

# Basler aViator



**New: 4 MP Camera Models**

Fast Readout, CCD Image Quality, Extremely Cost-Effective

## Basler aviator Camera Series

The Basler aviator series is a new family of high-speed, mainstream cameras. The aviator's superior image quality, even at high image capture rates, makes a convincing argument. The series features a Camera Link compatible interface, progressive scan readout, and global shutter technology. At its full 1024 x 1024 resolution, the one megapixel aviator model can capture 120 frames per second. Two megapixel variants are available with 4:3 and 16:9 (HDTV format) aspect ratios. Both two megapixel variants can capture images at a very high rate of more than 60 frames per second at full resolution. The four megapixel variants run with more than 30 frames per second. By using lower resolutions, the frame acquisition rate can be increased by almost four times. All aviator models are available in both monochrome and color.

Basler aviator cameras are equipped with Kodak's state-of-the-art CCD sensors. These new cameras combine Basler's extensive knowledge of the Camera Link interface with Basler's long

experience designing cameras based on Kodak sensors. In addition, Basler has leveraged the tap balancing competence we gained during the development of our Basler pilot series, which also employs Kodak sensors. As a result, the Basler aviator offers excellent imaging results in terms of linearity, dynamic range, and noise level. The fully automatic production support provided by Basler's unique Camera Test Tool Plus ensures the high quality of each individual aviator camera. EMVA 1288 measurement reports available on Basler's website will demonstrate our success in maintaining the highest standards during our production process.

### The Basler aviator's advantages include:

- One and two megapixel family members for greater throughput
- Basler's unique tap balancing
- A Camera Link interface for fast data transmission
- Separate input and output for external devices (e.g., strobe)
- An attractive price/performance ratio

## The Basler aviator Series Is an Ideal Fit for Applications Such as:

- Semiconductor manufacturing
- Electronics manufacturing
- Intelligent Traffic Systems (ITS)
- Metrology
- Medical imaging
- A wide variety of other applications

### Find the best setup

Aviator cameras can work together with any kind of frame grabber that supports the Camera Link standard. Most major frame grabber vendors already offer configuration files for Basler's new aviator camera family on their web pages. An installation guide that can be downloaded from Basler's website is designed to help you interface your aviator camera and your frame grabber card as simply and easily as possible. You can also get help for your hardware setup from Basler technical support. The Basler pylon driver package offers an easy-to-use graphical tool for camera configuration based on a virtual COM port or a Camera Link specific clser.dll library. With all of these tools available, you will quickly find the best parameter setup for your particular situation.

### Control the aviator

For application integration, the aviator camera offers you the familiar approach of using register-orientated low level communication. With



the new Basler Binary Protocol Library (BBPL), you can configure the camera by simply reading and writing values to camera registers. Comprehensive register documentation and code samples for C and MS Visual Basic 6.0 support changing the camera parameters for every feature on all variants.

In addition to the low level BBPL, Basler is offering an alternative C++ API, a first for Camera Link based cameras. Based on a new extension of the GenICam technology standard (see [www.genicam.org](http://www.genicam.org)), this high level API allows a more modern programming style. But regardless of your preferred programming style, both the low level API and the high level API offer unlimited access to all of the settings and features on your aviator camera. When you are finished making changes to your camera's settings, you can permanently store the optimized settings in one of the three "user sets" available on the camera, and you can set the camera so that the stored parameters will automatically be used at camera startup.

