

# Digital industrial cameras

Capture the essential.



# Inspired by nature – our technology as evolution.



The human eye can discern about 100 shades of gray. Our cameras can distinguish more than 4,000.

We can see no more than 16 individual images per second, but our cameras can capture more than 1,000.

Our cameras never get tired.

# Machine vision with expertise and passion.

Baumer is a global leader in sensor solutions for factory and process automation. More than 2,700 employees in 38 subsidiaries in 19 countries are at your service across the globe.

Industrial image processing is an important business for us. Leading in innovation, we have been providing high-performance digital cameras for PC-based image processing systems and intuitive vision sensors for over 20 years.

Merging cutting-edge technologies with customer-focused consultancy has made us a premier global provider of high-quality industrial cameras. Our customers benefit from a diverse portfolio of sophisticated products for many different applications across varied industries. We are committed to long-term availability of our cameras to make sure our customers will obtain a high return on their investments in vision systems.

We develop customer-focused products, anticipate trends and shape the market by pointing the way with technology innovations. We put a particular emphasis on high performance, outstanding quality and durability as well as easy system integration.

Where standard products come to their limits, we develop market-oriented, customized components in close cooperation with our customers. The result: Your decisive competitive edge.

# High-performance industrial cameras.

High frame rates, exceptional image quality and ease of integration – that's what our industrial cameras stand for.

Our cameras are the basis for stable long-term image analysis. Hence, your applications will be successful in the long run. To achieve this, we combine industrial design with the latest sensors and innovative technologies.

From a cost-efficient entry-level model to perfectly optimized standard cameras to high-performance industrial cameras with maximum performance to meet the highest standards, we offer a very large portfolio – suitable for your industry and applications.

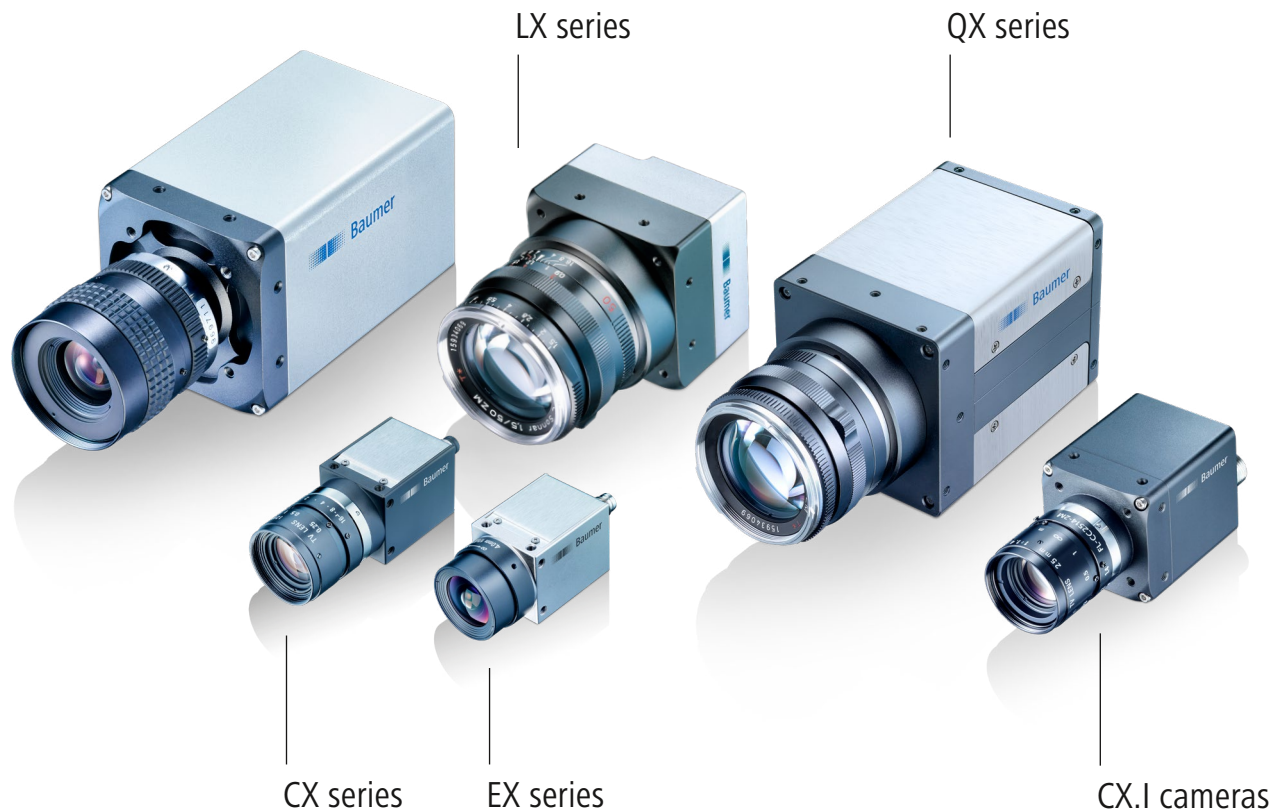
**GiGE**  
VISION

**USB**  
VISION

**10 GiGE**  
VISION

**CAMERA**  
**Link**

**GEN<i>i>CAM**



See the important when it counts.

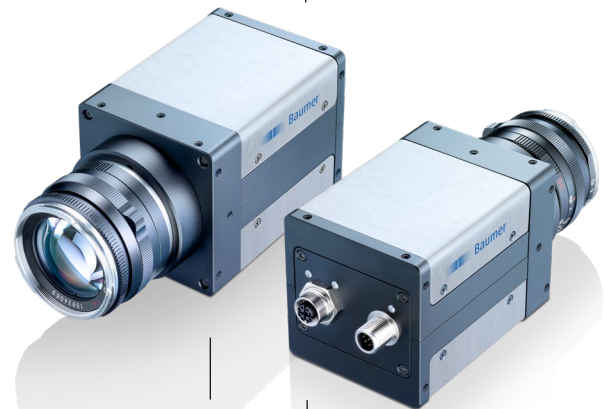
## High-speed cameras with high resolution.

