Basler MED ace

CAMERAS FOR MEDICAL & LIFE SCIENCES

USB3 VISION GiGE VISION

- Specifically designed for Medical & Life Sciences
- Basler's powerful MED Feature Sets
- CMOS technology at its best with Sony Pregius and ON Semiconductor PYTHON sensors
- Up to 164 fps and 20 MP
- Compliant with ISO 13485:2016

ISO 13485:2016

BASLER
the power of sight

OVERVIEW

Bye-Bye, CCD Sensors. Hello Basler MED ace.

Basler MED ace cameras are Basler's first camera series specifically designed for Medical & Life Sciences and are the perfect answer to Sony`s discontinuation of CCD sensors. Equipped with CMOS sensor technology at its best, the MED ace delivers even better image quality at much lower costs than CCD cameras.

With Sony's powerful Pregius sensors and exceptional PYTHON sensors by ON Semiconductor, the Basler MED ace stands out with up to 164 fps and 20 MP, pixel sizes up to 5.86µm, low temporal dark noise down to 2e- and sensor sizes up to 1.1 inch.

Basler's unique and industry-leading MED Feature Sets for Medical & Life Sciences bring it down to what our customers are looking for: Easy Compliance, Brilliant Image, Perfect Color, Dust Protection, Low Light Imaging, Industrial Excellence and High Speed. They combine market-leading hardware, firmware and pylon software features. Basler developed unique software features specifically designed to address the high imaging demands in Medical & Life Sciences and to reduce customers' development efforts.

With more than 30 years of vision experience, Basler offers top-notch CMOS cameras to support the transition faced by medical device manufacturers. Our ISO 13485:2016 certification offers customers several benefits through an effective quality management system with clearly defined standards. Experience cameras with exceptional quality and reliability.

Read more on *baslerweb.com/MEDace*

ISO 13485:2016

Our Compliance with ISO 13485:2016

With the certification according to ISO 13485:2016, Basler has proven its quality standards for the development, production, distribution and service of digital cameras as well as for placing them on the market.

For you, this means consistency, reliability and quality. Whether you want to operate internationally or expand locally, the quality management standards set for the ISO 13485:2016 certification help you achieve the quickest time to market. Let Basler assist you with documentation and preparation for the certification of medical devices you produce.

Find Success in Medical & Life Sciences with Consistently High Quality

As part of continuous improvement, we have adapted our quality management system to the requirements of the medical world and introduced the ISO 13485:2016 standard in selected organizational areas, according to which we produce, distribute and service selected products.

This gives medical device manufacturers the opportunity to purchase selected cameras for their applications from us and benefit from the quality requirements defined by the ISO 13485:2016 standard. Our cameras are suitable for use as a computer vision component for recording images, videos or measurement data. They do not represent a medical device within the meaning of the Medical Devices Act.

Find more information on
baslerweb.com/MEDace-quality

ISO
13485:2016

ISO 13485:2016 – Your Advantages

All sides benefit from an effective quality management system with clearly defined quality standards:

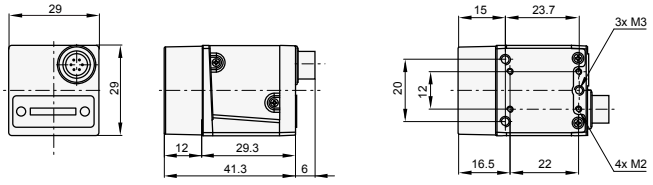
- Own production line for Basler MED ace cameras
- Validated and monitored production for reliable product quality
- Product continuity ensured through *design freeze* for the camera hardware and firmware
- Product Change Notification (PCN) in the event of product changes
- Traceability to reduce costs and for more transparency on recalls
- Less effort for your audits and product documentation
- Facilitation of compliance with guidelines for the manufacture of medical products

