

10MP Global Shutter High Speed CMOS Image Sensor

Preliminary and Confidential

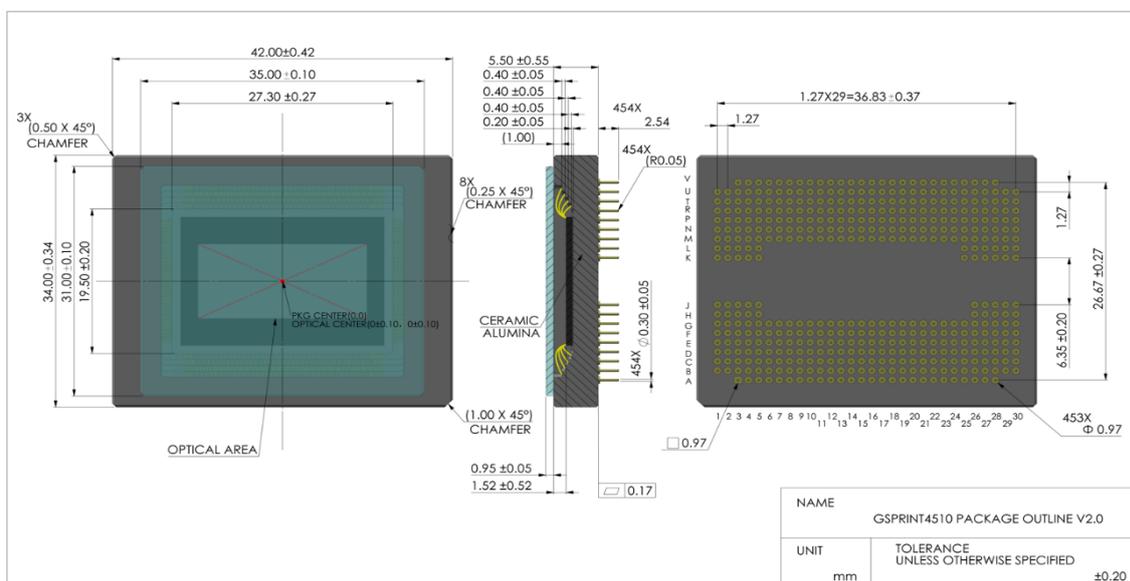
SENSOR DESCRIPTION

GSPRINT4510 is a 10 Megapixel (4600 x 2160) 4/3 sized (\varnothing 22.9 mm) high speed, global shutter image sensor designed with the latest 4.5 μm charge domain global shutter pixel. It achieves more than 30 k e⁻ FWC, less than 3 e⁻ rms read noise and 67.8 dB dynamic range. Using an advanced 65nm CIS process and light pipe technology, the sensor achieves >65% QE and more than 1/40,000 shutter efficiency. With on-chip charge binning, FWC can be further increased to > 120 ke⁻ and frame rate is quadrupled. GSPRINT4510 will be offered in different speed variants. The full speed variant consists of 144 pairs sub-LVDS channels running at 1.2Gbps which delivers a stunning 1920 fps in single gain operation at 8 bit per pixel and full resolution and 3856 fps with a ROI of 1024 rows in a dedicated 3D laser profiling mode. These unique features make it an ideal solution for demanding imaging in high-end applications such as high speed 4K video, industrial inspection, motion analysis and life science imaging. GSPRINT4510 is fully pin compatible with GSPRINT4521.

SENSOR SPECIFICATION

Resolution	4600 (H) × 2160 (V)	Optical format	4/3 " (\varnothing 22.9 mm)
Pixel size	4.5 μm × 4.5 μm	Photo-sensitive area	20.7 mm x 9.7 mm
Shutter type	Global Shutter	Quantum efficiency	>65%
Full well capacity	30 k e ⁻ (max in LG mode)	Shutter efficiency	1/40,000
Dark noise	3.3 e ⁻ (min in HG mode)	Dark current	2e ⁻ /p/s @ 25°C
Dynamic range	53 dB @ 8bit	Frame rate	1920 fps @ 8bit
	62 dB @ 10bit		1000 fps @ 10bit
	67.8 dB @ 12bit		480 fps @ 12bit
			3856 fps @ 8bit, 1024 row ROI
Output interface	144 x sub-LVDS	Channel multiplexing	144/140/136/.../12/8/4 (any multiple of 4)
ADC	8/10/12 bit	Max. Data rate	150 Gbps (@ 1.2 Gbps /channel)
Chroma	Color & Mono	Package	454 pins μ PGA
Power supply	3.3V / 1.8V / 1.2V Dedicated pixel supplies	Power consumption	5 W

PACKAGE OUTLINE



Subject to change without notice. Please address all product inquiries to GPIXEL

Email: info@gpixel.com