

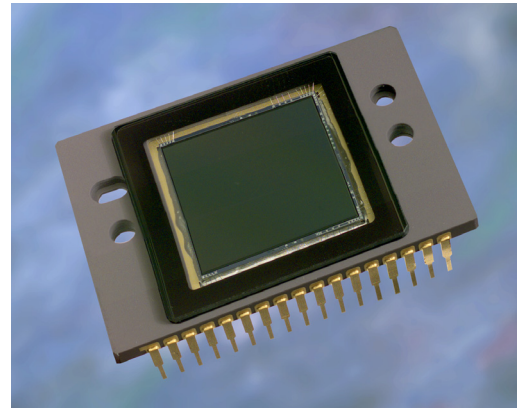
PRODUCT SUMMARY

KODAK KAI-04022 IMAGE SENSOR

2048 (H) X 2048 (V) INTERLINE TRANSFER PROGRESSIVE SCAN CCD

DESCRIPTION

The Kodak KAI-04022 Image Sensor is a high-performance 4-million pixel sensor designed for a wide range of medical, scientific and machine vision applications. The 7.4 μm square pixels with microlenses provide high sensitivity and the large full well capacity results in high dynamic range. The two high-speed outputs and binning capabilities allow for 16-50 frames per second (fps) video rate for the progressively scanned images. 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

- High resolution
- High sensitivity
- High dynamic range
- Low noise architecture
- High frame rate
- Binning capability for higher frame rate
- Electronic shutter

APPLICATIONS

- Industrial inspection
- Scientific Imaging

Parameter	Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	2112 (H) x 2072 (V)
Number of Effective Pixels	2056 (H) x 2062 (V)
Number of Active Pixels	2048 (H) x 2048 (V)
Pixel Size	7.4 μm (H) x 7.4 μm (V)
Active Image Size	15.15mm (H) x 15.15mm (V) 21.43mm (diagonal)
Aspect Ratio	1:1
Number of Outputs	1 or 2
Charge Capacity	40,000 e
Output Sensitivity	33 $\mu\text{V}/\text{e}$
Peak Quantum Efficiency (KAI-04022-ABA)	55%
Peak Quantum Efficiency (KAI-04022-CBA) BGR	45%, 42%, 35%
Read Noise (f=10MHz)	9 electrons, rms
Dark Current	< 0.5 nA/cm ²
Dark Current Doubling Temperature	7°C
Dynamic Range	72 dB
Charge Transfer Efficiency	> 0.99999
Blooming Suppression	300X
Smear	-80 dB
Image Lag	<10 e
Maximum Frame Rates	8 fps (single output) 16 fps (dual output)
Package	34 pin cerDIP
Cover Glass	AR Coated, 2 side

All parameters above are specified at T = 40°C

ORDERING INFORMATION

Catalog Number	Product Name	Description	Marking Code
4H0957	KAI-04022-AAA-CR-BA	Monochrome, No Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Standard Grade	KAI-04022-AAA Serial Number
4H0958	KAI-04022-AAA-CR-AE	Monochrome, No Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Engineering Grade	
4H0959	KAI-04022-ABA-CD-BA	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (2 sides), Standard Grade	KAI-04022-ABA Serial Number
4H0960	KAI-04022-ABA-CD-AE	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (2 sides), Engineering Grade	
4H0961	KAI-04022-ABA-CR-BA	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Standard Grade	
4H0962	KAI-04022-ABA-CR-AE	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Engineering Grade	
4H0963	KAI-04022-CBA-CD-BA	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (2 sides), Standard Grade	KAI-04022-CBA Serial Number
4H0964	KAI-04022-CBA-CD-AE	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (2 sides), Engineering Grade	
4H0965	KAI-04022-CBA-CR-BA	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Standard Grade	
4H0966	KAI-04022-CBA-CR-AE	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 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.

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