

# GSENSE400 Product Flyer

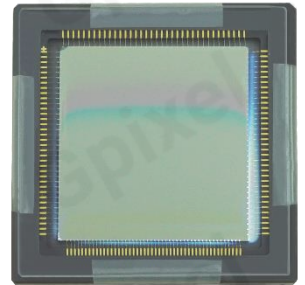


## 4MP SCIENTIFIC CMOS IMAGE SENSOR

The **GSENSE400** is a 4 Megapixels CMOS image sensor with 11um patented pinned photodiode pixels and electronic rolling shutter. Designed for scientific and high-end surveillance applications, **GSENSE400** features low readout noise of 1.47 electrons, dynamic range of 96dB and sensitivity of  $1.81 \times 10^8 e^- / ((W/m^2) \cdot s) @ 600nm$ .

**GSENSE400** can be either operated in standard mode (STD) with 70dB intra-scene dynamic range, or in high dynamic range mode (HDR) with 96dB intra-scene dynamic range. **GSENSE400** is capable of running up to 48fps in STD mode, or 24fps in HDR mode, and higher frame rates can be achieved in row-windowing mode.

Mounted in a 115-pin ceramic PGA package, the power consumption of less than 600mW can be easily dissipated. In addition, **GSENSE400** has a dark current of less than  $0.15 e^- / s / pix$  at minus  $20^\circ C$ , making it an ideal solution for the most demanding bio-imaging applications with long exposure time.



### Key Features

- 11 um Rolling Shutter pixel
- High sensitivity of  $1.81 \times 10^8 e^- / ((W/m^2) \cdot s) @ 600nm$
- Extremely low temporal noise of 1.5e-
- Dark current of less than  $0.15 e^- / s / pix @ -20^\circ C$
- Bio-imaging applications with long exposure time.

### Applications

- Biometry and Medical
- High-end Industrial Applications
- Security and Surveillance
- Scientific Applications

## Sensor Specifications

Resolution	2048 x 2048	Optical format	2.0 "
Pixel size	11 $\mu$ m x 11 $\mu$ m	Photo-sensitive area	22.5mm x 22.5mm
Shutter type	Rolling shutter	Quantum efficiency	58%@ 600nm
Full well capacity	91 ke-	Pixel clock rate	20MHz ~ 30MHz
Dark noise	1.5 e-	Dark current	<0.15e-/p/s @ -20°C
Dynamic range	95dB (HDR mode)	Frame rate	24fps @ HDR mode 48fps @ STD mode
Output interface	8 pairs of LVDS	Sensitivity(600nm)	1.81 x 10 <sup>8</sup> e-/((W/m <sup>2</sup> )·s)
ADC	12bit	Max. Data rate	2.4Gbit/s
Chroma	Mono	Power consumption	< 600mW
Supply voltage	3.3V for analog 1.8V for digital	Package	115 pins PGA 36.5mmx36.5mm

## Ordering Information

### Sensor Part No.

#### GSENSE400-BVM-NPN-BB1

Mono, sealed D263T glass lid with AR coating, Grade 1

#### GSENSE400-BVM-NPN-BB2

Mono, sealed D263T glass lid with AR coating, Grade 2

### EVK Part No.

#### EVA-400F-RT12 (HDR) / EVA-400F-ST12 (STD)

Evaluation board

Lens holder: T

Interface: Camera Link MDR - MDR

#### EVA-400F-RC12 (HDR) / EVA-400F-SC12 (STD)

Evaluation board

Lens holder: T

Interface: Camera Link MDR - MDR

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