

GLT5016BSI & GLT5008BSI, 8k and 16k BSI sensors for semiconductor inspection & life science applications

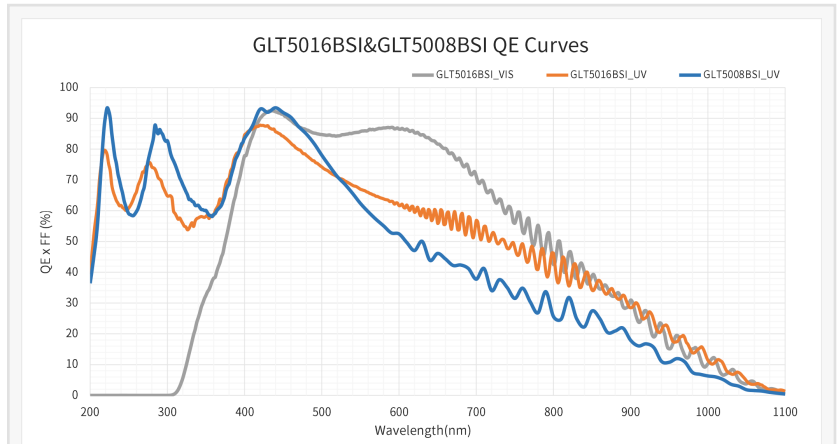
Gpixel announces its TDI imager family with the introduction of 8k and 16k BSI sensors, featuring 256 contiguous stages and line rates of up to 1MHz.

CHANGCHUN, CHINA, December 3, 2024 /EINPresswire.com/ -- Gpixel announces 2 new products in the GLT series of high-speed, backside illuminated (BSI) time delay and integration (TDI) line scan products. Both the GLT5008BSI, with a horizontal resolution of 8k pixels, and the GLT5016BSI, with a horizontal resolution of 16k pixels, utilize high-performance 5µm pixel technology.

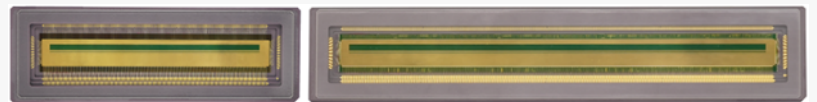
They feature backside illumination for enhanced sensitivity, a dual-band architecture providing high dynamic range (256 and 32 stages each), and high-speed readout capabilities to optimize throughput.

The sensitivity and speed are perfect for low-light, wide-field inspections in semiconductor metrology, advanced IC packaging, display manufacturing, and high-throughput life sciences imaging applications such as genomics.

The GLT5008BSI is available in two speeds: 500k Hz and 1M Hz, while the GLT5016BSI operates at a maximum line rate of 500k Hz. At 500k Hz, the dynamic range is 65.8 dB in 12-bit mode. In 10-bit mode, the sensor achieves 61.5 dB at 1M Hz (GLT5008BSI only). The 256-stage and 32-



GLT5008BSI and GLT5016BSI spectral sensitivity curves for both UV and VIS variants.



GLT5008BSI (left) GLT5016BSI (right) product picture.

	GLT5008BSI	GLT5016BSI
Resolution	P1: 8208 (H) x 256 (V) P2: 8208 (H) x 32 (V)	P1: 16416 (H) x 256 (V) P2: 16416 (H) x 32 (V)
Pixel size	5 µm x 5 µm	5 µm x 5 µm
Line Rate	500k Hz (12-bit) 1M Hz (10-bit)	500k Hz (12-bit)
Full Well Capacity	17k e-	15k e-
Dynamic Range	66.0 dB (12-bit) 61.5 dB (10-bit)	65.8 dB (12-bit)
Package type	231-pins uPGA 56.9 x 19.0 mm	415-pins uPGA 98.1 x 19.0 mm
Available versions	UV (removable glass lid)	UV (removable glass lid) VIS (sealed glass lid)

Comparison table of GLT5008BSI and GLT5016BSI basic specifications.

stage banks can be read out separately and combined off-chip for an extended dynamic range.

Both products offer wide sensitivity with peak quantum efficiency of >92% at 440 nm , thanks to advanced BSI and anti-reflective coating technology. GLT5008BSI and GLT5016BSI come standard in a UV-optimized version with high QE below 300 nm and removable cover glass. Additionally, GLT5016BSI has a second variant optimized for visual and NIR range.

The image data is transmitted through 72 or 108 sub-LVDS data channels at 1.2 Gbps or 960 Mbps for GLT5008BSI and GLT5016BSI, respectively. For applications that do not require the maximum frame rate, multiplexing modes can be used to reduce the number of output channels.

"Today we expand significantly our TDI sensor range for low light applications," says Wim Wuyts, Gpixel's Chief Commercial Officer. "Our new 8k and 16k TDI sensors, along with the existing 9k TDI sensor, provide machine builders several options to mitigate their supply chain risks with a multi-source strategy for TDI cameras and frame grabbers."

The GLT5008BSI comes in a 231-pin µPGA package, while the GLT5016BSI is offered in a 415-pin µPGA package. Samples and evaluation systems will be available starting Q1 2025.

Both of the new sensors will be on display in the Gpixel booth #D-37 at the ITE exhibition in Yokohama from December 4 – 6.

For more information, please contact Gpixel at info@gpixel.com or visit www.gpixel.com.

About Gpixel

Gpixel is an international company that offers customized and off-the-shelf CMOS image sensor solutions for various applications, including industrial, medical, scientific, and professional imaging. Gpixel's standard products include the GMAX and GSPRINT global shutter sensors with fast frame rates, 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, the GLR series of sensors with rectangular pixels for displacement sensors and spectroscopy, and the GCINE series of sensors for professional video and photography. Gpixel provides a comprehensive portfolio of products using the latest technologies to meet the demands of the professional imaging market.

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