

## PRODUCT SUMMARY

### KODAK KAI-29050 IMAGE SENSOR

#### 6576 (H) X 4384 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

#### DESCRIPTION

The KODAK KAI-29050 Image Sensor is a 29-megapixel CCD in a 35 mm optical (43 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 4 frames per second. 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 PGA 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 be leveraged 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 and Inspection
- Medical Imaging
- Security



Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	6644 (H) x 4452 (V)
Number of Effective Pixels	6600 (H) x 4408 (V)
Number of Active Pixels	6576 (H) x 4384 (V)
Pixel Size	5.5 $\mu\text{m}$ (H) x 5.5 $\mu\text{m}$ (V)
Active Image Size	36.17 mm (H) x 24.11 mm (V) 43.47 mm (diag) 35 mm optical format
Aspect Ratio	3:2
Number of Outputs	1, 2, or 4
Charge Capacity	20,000 electrons
Output Sensitivity	34 $\mu\text{V}/\text{e}^-$
Quantum Efficiency KAI-29050-ABA KAI-29050-CBA	TBD% (500 nm) TBD %, TBD %, TBD % (620, 540, and 470 nm)
Read Noise (f= 32MHz)	12 electrons rms
Dark Current Photodiode VCCD	7 electrons/s 140 electrons/s
Dark Current Doubling Temp Photodiode VCCD	7 $^{\circ}\text{C}$ 9 $^{\circ}\text{C}$
Dynamic Range	64 dB
Charge Transfer Efficiency	0.999999
Blooming Suppression	> 300 X
Smear	Estimated -100 dB
Image Lag	< 10 electrons
Maximum Pixel Clock Speed	32 MHz
Maximum Frame Rates Quad Output Dual Output Single Output	4 fps 2 fps 1 fps
Package	72 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
TBD (1)	KAI-29050-AAA-JD-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-29050-AAA Serial Number
TBD (1)	KAI-29050-ABA-JD-AE	Monochrome, Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-29050-ABA Serial Number
TBD (1)	KAI-29050-ABA-JR-AE	Monochrome, Telecentric Microlens, PGA Package, Taped Clear Cover Glass with AR coating (both sides), Engineering Grade	
TBD (1)	KAI-29050-CBA-JD-AE	Color (Bayer RGB), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-29050-CBA Serial Number
TBD (1)	KAI-29050-PBA-JD-AE	Color (KODAK TRUESENSE CFA), Telecentric Microlens, PGA Package, Sealed Clear Cover Glass with AR coating (both sides), Engineering Grade	KAI-29050-PBA Serial Number

Notes:

1. 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).

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