Basler aViator

Area Scan Cameras

- 1 to 4 megapixels and up to 120 fps
- Brilliant CCD color with 12 bit image quality
- Kodak four tap sensor technology with the best tap balancing
- Extremely cost effective for new designs or system upgrades

BASLER

Fast Readout and Sensitivity

The Basler aviator family is a series of high speed mainstream CCD cameras with Gigabit Ethernet and Camera Link interface and a very attractive price/performance ratio. It features mono and color camera models with resolutions of 1, 2 (4:3 and HDTV), and 4 megapixels with progressive scan readout and global shutter technology.

Superior image quality, even at high image capture rates, makes a convincing argument for this advanced camera family. Basler aviator cameras are equipped with Kodak's latest CCD sensor generation with four tap readout technology. These sensors are up to four times faster than standard CCD sensors of the same resolution. With the aviator, Basler has applied the unique tap balancing competence we gained during the development of our earlier camera families such as the Basler pilot series, which also employs Kodak multi-tap sensors.

The Camera Link interface is the best way to integrate the full performance of the aviator's four tap Kodak sensors into your application with no bandwidth related delays. The Basler aviator GigE models benefit from our extensive experience designing and building GigE cameras and feature 100 meter cable length, easy integration and a cost-saving system layout.

Basler aviator cameras are an ideal fit for a variety of applications including semiconductor and electronics manufacturing, traffic applications (ITS), metrology, or medical imaging.

Your benefits include:

- Excellent linearity, dynamic range, and noise level
- The best tap balance by performing individual tap calibration during production
- More than 25 camera features such as auto-gain, auto-exposure or the signal input debouncer support easy system integration
- More than 100 megabytes of data per second and up to 100 meter cable length with GigE
- The widest bandwidth connection for maximum grabbing speed with Camera Link and compatibility with all common frame grabbers
- Additional opto-isolated I/Os for external devices (e.g., strobe) in the Camera Link models
- Rugged housing featuring safe locking connections and an easy integration due to different mounting positions
- Field-proven Basler pylon driver package with both filter and performance drivers
- "GenICam over Camera Link" or direct register access support
- Very attractive price/performance ratio

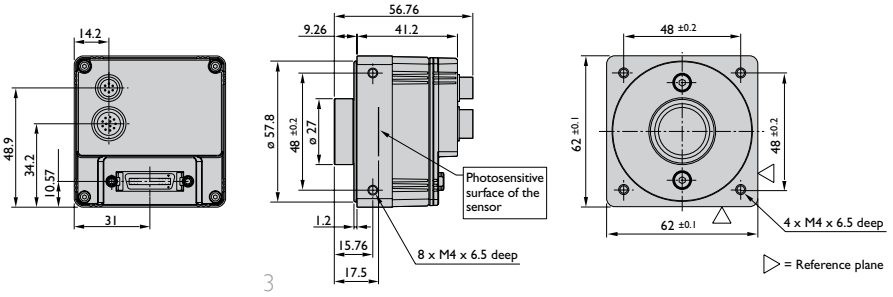
Specifications

Basler aviator	avA1000-120km/kc	avA1600-65km/kc	avA1900-60km/kc	avA2300-30km/kc
Camera				
Resolution (H x V pixels)	1024 x 1024	1600 x 1200	1920 x 1080	2330 x 1750
Sensor	Kodak KAI-01050	Kodak KAI-02050	Kodak KAI-02150	Kodak KAI-04050
Sensor Size (optical)	1/2″	2/3″	2/3″	1″
Sensor Technology	Progressive Scan CCD, global shutter			
Pixel Size	5.5 µm x 5.5 µm			
Frame Rate	120 fps	67 fps	62 fps	31 fps
Mono / Color	Mono / Color			
Pixel Format	Mono 8, Mono 10, Mono 12, Bayer GR 8, Bayer GR10, Bayer GR12			
Interface	Camera Link (base), single 26-pin MDR connector			
CL Pixel Clock	32.5, 40, 48, or 65 MHz (selectable via software)			
CL Tap Geometry	1X2-1Y or 1X-2YE			
Synchronization	Via external trigger or free-run			
Exposure Control	Trigger width or timed			
Mechanical / Electrical				
Housing Size (L x W x H)	41.2 mm x 62 mm x 62 mm			
Housing Temperature	Up to 50 °C			
Lens Mount	C-mount			
I/O Ports	2 opto-isolated input / 1 opto-isolated output			
Power Requirements	12 VDC (±10%) via 6-pin Hirose connector			
Power Consumption (typical)	5.0 W	5.5 W	5.5 W	6.0 W
Weight (typical)	<300 g			
Conformity	CE, FCC, IP30, RoHS			
Software Environment				
Configuration Software	Basler pylon release 2.2 or higher			
API for Configuration	Register API for C and VB6 or Basler pylon C++ API			
Conformity	Camera Link, GenICam			

Specifications are subject to change without prior notice.