QX series cameras are the ideal choice for applications that have to capture short image sequences very quickly and precisely in order to better understand and analyze processes and their sequences.

Thanks to the innovative 10 GigE interface, applications benefit from high bandwidth and at the same time all the advantages of the GigE Vision® standard: short transmission times, high industrial prevalence, simple and cost-effective integration without additional components such as frame grabbers, and cable lengths up to 100 m.

12 megapixel at 335 fps reliably capture short image sequences in fast processes

10 GigE interface easy, cost-effective integration



8 GB image memory flexible memory management

1.1 GB/s bandwidth short transmission times and reduced evaluation times

### QX series

- 12 megapixel and 335 fps
- CMOS sensors
- Flexible memory management
- 10 GigE interface with 1.1 GB/s bandwidth



Camera Type	Variants		Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]
	Mono	Color						
VQXT-120.HS	•	•	APS-C CMOS	CMV12000	Global	4096 × 3068	5.5 × 5.5	335   92

<sup>1)</sup> image acquisition in the camera's internal memory | interface (10 GigE)

Highest quality for reliable, long-term stable image evaluation.

## Focus on the essential.

The small, high-performance EX cameras excel by providing top Baumer quality at the best price. Focusing on essential, standard-compliant basic functionalities, the industrial cameras are ideal for most varied standard machine vision applications.

The square housing in 29×29 mm design with M3 mount on each side ensures quick and cost-efficient mechanical integration in your image processing system with high flexibility. The robust, industry-capable camera design ensures long-term stable and reliable image evaluation.

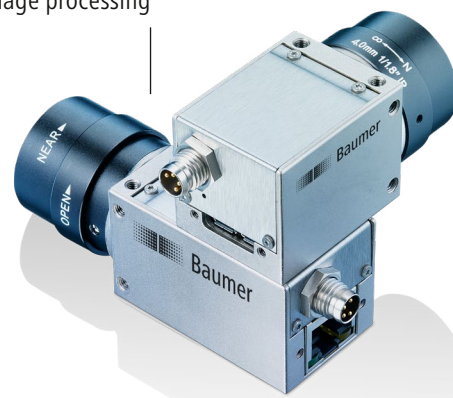
### EX series

- Up to 10 megapixel and 217 fps
- CMOS sensors
- Integrating essential basic functionalities for cost-oriented applications
- 29×29 mm housing with all-sided M3 mount



CMOS sensors of the latest generation for future-ready image processing

CS-mount reduces system costs thanks to cost-effective lenses



Robust design for long-term stable image evaluation

4-pin M8 connector for easy and cost-efficient process connection

**GiGE**  
VISION

**USB**  
VISION

Camera Type	Variants		Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]	
	Mono	Color						GigE Vision®	USB3 Vision™
VEXG-02	•	•	1/4" CMOS	PYTHON300	Global	640 × 480	4.8 × 4.8	217	–
VEXG-13	•	•	1/2" CMOS	PYTHON1300	Global	1280 × 1024	4.8 × 4.8	61	–
VEXU-24	•	•	1/1.2" CMOS	IMX249	Global	1920 × 1200	5.86 × 5.86	–	38
VEXG-25	•	•	2/3" CMOS	PYTHON2000	Global	1920 × 1200	4.8 × 4.8	41	–
VEXG-52.R	•	•	1/2.5" CMOS	MT9P031	Rolling <sup>1)</sup>	2592 × 1944	2.2 × 2.2	14	–
VEXG-100.R	•	•	1/2.3" CMOS	MT9J003	Rolling <sup>1)</sup>	3856 × 2764	1.67 × 1.67	7	–

<sup>1)</sup> rolling and global reset shutter

# Reliable detection and evaluation of fast processes.

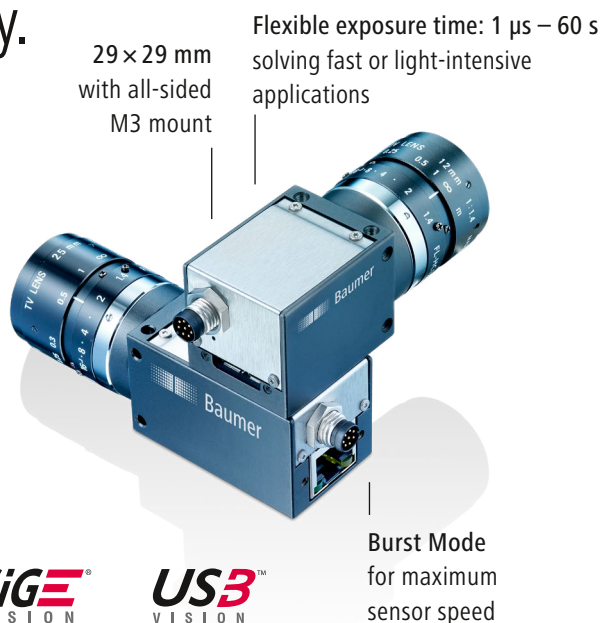


## Cutting-edge CMOS technology.

Using the cameras of the CX series, you are banking on latest CMOS sensor generation Sony® Pregius™ and ON Semiconductor® PYTHON for future-oriented applications. Among the wide variety of sensors you are sure to find the matching camera for most varied applications across all industries.

