

## Diagonal 6.3 mm (Type 1 / 2.9) CMOS solid-state Image Sensor with Square Pixel for Monochrome Cameras

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### Description

The IMX297LLR is a diagonal 6.3 mm (Type 1 / 2.9) CMOS active pixel type solid-state image sensor with a square pixel array and 0.40 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 triple power supply, and has low power consumption. High sensitivity, low dark current and low PLS characteristics are achieved.  
(Applications: Sensing, Embedded Vision)

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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 / 54 MHz
- ◆ Number of recommended recording pixels: 720 (H) × 540 (V) approx. 0.39 M pixels
  - Readout mode
  - All-pixel scan mode
  - ROI mode
  - Vertical / Horizontal - Normal / Inverted readout mode
- ◆ Readout rate
  - Maximum frame rate in
  - All-pixel scan mode: 10 bit: 120.8 frame/s
- ◆ 10-bit A/D converter
- ◆ CDS / PGA function
  - 0 dB to 24 dB: Analog Gain (0.1 dB step)
  - 24.1 dB to 48 dB: Analog Gain: 24 dB + Digital Gain: 0.1 dB to 24 dB (0.1 dB step)
- ◆ I/O interface
  - CSI-2 serial data output (1 Lane) RAW10 output
- ◆ Recommended lens F number: 2.8 or more (Close side)
- ◆ Recommended exit pupil distance: -100 mm to  $-\infty$

## Pregius

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**Device Structure**

◆ CMOS image sensor				
◆ Image size	Diagonal 6.3 mm (Type 1 / 2.9)	Approx. 0.40 M pixels	All-pixel	
◆ Total number of pixels	728 (H) × 554 (V)	Approx. 0.40 M pixels		
◆ Number of effective pixels	728 (H) × 544 (V)	Approx. 0.40 M pixels		
◆ Number of active pixels	728 (H) × 544 (V)	Approx. 0.40 M pixels		
◆ Number of recommended recording pixels	720 (H) × 540 (V)	Approx. 0.39 M pixels	All-pixel	
◆ Unit cell size	6.90 μm (H) × 6.90 μm (V)			
◆ Optical black	Horizontal (H) direction: Front 0 pixel, rear 0 pixel Vertical (V) direction: Front 10 pixels, rear 0 pixel			
◆ Package	138 pin LGA			

**Image Sensor Characteristics**

(Tj = 60 °C)

Item		Value	Remarks
Sensitivity (F8)	Typ.	3660 mV	1/30 s accumulation
Saturation signal	Min.	1001 mV	

**Basic Drive Mode**

Drive mode	Recommended number of recording pixels	Maximum frame rate [frame/s]	Output interface	ADC [bit]
All pixel	720 (H) × 540 (V) approx. 0.39 M pixels	120.8	CSI-2	10

