

Basler racer

Line Scan Cameras

GiGE[®]
VISION

CAMERA
Link
REGISTERED PRODUCT

GEN < i > **CAM**



Preliminary

- Next generation sensors with 2k and 4k resolution and up to 80 kHz line rate
- Flexible and easy integration, supported by a very compact design
- Gigabit Ethernet interface with 100 m cable length
- Camera Link interface for high throughput with Power over Camera Link (PoCL)
- Outstanding price/performance ratio

BASLER

Excellent Image Quality and Attractive Price/Performance Ratio

The Basler racer family uses special CMOS line scan sensors. We have added both Gigabit Ethernet and Camera Link interfaces, to create a flexible, state-of-the-art technology package for the line scan market. With an outstanding price/performance ratio, this series is ideal for price-sensitive applications.

Your benefits include:

- Resolutions of 2k and 4k
- Line rates up to 80 kHz
- Compact, rugged housing for easy integration
- Single cable power, provided by Power over Camera Link (PoCL)
- Compatible with the newest vision industry standards
- Field-proven Basler pylon driver package with both filter and performance drivers
- Outstanding price/performance ratio



Basler racer cameras are an ideal fit for a variety of applications, including web inspection (wood, paper, foil, etc.), print inspection, surface inspection (printed circuit boards, flat panels and displays, semiconductors etc.), food inspection, document scanning, and postal sorting.

The Basler racer family features a GenICam-compliant API, and uses the latest drivers. With GUI-based software, users can easily set camera parameters, adjust image quality and control the cameras from a remote computer.

Also based on the GenICam standard, the Basler pylon driver package operates with all models of the racer series. It is available in a 32 and 64 bit version for Windows and Linux and has been proven in thousands of installations worldwide.

Specifications

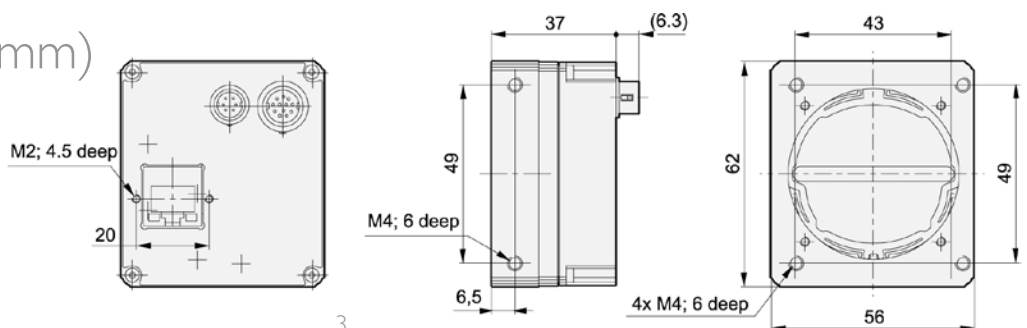
Basler Camera	raL2048-48gm	raL4096-24gm
Camera		
Resolution	2048	4096
Sensor	Awaiba DR-2k-7	Awaiba DR-4k-7
Sensor Technology	Linear CMOS	
Pixel Size	7 µm x 7 µm	
Line Rate	48 kHz	24 kHz
Mono/Color	Mono	
Video Output Format	Mono 8, Mono 12, Mono 12 Packed, YUV 4:2:2 Packed, YUV 4:2:2 (YUYV) Packed	
Interface	Gigabit Ethernet	
Pixel Bit Depth	8 or 12 bit	
Gain	Digital max. 16x	
Synchronization	Via external trigger, via software, or free-run	
Exposure Control	Trigger width, timed, or off	
Mechanical / Electrical		
Housing Size (L x W x H)	37 mm x 56 mm x 62 mm	
Housing Temperature	Up to 50°C	
Lens Mount	Universal front module with screwable C- or F-mount adapter (available as accessory)	
Digital I/O	3 in / 2 out or direct encoder input	
Power Requirements	12-24 VDC (±10%)	
Power Consumption (typical)	<4.5 W	<5 W
Weight (typical)	ca. 300 g	
Conformity	CE, UL (in preparation), KCC, FCC, RoHS, IP30	
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.

Cameras will be available Q2/2012

Further models with 6k, 8k, and 12k resolutions are planned for 2012.

