆ Input frequency 37.125 MHz / 74.25 MHz
- ◆ Number of recommended recording pixels: 13400 (H) × 9528 (V) approx. 127 M pixels
- ◆ Readout mode
  - Various subsampling and readout mode (\*)
  - \* Please refer to the datasheet for binning/subsampling details of readout modes.
- ◆ Readout rate
  - Maximum frame rate in
  - All-pixel scan mode: 10 bit 21.8 frame/s, 12 bit 19.6 frame/s, 14 bit 12.9 frame/s
- ◆ Pulse Output Function
  - The monitor output for Exposure period
- ◆ 11-bit / 12-bit / 14-bit A/D converter
- ◆ CDS / PGA function
  - Analog Gain: 0 dB to 36 dB (0.1 dB step)
- ◆ I/O interface
  - SLVS (4 Lane × 4 IF) output (891 Mbps per ch)
  - SLVS – EC (1 Lane × 4 IF / 2 Lane × 4 IF / 4 Lane × 4 IF) output (4.752 / 2.376 Gbps per Lane)
- ◆ Recommended lens F number: 2.8 or more (Close side)
- ◆ Recommended exit pupil distance: -100 mm

**Pregius**

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**Device Structure**

◆ CMOS image sensor		
◆ Image size	Diagonal 56.73 mm (Type 3.6)	
◆ Total number of pixels	13944 (H) × 9764 (V)	Approx. 136.15 M pixels
◆ Number of effective pixels	13472 (H) × 9568 (V)	Approx. 128.90 M pixels
◆ Number of active pixels	13400 (H) × 9528 (V)	Approx. 127.67 M pixels
◆ Number of recommended recording pixels	13400 (H) × 9528 (V)	Approx. 127.67 M pixels
◆ Unit cell size	3.45 μm (H) × 3.45 μm (V)	
◆ Optical black	Horizontal (H) direction: Front 210 pixels, rear 210 pixels Vertical (V) direction: Front 64 pixels, rear 64 pixels	
◆ Package	598 pin LGA	75.0 mm (H) × 63.6 mm (V)

**Image Sensor Characteristics**

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity	Typ.	15740 Digit	
Saturation signal	Min.	14890 Digit	

**Basic Drive Mode**

Drive mode	Number of active pixels	Max frame rate [frame/s]	Word length [bit]
All-pixel scan mode	13400 (H) × 9528 (V) approx. 127.67 M pixels	21.8	10
Vertical / Horizontal 1/2 subsampling mode	6700 (H) × 4764 (V) approx. 31.91 M pixels	41.7	10
2 × 2 Horizontal FD binning mode	6700 (H) × 4764 (V) approx. 31.91 M pixels	41.7	10
Vertical / Horizontal 2/2 weighted binning readout mode	6700 (H) × 4764 (V) approx. 31.91 M pixels	19.5	12
ROI mode 600 [line]	6700 (H) × 600 (V) approx. 4.02 M pixels	184	10
ROI mode 4 [line]	6700 (H) × 4 (V) approx. 0.026 M pixels	363	10

