

TECHNOLOGIES

TRUESENSE 7.4-micron Interline Transfer CCD Platform

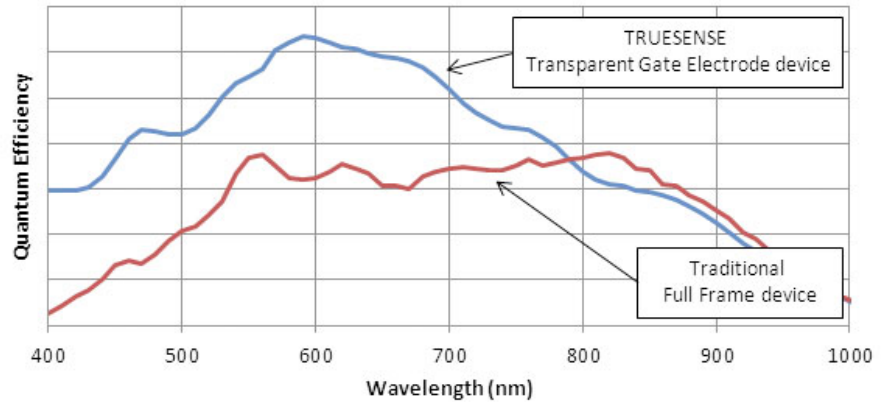
TRUESENSE 5.5-micron Interline Transfer CCD Platform

TRUESENSE Sparse Color Filter Pattern

TRUESENSE 6.0-micron Full Frame CCD Platform

TRUESENSE Transparent Gate Electrode

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TRUESENSE Transparent Gate Electrode

The TRUESENSE Transparent Gate Electrode significantly improves the sensitivity available from front-illuminated Full Frame CCD devices by increasing the amount of light entering the pixel for detection.

In a Full Frame CCD design, each pixel is covered by electrodes which allow charge to be read out of the device – as different voltages are applied to the electrodes, charge is “pushed” from pixel to pixel and then into the readout register. In standard semiconductor manufacturing, these electrodes are manufactured from polysilicon, which absorbs light and reduces the overall sensitivity of the pixel. The TRUESENSE Transparent Gate Electrode is manufactured using a different material – Indium Tin Oxide (ITO) – which is not only electrically conductive but also optically transparent, allowing light to enter the pixel without obstruction.

With this ITO electrode design, devices that utilize the TRUESENSE Transparent Gate Electrode have significantly higher sensitivity compared to devices that only use polysilicon electrodes: Sensitivity at 400 nm is improved by a factor of 10, and increased by 50% across the majority of the visible spectrum.

TRANSPARENT GATE ELECTRODE

Name	Resolution	Total Resolution	Pixel Size μm	Diag. mm	Max Frame Rate (fps)
KAF-0261	512 x 512	VGA	20.0	14.5	15
KAF-0402	768 x 512	WVGA	9.0	8.3	20
KAF-1001	1024 x 1024	1.0 MP	24.0	34.8	3
KAF-1603	1536 x 1024	1.6 MP	9.0	16.6	2.2
KAF-3200	2184 x 1510	3.3 MP	6.8	18.0	2.5
KAF-4301	2084 x 2084	4.3 MP	24.0	70.7	0.2
KAF-4320	2084 x 2084	4.3 MP	24.0	70.7	2
KAF-6303	3088 x 2056	6.3 MP	9.0	33.4	0.6
KAF-8300	3326 x 2504	8.3 MP	5.4	22.5	2.9
KAF-09000	3056 x 3056	9.3 MP	12.0	51.9	0.4
KAF-16801	4096 x 4096	16.8 MP	9.0	52.1	0.4
KAF-16803	4096 x 4096	16.8 MP	9.0	52.1	0.2
KAF-31600	6496 x 4872	31.6 MP	6.8	55.2	1.0

KAF-40000	7304 x 5478	40.0 MP	6.0	54.8	1.3
KAF-50100	8176 x 6132	50.1 MP	6.0	61.3	1.0