

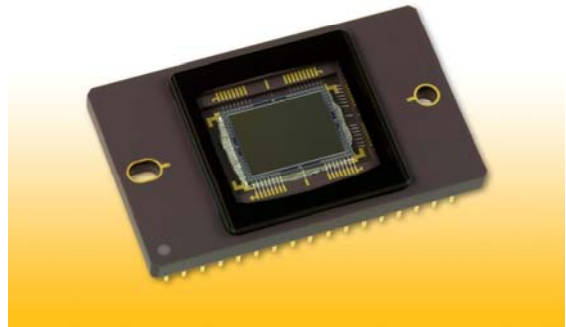
## PRODUCT SUMMARY

### KODAK KAI-02050 IMAGE SENSOR

1600 (H) X 1200 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

#### DESCRIPTION

The KODAK KAI-02050 Image Sensor is a 1600 (H) x 1200 (V) resolution, 2/3" optical format, progressive scan interline CCD. A flexible readout architecture is used that enables the use of either 1, 2 or 4 outputs to achieve frame rates up to 68 fps. The vertical overflow drain structure provides antiblooming protection and enables electronic shuttering for precise exposure control. Other features include low dark current, negligible lag and low smear.



#### FEATURES

- Progressive scan readout
- High frame rate
- Flexible readout architecture
- High sensitivity
- Low noise architecture
- Improved smear performance
- Electronic shutter

#### APPLICATIONS

- Industrial Imaging

Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	1684 (H) x 1264 (V)
Number of Effective Pixels	1640 (H) x 1240 (V)
Number of Active Pixels	1600 (H) x 1200 (V)
Pixel Size	5.5 $\mu\text{m}$ (H) x 5.5 $\mu\text{m}$ (V)
Active Image Size	8.8mm (H) x 6.6mm (V) 11.0mm (diagonal) 2/3" 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 KAI-02050-ABA (500nm)	50 %
Quantum Efficiency KAI-02050-CBA R(620nm), G(540nm), B(470nm)	31 %, 42 %, 43 %
Read Noise (f= 40MHz)	12 electrons rms
Dark Current	Photodiode: 7 electrons/s VCCD: 140 electrons/s
Dark Current Doubling Temperature	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 Rates	18 fps (single output) 34 fps (dual output) 68 fps (quad output)
Package	68 pin PGA
Cover Glass	AR Coated, 2 Sides

Unless noted, all parameters above are specified at T = 40 $^{\circ}$  C

## ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H2031	KAI-02050-AAA-JR-BA	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-AAA Serial Number
4H2032	KAI-02050-AAA-JR-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2033	KAI-02050-ABA-JD-BA	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-ABA Serial Number
4H2034	KAI-02050-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2035	KAI-02050-ABA-JR-BA	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Standard Grade	
4H2036	KAI-02050-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
4H2037	KAI-02050-CBA-JD-BA	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Standard Grade	KAI-02050-CBA Serial Number
4H2038	KAI-02050-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	

Please 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).

### 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)

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