

PRODUCT SUMMARY

KODAK KAI-01050 IMAGE SENSOR

1024 (H) X 1024 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-01050 Image Sensor is a 1-megapixel CCD in a 1/2" (8 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 for full resolution readout up to 120 frames per second. A vertical overflow drain structure suppresses image blooming and enables electronic shuttering for precise exposure control. Other features include low dark current, negligible lag, and low smear.

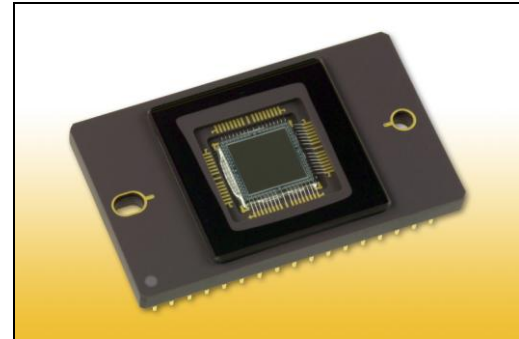
The sensor shares common pin-out and electrical configurations with other devices based on the KODAK TRUESENSE 5.5 micron Interline Transfer CCD Platform, allowing a single camera design to support multiple members of this sensor family.

FEATURES

- Color or 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	1084 (H) x 1064 (V)
Number of Effective Pixels	1040 (H) x 1040 (V)
Number of Active Pixels	1024 (H) x 1024 (V)
Pixel Size	5.5 μm (H) x 5.5 μm (V)
Active Image Size	5.632mm (H) x 5.632mm (V) 7.96mm (diagonal) 1/2" optical format
Aspect Ratio	1:1
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 $\mu\text{V}/e^-$
Quantum Efficiency	
KAI-01050-ABA	50% (500 nm)
KAI-01050-CBA	31%, 42%, 43% (620, 540, and 470 nm)
Read Noise (f= 40MHz)	12 electrons rms
Dark Current	
Photodiode	7 electrons/s
VCCD	70 electrons/s
Dark Current Doubling Temp	
Photodiode	7 $^{\circ}\text{C}$
VCCD	9 $^{\circ}\text{C}$
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 Rate	
Quad Output	120 fps
Dual Output	60 fps
Single Output	30 fps
Package	68 pin PGA
Cover Glass	AR Coated, 2 Sides

All parameters are specified at T = 40 $^{\circ}$ C unless otherwise noted.

ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H0901	KAI-01050-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-01050-ABA Serial Number
4H0902	KAI-01050-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-01050-ABA Serial Number
4H0915	KAI-01050-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-01050-CBA Serial Number
4H0916	KAI-01050-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-01050-CBA Serial Number

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

For all reference documentation, please visit our Web Site at www.kodak.com/go/imagers.

Please address all inquiries and purchase orders to:

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