

## 2MP Global Shutter High Speed CMOS Image Sensor

*Preliminary and Confidential*

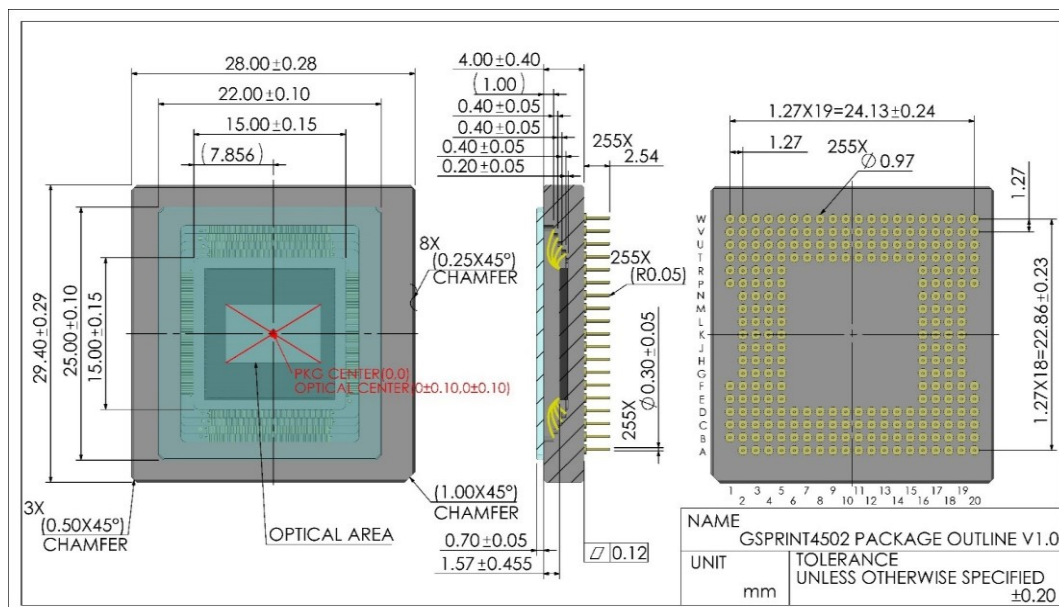
### SENSOR DESCRIPTION

GSPRINT4502 is a 2 Megapixel (2048 x 1216) 2/3 sized ( $\varnothing$  10.7 mm) high speed, global shutter image sensor designed with the latest 4.5  $\mu\text{m}$  charge domain global shutter pixel. It achieves more than 30k  $e^-$  FWC, less than 4  $e^-$  rms read noise and > 68 dB dynamic range, optionally to be increased with multi-slope HDR mode. 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 > 120k $e^-$  and frame rate is quadrupled. GSPRINT4502 consists of 64 pairs sub-LVDS channels running at 1.2Gbps which delivers a stunning 3300 fps at 8 bit per pixel and full resolution and over 10000 fps with binning mode. These unique features make it an ideal solution for demanding imaging in applications such as 3D laser profiling, industrial inspection, motion analysis and high speed imaging.

### SENSOR SPECIFICATION

|                    |                                       |                      |   |
|--------------------|---------------------------------------|----------------------|---|
| Resolution         | 2048 (H) x 1216 (V)                   | Optical format       | 2/3 " ( $\varnothing$ 10.7 mm)          |
| Pixel size         | 4.5 $\mu\text{m}$ x 4.5 $\mu\text{m}$ | Photo-sensitive area | 9.21mm(H) x 5.47mm(V)                   |
| Shutter type       | Global Shutter                        | Quantum efficiency   | >65%                                    |
| Full well capacity | 30k $e^-$ (Gain 0)                    | Shutter efficiency   | 1/40,000                                |
| Dark noise         | <4 $e^-$ (Gain 4)                     | Dark current         | 2 $e^-$ /p/s @ 25°C                     |
| Dynamic range      | 52 dB @ 8bit                          | Frame rate           | 3300 fps @ 8bit                         |
|                    | 60 dB @ 10bit                         |                      | 1750 fps @ 10bit                        |
|                    | 68 dB @ 12bit                         |                      | 840 fps @ 12bit                         |
| Output interface   | 64 x sub-LVDS                         | Channel multiplexing | 64/60/.../12/8/4<br>(any multiple of 4) |
| ADC                | 8/10/12 bit                           | Max. Data rate       | 76.8Gbps(@ 1.2 Gbps /channel)           |
| Chroma             | Color & Mono                          | Package              | 255 pins $\mu$ PGA                      |
| Power supply       | 3.3V / 1.8V / 1.2V                    | Power consumption    | ~2 W                                    |
|                    | Dedicated pixel supplies              |                      |   |

### PACKAGE OUTLINE



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

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