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

Dimensions (in mm)



Specifications

GigE VISION

Basler aviator	avA1000-100gm/gc	avA1600-50gm/gc	avA1900-50gm/gc	avA2300-25gm/gc
Camera				
Resolution Size (H x V pixels)	1024 x 1024	1600 x 1200	1920 x 1080	2330 x 1750
Sensor	Kodak KAI-01050	Kodak KAI-02050	Kodak KAI-02150	Kodak KAI-04050
Sensor Size (optical)	1/2″	2/3″	2/3″	1″
Sensor Technology	Progressive Scan CCD, global shutter			
Pixel Size	5.5 x 5.5 µm			
Frame Rate	101 fps	55 fps	51 fps	26 fps
Mono/Color	Mono/Color			
Video Output Format	Mono 8, Mono 12, Mono 12 Packed, YUV 4:2:2 Packed, YUV (4:2:2 (YUYV) Packed, Bayer GB 8, Bayer GB 12, Bayer GB 12 Packed			
Interface	Gigabit Ethernet (1000 Mbit/s)			
Synchronization	Via external trigger, via the Ethernet connection, or free-run			
Exposure Control	Via external trigger signal or programmable via the camera API			
Mechanical / Electrical				
Housing Size (L x W x H)	40.7 mm x 62 mm x 62 mm			
Housing Temperature	Up to 50°C			
Lens Mount	C-mount			
Digital I/O	2 opto-isolated input / 4 opto-isolated output			
Power Requirements	12 VDC (±10%) via 12-pin Hirose connector			
Power Consumption (typical)	5.6 W	5.8 W	5.8 W	6.3 W
Weight (typical)	<300 g			
Conformity	CE, FCC, IP30, RoHS			
Software / Driver				
Driver	Basler pylon SDK including filter and performance driver			
Operating System	Windows, Linux - 32 bit and 64 bit			
Conformity	GigE Vision, GenICam			

Specifications are subject to change without prior notice.

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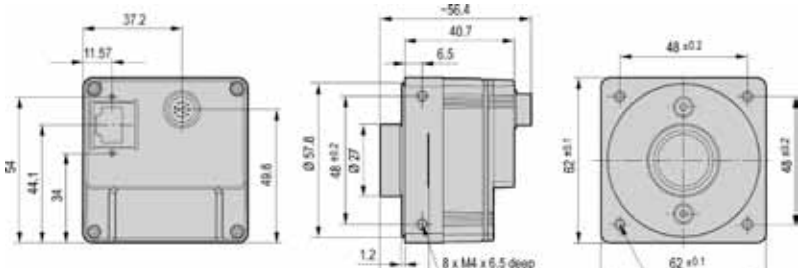
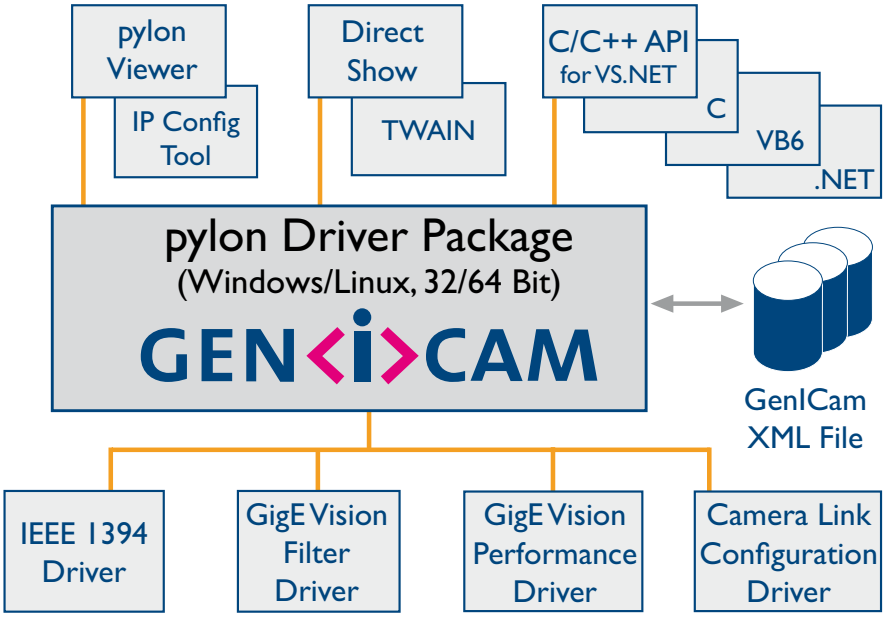
Dimensions (in mm)



Get your free version for Windows or Linux

Basler pylon Driver Package

The pylon driver package operates with all Basler line scan and area scan cameras. It offers stable, reliable and flexible data exchange between Basler cameras and PCs, at a very low CPU load.



The internal architecture of the pylon driver package is based on GenICam Technology, which offers you easy access to the newest camera models and the latest features. Changes to an existing camera device in your application essentially become a plug-and-play process.

The pylon GigE Vision Performance Driver quickly separates incoming packets carrying image data from other traffic on the network and makes the data available for use by your vision application while requiring the lowest CPU resources. This driver can only be used with network cards that include specific Intel chipsets. The pylon GigE Vision Filter driver supports all kinds of hardware, common GigE network cards, and GigE ports on your motherboard as well. The pylon IEEE 1394b driver gives you access to a well-established interface technology. The pylon Camera Link Configuration driver offers a comfortable access to all camera parameters of Basler's latest Camera Link families aviator, ace, and racer.

The pylon Viewer offers you a convenient application for testing and evaluating Basler cameras. The pylon IP Configuration tool helps you to set up multi-camera systems easily via local network boundaries. The pylon SDK supports any type of application development. The pylon package contains the following main modules. Each one can be individually selected/unselected during the installation process, preventing the installation of unneeded modules on your system.

- GigE Vision Filter Driver
- GigE Vision Performance Driver
- IEEE 1394 Driver
- Camera Link Serial Communication Driver
- pylon Viewer
- IP Configuration Tool
- pylon SDK for all Cameras; C,C++, C# and VB6 (the 'pylon for Linux' Version only supports the GigE interface via a C++ API)

The pylon driver package can be downloaded for free from our website. For more information on the installation process, refer to the pylon Installation Guide. The helpful pylon Release Notes contain all improvements and bug fixes since the first pylon version.

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?

1288 EMVA Standard Compliant

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

RoHS Compliance

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

www.baslerweb.com

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