Basler runner

LINE SCAN CAMERAS


GiGE® VISION

- High-quality line scan technology meets a cost-effective GigE interface

- Real color support in a compact housing size

- Shading correction compensates for difficult lighting conditions

- Flexible, easy integration supported by a variety of I/O features

BASLER
the power of sight

OVERVIEW

Proven Image Quality and Easy to Use Without a Frame Grabber

The Basler runner family is a line scan series that combines high quality line scan technology with Gigabit Ethernet (GigE) interface technology. Proven image quality and an easy-to-use GigE interface make the runner family a perfect solution for a wide variety of applications. With the GigE interface, it's simple and straightforward for the user to adapt a camera to their system, to acquire their first images, and to adjust the camera's parameter settings to obtain the best results for their particular application. And because a Camera Link frame grabber and cables are not needed with runner cameras, a GigE line scan bundle is a highly cost-effective solution.
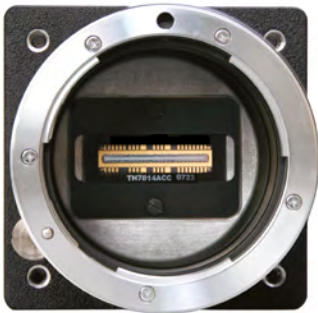
runner Color Sensor Technolog

The ruL2098-10gc incorporates a tri-linear sensor with three separate light-sensitive lines to collect red, green, and blue information. A built-in spatial correction capability can be used to compensate for the small space between each of the sensor's lines, resulting in a true RGB image in a wide variety of applications.

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

Your benefits include:

- Up to 100 meter cable length with GigE

- Reliable, high-bandwidth data transfer at the lowest CPU load with the pylon driver package

- Superior image quality improves your image processing results

- Optimum image quality without the need for an expensive matched lens, providing you with an affordable solution for color imaging

- Use of a tri-linear sensor results in a very compact camera, reducing the space needed in your installation

- Simple integration environment provided by runner's flexible I/O capabilities (general purpose I/O), for example to transfer the trigger signal to another runner camera operating in parallel

- LED indicators and test image generation capabilities reduce your integration time and aid troubleshooting

- Broad variety of software features, such as the Multiplier and Divider to modify the incoming trigger signals and ensure that the camera is operating at the correct line speed

- An integrated spatial correction feature combines pixel data from the lines in the sensor eliminating the need for computer resources to perform this task

- Very attractive price/performance ratio

TECHNICAL DETAILS

Specifications

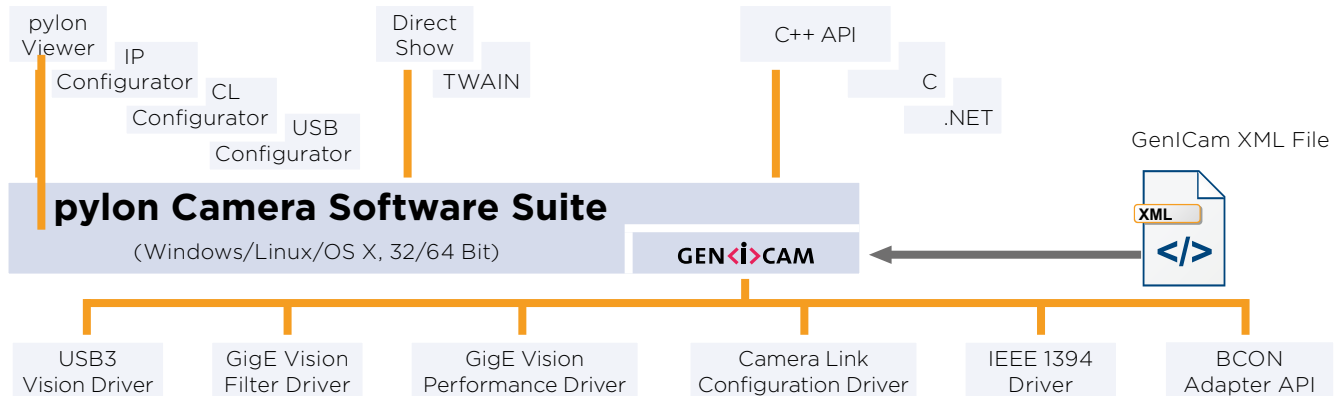| Basler runner	ruL2098-10gc
Camera	
Sensor Size	2098 pixels per line
Sensor	Kodak KLI-2113 tri-linear color CCD
Pixel Size	14 µm x 14 µm
Max Line Rate	9.2 kHz
Interface	Gigabit Ethernet (1000 Mbit/s)
Pixel Bit Depths	8 or 12 bit
Video Output Format	RGB 8, RGB 12, YUV 4:2:2
Syncronization	Via external signal or software
Exposure Control	Trigger width, timed, or off
Mechanical / Electrical	
Housing Size (L x W x H)	54.5 mm x 62.0 mm x 62.0 mm
Housing Temperature	Up to 50 °C
Lens Mount	F or V-mount
Digital I/O	3 in / 2 out or direct encoder input
Power Requirements	12 VDC (±10%)
Power Consumption (typical)	5.1 W
Weight (typical)	235 g
Conformity	CE, FCC, IP 30, RoHS, GenICam, GigE Vision

