

GSENSE2011 Product Flyer



2MP SCIENTIFIC CMOS IMAGE SENSOR

GSENSE2011 is a 2Mega pixel resolution scientific CMOS image sensor, capable of operating with either global or rolling shutter. Featured with six transistor (6T) pixel design on a $6.5\mu\text{m}$ pitch, the sensor has a very low readout noise of $2.1e^-$ in rolling shutter mode. **GSENSE2011**'s max. frame rate is 83fps in rolling shutter mode, and 653fps in 10bit global shutter DDS mode.

Ideal for low light imaging, high-end security and surveillance, 3D laser scan, scientific and medical applications.

GSENSE2011 sensor is a smaller version of **GSENSE2020** sensor with change of resolution and optical format.



Key Features

- $6.5\mu\text{m}$ Square Pixels
- Quantum efficiency of 72% @ 595nm.
- Max. frame rate up to 83fps @RS HDR
- Max. frame rate up to 653fps @GS DDS
- Readout noise: $2.1 e^-$
- On-chip PLL

Applications

- Biometry and Medical
- Industrial and Machine vision
- Security, Traffic and Surveillance
- Spectral Application
- Astronomy Application

Sensor Specifications

| | | | |
|--------------------|-------------------------------------|----------------------|---|
| Resolution | 2048 x 1152 | Optical format | 1 " |
| Pixel size | 6.5μm × 6.5μm | Photo-sensitive area | 13.3mm × 7.5mm |
| Shutter type | Rolling & Global shutter | Quantum efficiency | 72%@ 595nm |
| Full well capacity | 45 ke- | Pixel clock rate | 50MHz |
| Dark noise | 2.1 e ⁻ | Dark current | 13 e ⁻ /p/s @ 30°C |
| Dynamic range | 87dB | Frame rate | 81fps @RS HDR 653fps @GS DDS |
| Output interface | 8 pairs of LVDS | Max. Data rate | 4.8Gbps |
| Chroma | Mono | Power consumption | < 811mW |
| ADC | 10 / 12bit | Sensitivity: | 8.1x10 ⁷ e ⁻ /((W/m ²)·s)@ 595nm |
| Supply voltage | 3.3V for analog 2.0V for digital | Package | 153 pins μPGA 26.1mmx23.5mm |

Ordering Information

Sensor Part No.

GSENSE2011-BVC-NUY-BB1
Color, normal microlens, Grade 1

GSENSE2011-BVC-NUY-BB2
Color, normal microlens, Grade 2

GSENSE2011-BVM-NUY-BB1
Mono, normal microlens, Grade 1

GSENSE2011-BVM-NUY-BB2
Mono, normal microlens, Grade 2

EVK Part No.

EVA-2011F-XC10 (10bit DDS) / EVA-2011F-RC12 (12bit HDR)
USB interface, 3 stacked PCB boards

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