### CX series

- Up to 20 megapixel and 891 fps
- CMOS sensors
- Camera temperature range up to 65 °C
- GigE power supply: 12 – 24 V externally or PoE



**GigE**  
VISION

**USB**  
VISION

Camera Type	Variants			Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [μm]	Full Frames [fps]	
	Mono	Color	Pol						GigE Vision® <sup>1)</sup>	USB3 Vision™
V CXG-02 / V CXU-02	•	•		1/4" CMOS	PYTHON300	Global	640 × 480	4.8 × 4.8	595   403	891
V CXG-04 / V CXU-04	•	•		1/2.9" CMOS	IMX287	Global	720 × 540	6.9 × 6.9	441   318	430
V CXG-13 / V CXU-13	•	•		1/2" CMOS	PYTHON1300	Global	1280 × 1024	4.8 × 4.8	148   94	222
V CXG-15 / V CXU-15	•	•		1/2.9" CMOS	IMX273	Global	1440 × 1080	3.45 × 3.45	121   79	224
V CXG-22.R / V CXU-22.R	•	•		1/2" CMOS	IMX290	Rolling <sup>2)</sup>	1920 × 1080	2.9 × 2.9	89   58	138
V CXG-23 / V CXU-23	•	•		1/1.2" CMOS	IMX174	Global	1920 × 1200	5.86 × 5.86	81   53	166
V CXG-24 / V CXU-24	•	•		1/1.2" CMOS	IMX249	Global	1920 × 1200	5.86 × 5.86	38   38	38
V CXG-25 / V CXU-25	•	•		2/3" CMOS	PYTHON2000	Global	1920 × 1200	4.8 × 4.8	59   53	167
V CXU-31	•	•		1/1.8" CMOS	IMX252	Global	2048 × 1536	3.45 × 3.45	–	120
V CXG-32 / V CXU-32	•	•		1/1.8" CMOS	IMX265	Global	2048 × 1536	3.45 × 3.45	55   39	55
V CXG-50 <sup>3)</sup> / V CXU-50	•	•	•	2/3" CMOS	IMX250	Global	2448 × 2048	3.45 × 3.45	35   24	77
V CXG-51 / V CXU-51	•	•		2/3" CMOS	IMX264	Global	2448 × 2048	3.45 × 3.45	35   24	35
V CXG-53 / V CXU-53	•	•		1" CMOS	PYTHON5000	Global	2592 × 2048	4.8 × 4.8	28   23	73
V CXG-65.R <sup>4)</sup> / V CXU-65.R	•	•		1/1.8" CMOS	IMX178	Rolling <sup>2)</sup>	3072 × 2048	2.4 × 2.4	18   18	47
V CXU-90	•	•		1" CMOS	IMX255	Global	4096 × 2160	3.45 × 3.45	–	41
V CXG-91 / V CXU-91	•	•		1" CMOS	IMX267	Global	4096 × 2160	3.45 × 3.45	21   13	39
V CXU-123	•	•		1.1" CMOS	IMX253	Global	4096 × 3000	3.45 × 3.45	–	29
V CXG-124 / V CXU-124	•	•		1.1" CMOS	IMX304	Global	4096 × 3000	3.45 × 3.45	15   10	29
V CXG-125.R <sup>4)</sup> / V CXU-125.R	•	•		1/1.7" CMOS	IMX226	Rolling <sup>2)</sup>	4000 × 3000	1.85 × 1.85	15   10	29
V CXG-201.R / V CXU-201.R	•	•		1" CMOS	IMX183	Rolling <sup>2)</sup>	5472 × 3648	2.4 × 2.4	9   6	15

<sup>1)</sup> Burst Mode (image acquisition in the camera's internal memory) | interface <sup>2)</sup> rolling and global reset shutter <sup>3)</sup> only available as polarization model <sup>4)</sup> available Q2/2019

# Image-controlled, high-precision gripping and positioning sequences.



## Enhanced performance in demanding applications.

The CX.I cameras deliver improved performance: extended operating temperature range, hard-anodized housing, M12 connector, 4 power outputs and integrated illumination controller.

Models with extended temperature capabilities ranging from -40 °C to 70 °C fully eliminate the need for additional cooling or heating. This allows for simple thermal integration while saving time and system costs.

Great functionality merged with the latest CMOS sensors, supreme image quality and high frame rates enable multifaceted use in diversified application fields.

Hard-anodized housing  
precise image analysis,  
e.g. in the food and  
pharmaceutical industry



x-encoded M12 connector and PoE  
cost-efficient single-cable solution  
helps reduce downtimes

4 power outputs with  
max. 120 W (max. 48 V / 2.5 A)  
simple control of external light sources,  
e.g. for shape-from-shading

### CX.I cameras

- Up to 12 megapixel and 148 fps
- CMOS sensors
- Operating temperature range -40 °C to 70 °C
- Vibration 10 g, shocks 100 g



Camera Type <sup>1)</sup>	Variants			Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]
	Mono	Color	XT <sup>2)</sup>						
VCXG-13.I	•	•	•	1/2" CMOS	PYTHON1300	Global	1280 × 1024	4.8 × 4.8	148   94
VCXG-15.I	•	•	•	1/2.9" CMOS	IMX273	Global	1440 × 1080	3.45 × 3.45	121   79
VCXG-25.I	•	•	•	2/3" CMOS	PYTHON2000	Global	1920 × 1200	4.8 × 4.8	59   53
VCXG-32.I	•	•	•	1/1.8" CMOS	IMX265	Global	2048 × 1536	3.45 × 3.45	55   39
VCXG-51.I	•	•	•	2/3" CMOS	IMX264	Global	2448 × 2048	3.45 × 3.45	35   24
VCXG-53.I	•	•	•	1" CMOS	PYTHON5000	Global	2592 × 2048	4.8 × 4.8	28   23
VCXG-124.I	•	•	•	1.1" CMOS	IMX304	Global	4096 × 3000	3.45 × 3.45	15   10

<sup>1)</sup> operating temperature 0 °C to 65 °C <sup>2)</sup> models with extended temperature range <sup>3)</sup> Burst Mode (image acquisition in the camera's internal memory) | interface



# Reliable inspection in demanding environments.

## Flexibly implemented applications.

The modular housing accessories are specifically designed for the CX.I cameras to always provide the best application match at optimum price/performance ratio – from robust robotic capabilities to sensitive areas in food and beverage as well and the pharmaceutical industry with stringent hygiene requirements.