Dimensions (in mm)



Specifications

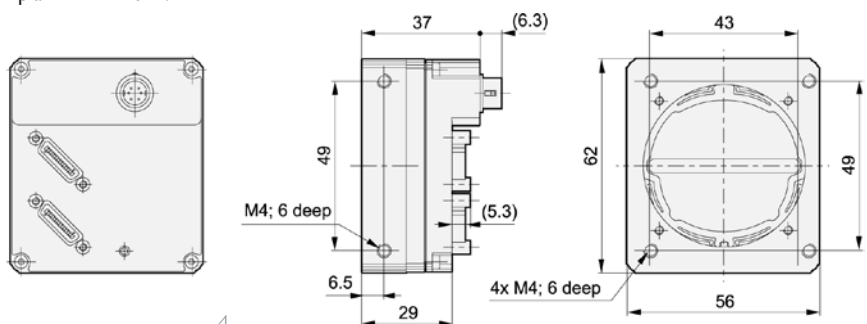
Basler Pylon	raL2048-80km	raL4096-80km
Camera		
Resolution	2048	4096
Sensor	Awaiba DR-2k-7	Awaiba DR-4k-7
Sensor Technology	Linear CMOS	
Pixel Size	7 μm x 7 μm	
Line Rate	80 kHz	
Mono/Color	Mono	
Pixel Data Format	Mono 8, Mono 10, Mono 12	
Interface	Camera Link	
Pixel Bit Depth	8, 10 or 12 bit	
Camera Link Clock	32.5, 40, 65, 80, or 82 MHz	
Gain	Digital max. 16x	
Synchronization	Via external trigger or free-run	
Exposure Control	Trigger width, timed, or off	
Mechanical / Electrical		
Housing Size (L x W x H)	37 mm x 56 mm x 62 mm	
Housing Temperature	Up to 50°C	
Lens Mount	Universal front module with screwable C- or F-mount adapter (available as accessory)	
Digital I/O	Via Camera Control Signals (max. 4)	
Power Requirements	12-24 VDC ($\pm 10\%$)	
Power Consumption (typical)	<4 W	<4.5 W
Weight (typical)	ca. 300 g	
Conformity	CE, UL (in preparation), KCC, FCC, RoHS, IP30	
Software / Driver		
API for Configuration	Register API or Basler pylon C++ API	
Operating System	Windows, Linux - 32 bit and 64 bit	
Conformity	GenICam, Camera Link	

Specifications are subject to change without prior notice.

Cameras will be available Q2/2012

Further models with 6k, 8k, and 12k resolutions are planned for 2012.

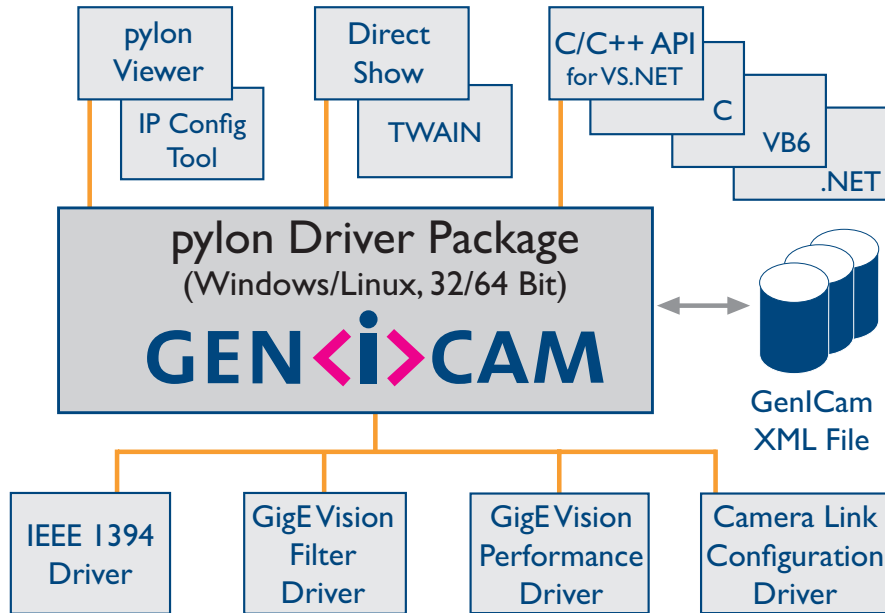
Dimensions (in mm)



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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?



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 racer 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 racer 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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