

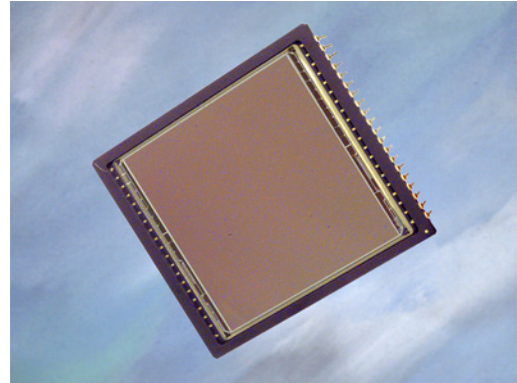
## PRODUCT SUMMARY

### KODAK KAF-4301 IMAGE SENSOR

#### 2084 (H) X 2084 (V) FULL FRAME CCD IMAGE SENSOR

#### DESCRIPTION

The KODAK KAF-4301 Image Sensor is a high-density, 4.3 million pixel, full-frame CCD image sensor. One of two electronically selectable amplifiers may be used for a high sensitivity or high dynamic range output signal. Gates are available for binning in both the serial and parallel directions. Low dark current of less than 30 pA/cm<sup>2</sup> at 25° C allows room temperature operation in most cases and moderate cooling (-30°C) for applications involving extended exposures.



#### FEATURES

- Front Illuminated Full-Frame Architecture with Transparent Gate True Two Phase Technology
- 24µm(H) x 24µm(V) Pixel Size
- 2084(H) x 2084(V) Photosensitive Pixels
- 50.02 mm x 50.02 mm Photo active Area
- 100% Fill Factor
- Two Clock Selectable Outputs: High Gain Output (11 µV/e<sup>-</sup>), or High Dynamic Range Output (2.0 µV/e<sup>-</sup>)
- Low Dark Current (<15 pA/cm<sup>2</sup> at T=25° C)

Parameter	Typical Value
Architecture	Full-Frame CCD
Pixel Count	2084 (H) x 2084 (V)
Pixel Size	24 µm(H) x 24 µm(V)
Imager Size	50.0 mm (H) x 50.0 mm (V)
Optical Fill Factor	100%
Output Sensitivity	
High Sensitivity Output	11 µV/electron
High Dynamic Range Output	2 µV/electron
Saturation Signal	
High Sensitivity Output	200,000 electrons
High Dynamic Range Output	650,000 electrons
Readout Noise [1 MHz]	15 electrons rms
Dark Current [25° C, Accumulation Mode]	<30pA/cm <sup>2</sup>
Dark Current Doubling Rate	5-6°C
Dynamic Range (Sat Sig/Dark Noise)	81 dB
High Sensitivity Output	
High Dynamic Output Range	87 dB
Quantum Efficiency (450, 550, 650 nm)	40%, 55%, 65%
Maximum Data Rate	
High Sensitivity Output	2.5 MHz
High Dynamic Range Output	2 MHz
Transfer Efficiency (2 MHz, to -40°C)	>0.99997

#### APPLICATIONS

- Scientific Imaging
- Industrial Imaging

## ORDERING INFORMATION

<b>Catalog Number</b>	<b>Product Name</b>	<b>Description</b>
4H0791	KAF- 4301-AAA-JP-B1	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass, no coatings, Grade 1
4H0792	KAF- 4301-AAA-JP-B2	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass, no coatings, Grade 2
4H0169	KAF- 4301-AAA-JP-AE	Monochrome, No Microlens, PGA Package, Taped Clear Cover Glass, no coatings, Engineering Sample
4H0090	KEK-4H0090-KAF-4301-12-5	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:

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)