

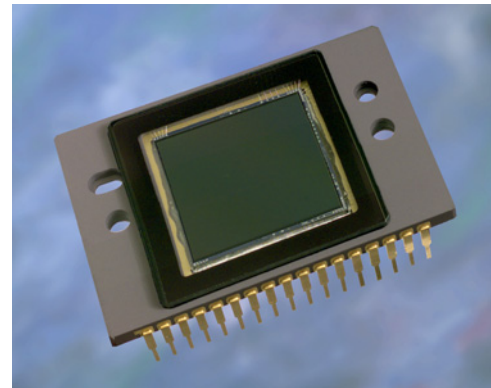
PRODUCT SUMMARY

KODAK KAI-4011 IMAGE SENSOR

2048 (H) X 2048 (V) PROGRESSIVE SCAN INTERLINE CCD IMAGE SENSOR

DESCRIPTION

The KODAK KAI-4011 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 Imaging
- Medical Imaging
- Scientific Imaging

Parameter	Typical Value
Architecture	Interline CCD; Progressive Scan
Total Number of Pixels	2112 (H) x 2072 (V) = approx. 4.38M
Number of Effective Pixels	2056 (H) x 2062 (V) = approx. 4.24M
Number of Active Pixels	2048 (H) x 2048 (V) = approx. 4.19M
Number of Outputs	1 or 2
Pixel Size	7.4 μm (H) x 7.4 μm (V)
Imager Size	21.43mm (diagonal)
Chip Size	16.67mm (H) x 16.05mm (V)
Aspect Ratio	1:1
Saturation Signal	40,000 e^-
Peak Quantum Efficiency	Mono: 55% Color (RGB): 45%, 42%, 35%
Output Sensitivity	16 $\mu\text{V}/e^-$
Total System Noise	40 MHz: 40 e^- 20 MHz: 23 e^-
Dark Current	< 0.5 nA/cm ²
Dark Current Doubling Temperature	7° C
Dynamic Range	60 dB
Charge Transfer Efficiency	> 0.99999
Blooming Suppression	300X
Smear	80 dB
Image Lag	<10 e^-
Maximum Data Rate	40 MHz

Parameters above are specified at T = 40° C unless otherwise noted.

ORDERING INFORMATION

Catalog Number	Product Name	Description
4H0677	KAI- 4011-AAA-CR-AE	Monochrome, No Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Engineering Sample
4H0676	KAI- 4011-AAA-CR-BA	Monochrome, No Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Standard Grade
4H0679	KAI- 4011-ABA-CD-AE	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (both sides), Engineering Sample
4H0678	KAI- 4011-ABA-CD-BA	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (both sides), Standard Grade
4H0681	KAI- 4011-ABA-CR-AE	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Engineering Sample
4H0680	KAI- 4011-ABA-CR-BA	Monochrome, Telecentric Microlens, CERDIP Package (sidebrazed), Taped Clear Cover Glass with AR coating (2 sides), Standard Grade
4H0683	KAI- 4011-CBA-CD-AE	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (both sides), Engineering Sample
4H0682	KAI- 4011-CBA-CD-BA	Color (Bayer RGB), Telecentric Microlens, CERDIP Package (sidebrazed), Clear Cover Glass with AR coating (both sides), Standard Grade
4H0696	KEK-4H0696-KAI-4011/4021-10-40	Evaluation Board (Complete Kit)

Please see ISS Application Note "Product Naming Convention" (MTD/PS-0892) for a full description of naming convention used for KODAK image sensors.

Address all inquiries and purchase orders to:

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