# Specifications

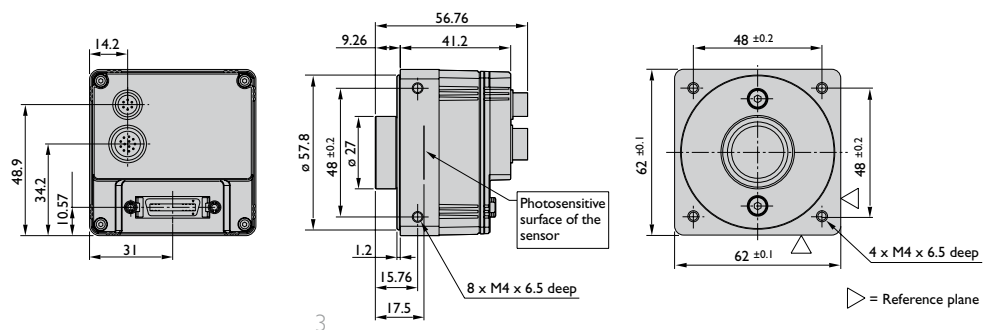
Basler aviator	avA1000-120km/kc	avA1600-65km/kc	avA1900-60km/kc	avA2300-30km/kc*
<b>Camera</b>				
Sensor Size (H x V)	1024 x 1024 pixels	1600 x 1200 pixels	1920 x 1080 pixels	2330 x 1750 pixels
Sensor Type	Kodak KAI-1050	Kodak KAI-2050	Kodak KAI-2150	Kodak KAI-4050
Sensor Readout	Progressive Scan CCD, global shutter			
Optical Size	1/2"	2/3"	2/3"	1"
Pixel Size	5.5 µm x 5.5 µm			
Max. Frame Rate	120 frames per second	67 frames per second	62 frames per second	32 frames per second
Mono / Color	Mono / Color			
Data Output Type (Interface)	Camera Link (base), single 26-pin MDR connector			
Camera Link Clock	40 – 66 MHz			
CL Pixel Data Formats	2 tap			
CL Pixel Bit Depths	8 bits, 12 bits			
Synchronization	Via external trigger or free-run			
Exposure Control	Trigger width or timed			
<b>Mechanical / Electrical</b>				
Power Requirements	12VDC (±10%), 6-pin Hirose			
I/O Ports	2 in / 1 out, 12-pin Hirose			
Lens Mount	C-mount			
Typical Power Consumption	5.0 W	5.5 W	5.5 W	5.5 W
Housing Size (L x W x H)	57.0 mm x 62.0 mm x 62.0 mm			
Weight (typical)	300 g			
Conformity	CE, FCC, RoHS, IP30, GenICam			
Housing Temperature	Up to 50°C			
<b>Software Environment</b>				
Configuration Software	Basler pylon (release 2.2 or higher)			
API for Configuration	Register API for C and VB6 or Basler pylon C++ API			

Specifications are subject to change without prior notice.

\*Available Q2/2010

For detailed technical information, please see the camera manual that can be found on our website: [www.baslerweb.com/manuals](http://www.baslerweb.com/manuals)

# Dimensions (in mm)



## What Makes Basler Camera Quality So Special?



To ensure consistently high product quality, we employ several quality inspection procedures during manufacturing. The following list describes some of the most essential actions we take to meet your highest requirements:

- The back focal length on each camera is carefully measured and adjusted. This guarantees an optimum distance between the lens flange and the sensor and ensures compliance with optics standards.
- Our advanced Camera Test Tool (CTT+), the first fully-automated inspection system for digital cameras, checks all of the significant quality aspects of each camera we produce. The CTT+ is a unique combination of optics, hardware, and software that can be quickly and efficiently used to calibrate a camera and to measure its performance against a set of standards. For defined sets of conditions, an automated software program examines the camera's output, makes any calibration adjustments necessary, and compares the output to a strictly defined set of performance criteria.

## How Does Basler Measure and Define Image Quality?



Basler is leading the effort to standardize image quality and sensitivity measurement for machine vision cameras and sensors. All measurements done by Basler will be in 100% compliance with the new European Machine Vision Association EMVA 1288 standard. Because it describes a unified way to measure, compute, and present the specification parameters for cameras and image sensors used in machine vision applications, Basler is giving the EMVA 1288 standard our strongest support.

The aviator family will be characterized and measured to provide information about the quality and sensitivity of our products. All data can be found on Basler's website: [www.baslerweb.com](http://www.baslerweb.com)

## RoHS Compliance

The Basler aviator series is RoHS compliant. This is especially important in applications where the end-user requires strict RoHS compliance in all system components.



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