

# High Speed Product Info

## Highest frame rates

A perfect solution for ultra fast machine vision applications, Baumer's new HX digital CMOS cameras combine extremely high frame rates of 500 fps with over a megapixel of resolution at 1280 x 1024 pixels. Hyper frame rates of up to 120,000 fps are achievable by using up to three regions of interest (ROI) within the full frame. The cameras offer both a free running and trigger mode. By supporting the CameraLink® communication standard, industrial cables and frame grabber boards can be used, simplifying system integration.

## Enhanced sensitivity and high dynamic range

The HX family provide an exceptionally high photo sensitivity of 2500 ISO/ASA. Thus, high speed inspection is now possible even for low-light environments. In many cases, supplemental lighting is not needed. To image high dynamic range scenes containing very dark and very bright objects, the linear response of CMOS sensors is not appropriate. Therefore, the cameras offer an adjustment option which resembles the non-linear dynamic response of the human eye. This is achieved by resetting bright pixels after a specific percentage of the exposure time.

## Multiple exposure capability

In default mode, each pixel is reset after readout. For low-light environments, a non-destructive readout mode can be selected. Thereby, the pixel exposure can be accumulated up to 7 times. The image with the best exposure characteristics can be used for further processing. This is especially beneficial for 24-hour operation in outdoor environments.

## High speed CMOS cameras for advanced industrial vision applications



## Applications

Due to its exceptional features, the HX family is attractive for a number of applications and industries. This includes inspection, process control, measurement, material research, traffic monitoring, airbag inflation observation, fast flow visualization, hydrodynamics, fuel injection, automobile crash tests and semiconductor quality control.

## CameraLink® Interface

CameraLink® is a connectivity standard between digital cameras and frame grabbers for vision applications. The standard provides a simple cable concept and defines several data transfer modes. With a data transfer rate of up to 680 MByte/sec, it is uniquely positioned for high speed applications. The camera parameterization is performed using a serial communication protocol via the frame grabber. The Baumer HX

cameras are compatible with products from leading frame grabber vendors.

## Key features

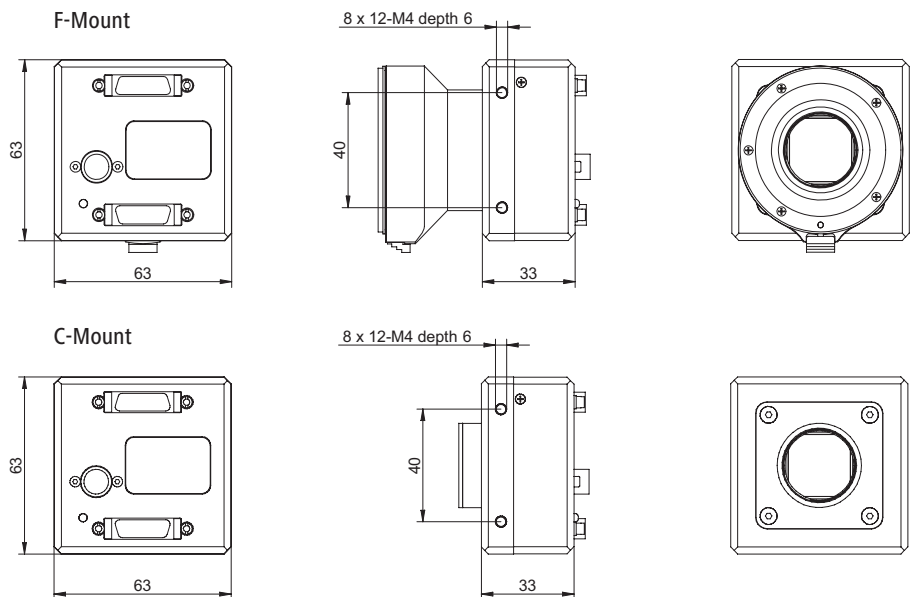
- 1280 x 1024 pixel with 500 fps
- Up to 120,000 fps using ROI
- Superior photo sensitivity
- Dynamic range up to 90 dB
- Multiple ROIs
- Available in monochrome and color
- Full CameraLink® interface
- F-Mount or C-Mount interface
- Compact and lightweight aluminum housing





## The right camera for your high speed application

Specifications	HXC13-F	HXC13-C
Resolution	1280 x 1024	
Sensor	High Speed CMOS Image Sensor (LUPA-1300-2)	
Pixel size	14 µm x 14 µm	
Photo sensitivity	2500 ASA	
Pixel clock	80 MHz	
Shutter	Internal timer, 1024 steps 2 µsec – 1 sec or pulse width of external trigger	
Frame rate	500 fps at full frame size, up to 120,000 with reduced resolution	
Gain	Digital 1 – 4 times, 1/1024 steps	
Exposure control	2 µsec...1 sec	
Operation modes	Free running or trigger mode	
Camera configuration	Serial interface via CameraLink®	
Digital outputs	Base CameraLink®, 2 x 8 bit, 2 x 10 bit Medium CameraLink®, 4 x 10 bit Full CameraLink®, 8 x 8 bit, 10 x 8 bit	
Dimensions [mm]	63 x 63 x 75.3	63 x 63 x 46.2
Weight	308 g	247 g
Power requirements	8...24 VDC, 5 Watts	
Optical interface	F-Mount	C-Mount
Operating temperature	+5 °C...+50 °C	
Conformity	CE, RoHS	



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