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Basler pilot

AREA SCAN CAMERAS



- VGA to 5 megapixels and up to 210 fps
- Selected high quality Sony and Kodak CCD sensors
- Powerful Gigabit Ethernet interface
- Superb image quality at all resolutions and frame rates

BASLER
the power of sight

OVERVIEW

Excellent Image Quality and Attractively Priced

The Basler pilot camera family is based on four selected Kodak CCD sensors and one Sony CCD sensor for exceptional image quality. Equipped with a GigE Vision compliant interface, these cameras take maximum advantage of Kodak and Sony sensor technology and can often substitute for more cost-intensive Camera Link cameras and frame grabbers. Because Basler pilot cameras use the same sensors currently used in existing Camera Link cameras, no optics changes are required.

For more flexibility, this series offers additional software features that can be integrated into the image processing software on a remote computer.

Basler pilot cameras are a perfect fit for a variety of vision applications including semiconductor and component inspection, food inspection, manufacturing quality control, intelligent traffic systems, microscopy and medical imaging, biometrics, and many others.

Your benefits include:

- Resolutions from VGA to 5 megapixels
- 100 meter cable length provided by Gigabit Ethernet to give you the highest flexibility
- Cost-effective Gigabit Ethernet interface does not need a frame grabber
- Up to 12 bit depths and no bandwidth limitation on 8 bit data flow inside the camera
- Field-proven pylon Camera Software Suite with both filter and performance drivers
- 100% quality checked and calibrated to give you consistent performance and reliability



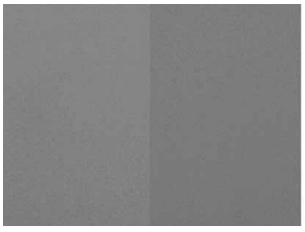
OVERVIEW

Outstanding Image Quality

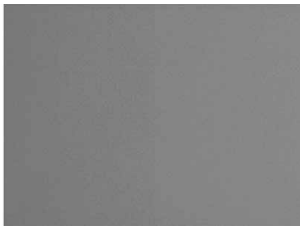
The Basler pilot family is equipped with four different Kodak CCD sensors and one Sony CCD sensor with each camera available in mono or color. These sensors were selected to provide outstanding image quality in combination with the Basler pilot's read-out and processing electronics. For precise imaging results, all Basler pilot cameras run in progressive scan mode.

Excellent Tap Balance

Basler has leveraged its years of experience in balancing the output from imaging sensors with two taps, so customers can expect a perfectly balanced, homogenous image. This technological advantage has already impressed many customers who use these Basler pilot cameras. All Basler pilot cameras have shown exceptionally good results compared to competitive cameras based on the same sensors. The following drawing shows the effect. (Left: unbalanced camera, right: factory balanced pilot camera)



Unbalanced sensor with visible line



Basler pilot after calibration

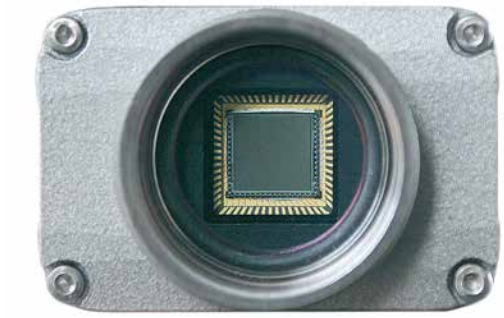
Precise Sensor Alignment

In addition to Basler's standard CTT+ automated quality assurance and calibration system, the pilot camera family is tested and measured with another production tool. This unique tool is an ultrahigh precision sensor alignment device. The device automatically mounts the sensor board on the camera's front module in six degrees of freedom with reference to the optical axis. This ensures a constant depth of focus over the whole sensor and guarantees the best imaging results, even with sensors that have pixels smaller than 5 µm, like the piA2400gm/gc has.

Software Makes Image Processing Easy

The Basler pilot family comes with a fully tested package of software, the pylon Camera Software Suite, that lets you easily evaluate and integrate pilot cameras. The package can be downloaded from Basler's website. It includes a Viewer tool and the software development kit (SDK).