TECHNICAL DETAILS

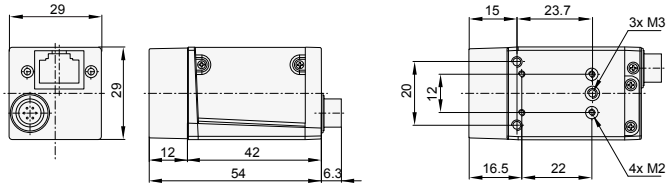
Basler MED ace	MED ace 2.3 MP 41 color/mono	MED ace 2.3 MP 164 color/mono	MED ace 5.1 MP 35 color/mono	MED ace 5.1 MP 75 color/mono	MED ace 5.3 MP 20 color/mono
Camera					
Camera Category	ace U	ace U	ace U	ace U	ace U
Resolution (H x V pixels)	1920 × 1200	1920 × 1200	2448 × 2048	2448 × 2048	2590 × 2048
Sensor	Sony Pregius IMX249	Sony Pregius IMX174	Sony Pregius IMX264	Sony Pregius IMX250	ON Semiconductor PYTHON 5000
Sensor Size [mm]	11.3 × 7.1	11.3 × 7.1	8.5 × 7.1	8.5 × 7.1	12.4 × 9.8
Sensor Size (optical)	1/1.2"	1/1.2"	2/3"	2/3"	1"
Sensor Technology	CMOS, global shutter				
Pixel Size [µm²]	5.86 × 5.86	5.86 × 5.86	3.45 × 3.45	3.45 × 3.45	4.8 × 4.8
Frame Rate [fps]	41	164	35	75	21
Exposure Control	Via hardware trigger or programmable via the camera API				
Mono/Color	Mono/Color				
Video Output Format	Mono (8, 12, 12 Packed), Bayer RG (8, 12, 12 Packed), YCbCr422_8, RGB8, BGR8				Mono (8, 10, 10 Packed), Bayer BG (8, 10, 10 Packed), YUV 4:2:2 (Packed, YUYV Packed)
Interface	USB 3.0				Gigabit Ethernet
Mechanical/Electrical					
Housing Size	29.3 mm × 29 mm × 29 mm				42 mm × 29 mm × 29 mm
Housing Temp.	0 °C – 50 °C				
Lens Mount	C				
Digital I/O	1 opto-isolated input + 1 opto-isolated output + 2 Fast-GPIO (configurable as In/Out)				1 opto-isolated input + 1 opto-isolated output + 1 GPIO
Power Requirements	Via USB 3.0 interface				Power over Ethernet (IEEE 802.3af) or 12-24 VDC (+/- 10%)
Power Consumption	2.9 W	3.7 W	2.7 W	3.4 W	PoE 4.1 W / AUX 3.6 W
Software Environment					
Driver	Basler pylon Camera Software Suite or 3rd party USB3 Vision Software				
Operating System	Windows, Linux, macOS				
Conformity	ISO 13485:2016, CE, RoHS, GenICam, USB3 Vision, IP30, UL, FCC Class B, EMV Class B, CISPR				

Specifications are subject to change without prior notice.
Latest specifications and availability can be found on our website *baslerweb.com/MEDace*. Please visit *baslerweb.com/manuals* for the detailed camera User's Manual and *baslerweb.com/thirdparty* for information on third party software.

