

PRODUCT SUMMARY

KODAK KAI-08050 IMAGE SENSOR

3296 (H) X 2472 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-08050 Image Sensor is an 8-megapixel CCD in a 4/3" (22 mm diagonal) optical format. Based on the KODAK TRUESENSE 5.5 micron Interline Transfer CCD Platform, the sensor features broad dynamic range, excellent imaging performance, and a flexible readout architecture that enables use of 1, 2, or 4 outputs. The sensor supports full resolution readout up to 16 frames per second, while a Region of Interest (ROI) mode supports partial readout of the sensor at even higher frame rates. A vertical overflow drain structure suppresses image blooming and enables electronic shuttering for precise exposure control.

The sensor is available with the KODAK TRUESENSE Color Filter Pattern, a technology which provides a 2x improvement in light sensitivity compared to a standard color Bayer part.

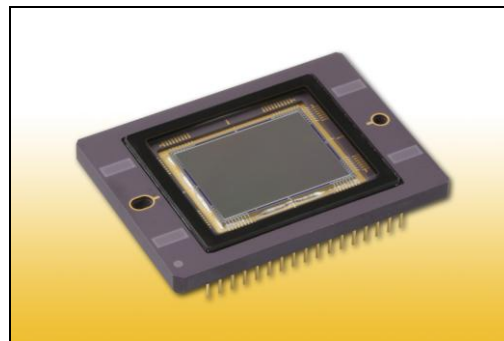
The sensor shares common pin-out and electrical configurations with other devices based on the KODAK TRUESENSE 5.5 micron Interline Transfer Platform, allowing a single camera design to support multiple members of this sensor family.

FEATURES

- Bayer Color Pattern, KODAK TRUESENSE Color Filter Pattern, and Monochrome configurations
- Progressive scan readout
- Flexible readout architecture
- High frame rate
- High sensitivity
- Low noise architecture
- Excellent smear performance
- Package pin reserved for device identification

APPLICATIONS

- Industrial Imaging
- Medical Imaging
- Security



Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	3364 (H) x 2520 (V)
Number of Effective Pixels	3320 (H) x 2496 (V)
Number of Active Pixels	3296 (H) x 2472 (V)
Pixel Size	5.5 μm (H) x 5.5 μm (V)
Active Image Size	18.13mm (H) x 13.60mm (V) 22.66mm (diag) 4/3" optical format
Aspect Ratio	4:3
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 $\mu\text{V}/\text{e}^-$
Quantum Efficiency	
Pan (-ABA, -PBA)	50 % (500 nm)
R, G, B (-CBA, -PBA)	31%, 42%, 43% (620, 540, and 470 nm)
Read Noise (f= 40MHz)	12 electrons rms
Dark Current	
Photodiode	7 electrons/s
VCCD	140 electrons/s
Dark Current Doubling Temp	
Photodiode	7 °C
VCCD	9 °C
Dynamic Range	64 dB
Charge Transfer Efficiency	0.999999
Blooming Suppression	> 300 X
Smear	-100 dB
Image Lag	< 10 electrons
Maximum Pixel Clock Speed	40 MHz
Maximum Frame Rates	
Quad Output	16 fps
Dual Output	8 fps
Single Output	4 fps
Package	68 pin PGA
Cover Glass	AR Coated, 2 Sides

All parameters are specified at T = 40° C unless otherwise noted.

ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H2073	KAI-08050-AAA-JR-BA	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-08050-AAA Serial Number
4H2074	KAI-08050-AAA-JR-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2075	KAI-08050-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-08050-ABA Serial Number
4H2076	KAI-08050-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2077	KAI-08050-ABA-JR-BA	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2078	KAI-08050-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2079	KAI-08050-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-08050-CBA Serial Number
4H2080	KAI-08050-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2180	KAI-08050-PBA-JD-BA	Color (KODAK TRUESENSE CFA), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-08050-PBA Serial Number
4H2181	KAI-08050-PBA-JD-AE	Color (KODAK TRUESENSE CFA), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	

See ISS Application Note "Product Naming Convention" (MTD/PS-0892) for a full description of naming convention used for KODAK image sensors.

For reference documentation, including information on evaluation kits, visit our Web Site at www.kodak.com/go/imagers.

Please address all inquiries and purchase orders to:

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