Cameras for Traffic & Transportation

GiGE USB
VISION VISION

- Extensive portfolio of industrial and IP cameras
- High sensitivity sensors (e.g. Sony IMX174)
- Raw images & compressed video stream
- Highest reliability
- Excellent price/performance ratio
- 3-year warranty

BASLER
the power of sight

TYPICAL APPLICATIONS

ANPR

ANPR (Automatic Number Plate Recognition) is a versatile tool for multiple purposes, including enforcement, tolling and police investigation support. With the wide portfolio of sensors, our customers can generate very flexible and compact ANPR solutions for the traffic market from price sensitive in-vehicle to high-speed tolling applications.

Enforcement

Enforcement systems are used over a wide range e.g. speed enforcement, red light enforcement, and lane violation detection. The goal of these systems is to change driver behaviors and make roads safer. Cameras for these applications are typically based on high sensitivity sensors starting from 2MP and usually 25fps.

Tolling

Toll collection systems, such as city tolling, free-flow tolling and monitoring of toll evasion, generally require cameras with real-time capabilities to handle the high speeds of the vehicles. High resolution and high sensitivity sensors with global shutter are mandatory prerequisites for this type of application.

Traffic Monitoring

Cameras help monitor traffic flow, as well as road and weather conditions. One important application is Automatic Incident Detection, to ensure quick response on accidents and other obstructions, particularly in critical locations like tunnels and bridges. Cameras used in traffic monitoring must handle difficult weather conditions and changing lighting.

In-vehicle

In-vehicle cameras deliver images for e.g. automatic number plate recognition (ANPR) and support enforcement, tolling and police investigation. Equipped with the comfortable USB3 Vision and very attractive pricing the pulse or dart cameras can easily be integrated into these mass surveillance systems.

MATCHING BASLER CAMERAS

Camera Recommendations	Sensor	Sensor Type	Resolution (H × V pixels)	Frame Rate [fps]	Interface	Pixel Size [µm]	Optical Size	ANPR	Enforcement	Tolling	Monitoring	In-Vehicle	Rail & Road
Basler ace													
acA1300-200um/uc	ON Semiconductor PYTHON1300	CMOS	1280 × 1024	200	USB 3.0	4.8	1/2"	✔					
acA1920-40um/uc	Sony IMX249	CMOS	1920 × 1200	40	USB 3.0	5.86	1/1.2"	✔	✔	✔			
acA1920-150um/uc	ON Semiconductor PYTHON2000	CMOS	1920 × 1200	150	USB 3.0	4.8	2/3"	✔	✔	✔			
acA1920-155um/uc	Sony IMX174	CMOS	1920 × 1200	155	USB 3.0	5.86	1/1.2"	✔	✔	✔			
acA2000-165um/uc/umNIR	CMOSIS CMV2000	CMOS	2048 × 1088	165	USB 3.0	5.5	2/3"	✔	✔	✔			✔
acA2040-90um/uc/umNIR	CMOSIS CMV4000	CMOS	2048 × 2048	90	USB 3.0	5.5	1"	✔	✔	✔			
acA2500-60um/uc	ON Semiconductor PYTHON5000	CMOS	2590 × 2048	60	USB 3.0	4.8	1"	✔	✔	✔			
acA1300-60gmNIR	e2v EV76C661	CMOS	1280 × 1024	60	GigE	5.3	1/1.8"	✔					
acA1300-60gm/gc	e2v EV76C560	CMOS	1280 × 1024	60	GigE	5.3	1/1.8"	✔					
acA1300-75gm/gc	ON Semiconductor PYTHON1300	CMOS	1280 × 1024	75	GigE	4.8	1/2"	✔					
acA1600-60gm/gc	e2v EV76C570	CMOS	1600 × 1200	60	GigE	4.5	1/1.8"	✔					
acA1920-40gm/gc	Sony IMX249	CMOS	1920 × 1200	40	GigE	5.86	1/1.2"	✔	✔	✔			
acA1920-48gm/gc	ON Semiconductor PYTHON2000	CMOS	1920 × 1200	48	GigE	4.8	2/3"	✔	✔	✔			
acA1920-50gm/gc	Sony IMX174	CMOS	1920 × 1200	50	GigE	5.86	1/1.2"	✔	✔	✔			
acA2000-50gm/gc/gmNIR	CMOSIS CMV2000	CMOS	2048 × 1088	50	GigE	5.5	2/3"	✔	✔	✔			✔
acA2040-25gm/gc/gmNIR	CMOSIS CMV4000	CMOS	2048 × 2048	25	GigE	5.5	1"	✔	✔	✔			
acA2500-20gm/gc	ON Semiconductor PYTHON5000	CMOS	2590 × 2048	20	GigE	4.8	1"	✔	✔	✔			
acA2040-180km/kmNIR	CMOSIS CMV4000	CMOS	2048 × 2048	180	CL	5.5	1"						✔
Basler aviator													
avA2300-25gm/gc	ON Semiconductor KAI-4050	CCD	2330 × 1750	26	GigE	5.5	1"	✔	✔	✔			
Basler beat													
beA4000-62km	CMOSIS CMV12000	CMOS	4096 × 3072	62	CL	5.5	1.75"		✔				✔
beA4000-62kc	CMOSIS CMV12000	CMOS	4088 × 3070	62	CL	5.5	1.75"		✔				✔

Specifications are subject to change without prior notice. Latest specifications can be found on *www.baslerweb.com/products*.

