

PRODUCT SUMMARY

KODAK KAI-02150 IMAGE SENSOR

1920 (H) X 1080 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-02150 Image Sensor is a 1080p (1920 x 1080) CCD in a 2/3" (11 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 64 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.

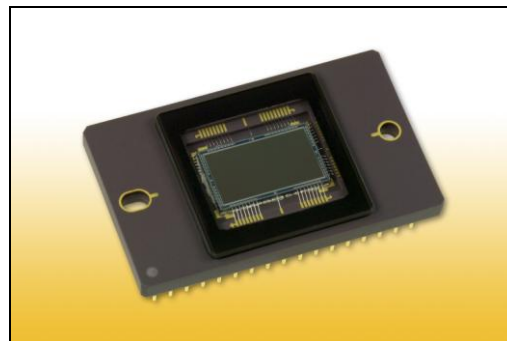
The sensor shares common pin-out and electrical configurations with other devices based on the KODAK TRUESENSE 5.5 micron Interline Transfer CCD Platform, allowing a single camera design to support multiple members of this sensor family.

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	2004 (H) x 1144 (V)
Number of Effective Pixels	1960 (H) x 1120 (V)
Number of Active Pixels	1920 (H) x 1080 (V)
Pixel Size	5.5 μm (H) x 5.5 μm (V)
Active Image Size	10.56mm (H) x 5.94mm (V) 12.1mm (diagonal) 2/3" optical format
Aspect Ratio	16:9
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 $\mu\text{V}/\text{e}^-$
Quantum Efficiency	
KAI-02150-ABA	50% (500 nm)
KAI-02150-CBA	31%, 42%, 43% (620, 540, 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 $^{\circ}\text{C}$
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	64 fps
Dual Output	33 fps
Single Output	17 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
4H2039	KAI-02150-AAA-JR-BA	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-AAA Serial Number
4H2040	KAI-02150-AAA-JR-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2041	KAI-02150-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-ABA Serial Number
4H2042	KAI-02150-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2043	KAI-02150-ABA-JR-BA	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2044	KAI-02150-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2045	KAI-02150-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02150-CBA Serial Number
4H2046	KAI-02150-CBA-JD-AE	Color (Bayer RGB), 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 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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