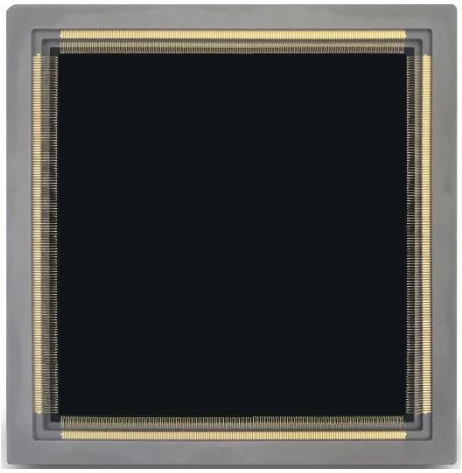
# 16.8MP BSI Scientific CMOS Image Sensor

## SENSOR DESCRIPTION



GSENSE4040BSI is a BSI CMOS image sensor of 16.8MP (4096 x 4096) resolution with 9 µm × 9 µm pixel size, and a photosensitive area of 36.8 mm x 36.8 mm (52 mm diagonal).

Using dual gain HDR operation mode, 85 dB is achieved with 39k $e^-$ full well capacity and 2.3 $e^-$ readout noise. 18 pairs of LVDS channels running at 600 MHz per channel support full-resolution imaging at a frame rate of 24 fps.

GSENSE4040BSI is assembled in 140-pin PGA ceramic package with a removable glass lid. This sensor is pin compatible with GSENSE4040FSI for fast and easy integration.

The combination of these features makes GSENSE4040BSI an ideal choice for astronomy and high-performance life science and scientific imaging applications.

## SENSOR SPECIFICATION

| | | | |
|---|---|---|---|
| Resolution | 4096 (H) × 4096 (V) | Optical format | ∅ 52 mm |
| Pixel size | 9 µm × 9 µm | Photosensitive area | 36.8 mm x 36.8 mm |
| Shutter type | Rolling Shutter | Peak QE | 90% at 600 nm |
| Full well capacity | 39 $ke^-$ | Maxim SNR | 46 dB |
| Readout noise | 2.3 $e^-$ | Dark current | 0.04 $e^-$/s/pixel @ -40 C |
| Dynamic range | 85 dB (intra-scene) | Frame rate | 24 fps (HDR) |
| Output interface | 18 x LVDS | Max. Data rate | 10.8 Gbps |
| ADC | 12 bit | Package | 140-pin PGA |
| Chroma | Mono | Power Consumption | < 1.4W |