

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	6.5 μ m x 6.5 μ m	Photo-sensitive area	13.3mm x 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	83fps @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 μ PGA 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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