

# The BSI Compatible CIS for Professional Applications - GSENSE6060


*Preliminary*
**Applications:**

- Astronomy
- High-end Scientific Imaging
- X-ray Imaging
- Electron Microscopy

**SENSOR DESCRIPTION**

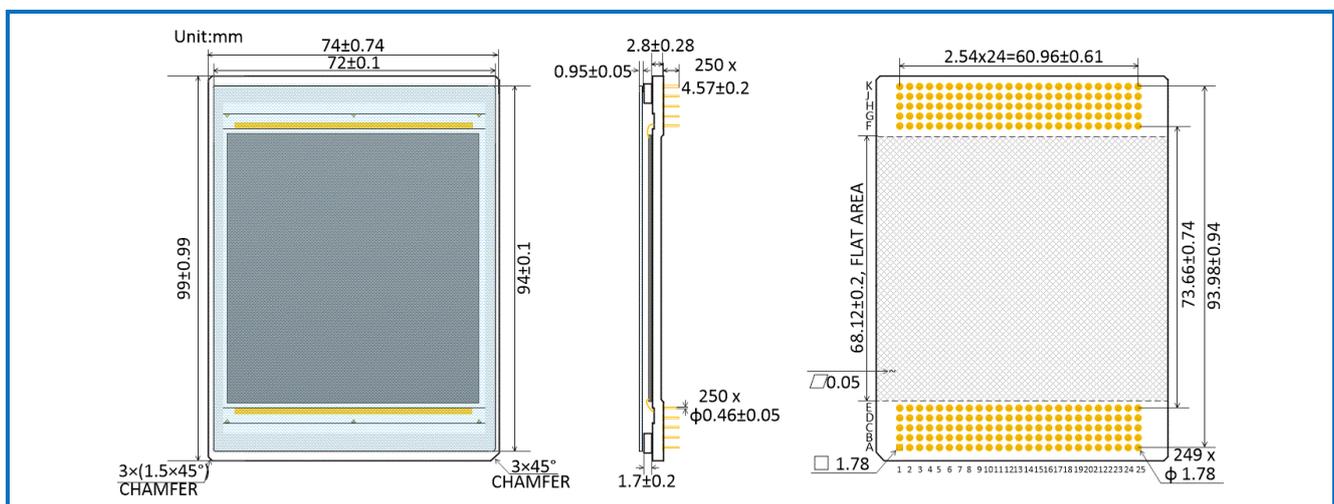
Designed with a large imaging area for demanding astronomical and scientific applications, the BSI compatible GSENSE6060 extends Gpixel's family of scientific CMOS image sensor further for professional applications.

With its top and bottom readouts, the sensor maximum frame rate is more than 40fps with 12bit ADC, allowing scientists to observe with the never-achieved temporal resolution. The on-chip 14bit ADC combining with a correlated multisampling (CMS) technique unprecedentedly extends the sensor intra-scene dynamic range to 16 bit. The two readout chains also provide the possibility for HDR combination up to 90dB. The Aluminum Nitride package provides 10x thermal conductivity than traditional Alumina packages as well as excellent flatness both at room and deep-cooled temperatures. GSENSE6060 and GSENSE6060BSI are pin-compatible and both are equipped with removable lids.

**DESIGN SPECIFICATIONS**

Resolution	6144 × 6144	Pixel size	10μm × 10μm
Photosensitive area	61.44mm × 61.44mm	Shutter type	Rolling shutter with global reset option
ADC	2 × 12bit, 14bit	Output interface	50 × LVDS @ 630Mbps (12bit)
	14bit CMS (16bit equivalent)		14 × LVDS @ 630Mbps (14bit)
Quantum efficiency	75% peak (FSI)	Dark current	<0.01e <sup>-</sup> /p/s @ -65 °C (FSI)
	95% peak (BSI)		<35e <sup>-</sup> /p/s @ 25 °C (FSI)
Package	250-pin PGA (ALN)	Chroma	Mono
Supply voltage	6.5V / 1.8V	Power consumption	4W @ 14bit / 5.2W @ 12bit

Operation mode	Full well capacity	Dark noise	Intra-scene dynamic range	Max. Frame rate
14bit Standard	>80ke <sup>-</sup>	<3.5e <sup>-</sup>	76dB (single 14bit)	14fps
14bit @ 16-CMS	>80ke <sup>-</sup>	<4e <sup>-</sup>	84dB (14bit + 16-CMS)	0.4fps
12bit Standard	>120ke <sup>-</sup>	<4e <sup>-</sup>	72dB (single 12bit)	>40fps
12bit @ 2-CMS	>120ke <sup>-</sup>	<4e <sup>-</sup>	75dB (12bit + 2-CMS)	>20fps
12bit @ HDR	>120ke <sup>-</sup>	<3.5e <sup>-</sup>	90dB (2 × 12bit)	>15fps



Please address all product inquiries to GPIXEL Inc.

Addr: No.588 Yingkou Road, Changchun, China • Tel: 0431-86176682 • Email: info@gpixelinc.com