The housing base set IP 65/67 housing with hard-anodized surface prevents any chance of dirt accumulation and stands up to intensive cleaning cycles. With a surface roughness of less than 0.8 µm, the EHEDG-compliant stainless steel housing base set IP 69K prevents adherence of product residues. The patented tube system with a variable number of extension rings will reliably and quickly protect camera and lens of different lengths against dust or dirt – also ideal for use in robotics.

Round, hard-anodized housing  
prevents dirt accumulation,  
e.g. by stagnant fluids

Patented modular  
tube system  
flexible protection  
for varied lenses



Stainless steel housing  
in washdown design  
for use in splash zones and  
areas with product contact

### CX.I camera housing accessories

- Base sets developed in accordance with EHEDG guidelines
- Perfect thermal harmonization of camera and housing accessories
- Optimum price-performance ratio



	Base Set	Tube Thread	Cover glass	Extension Rings	Protection Class	Material
IP 65/67 cameras	–	M47, M62	acrylic glass, laminated safety glass <sup>1)</sup>	6 mm, 12 mm, 36 mm	IP 65/67	aluminum, hard-anodized
IP 65/67 cameras, round	•	M62	acrylic glass, laminated safety glass <sup>1)</sup>	6 mm, 12 mm, 36 mm	IP 65/67	aluminum, hard-anodized
IP 69K cameras	•	M60	acrylic glass	–	IP 69K	stainless steel

<sup>1)</sup> chemically strengthened alumino-silicate glass SCHOTT Xensation®

# Precise inspection at high throughput.

## Fast, high-resolution cameras.

LX series cameras are based on modern-day CMOS sensors with Global Shutter. They master complex inspection tasks with demanding requirements on detailed image acquisition and throughput. Their superb performance is owed to high sensitivity, excellent image quality and up to 48 megapixel resolution.

The GigE camera models feature Burst Mode to capture image sequences or selected regions of the image (ROI) at very high speed. Where using cameras with Dual GigE twice the frame rate for increased throughput is provided. For improved system stability, the Camera Link® models offer additional features, such as status information and checksum calculation.

Camera Link® with up to 800 MB/s and easy system integration using GenICam™

Multi ROI and Multi I/O as well as PoE / PoCL for ultimate flexibility



Flexible lens mount M58, M42, F-mount or C-mount

Single or Dual GigE with 240 MB/s high frame rates and easy integration

### LX series

- Up to 48 megapixel and 337 fps
- CMOS sensors
- Outstanding sensitivity
- HDR extended dynamic range



Camera Type	Variants			Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]	
	Mono	Color	NIR <sup>1)</sup>						GigE Vision <sup>2)</sup>	Camera Link®
LXG-20 / LXC-20	•	•	•	2/3" CMOS	CMV2000	Global	2048 × 1088	5.5 × 5.5	337   111	337
LXG-40 / LXC-40	•	•	•	1" CMOS	CMV4000	Global	2048 × 2048	5.5 × 5.5	180   59	180
LXG-80	•	•		4/3" CMOS	CMV8000	Global	3360 × 2496	5.5 × 5.5	61   29	–
LXG-120 / LXC-120	•	•		APS-C CMOS	CMV12000	Global	4096 × 3072	5.5 × 5.5	50   19	63
LXG-200 / LXC-200	•	•		35 mm CMOS	CMV20000	Global	5120 × 3840	6.4 × 6.4	32   12	32
LXG-250 / LXC-250	•	•		APS-H CMOS	PYTHON 25K	Global	5120 × 5120	4.5 × 4.5	32   9	32
LXG-500 / LXC-500	•	•		35 mm CMOS	CMV50000	Global	7920 × 6004	4.6 × 4.6	15   5	15

<sup>1)</sup> only LXG cameras <sup>2)</sup> Burst Mode (image acquisition in the camera's internal memory) | interface (Dual GigE)

# Precise and fast inspections in demanding environments.

## Robust 10 GigE cameras.

The 10 GigE cameras of the LX series combine the latest Sony® Pregius™ sensors and innovative 10 GigE interface for data transmission at large bandwidth with 1.1 GB/s and supreme image quality.

With resolutions up to 12 megapixel, low noise and a dynamic range of 71 dB the CMOS cameras reliably capture even the finest detail in dynamic applications. The 10 GigE interface ensures consistently fast image transmission and shorter evaluation time – with quick and cost-effective camera integration in parallel. In addition, high performant features such as sequencer, Burst Mode or IEEE 1588 support your individual application solution.

### 10 GigE cameras of the LX series

- Up to 12 megapixel and 215 fps
- CMOS sensors
- Exposure time down to 1 μs, up to 1.1 GB/s bandwidth
- 10GBase-T for copper cables or SFP+ slot for optical cables



IP 65/67 housing<sup>1)</sup> with M12 connector robust image evaluation in harsh environments

Liquid lens support rapid focus adjustment to changing object distance

SFP+ slot for fiber-optic cables bridge distances up to 10 kilometers

4 outputs with max. 120 W / 2.5 A direct lighting trigger, no external controller required

10 GigE interface easy and cost-efficient system integration



Camera Type	Variants			Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [μm]	Full Frames [fps]
	Mono	Color	Fiber <sup>2)</sup>						
VLXT-31	•	•	•	1/1.8" CMOS	IMX252	Global	2048 × 1536	3.45 × 3.45	215
VLXT-50	•	•	•	2/3" CMOS	IMX250	Global	2448 × 2048	3.45 × 3.45	163
VLXT-90	•	•	•	1" CMOS	IMX255	Global	4096 × 2160	3.45 × 3.45	95
VLXT-123	•	•	•	1.1" CMOS	IMX253	Global	4096 × 3000	3.45 × 3.45	69

<sup>1)</sup> with optional patented modular tube system <sup>2)</sup> available Q3/2019

# Minimizing system cost by innovation.

## Cameras with image processing.

LX camera models with *VisualApplets* technology enable integrated, application-specific image processing directly in the camera's FPGA which reduces the data volume for transmission and processing. This way, the effort of algorithm calculation which requires considerable processing power is removed from the PC-based image processing system. Application performance will be enhanced while system cost is reduced.

