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 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.

With 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.

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

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 develop, produce and distribute 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-compliance

ISO
13485:2016

ISO 13485:2016 – Your Advantages

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

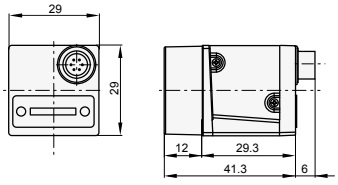
- Less effort for your audits and product documentation
- Validated and monitored production for reliable product quality
- Selected supplier in accordance with the quality standard, regularly checked and evaluated
- Consistent documentation quality due to comprehensive change management
- Traceability to reduce costs and for more transparency on recalls
- Own production line for Basler MED ace cameras
- Easier to comply with European standards for international manufacturers of medical devices

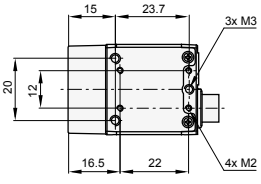
TECHNICAL DETAILS

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]	11.25 × 7.03	11.25 × 7.03	8.45 × 7.07	8.45 × 7.07	12.44 × 9.83
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, Mac OS X				
Conformity	ISO 13485:2016, CE, RoHS, GenICam, USB3 Vision, IP30, UL, FCC Class B, EMV Class B, CISPR				

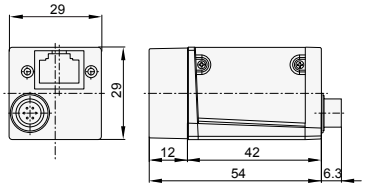
Specifications are subject to change without prior notice.
Latest specifications and availability can be found on our website *baslerweb.com/MEDace*. Please visit *baslerweb.com/manuals* for the detailed camera User's Manual and *baslerweb.com/thirdparty* for information on third party software.

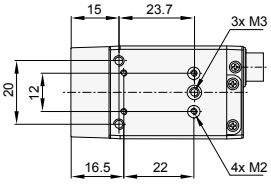
Dimensions (in mm): **ace U USB 3.0**





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





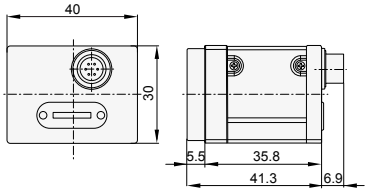
TECHNICAL DETAILS

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]	14.13 × 7.45	14.13 × 7.45	14.13 × 10.35	14.13 × 10.35	13.30 × 9.51
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, Mac OS X				
Conformity	ISO 13485:2016, CE, RoHS, GenICam, USB3 Vision, IP30, UL, FCC Class B, EMV Class B, CISPR				

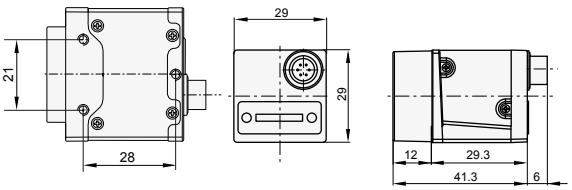
Specifications are subject to change without prior notice.
Latest specifications and availability can be found on our website *baslerweb.com/MEDace*. Please visit *baslerweb.com/manuals* for the detailed camera User's Manual and *baslerweb.com/thirdparty* for information on third party software.

* 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 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 and distributes the Basler MED ace cameras for Medical & Life Sciences under ISO 13485:2016. In addition, we maintain all relevant standard conformities, such as CE, UL, EMC Class B, CISPR Class B or FCC Class B to support.

BRILLIANT IMAGE

Get a supreme image out-of-the-box with the Brilliant Image feature set. Experience Basler MED cameras with the market-leading PGI algorithm for color and monochrome cameras, advanced auto white balancing, as well as smart auto contrast and auto exposure algorithms.

PERFECT COLOR

This feature set incorporates several unique tools to change the color appearance of your image: adjust settings for hue, saturation and brightness for full control of color space. Basler`s Color Adjustment (6-axis Hue/Saturation) enables for single-color changes and the Color Calibrator Beyond lets you find the perfect color parameters for highest color fidelity.

LOW LIGHT IMAGING

State-of-the-art Sony Pregius CMOS sensor technology together with Basler's unique long exposure mode and built-in histogram functions allow for excellent low light images. The well-developed CMOS technology combined with the Low Light Imaging feature set is highly beneficial for applications with fluorescence imaging.

HIGH SPEED

Basler offers fast and yet highly reliable cameras for high-speed applications in laboratory automation. Experience Basler MED ace cameras with frame rates between 60 and 164 frames per second with global shutter and CMOS sensor technology as well as industry-proven USB3 Vision interface technology.

INDUSTRIAL EXCELLENCE

Basler cameras are 100% quality tested and are the market's most robust and reliable products. Together with the pylon Camera SDK, our extended camera control features and a customer-focused support based on 30 years of vision experience, camera integration has never been more efficient.

APPLICATIONS

Best Fit For Your Imaging Requirements

Each application has different requirements. The MED ace was specifically designed to meet those high imaging demands in Medical & Life Sciences. Follow our recommendations when searching for the most suitable CMOS camera.

If you require comprehensive guidance don't hesitate to contact us directly: *baslerweb.com/sales*.

Application	Requirements	MED Feature Sets	Recommended Cameras
Laboratory Automation	High frame rates Global shutter Compliant with ISO 13485:2016		Basler MED ace 2.3 MP 164 color Basler MED ace 5.1 MP 75 mono Basler MED ace 5.3 MP 20 mono
Ophthalmology	High resolution Crystal clear image details Excellent color reproduction		Basler MED ace 5.1 MP 75 color Basler MED ace 12.3 MP 30 color Basler MED ace 20.0 MP 17 color
Microscopy	Image quality out-of-the-box Excellent color and contrast For In-Vitro Diagnostics: Compliant with ISO 13485:2016		Basler MED ace 2.3 MP 164 color Basler MED ace 5.1 MP 75 color Basler MED ace 20.0 MP 17 color
Fluorescence Imaging	Large pixel size Low temporal dark noise Long exposure times		Basler MED ace 2.3 MP 164 mono Basler MED ace 5.1 MP 75 mono Basler MED ace 8.9 MP 42 mono Basler MED ace 12.3 MP 30 mono
Other Applications in Medical & Life Sciences	Best price/performance ratio Reliability and robustness Long-term availability Certificates & ISO standards		Basler MED ace 2.3 MP 41 color Basler MED ace 5.1 MP 35 color Basler MED ace 8.9 MP 32 color Basler MED ace 12.3 MP 23 color

OTHER INFORMATION

About Basler

Basler is a leading manufacturer of high-quality digital cameras and accessories for industry, medicine, traffic and a variety of other markets. The company's product portfolio encompasses area scan and line scan cameras in compact housing dimensions, camera modules in board level variants for embedded solutions, and 3D cameras. The catalog is rounded off by our user-friendly pylon SDK and a broad spectrum of accessories, including a number developed specially for Basler and optimally harmonized for our cameras.

Basler has 30 years of experience in computer vision. The company is home to approximately 500 employees at its headquarters in Ahrensburg, Germany, and its subsidiaries and sales offices in Europe, Asia, and North America.

Find our white papers, success stories and more useful information on: *baslerweb.com/medical*.

3-Year Warranty

Basler offers a 3-year warranty for their cameras and the Basler Lenses 1/2.5". 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.

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. Regardless of what technology or camera model you choose you can be assured of consistent performance.

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