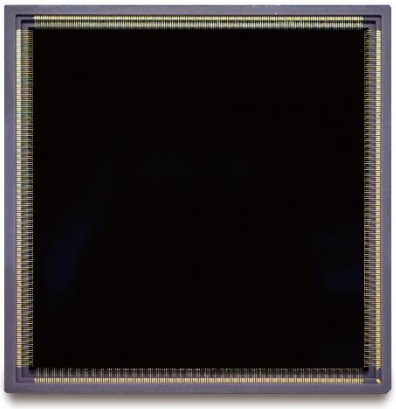
16.7MP large area BSI scientific CMOS Image Sensor



Applications:

Astronomy

X-ray Imaging

High Energy Physics

High-end Scientific Imaging

SENSOR DESCRIPTION

As the 4th BSI CMOS product of the GSENSE family of scientific image sensors, the GSENSE1516BSI provides 4096 x 4096 (16.7MP) resolution with 15 µm × 15 µm pixels, and a large photosensitive area of 61.44mm x 61.44mm. Using the dual-gain HDR mode, an intra-scene dynamic range over 90 dB is achieved with 134 ke$^-$ full well capacity and 4 e$^-$ readout noise. 34 pairs of LVDS channels at 125 MHz per channel output image data supporting a frame rate of 9 fps. GSENSE1516BSI is assembled with a removable glass lid and 323-pin PGA ceramic package. The combination of these features makes the GSENSE15161BSI especially well-suited for astronomy and other high-performance life science and scientific imaging applications.

SENSOR SPECIFICATION

Resolution	4,096 (H) × 4,096 (V)	Optical format	Medium size (∅ 86.8 mm)
Pixel size	15 µm × 15 µm	Photo-sensitive area	61.44 mm x 61.44 mm
Shutter type	Rolling Shutter	Peak QE	95% at 580 nm
Full well capacity	134 ke-	Maximum SNR	51 dB
Dark noise	4 e$^-$ (HG)	Dark current	0.04 e-/s/pixel @ -50 °C
Dynamic range	90 dB (intra-scene)	Frame rate	9 fps in HDR mode
Output interface	34 x LVDS	Channel multiplexing	34/18/10
ADC	12 bit	Max. Data rate	4.25 Gbps
Power consumption	1.3 W	Package	323 pins PGA

PACKAGE OUTLINE