With *VisualApplets* by Silicon Software, the graphic development environment for FPGA programming, even complex algorithms can be implemented quickly and easily. It enables efficient and economic image data processing at very high resolution and speed.

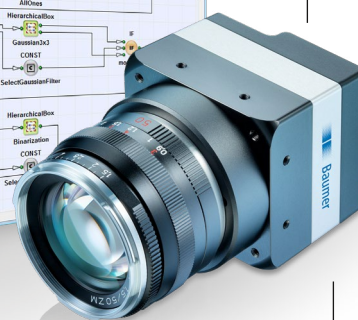
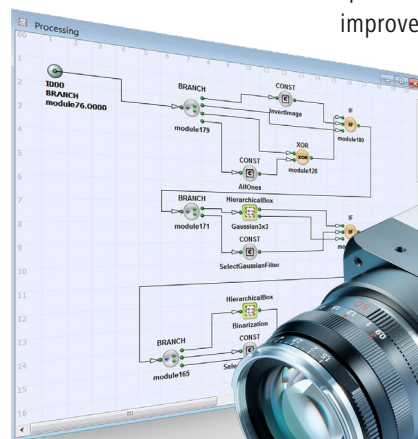
### LX *VisualApplets* cameras

- Up to 20 megapixel and 338 fps
- Flexible user-specific function extension
- Hardware-based image processing in real-time
- Models for 3D laser triangulation and JPEG image compression



Graphical FPGA development environment enables easy application development

Digital inputs and outputs with precise control for improved flexibility



GigE Vision®  
easy, flexible and  
cost-efficient integration

Easy system integration  
via GenICam™ compliant  
configuration



Camera Type	Variants				Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]
	Mono	Farbe	3D	JPEG						
LXG-20.P		•		•	2/3" CMOS	CMV2000	Global	2048 × 1088	5.5 × 5.5	140   56
LXG-20.PS	•		•		2/3" CMOS	CMV2000	Global	2048 × 1088	5.5 × 5.5	338   56
LXG-40.P	•			•	1" CMOS	CMV4000	Global	2048 × 2048	5.5 × 5.5	74   29
LXG-120.P	•				APS-C CMOS	CMV12000	Global	4096 × 3072	5.5 × 5.5	25   9
LXG-120.PS	•		•		APS-C CMOS	CMV12000	Global	4096 × 3072	5.5 × 5.5	60   9
LXG-200.P	•				35 mm CMOS	CMV20000	Global	5120 × 3840	6.4 × 6.4	16   6
LXG-250.JP				•	APS-H CMOS	PYTHON 25K	Global	5120 × 5120	4.5 × 4.5	10   4

<sup>1)</sup> image acquisition and processing with *VisualApplets* | interface

# Targeted implementation of applications.



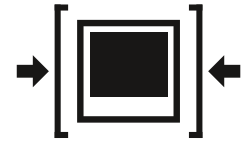
## Ready-to-use SmartApplets.

Thanks to *SmartApplets*, the functional scope of LX *VisualApplets* cameras can easily be extended for specific applications. You do not need to develop your own image processing algorithm – which saves time and costs.

The applets are immediately ready to use, extensively tested and can comfortably be transferred to the camera by means of a firmware update. If necessary, customer-specific adaptations can be effectively implemented on the basis of the *SmartApplets*.



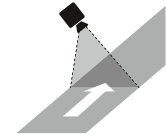
Binarization



JPEG Compression



HDR Calculation



Line Scan Emulation

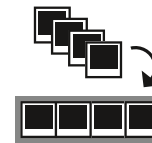
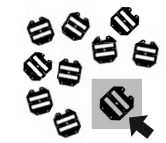


Image Aggregation



Object Extraction

### SmartApplets for LX *VisualApplets* cameras



- Ready-to-use function extensions
- Free download from the Baumer Member Area
- Easily integrated by means of firmware update
- Competent support from the Baumer Solution Center

<i>SmartApplets</i>		Camera Type
Binarization	Reduce data with adaptive binarization and use high resolution and speed via GigE	LXG-20M.PS
HDR Calculation	Simple evaluation of light and dark areas within a single scene thanks to the calculation of an HDR image from a sequence of images with different exposure times	LXG-40M.P LXG-200M.P
Image Aggregation	Merging multiple images with small ROIs with extremely high frame rates to simplify image transfer and reduce the CPU load	LXG-20M.PS
JPEG Compression	Reduce the amount of data to be transmitted through lossy image compression (adjustable)	LXG-40M.P
Line Scan Emulation	Simplified integration by emulating a line scan camera with a matrix sensor	LXG-20M.PS LXG-120M.PS
Object Extraction	Localization and extraction of objects for data reduction	LXG-40M.P LXG-120M.P

Additional *SmartApplets* and supported camera models are available on request.

# Customer-specific products for your applications.

When standard cameras reach their limits, we can develop customized image processing components for your applications – starting with the simple adaptation of our industrial cameras, through the complete development of an OEM product, to modifications of our software.



