

# 21MP Global Shutter High Speed CMOS Image Sensor

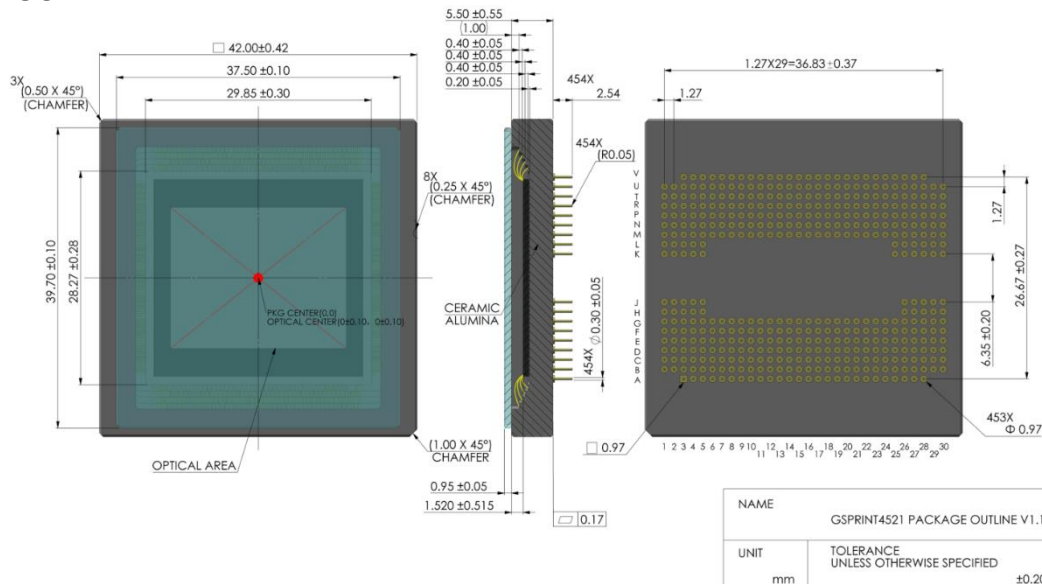
**SENSOR DESCRIPTION**
*Preliminary*

GSPRINT4521 is a 21 Megapixel (5120 x 4096) APS sized ( $\varnothing$  29.5mm) high speed, global shutter image sensor designed with the latest 4.5  $\mu$ m charge domain global shutter pixel. It achieves more than 35 ke<sup>-</sup> FWC (low gain), less than 3 e<sup>-</sup> rms read noise (high gain) and > 69 dB intra-scene dynamic range, optionally increased to 81 dB with a dual gain HDR mode. Its state-of-the-art 65nm CIS process allows the sensor to use on-chip charge binning, further increasing FWC and almost quadrupling frame rate.

GSPRINT4521 will be offered in two speed variants. The full speed variant consists of 160 pairs sub-LVDS channels running at 1.2Gbps which delivers a stunning 1000 fps in single gain operation at 8 bit per pixel and full resolution, and more than 3000 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.

**SENSOR SPECIFICATION**

Resolution	5120 (H) × 4096 (V)	Optical format	APS sized ( $\varnothing$ 29.5mm)
Pixel size	4.5 $\mu$ m × 4.5 $\mu$ m	Photo-sensitive area	23 mm x 18.4 mm
Shutter type	Global Shutter	Quantum efficiency	TBD
Full well capacity	35 ke <sup>-</sup> (LG mode)	Shutter efficiency	TBD
Dark noise	<3 e <sup>-</sup> (HG mode)	Dark current	TBD
Dynamic range	±51 dB @ 8bit	Frame rate	1000fps @ 8bit
	±62 dB @ 10bit		500 fps @ 10bit
	>69 dB @ 12bit		250 fps @ 12bit
	>81 dB @ dual-gain HDR		
Output interface	160 x sub-LVDS	Channel multiplexing	160/156/152/.../12/8/4 (any multiple of 4)
ADC	8/10/12 bit	Max. Data rate	192 Gbps (@ 1.2 Gbps /channel)
Chroma	Color & Mono	Package	454 pins $\mu$ PGA
Power supply	3.3V / 1.8V / 1.2V	Power consumption	6-7W
	Dedicated pixel supplies		

**PACKAGE OUTLINE**


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

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