

## PRODUCT SUMMARY

### KODAK KAI-16070 IMAGE SENSOR

#### 4864 (H) X 3232 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

#### DESCRIPTION

The KODAK KAI-16070 Image Sensor is a 16-megapixel CCD in a 35 mm optical format (43 mm diagonal). Based on the KODAK TRUESENSE 7.4 micron Interline Transfer CCD Platform, the sensor provides very high smear rejection and up to 82 dB linear dynamic range through the use of a unique dual-gain amplifier. Flexible readout architecture enables use of 1, 2, or 4 outputs for full resolution readout up to 8 frames per second, while 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.

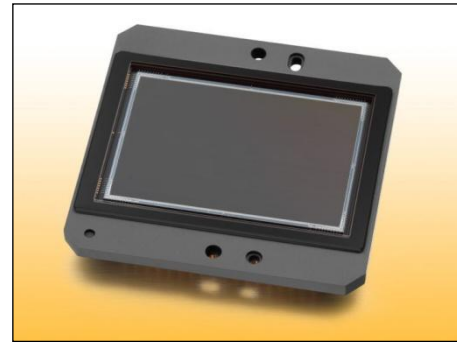
The sensor shares common pin-out and electrical configurations with a full family of KODAK Interline Transfer CCD image sensors, allowing a single camera design to be leveraged in support of multiple devices.

#### FEATURES

- Superior smear rejection
- Up to 82 dB linear dynamic range
- Bayer Color Pattern, KODAK TRUESENSE Color Filter Pattern, and Monochrome configurations
- Progressive scan & flexible readout architecture.
- High frame rate
- High sensitivity - Low noise architecture
- Package pin reserved for device identification

#### APPLICATIONS

- Industrial Imaging and Inspection
- Traffic
- Aerial Photography



Parameter	Typical Value (T = 40° C)
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	4932 (H) x 3300 (V)
Number of Effective Pixels	4888 (H) x 3256 (V)
Number of Active Pixels	4864 (H) x 3232 (V) (15.7M)
Pixel Size	7.4 μm (H) x 7.4 μm (V)
Active Image Size	36.0 mm (H) x 23.9 mm (V) 43.2 mm (diag) 35mm optical format
Aspect Ratio	3:2
Number of Outputs	1, 2, or 4
Charge Capacity	40,000 electrons
Output Sensitivity	9.7 μV/e <sup>-</sup> (low), 33 μV/e <sup>-</sup> (high)
Quantum Efficiency R, G, B (-CBA, -PBA) Pan (-ABA, -PBA)	TBD%, TBD%, TBD% (620, 540, 470nm) 51% (500nm)
Base ISO -ABA -CBA, -PBA	300 TBD
Read Noise (f= 40MHz)	12 electrons rms
Dark Current Photodiode / VCCD	1 / 145 electrons/s
Dark Current Doubling Temp Photodiode / VCCD	7 °C / 9 °C
Dynamic Range High gain amp (40 MHz) Dual amp, 2x2 bin (40 MHz)	70 dB 82 dB
Charge Transfer Efficiency	0.999999
Blooming Suppression	> 1000 X
Smear	-115 dB
Image Lag	< 10 electrons
Maximum Pixel Clock Speed	40MHz
Maximum Frame Rates Quad/Dual/Single Output	8 / 4 / 2 fps
Package	72 pin PGA
Cover Glass	AR Coated, 2 Sides

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

**ORDERING INFORMATION**

<b>Catalog Number</b>	<b>Product Name</b>	<b>Description</b>	<b>Marking Code</b>
4H2212 (1)	KAI-16070-AXA-JD-B1	Monochrome, Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 1	KAI-16070-AXA Serial Number
4H2213 (1)	KAI-16070-AXA-JD-B2	Monochrome, Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 2	
4H2189 (2)	KAI-16070-AXA-JD-AE	Monochrome, Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2214 (1)	KAI-16070-CXA-JD-B1	Color (Bayer RGB), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 1	KAI-16070-CXA Serial Number
4H2215 (1)	KAI-16070-CXA-JD-B2	Color (Bayer RGB), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 2	
4H2185 (2)	KAI-16070-CXA-JD-AE	Color (Bayer RGB), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2216 (1)	KAI-16070-PXA-JD-B1	Color (KODAK TRUESENSE CFA), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 1	KAI-16070-PXA Serial Number
4H2217 (1)	KAI-16070-PXA-JD-B2	Color (KODAK TRUESENSE CFA), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Grade 2	
4H2187 (2)	KAI-16070-PXA-JD-AE	Color (KODAK TRUESENSE CFA), Special Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	

Notes:

1. Grade 1 and 2 part numbers are listed for informational purposes only. Grade 1 and 2 part numbers are not available for orders at this time. Please contact Image Sensor Solutions for availability dates.
2. Engineering grade part numbers are listed for informational purposes only. Engineering grade part numbers are not available for orders at this time. Please contact Image Sensor Solutions for availability dates.

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](http://www.kodak.com/go/imagers).

Please address all inquiries and purchase orders to:

Image Sensor Solutions  
Eastman Kodak Company  
Rochester, New York 14650-2010

Phone: (585) 722-4385  
Fax: (585) 477-4947  
E-mail: [imagers@kodak.com](mailto:imagers@kodak.com)

Kodak reserves the right to change any information contained herein without notice. All information furnished by Kodak is believed to be accurate.