If you still have questions or particular concerns, talk to us. Our technical *sales* and *support* teams are available to assist you with additional product information and to help you select the best camera for your application.

MATCHING BASLER CAMERAS

Camera Recommenda-tions	SPECIFICATIONS									APPLICATIONS					
	Sensor	Sensor Type	Resolution (H × V pixels)	Frame Rate [fps]	Line Rate [kHz]	Interface	Pixel Size [µm]	Optical Size	Sensor Length [mm]	ANPR	Enforcement	Tolling	Monitoring	In-Vehicle	Rail & Road
Basler dart															
daA1280-54um/uc	Aptina AR0134	CMOS	1280 × 960	54	USB 3.0	3.75	1/3″			✔				✔	
Basler pulse															
puA1280-54um/uc	Aptina AR0134	CMOS	1280 × 960	54	USB 3.0	3.75	1/3″							✔	
Basler IP Cameras															
BIP2-1300c	Sony ICX445	CCD	1280 × 960	30	-	Fast Ethernet	3.75	1/3″	-		✔	✔	✔	✔	
BIP2-1300c-dn	Sony ICX445	CCD	1280 × 960	30	-	Fast Ethernet	3.75	1/3″	-		✔	✔	✔	✔	
BIP2-1600c	Sony ICX274	CCD	1600 × 1200	12,5	-	Fast Ethernet	4.40	1/1.8″	-		✔		✔	✔	
BIP2-1600c-dn	Sony ICX274	CCD	1600 × 1200	12,5	-	Fast Ethernet	4.40	1/1.8″	-		✔		✔	✔	
BIP2-1920c-dn	Aptina MT9P031	CMOS	1920 × 1080	30	-	Fast Ethernet	2.20	1/3″	-				✔		
BIP2-1920-30c	Sony IMX174	CMOS	1920 × 1080	30	-	Fast Ethernet	5.86	1/1.3″	-		✔	✔	✔	✔	✔
BIP2-2500c-dn	Aptina MT9P031	CMOS	2560 × 1920	15	-	Fast Ethernet	2.20	1/2.5″	-				✔		
Basler racer															
all racer models	Awaiba DR-2k-7-DR-12k-3.5	CMOS	2k, 4k, 6k, 8k, 12k	-	51-80	GigE / CL	7.0/3.5	-	14.3-43.0						✔
Basler sprint															
all sprint models	Dual Line CMOS	CMOS	2k, 4k, 8k	-	38.6-140	CL	10.0	-	20.48-81.92						✔

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FEATURES

Which features are relevant for your traffic application?

Feature	Industrial Cameras	IP Cameras	Benefits
Sequencer acquisition mode	✓		Multiple AOIs and different image acquisition settings possible
Broad sensor range	✓	✓	Suitable sensors for any application: CCD + CMOS from VGA to 14MP including NIR-enhanced versions
High sensitivity	✓	✓	Short exposure times to avoid motion blur
Multi-streaming		✓	Independent stream processing (e.g. single car/overview of a scene)
Auto iris functionality		✓	Wide range of light conditions possible
Day/night functionality		✓	High contrast images in low light
Real time trigger	✓	✓	Short trigger response time for high speed application and flash synchronization
Image compression		✓	Reducing network traffic for multiple camera setups
Uncompressed images	✓	✓	Basler IP cameras can now also produce uncompressed images (YUV) that deliver as much detail as possible for single (triggered) shots. The images are sent directly to the back end in uncompressed form (YUV), involving a relatively large volume of data. The benefit is that no image information is lost in the compression process which improves ANPR results significantly.

For further information on our cameras, please visit: **www.baslerweb.com/datasheets**

FULL HD   DAY/NIGHT   GEN<i>CAM

Basler cameras for ITS: dart, ace, pulse, Basler beat, IP Fixed Box camera

WHY BASLER CAMERAS?

No one can imagine state-of the-art traffic systems without modern camera technology. The camera itself has changed as well, from a simple monitoring/capturing device to a highly-integrated, feature-rich part of a complete system.

Basler's digital cameras have a central role in traffic and transport applications worldwide. Our product designs are driven by industry requirements; they offer easy integration, compact size, and a very strong price/performance ratio.

Your benefits include:

- Industry-approved camera technology
- Over 25 years of image processing experience
- Fully quality-tested, calibrated cameras for high performance and reliability
- Strong price/performance ratio, with starting list prices of 99 EUR
- Latest CCD and CMOS sensors with excellent image quality and global shutter
- Compact, rugged housings for easy integration
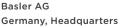
About Basler

Founded in 1988, Basler is a leading global manufacturer of high quality digital cameras and lenses for factory automation, medical and 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. 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.

3-Year Warranty

Basler offers a 3-year warranty for their cameras and Basler Lenses. We continually reinvest in research, development and superior manufacturing capabilities so that our customers can fully rely on the products we manufacture.

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