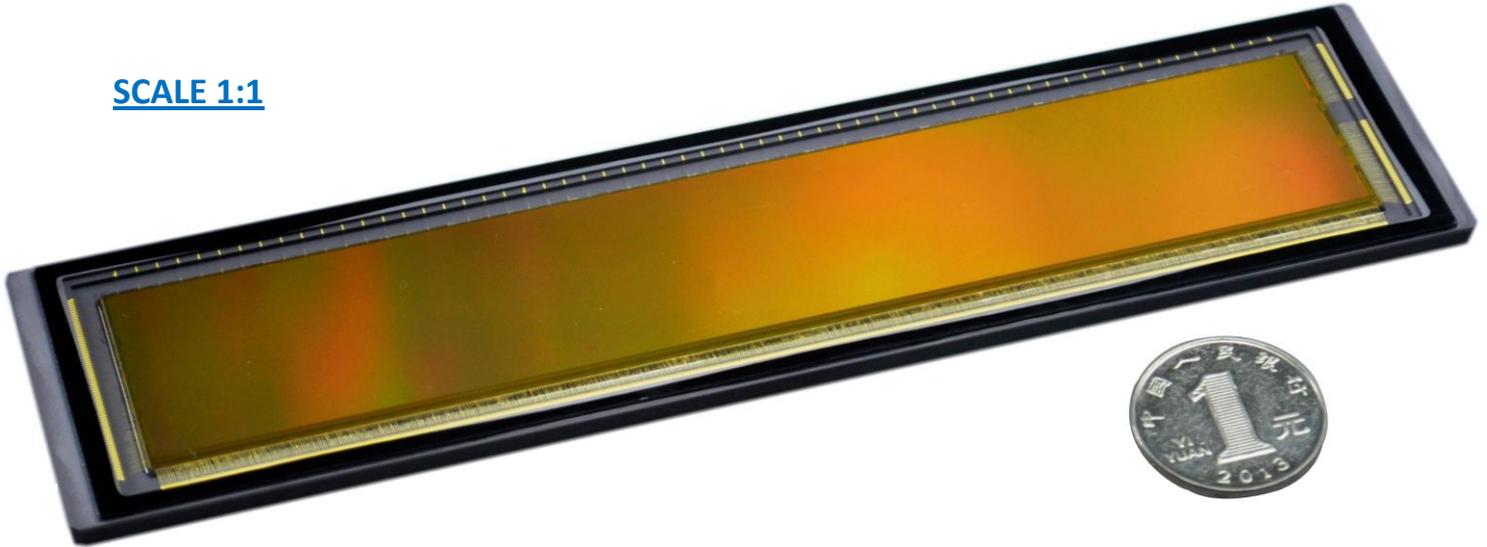




150 Megapixels Full-Frame CMOS Image Sensor - GMAX3005

SCALE 1:1



SENSOR DESCRIPTION

The GMAX3005 is a monochrome CMOS image sensor designed for demanding applications like medical, industrial and scientific imaging. GMAX3005 offers a new world's record of 150M active pixel resolution, and is capable of running at 10 frames per second at full frame. Higher frame rates can be achieved in row-windowing mode.

This "wafer-scale" sensor has an astonishing 167.6mm x 30.1mm chip size including 165mm x 27.5mm photon-sensitive area. GMAX3005 has 16-bit on-chip ADC with 12-bit ENOB, and 120 LVDS output pairs running at 200Mbps. GMAX3005 is ideal for applications that require high sensitivity; it reaches a noise level of 4e- with a dynamic range of 75.4dB, and over 70% quantum efficiency at 550nm wavelength. GMAX3005 has a dark current as low as 10e-/s/pixel at 32° C, which makes long exposure possible even without active cooling.

The sensor consumes less than 2.5W at full frame rate. GMAX3005 is mounted in an ultra-flat 395-pin PGA ceramic package with excellent heat dissipation and reliability.

