



## Product Overview

### KAC-12040: CMOS Image Sensor, 12 MP

For complete documentation, see the [data sheet](#)

#### Product Description

The KAC-12040 Image Sensor is a high-speed 12-megapixel CMOS image sensor in a 4/3" optical format based on a 4.7  $\mu\text{m}$  5T CMOS platform. The image sensor features very fast frame rate, excellent NIR sensitivity, and flexible readout modes with multiple regions of interest (ROI). The readout architecture enables use of 8, 4, or 2 LVDS output banks for full resolution readout up to 70 frames per second.

Each LVDS output bank consists of up to 8 differential pairs operating at 160 MHz DDR for a 320 MHz data rate per bank. The pixel architecture allows Rolling Shutter operation for motion capture with optimized Dynamic Range or Global Shutter for precise still image capture.

The image sensor has a pre-configured QFHD (4 x 1080p, 16:9) video mode, fully programmable ROI for windowing, programmable sub-sampling, and reverse readout (flip and mirror). Two ADCs can be configured for 8-bit, 10-bit, 12-bit or 14-bit conversion and output.

Additional features include Interspersed video streams (Dual-Video), on-chip calibration, black clamping, Overflow pixel for blooming reduction, black-sun correction (anti-eclipse), column and row noise correction, and integrated timing generation with SPI control, 4:1 and 9:1 averaging decimation modes.

#### Features

- Global shutter and rolling shutter
- Very fast frame rate
- High NIR sensitivity
- Multiple regions of interest
- Interspersed video streams

#### Applications

- Machine Vision
- Intelligent Transportation Systems
- Surveillance

#### Part Electrical Specifications

Product	Compliance	Status	Type	Megapixels	Frame Rate (fps)	Optical Format	Shutter Type	Pixel Size ( $\mu\text{m}$ )	Color	Package Type
KAC-12040-ABA-JD-AA	Pb-free Halide free	Active	CMOS	12	70	4/3 inch	Global Rolling	4.7 x 4.7	Mono	CPGA-267
KAC-12040-ABA-JD-AE	Pb-free Halide free	Active	CMOS	12	70	4/3 inch	Global Rolling	4.7 x 4.7	Mono	CPGA-267
KAC-12040-CBA-JD-AA	Pb-free Halide free	Active	CMOS	12	70	4/3 inch	Global Rolling	4.7 x 4.7	Bayer Color	CPGA-267
KAC-12040-CBA-JD-AE	Pb-free Halide free	Active	CMOS	12	70	4/3 inch	Global Rolling	4.7 x 4.7	Bayer Color	CPGA-267

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