Gpixel expands GSENSE product family with 16.7MP BSI scientific image sensor

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Changchun, China, June 15th, 2020 -Gpixel announces the further expansion of the popular GSENSE product family with the GSENSE1516BSI, a large format BSI CMOS image sensor for high-end scientific applications. The sensor is designed around Gpixel's high performance 15 µm square rolling shutter pixel, provides 4096 x 4096 resolution (16.7 MP), and supports up to 9fps in dual gain HDR mode.

Like other sensors in the GSENSE family, the GSENSE1516BSI can read out a single exposure with two different gain settings, providing two separate images that when recombined achieve up to 90dB intra-scene dynamic range. Using the low gain channel, the sensor's full well capacity is 134ke⁻, maximizing signal to noise in the bright parts of the image. Through the high gain channel, the sensor achieves a read noise of 4e⁻, perfect for the measurement of faint signals.

The generous 15 µm pixel size combined with 95% peak quantum efficiency provides excellent sensitivity for the most demanding low light scientific applications. The 61mm x 61mm photoactive area increases the imaging field of view, and in combination with the sensor's high frame rate, maximizes the data throughput for applications like speckle imaging in astronomy.

Engineering samples of the GSENSE1516BSI will be available for evaluation in July 2020. For more information, please contact us.

Following table lists the main specifications of Gpixel BSI portfolio running at 12bit HDR mode.

	GSENSE400BSI	GSENSE2020BSI	GSENSE6060BSI	GSENSE1516BSI	(Unit)
Resolution	2048 x 2048	2048 x 2048	6144 x 6144	4096 x 4096	pixels
Pixel Size	11 x 11	6.5 x 6.5	10 x 10	15 x 15	µm x µm
Photosensitive Area	22.5 x 22.5	13.3 x 13.3	61.4 x 61.4	61.4 x 61.4	mm x mm
Full Well Capacity	91.2	55	102	134	ke–
Readout Noise	1.6	1.6	3	4	e–
Dynamic Range	95	90.7	90.6	90	dB
Frame Rate	24	43	11	9	fps

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・About GSENSE

The GSENSE series is a world leading scientific CMOS image sensor family, designed with correlated multiple sampling for extreme low noise, true HDR for high dynamic range and optional backside illumination technology for quantum efficiency of up to 95%. Primary applications include scientific imaging, medical imaging, spectroscopy, fluorescence imaging, astronomy, high energy physics, and high-end surveillance. The GSENSE family of BSI sensors currently includes GSENSE2020BSI, GSENSE400BSI and GSENSE6060BSI.

・About Gpixel

Founded in 2012 by experienced CMOS image sensor designers and semiconductor physicists, Gpixel works in close cooperation with our customers and business partners to produce state-of-art CMOS image sensors for use all over the world. From our offices in Changchun, China (headquarters), Antwerp, Belgium and Tokyo, Japan, we are committed to delivering innovative and specialized high-end CMOS image sensor solutions for industrial, professional, medical, and scientific applications. For more information, please visit www.gpixel.com.

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