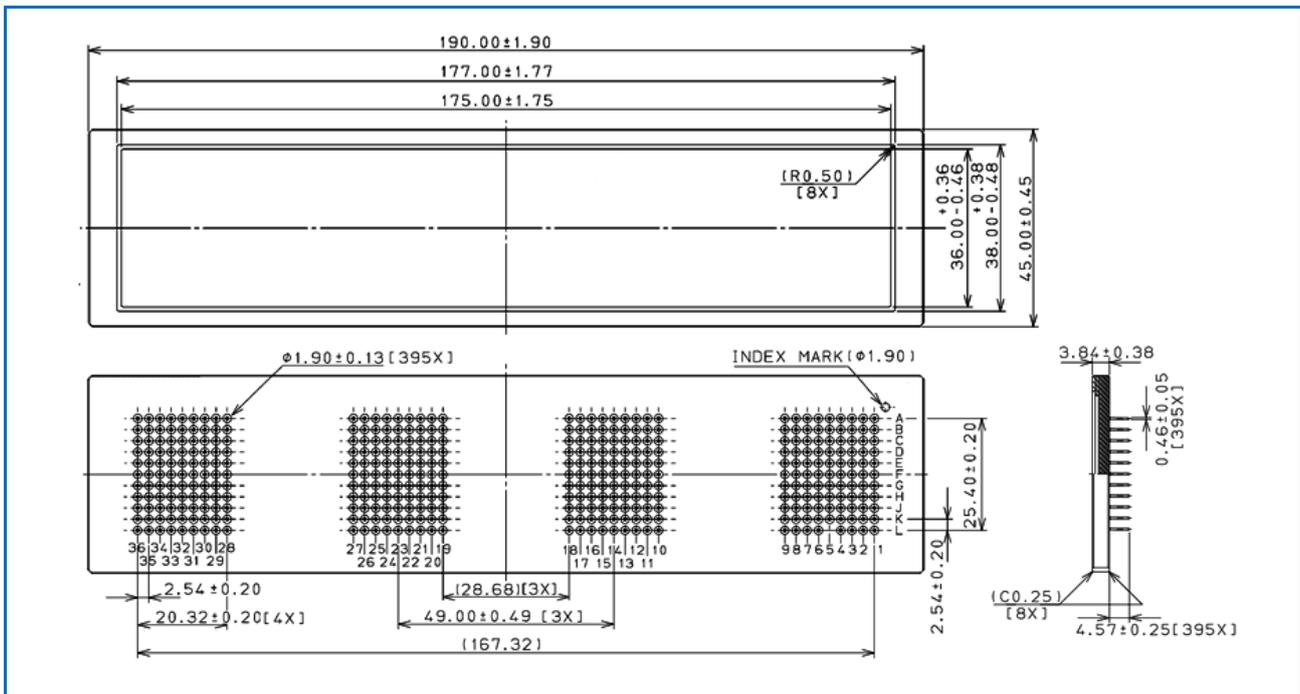
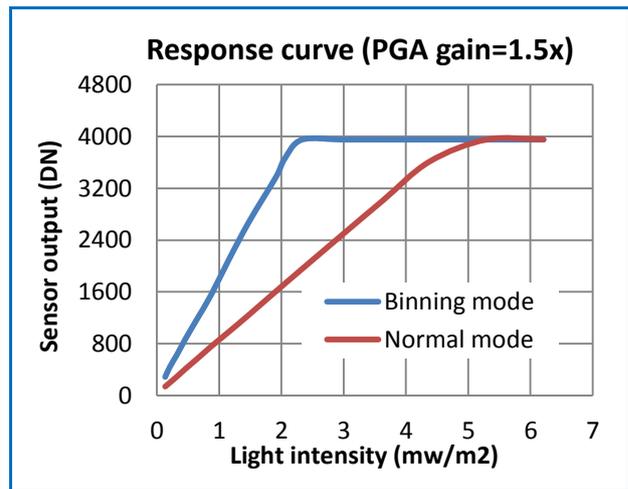
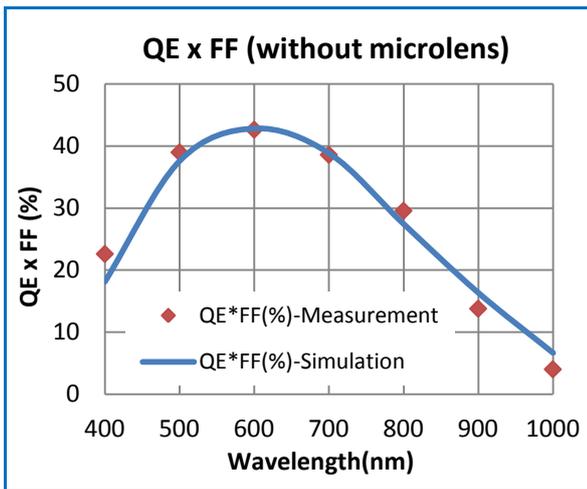
SENSOR FEATURES

- World's highest resolution CMOS image sensor with 150 megapixels
- Pixel resolution: 30,000(H) × 5,000(V)
- "Wafer-scale" chip size of 167.6mm × 30.1mm
- Photon-sensitive area: 165mm × 27.5mm
- 5.5μm square pinned photodiode 4T pixel
- Optical and electrical black pixel rows
- Electronic rolling shutter
- 10fps at full frame
- ROI windowing capability with enhanced frame rate (row based only)
- 2-to-1 binning capability
- 16bit on-chip ADC with 12bit dynamic range
- High sensitivity mode and high full-well capacity mode
- 120 LVDS output pairs
- LVDS DDR output clock to sample data on the receiving end
- On-chip temperature sensor
- On-chip SPI control and on-chip PLL
- Excellent anti-blooming capability



SENSOR SPECIFICATIONS

Photon-sensitive area	165mm(H) x 27.5mm(V)	SNR Max	43dB
Pixel size	5.5μm×5.5μm	Dark noise	3.94e-
Resolution	150MP - 30,000×5,000	Dark current	<10e-/s/pix (32° C)
Shutter type	electronic rolling shutter	Dynamic range	67dB (Intra-scene)
ADC	16bit	Dynamic range	75.4dB
Main clock rate	20MHz ~30MHz	Sensitivity (PGA=5.6x)	255DN/nJ/cm ²
Frame rate	10fps @ full frame	Full well charge	23000 e-
Data rate	24Gbit/s @10fps	Output interface	120 LVDS pairs
Supply voltage	3.3V / 1.8V	Operating temperature	-55° C ~ +85° C
Max Power	2.5W	Package	395 pins PGA



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