## Your benefits

- Our know-how: you gain competitive advantage and save time
- Our practice-proven technologies: reliable solutions and investment security
- Our best price-performance ratio: cost reduction and profitability improvement

### Made to match: modification of standard cameras.

Perfectly tailored to your application, we can modify our cameras and thus create the right component for your system. This covers:

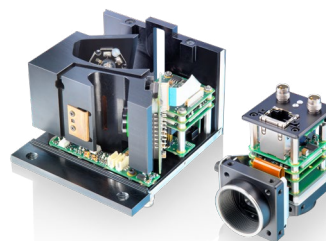
- Modification of hardware (e.g. adjustment of mechanical and electrical interfaces)
- Firmware adaptation (e.g. image preprocessing)
- Branding and labeling (e.g. application of trademarks)



### Tailor-made for you: OEM development.

To meet your requirements, we develop OEM components with an optimum price-performance ratio. Our range of services covers:

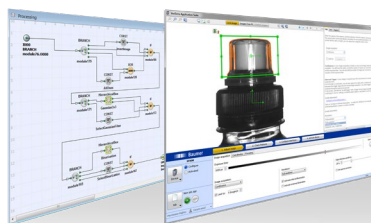
- Development and production of image processing components
- Complete design of mechanical systems, hardware and software
- Long-term availability



### Individually adapted: software & algorithms.

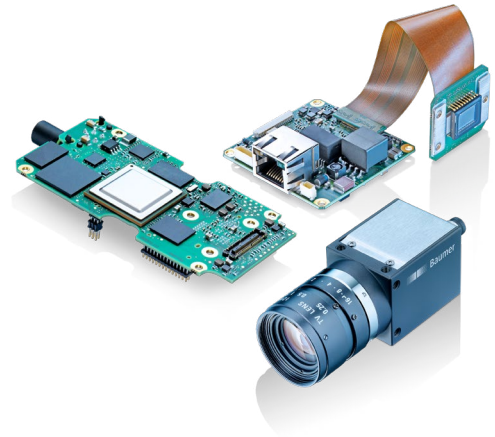
We can offer you different software solutions for optimum system performance, namely:

- Camera integration and image preprocessing with the Baumer GAPI SDK for Windows®, Linux® and Linux® ARM®
- FPGA-based image processing for image enhancement or data reduction in real time
- DSP- / x86- / ARM®-based image processing algorithms



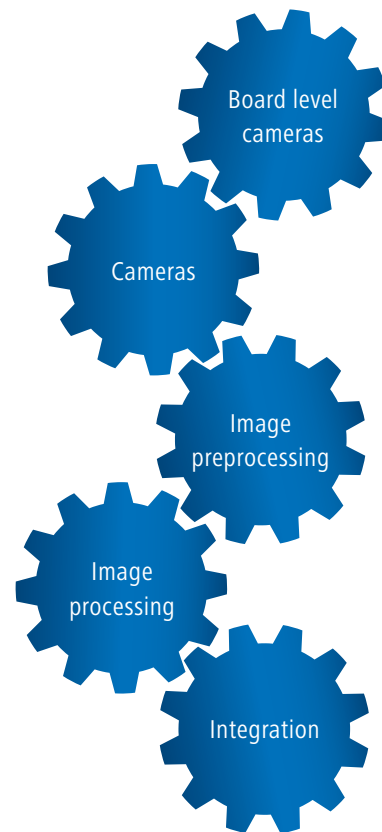
# Implement embedded vision precisely.

For the realization of your embedded vision application, we can offer you a large product portfolio and customer-specific products with long-term availability. In addition, the experienced staff in our Baumer Solution Center can support you with competent advice and feasibility analyses.



## Your individual application – our versatile range of products.

- **High flexibility in small spaces:**  
Flexible integration (MX series), for example in applications in medical technology, laboratory automation or in the retail trade
- **Large camera portfolio for many industries:**  
Compact cameras (CX and LX series) with optional IP 65/67 protection class for applications in mechanical engineering, in the electronics industry, for traffic monitoring or in microscopy
- **Real-time behavior without additional system components:**  
FPGA-based real-time image processing (LX *VisualApplets* cameras) for image enhancement or data reduction, for example in the pharmaceutical, beverages or packaging industry
- **Powerful algorithms can be used flexibly on the latest processors:**  
Patented Baumer *FEX*<sup>®</sup> image processor and powerful DSP- / ARM<sup>®</sup>-based algorithms in *VeriSens*<sup>®</sup> vision sensors
- **Quickly and easily integrated:**  
Standard-compliant interfaces, protocols (e.g. real-time Ethernet) and flexible software integration under Windows<sup>®</sup>, Linux<sup>®</sup> or Linux<sup>®</sup> ARM<sup>®</sup> (Baumer GAPI SDK) together with our accessories and starter kits



## Your benefits

- Optimum price-performance ratio for series-type applications
- Long-term availability of customer-specific image processing components
- Support from the Baumer Solution Center
- Easy global procurement and competent support thanks to worldwide presence of Baumer



# Intelligent software integration.

Quick and platform-neutral camera integration in the application and software environment is conveniently realized by high-performance Software Development Kits (SDK) Baumer GAPI and Camera Link® SDK with Application Programming Interface (API).

		GAPI SDK v2.x	Camera Link® SDK <sup>1)</sup>
Interfaces	GigE / 10 GigE / Dual GigE	•	–
	USB 3.0	•	–
	Camera Link®	–	•
Hardware platforms	x86 / x64   Linux® ARM®	•   •	•   –
Operating systems	Windows® 7   8   10	•   •   •	•   •   –
	Linux® (Debian® / Ubuntu® / Fedora® / openSUSE®)	•	–
Programming languages	C++   C#	•   •	•   –

<sup>1)</sup> For LX cameras with Camera Link®. Other Baumer cameras with Camera Link® run with GAPI SDK v1.7.1.



Download  
Software Development Kits  
[www.baumer.com/cameras/SDK](http://www.baumer.com/cameras/SDK)

## Baumer GAPI SDK.

Fully supporting GenCam™ and GenTL, the Baumer GAPI SDK ensures flexible and easy camera integration. Numerous programming examples and documentations as well as varied options for testing and visualization of the Camera Explorer ease integration even further.

For embedded vision applications with Linux® ARM®-based systems, the SDK features several standard and basic packages to utilize the manufacturer evaluation kit's respectively own software designs.

