

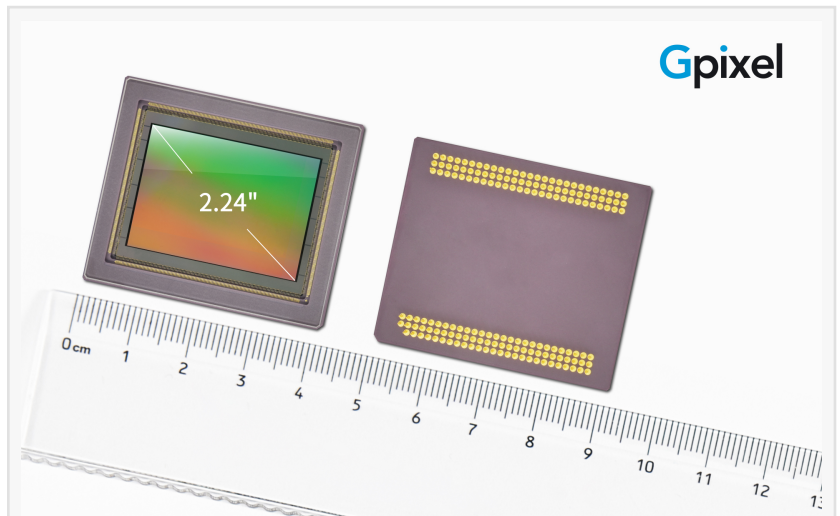
# Gpixel Introduces 271 MP Backside Illuminated CMOS Image Sensor for High-Throughput Industrial and Scientific Imaging

*GMAX15271BSI a groundbreaking CMOS image sensor designed to push the boundaries of industrial and scientific imaging systems.*

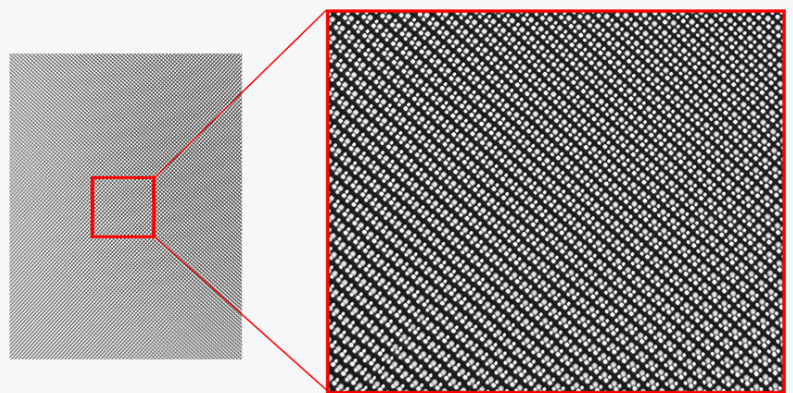
CHANGCHUN, JILIN, CHINA, March 11, 2025 /EINPresswire.com/ -- Gpixel announces the launch of the GMAX15271BSI, a groundbreaking CMOS image sensor designed to push the boundaries of industrial and scientific imaging systems.

The GMAX15271BSI is a state-of-the-art rolling shutter CMOS image sensor engineered for ultra-high-resolution imaging, delivering 19,376 (H) × 14,000 (V) pixel resolution on a compact 35.9 mm diagonal image format. Leveraging advanced 1.5  $\mu\text{m}$  Back-Side Illuminated (BSI) pixel technology, the sensor maximizes light sensitivity and spatial efficiency while maintaining exceptional image clarity. It supports dual ADC modes for versatile operation. In 14-bit mode, the sensor achieves sub-electron readout noise ( $0.75\text{ e}^-$ ) and a high dynamic range of

73.9 dB with a frame rate of 4.8 fps, for precision imaging in challenging lighting conditions. The 12-bit mode prioritizes speed, boosting the frame rate to 8.5 fps for high-throughput applications. Binning is supported in both 14-bit and 12-bit modes, with on-chip charge-domain binning in the vertical direction and off-chip digital binning in the horizontal direction. In the 14-bit 2x2 binning mode, the sensor achieves a noise floor of  $2.34\text{ e}^-$  and a dynamic range of 78.3



The GMAX15271BSI is a 271 MP BSI image sensor with 35.9 mm diagonal.

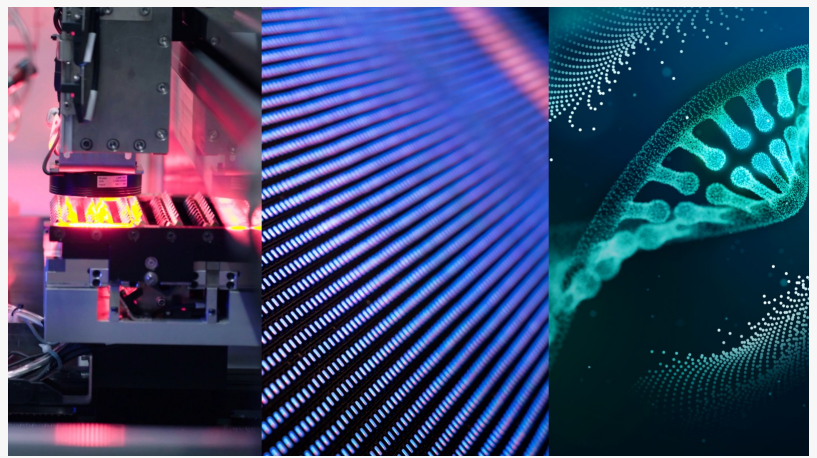


Mobile OLED screen, captured by the GMAX15271BSI evaluation system.

dB, and a frame rate of 9.6 fps. In the 12-bit 2x2 binning mode, the sensor delivers a noise floor of 3.62 e<sup>-</sup>, a dynamic range of 73.0 dB, and a frame rate of 17 fps.

The sensor integrates a high-speed sub-LVDS interface to ensure robust data transmission at elevated speeds, balancing resolution and performance. On-chip functionalities such as binning modes for enhanced sensitivity and reduced data load, global reset for

precise synchronization, and low-power operation further enhance adaptability across diverse imaging scenarios. Color and monochrome variants of the sensor are packaged in a durable 161-pin ceramic  $\mu$ PGA package (41.75 mm  $\times$  35.75 mm), combining high reliability with efficient thermal management and ensuring stable performance in demanding environments.



Application of GMAX15271BSI

Designed for high-end industrial and scientific applications, the sensor excels in tasks requiring extreme detail and dynamic range, including flat panel display inspection, semiconductor and PCB defect detection, precision manufacturing quality control, aerial mapping, pathology, and genomics. By merging an ultra-high resolution, cutting-edge BSI pixel architecture and intelligent power management, the GMAX15271BSI redefines the standards of speed, accuracy, and reliability in machine vision systems and scientific instrumentation.

Engineering samples and evaluation systems are available now. Contact [info@gpixel](mailto:info@gpixel) for inquiries.

#### About Gpixel

Gpixel is an international company providing high-end customized and off the-shelf CMOS image sensor solutions for industrial, medical, scientific, and professional imaging applications. Gpixel's standard products include the GMAX and GSPRINT fast frame rate sensors, the GSENSE high-end scientific CMOS image sensor series, the GLUX series of high sensitivity sensors for surveillance, the GL series of line scan imagers, the GLT series of TDI imagers, GTOF series of time-of-flight 3D imagers, and the GCINE

series of sensors for professional video and photography. Gpixel provides a broad portfolio of products leveraging the latest technologies to meet the ever-growing demands of the professional imaging market.

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