Dimensions (in mm): **ace U USB 3.0**



Dimensions (in mm): **ace U GigE**



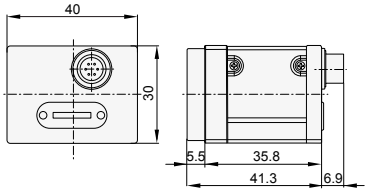
TECHNICAL DETAILS

Basler MED ace	MED ace 8.9 MP 32 color/mono	MED ace 8.9 MP 42 color/mono	MED ace 12.3 MP 23 color/mono	MED ace 12.3 MP 30 color/mono	MED ace 20.0 MP 17 color/mono
Camera					**PLANNED***
Camera Category	ace L	ace L	ace L	ace L	ace U
Resolution (H × V pixels)	4096 × 2160	4096 × 2160	4096 × 3000	4096 × 3000	5472 × 3648
Sensor	Sony Pregius IMX267	Sony Pregius IMX255	Sony Pregius IMX304	Sony Pregius IMX253	Sony IMX183
Sensor Size [mm]	14.1 × 7.5	14.1 × 7.5	14.1 × 10.4	14.1 × 10.4	13.1 × 8.8
Sensor Size (optical)	1″	1″	1.1″	1.1″	1″
Sensor Technology	CMOS, global shutter				CMOS, rolling shutter
Pixel Size [µm²]	3.45 × 3.45	3.45 × 3.45	3.45 × 3.45	3.45 × 3.45	2.40 × 2.40
Frame Rate [fps]	32	42	23	30	17
Exposure Control	Via hardware trigger or programmable via the camera API				
Mono/Color	Mono/Color				
Video Output Format	Mono (8, 12, 12 Packed), Bayer RG (8, 12, 12 Packed), YCbCr422_8, RGB8, BGR8				
Interface	USB 3.0				
Mechanical/Electrical					
Housing Size	35.8 mm × 40 mm × 30 mm				29.3 mm × 29 mm × 29 mm
Housing Temp.	0 °C – 50 °C				
Lens Mount	C				
Digital I/O	1 opto-isolated input + 1 opto-isolated output + 2 Fast-GPIO (configurable as In/Out)				
Power Requirements	Via USB 3.0 interface				
Power Consumption	3.0 W	3.6 W	3.0 W	3.6 W	2.9 W
Software Environment					
Driver	Basler pylon Camera Software Suite or 3rd party USB3 Vision Software				
Operating System	Windows, Linux, macOS				
Conformity	ISO 13485:2016, CE, RoHS, GenICam, USB3 Vision, IP30, UL, FCC Class B, EMV Class B, CISPR				

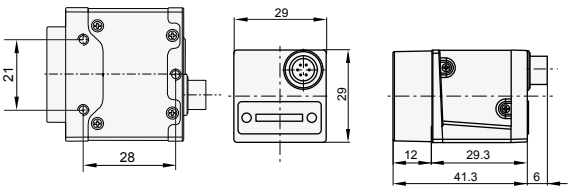
Specifications are subject to change without prior notice.
Latest specifications and availability can be found on our website *baslerweb.com/MEDace*. Please visit *baslerweb.com/manuals* for the detailed camera User's Manual and *baslerweb.com/thirdparty* for information on third party software.

* Please note that the camera's specifications are preliminary.

Dimensions (in mm): **ace L USB 3.0**



Dimensions (in mm): **ace U USB 3.0**



MED FEATURE SETS

The Basler MED Feature Sets combine our cameras' most impressive attributes, and stand out with their hardware, firmware and pylon software features. Find features specifically designed for Medical & Life Sciences within the following sets. Find more information on *baslerweb.com/MED-Feature-Sets*.

EASY COMPLIANCE

Basler produces, distributes and services Basler MED ace cameras according to ISO 13485:2016. In addition, we comply with all relevant standards such as CE, UL, EMC class B, CISPR class B and FCC class B.

BRILLIANT IMAGE

The very first time you switch on the camera, you will get the best quality pictures. Because in addition to preset wake-up settings and Basler's PGI algorithm, Basler MED ace cameras have auto-image functions such as auto color or auto contrast.

PERFECT COLOR

Applications such as in microscopy and ophthalmology require individual color adjustment options. Design the color reproduction of your picture yourself: for example, by adjusting the settings for hue, saturation, brightness and contrast over the entire picture as well as for individual colors.

DUST PROTECTION

With regard to cleanliness, optical systems in Medical & Life Sciences applications must meet special requirements. How do we ensure that? Through the sealing of the sensor room, the separate production of the Basler MED ace in a cleanroom and strict tests for dust and other particles.

LOW LIGHT IMAGING

Get excellent picture quality even in low light! Among other things, fluorescence applications require long exposure times. Thanks to modern CMOS sensor technology and our mode for long exposure times, you always produce the best quality images.