## Baumer Camera Link® SDK.

The Camera Link® cameras of the LX series feature GenCP (Generic Control Protocol) for convenient and quick configuration. Increasingly supported by frame grabber manufacturers, the need for an additional SDK will be eliminated. Alternatively, the Baumer Camera Link® SDK may also be used for evaluation and integration. It includes a configuration tool to setup and test all camera functions and to use extended features such as events. The camera can be conveniently integrated into your software environment based on GenCam™ reference implementation.





# Flexibility by compatibility.

Every task in image processing is unique and imposes individual requirements on both camera and related machine vision software. We meet them all.

## Flexibility by standard compliance.

Hassle-free compatibility of GenICam™, the Baumer GAPI generic application programming interface, together with standard-optimized drivers for GigE Vision®, USB3 Vision™ and Camera Link® simplify camera integration and allow for drop-in replacement across all series.



## Third Party Software Support.

Full compliance to all relevant standards in camera engineering and development, regular compatibility tests and the close cooperation with our software partners give you the freedom to implement user-specific third party software and ensure trouble-free integration of our cameras in any of your application tasks.

### Third Party Software<sup>1)</sup>:



### Software partnerships<sup>2)</sup>:



<sup>1)</sup> The list informs you which third party software is compatible with Baumer industrial cameras. The list does not claim to be complete and neither includes any recommendation for a specific provider.

<sup>2)</sup> Software support of individual models may be provider-specific and is recommended for corresponding validation.

# Making it all easy.

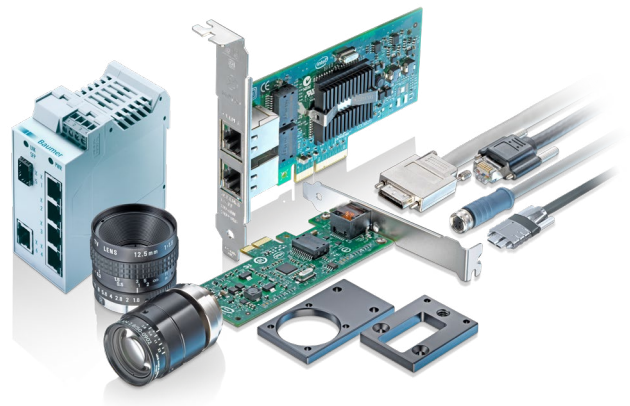
We provide you with everything you need to integrate our cameras quickly and easily into your systems: From proper network components and accessories up to individual Starter Kits, you will have everything that's necessary.

## Matching accessories for your system.

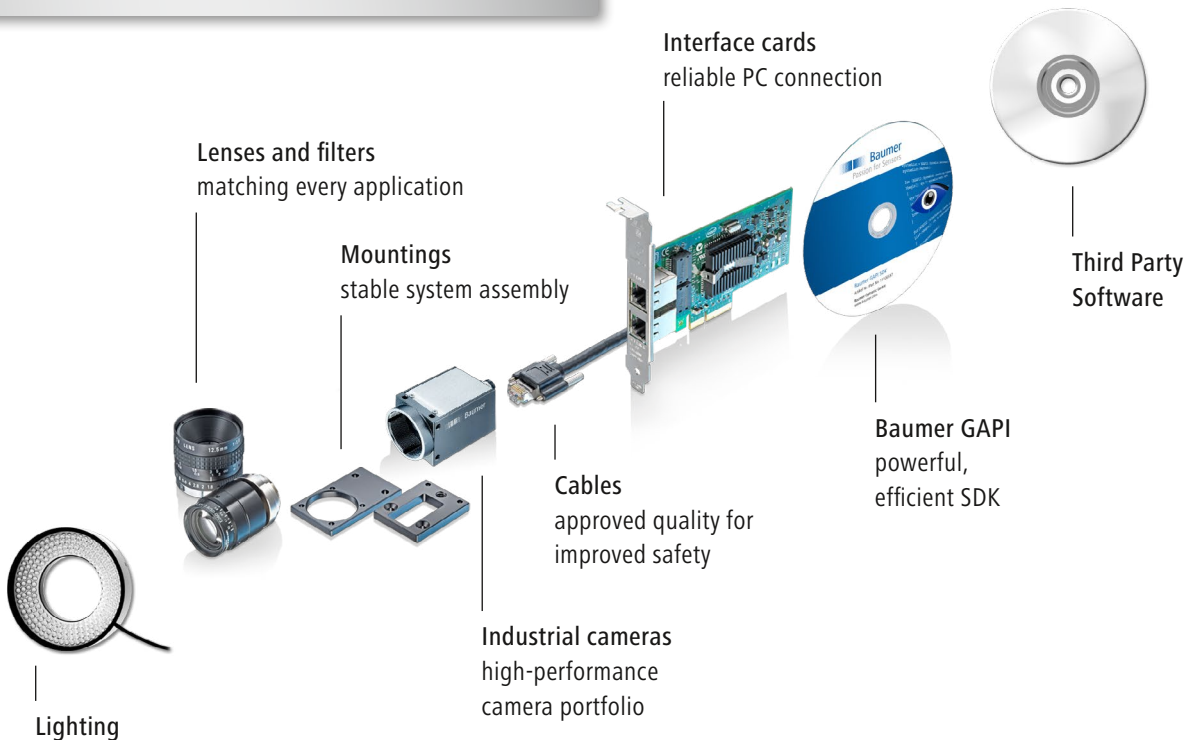
There is more to an image processing system than just a camera: cables, PCI interface cards, filters, adapters and mountings or lenses. We help you to find the accessories that match your application and provide you with a comprehensive range of cross-interface accessories that are optimally harmonized. Since the system is only as reliable as its individual components, you can be sure our components underwent comprehensive testing and inspection – for long-term longevity and reliability in the image processing application.

## Starter Kits: Just unpack and go.

Our Starter Kits are individually compiled to match the related camera series and will support you in evaluating a camera. You can focus entirely on the solution while we provide you with everything required for set up – from cable to mountings on to software.