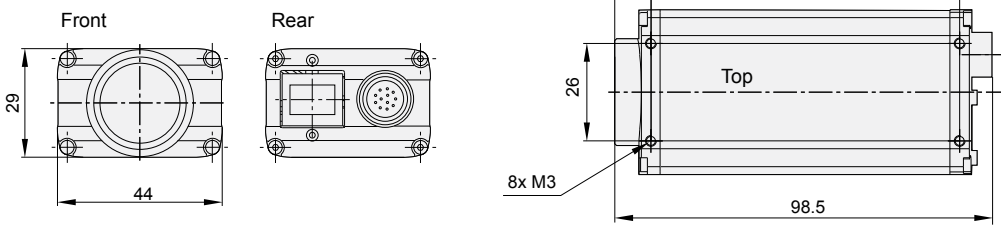
TECHNICAL DETAILS

Specifications

Basler pilot	piA640-210gm/gc	piA1000-48gm/gc	piA1000-60gm/gc	piA1600-35gm/gc	piA1900-32gm/gc	piA2400-17gm/gc
Camera						
Resolution (H x V pixels)	646 x 486	1004 x 1004	1004 x 1004	1604 x 1204	1928 x 1084	2456 x 2058
Sensor	Kodak KAI-0340	Kodak KAI-1020	Kodak KAI-1020	Kodak KAI-2020	Kodak KAI-2093	Sony ICX625
Sensor Size (optical)	1/3"	2/3"	2/3"	1"	1"	2/3"
Sensor Technology	Progressive Scan CCD, global shutter					
Pixel Size (µm)	7.4 x 7.4	7.4 x 7.4	7.4 x 7.4	7.4 x 7.4	7.4 x 7.4	3.45 x 3.45
Frame Rate	210 fps	48 fps	60 fps	35 fps	32 fps	17 fps
Mono / Color	Mono / Color					
Interface	Gigabit Ethernet					
Video Output Format	Mono 8:8 bits/pixel, Mono 16:16 bits/pixel, YUV 4:2:2:16 bits/pixel average Raw 8:8 bits/pixel (R,G or B), Raw 16:16 bits/pixel (R,G or B) and packed formats					
Syncronization	Via external signal, via software, or free run					
Exposure Control	Edge-controlled, level controlled, or programmable					
Mechanical / Electrical						
Housing Size (L x W x H)	86.7 mm x 44 mm x 29 mm					
Housing Temperature	Up to 50 °C					
Lens Mount	C-mount					
Digital I/O	2 opto-isolated input ports, 4 opto-isolated output ports					
Power Requirements	12-24 VDC; via Hirose 12-pin connector (max. 10 meter cable length)					
Power Consumption (typ.)	<4.5 W	<4.8 W	<4.6 W	<4.9 W	<4.9 W	<5.9 W
Weight (typical)	~220 g					
Conformity	CE, FCC, RoHS, IP30					
Software / Driver						
Driver	Basler pylon Camera Software Suite or 3rd party GigE Vision Software					
Operating Systems	Windows, Linux - 32 bit and 64 bit					
Conformity	GigE Vision, GenICam					

Specifications are subject to change without prior notice. Latest specifications can be found on our website.
Please visit www.baslerweb.com/manuals for the detailed camera User's Manual and www.baslerweb.com/thirdparty for information on third party software.

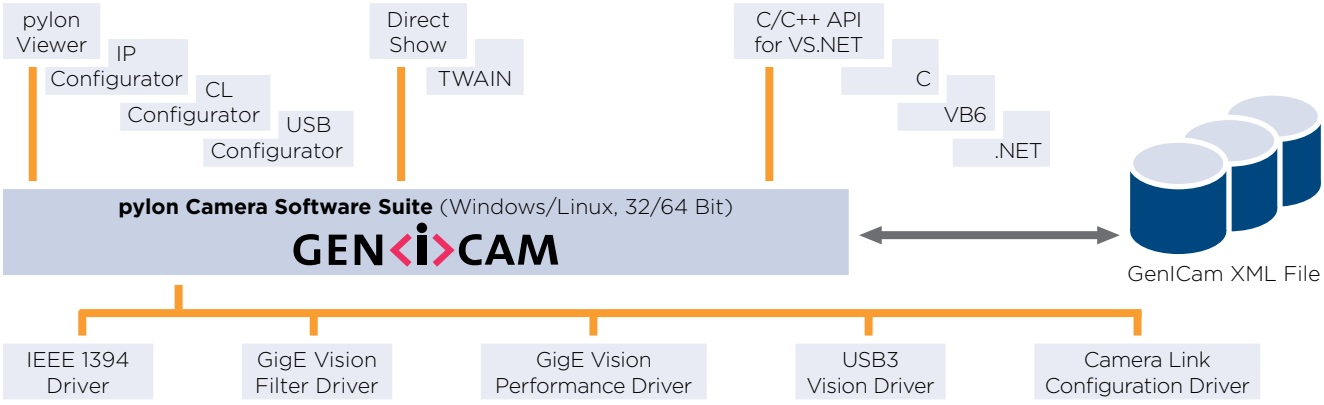
Dimensions (in mm)