Specifications are subject to change without prior notice.
Latest specifications and availability can be found on our website *www.baslerweb.com/runner*.
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)
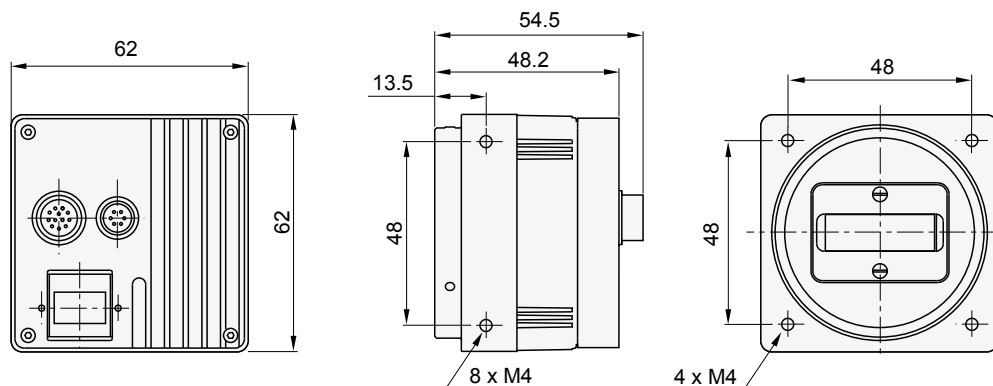
SOFTWARE

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, for Windows and Linux on x86 and ARM based systems – at a very low CPU load.

pylon Viewer · IP Configurator · CL Configurator · USB Configurator · Direct Show · TWAIN · C++ API · C · .NET · GenICam XML File

pylon Camera Software Suite
(Windows/Linux/OS X, 32/64 Bit)

GEN‹i›CAM

| USB3 Vision Driver | GigE Vision Filter Driver | GigE Vision Performance Driver | Camera Link Configuration Driver | IEEE 1394 Driver | BCON Adapter API |

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 Drivers** quickly separate incoming packets carrying image data from other traffic on the network and make the data available for use by your vision application while requiring the lowest CPU resources.

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 **BCON Adapter API** allows easy implementation

of an adapter to communicate with the systems I^2C interface. A ready to use sample adapter implementation is also provided.

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
- BCON Adapter API
- Camera Link Serial Communication Driver
- pylon Viewer
- SDK for all cameras; C, C++, .NET (C#,, ...); the 'pylon for Linux' version only supports the GigE and USB 3.0 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 ISO 9001, 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 their cameras and Basler Lenses. 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 and lenses for factory automation, medical & life sciences, retail and traffic applications. The company employs 500 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 as well as lenses. Today it includes some 300 camera models – and it's still growing. We're committed to developing technology that drives business results for our customers: cameras and lenses that are easy to use, easy to integrate, and deliver an exceptional price/performance ratio.

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