Your Starter Kit  
Request today your  
individual Starter Kit:  
[www.baumer.com/vision/StarterKits](http://www.baumer.com/vision/StarterKits)



# Proven cameras with long-term availability.

Camera Type	Variants			Sensor Type	Sensor	Shutter	Resolution [px]	Pixel Size [µm]	Full Frames [fps]		
<b>VisiLine® series</b>	Mono	Color	IP 65/67						GigE Vision® USB3 Vision™		
VLG-02	•	•	•	1/4" CCD	ICX618	Global	656 × 490	5.6 × 5.6	160		
VLG-03	•	•		1/3" CMOS	CMV300	Global	640 × 480	7.4 × 7.4	376		
VLG-12	•	•	•	1/3" CCD	ICX445	Global	1288 × 960	3.75 × 3.75	42		
VLG-20	•	•	•	1/1.8" CCD	ICX274	Global	1624 × 1228	4.4 × 4.4	27		
VLG-22	•	•	•	2/3" CMOS	CMV2000	Global	2040 × 1084	5.5 × 5.5	55		
VLG-23	•	•	•	1/1.2" CMOS	IMX174	Global	1920 × 1200	5.86 × 5.86	53		
VLG-24	•	•		1/1.2" CMOS	IMX249	Global	1920 × 1200	5.86 × 5.86	38		
VLG-40	•	•	•	1" CMOS	CMV4000	Global	2040 × 2044	5.5 × 5.5	29		
<b>MX series</b>	Mono	Color							GigE Vision® USB3 Vision™		
MXG02	•	•		1/4" CCD	ICX618	Global	656 × 490	5.6 × 5.6	160		
MXG03	•	•		1/3" CMOS	CMV300	Global	640 × 480	7.4 × 7.4	376		
MXG12	•	•		1/3" CCD	ICX445	Global	1288 × 960	3.75 × 3.75	42		
MXG20	•	•		1/1.8" CCD	ICX274	Global	1624 × 1228	4.4 × 4.4	27		
MXG20	•	•		2/3" CMOS	CMV2000	Global	2040 × 1084	5.5 × 5.5	55		
MXG40	•	•		1" CMOS	CMV4000	Global	2040 × 2044	5.5 × 5.5	29		
<b>PX series</b>	Mono								USB3 Vision™		
PXU-60.Q	•			1" CCD	ICX694	Global	2752 × 2200	4.54 × 4.54	25		
PXU-120.Q	•			1" CCD	ICX834	Global	4248 × 2832	3.1 × 3.1	13		
<b>HX series</b>	Mono	Color	NIR						GigE Vision® <sup>3)</sup> Camera Link®		
HXG20/HXC20	•	•	•	2/3" CMOS	CMV2000	Global	2048 × 1088	5.5 × 5.5	337   105 337		
HXG40/HXC40	•	•	•	1" CMOS	CMV4000	Global	2048 × 2048	5.5 × 5.5	180   56 180		
<b>SX series</b>	Mono								GigE Vision®		
SXG10	•			1/2" CCD	KAI-01050	Global	1024 × 1024	5.5 × 5.5	120		
SXG20	•			2/3" CCD	KAI-02050	Global	1600 × 1200	5.5 × 5.5	68		
SXG80	•			4/3" CCD	KAI-08050	Global	3296 × 2472	5.5 × 5.5	16		
<b>TX series</b>	Mono	Color <sup>2)</sup>	NIR	PoE	Multi I/O				GigE Vision®		
TXG02	•	•				1/4" CCD	ICX618	Global	656 × 494	5.6 × 5.6	140
TXG03	•	•		•	•	1/3" CCD	ICX424	Global	656 × 494	7.4 × 7.4	90
TXG04	•	•				1/2" CCD	ICX414	Global	656 × 494	9.9 × 9.9	56
TXG04 v2	•					1/2" CCD	ICX414	Global	656 × 494	9.9 × 9.9	93
TXG06	•	•				1/2" CCD	ICX415	Global	776 × 582	8.3 × 8.3	64
TXG08	•	•		•		1/3" CCD	ICX204	Global	1032 × 776	4.65 × 4.65	28
TXG12	•	•				1/3" CCD	ICX445	Global	1296 × 966	3.75 × 3.75	32
TXG13	•	•		•	•	1/2" CCD	ICX267	Global	1392 × 1040	4.65 × 4.65	20
TXG14	•	•	•			2/3" CCD	ICX285	Global	1392 × 1040	6.45 × 6.45	20
TXG14f	•	•				2/3" CCD	ICX285	Global	1392 × 1040	6.45 × 6.45	30
TXG20	•	•				1/1.8" CCD	ICX274	Global	1624 × 1236	4.4 × 4.4	16
TXG50	•	•			•	2/3" CCD	ICX625	Global	2448 × 2050	3.45 × 3.45	15

<sup>1)</sup> Available with GigE interface only. <sup>2)</sup> Resolution with color models can have minimal variations.

<sup>3)</sup> Burst Mode (image acquisition in the camera's internal memory) | interface (Dual GigE)

# Worldwide presence.



## Africa

Algeria  
Cameroon  
Côte d'Ivoire  
Egypt  
Morocco  
Reunion  
South Africa

## America

Brazil  
Canada  
Colombia  
Mexico  
United States  
Venezuela

## Asia

Bahrain  
China  
India  
Indonesia  
Israel  
Japan  
Kuwait  
Malaysia  
Oman  
Philippines  
Qatar  
Saudi Arabia  
Singapore  
South Korea  
Taiwan  
Thailand  
UAE

## Europe

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Belgium  
Bulgaria  
Croatia  
Czech Republic  
Denmark  
Finland  
France  
Germany  
Greece  
Hungary  
Italy  
Malta  
Martinique  
Netherlands  
Norway  
Poland  
Portugal  
Romania  
Russia  
Serbia  
Slovakia  
Slovenia  
Spain  
Sweden  
Switzerland  
Turkey  
United Kingdom

## Oceania

Australia  
New Zealand



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