Get your free version: www.baslerweb.com/pylon

Basler pylon Camera Software Suite

The pylon Camera Software Suite operates with all Basler line scan and area scan cameras - no matter what interface they use. It offers stable, reliable and flexible data exchange between Basler cameras and PCs, at a very low CPU load.



The architecture of the pylon Camera Software Suite 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.

An easy-to-use set of tools lets you configure the camera's interface. Use the **pylon Viewer** to set camera parameters, to capture and display images, and to evaluate the camera.

The pylon **USB3 Vision Driver** fully supports the USB3 Vision standard. It allows Basler USB 3.0 cameras to use the full speed and bandwidth of USB 3.0 for image transmission while reducing resource load and using off-the-shelf hardware components.

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, and the pylon **Camera Link Configuration Driver** offers comfortable access to all camera parameters of Basler's latest Camera Link families ace, aviator, and racer.

The pylon Camera Software Suite also contains a powerful SDK that 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:

- USB3 Vision Driver
- GigE Vision Filter Driver
- GigE Vision Performance Driver
- IEEE 1394 Driver
- Camera Link Serial Communication Driver
- pylon Viewer
- SDK for all cameras; C, C++, .NET (C#, VB.NET, ...), and VB6 (the 'pylon for Linux' version only supports the GigE interface via a C++ API)

The pylon Camera Software Suite can be downloaded for free at **www.baslerweb.com/pylon**. 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.

OTHER INFORMATION

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 cameras and sensors. We are giving the EMVA 1288 standard our strongest support because it describes a unified method to measure, compute, and present the specification parameters for cameras and image sensors. Our cameras are characterized and measured in 100% compliance with the EMVA 1288 standard. Measurement reports can be downloaded from our website.

How Does Basler Ensure Superior Quality and Reliable High Performance?

Our approach to quality assurance is rigorous: we continually audit all facets of our business to guarantee performance, increase efficiency and reduce costs for our customers. We are compliant with all major quality standards including ISO9001, CE, RoHS, and more. To ensure consistently high product quality, we employ several quality inspection procedures during manufacturing.

Every Basler camera is subjected to exhaustive optical and mechanical tests before leaving the factory. We have developed a unique combination of optics, hardware, and software tools that can quickly and efficiently calibrate a camera and measure its performance against a set of standard performance criteria. Regardless of what technology or camera model you choose you can be assured of consistent performance.

3-Year Warranty

Basler offers a 3-year warranty for our cameras. We make this unprecedented promise because we have unparalleled confidence in our products. We continually reinvest in research, development and superior manufacturing capabilities so that our customers can fully rely on the products we manufacture.

About Basler

Founded in 1988, Basler is a leading global manufacturer of high quality digital cameras for industrial, medical, traffic and video surveillance applications. The company employs some 300 people at its headquarters in Ahrensburg, Germany and subsidiaries in the United States and Asia.

Basler's portfolio of products offers customers the vision industry's widest selection of industrial and network cameras. Today it includes some 300 models – and it's still growing. We're committed to developing technology that drives business results for our customers: cameras that are easy to use, easy to integrate, and deliver an exceptional price/performance ratio.



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Artisan Technology Group is an independent supplier of quality pre-owned equipment

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Planning to upgrade your current equipment? Have surplus equipment taking up shelf space? We'll give it a new home.

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