INDUSTRIAL EXCELLENCE

We subject all cameras for the Medical & Life Sciences field to intensive testing. The high quality together with our pylon software package, our extended camera control functions and our individual customer support enable easy camera integration and pictures of the best quality.

HIGH SPEED

Fast and reliable cameras are required for high-speed applications such as in laboratory automation. Global shutter, CMOS sensor technology and USB 3 Vision interface technology enable frame rates of up to 164 frames per second with the Basler MED ace.

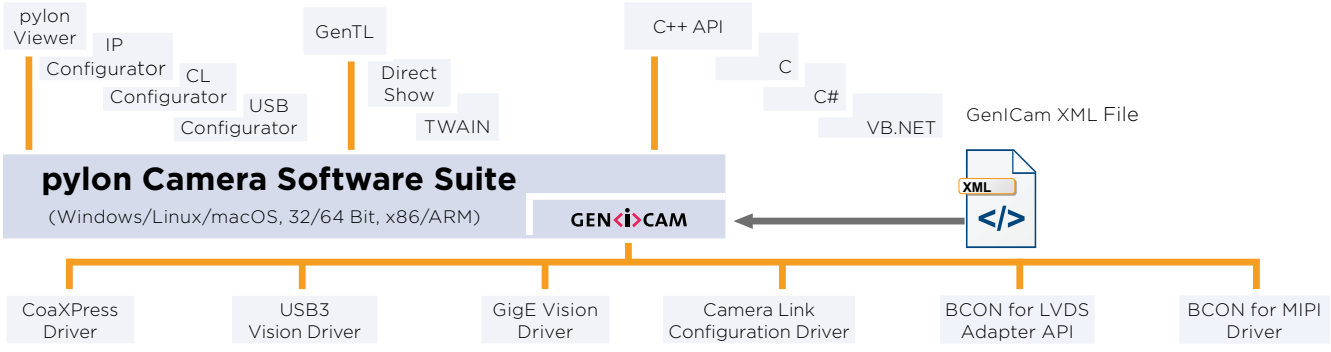
MED FEATURE SETS

Camera	Sensor	Interface	MED Feature Sets						
			ISO 13485:2016						
Basler MED ace 2.3 MP 41 m/c	IMX249	USB 3.0	•	•	•	•	•		
Basler MED ace 2.3 MP 164 m/c	IMX174	USB 3.0	•	•	•	•	•	•	•
Basler MED ace 5.1 MP 35 m/c	IMX264	USB 3.0	•	•	•	•	•		
Basler MED ace 5.1 MP 75 m/c	IMX250	USB 3.0	•	•	•	•	•	•	•
Basler MED ace 5.3 MP 20 m/c	PYTHON 5000	GigE	•	•	•	•			
Basler MED ace 8.9 MP 32 m/c	IMX267	USB 3.0	•	•	•	•			
Basler MED ace 8.9 MP 42 m/c	IMX255	USB 3.0	•	•	•	•		•	
Basler MED ace 12.3 MP 23 m/c	IMX304	USB 3.0	•	•	•	•			
Basler MED ace 12.3 MP 30 m/c	IMX253	USB 3.0	•	•	•	•		•	

* This MED Feature Set is available for color cameras only.

Basler pylon Camera Software Suite

The pylon Camera Software Suite operates with all Basler area scan and line scan cameras – no matter what interface they use. It offers stable, reliable and flexible data exchange between Basler cameras and PCs, for Windows, macOS, Linux on x86 and ARM based systems – at a very low CPU load.



OTHER INFORMATION

About Basler

Basler is a leading international manufacturer of imaging components such as cameras, lenses, frame grabbers, software as well as embedded vision solutions, customized products and consulting services. The products are used in a variety of computer vision markets, including factory automation, medical, traffic, logistics, retail, and robotics. Founded in 1988, the Basler Group employs approximately 800 people at its headquarters in Ahrensburg and other locations in Europe, Asia and North America.

Find our White Papers, Customer Stories and more useful information on: *baslerweb.com/medical*.

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 ensure powerful 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.

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baslerweb.com/sales

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