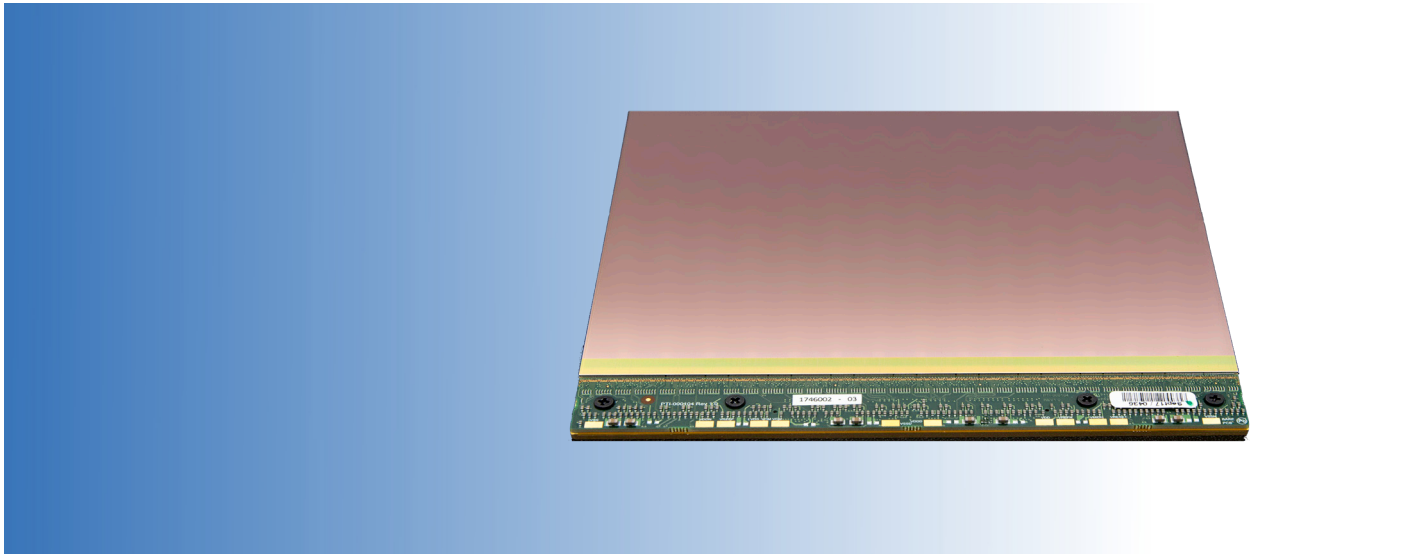


IS series 100µm pixel sensors

IS-3131 / IS-2121 / IS-1510 / IS-0510



The IS series high speed wafer-scale CMOS image sensors have been developed for medical, industrial and scientific applications. Each sensor uses radiation-hard 100µm x 100µm pixels with user selectable high/low full well. These image sensors offer a programmable region of interest (ROI) mode in which the frame rate is inversely proportional to the number of rows. Dual gain and wide dynamic range allow the sensors to be matched to a wide choice of scintillator options for real time, CT and single-image use. The IS-3131 and IS-2121 are suitable for C-arm surgical imaging, cone beam CT and security applications. The IS-1510 and IS-0510 sensors can be tiled to create larger arrays.

Key features

Specifications

| | IS-2121 | IS-3131 | IS-1510 | IS-0510 |
|---|-------------|-------------|-------------|-------------|
| Radiation-hard pixel design | | | | |
| Active area (cm) | 20.6 x 20.5 | 30.9 x 30.7 | 10.3 x 15.3 | 14.0 x 12.0 |
| Frame rate up to 66Hz | | | | |
| Resolution (h x v) | 2063 x 2049 | 3095 x 3073 | 1031 x 1536 | 2400 x 2802 |
| 14-bit digital output | | | | |
| Frame rate max (fps) | 66 | 66 | 66 | 98 |
| Programmable region of interest (ROI) for higher frame rates. | | | | |
| Tile butting | - | - | 3-side | 3-side |
| Digital outputs (CMOS) | 200 | 300 | 50 | 50 |
| Dual gain (full well), run time selectable | | | | |
| Package Dimensions (cm) | 20.6 x 25.3 | 31.2 x 35.5 | 10.3 x 17.7 | 10.3 x 7.4 |

ISDI Ltd

Unit G2, Highgate Business Centre
33 Greenwood Place
London NW5 2QL

+44 20 8037 0000
www.isdicmos.com

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Specifications

IS-3131 / IS-1510 / IS-0510



| | |
|--------------------------------|---|
| Pixel pitch | 100µm |
| On chip ADC | 14 bits |
| Chroma | Mono |
| Gain modes | Dual gain: high or low full well |
| Row period in ROI mode | 9.8 µs/row |
| Minimum ROI size | 2 rows |
| Readout architecture | Rolling shutter |
| Temperature sensor on-chip | -40C° to +80C, analogue output |
| QE @ 550 nm | 55% |
| Operating temperature | 10 – 50°C |
| RoHS | Yes |
| Connector Type | Samtec QTH-090 |
| Supply voltage | 3.5V, 3.3V, 1.8V |
| Power consumption | 10W (IS-3131), 6.8W (IS-212), 1.7W (IS-1512, IS-1207) |
| Package | Silicon wire-bonded to PCB, metal/ceramic substrate |
| Saturation in linear range HFW | 2.6 Me- |
| Saturation in linear range LFW | 410ke- |
| Dynamic range HFW | 74dB |
| Dynamic range LFW | 72dB |

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