

photonicsENS

SENSORS & ALGORITHMS



PRODUCT CATALOGUE

Bring the invisible to **light!**

www.photonicsens.com

PRODUCT CATALOGUE



High-performance cameras optimized for vivid and accurate color reproduction, ideal for applications requiring high image quality and real-time 3D processing.

AC-213E75*

AC-213E250*

AC-222E120*

AC-223E250*



Enhanced version of the VIVID series, featuring improved depth perception, higher precision, and a wider range of FOV options for detailed imaging in complex environments.

AC1-255D120C

AC1-255D200C

AC1-255D250C



Precision-focused cameras designed for applications requiring sharp image clarity and high depth accuracy, suitable for industrial use.

AC-231E100*

AC-231E132*

AC-232E453*

AC-231E500*

• SHORT RANGE

• SHORT RANGE

••• LONG RANGE

••• LONG RANGE



Robust and high-speed cameras built for challenging environments, offering exceptional frame rates, superior image quality, and the versatility to choose from different FOVs and working distances.

AC1-233F70C

AC1-233F100C

AC1-233F200C

AC1-233F250C

AC1-233F450C

• SHORT RANGE

• SHORT RANGE

•• MID RANGE

•• MID RANGE

••• LONG RANGE



Advanced imaging solutions with optimized field of view and high-resolution sensors, perfect for high-precision applications.

AC1-232F111C

AC1-232F150C

AC1-232F215C

AC1-232F500C

• SHORT RANGE

• SHORT RANGE

•• MID RANGE

••• LONG RANGE

The C at the end of some model names means that the camera image is in colour. The marked () cameras also have this version available.



Ultra-high-performance cameras designed for large-scale industrial applications, featuring extensive depth range and superior processing capabilities.

AC1-231F152C

AC1-231F200C

AC1-231F400C

AC1-231F1000C

• SHORT RANGE

• SHORT RANGE

••• LONG RANGE

••• LONG RANGE



TITAN

Cutting-edge cameras with breakthrough imaging technology, designed for specialized applications requiring extreme precision and reliability.

AC-241F59.9

AC1-241E131C

AC1-241E150C

AC1-241E206C

AC-231F88.7



QUANTUM

Ultra-precision cameras tailored for microelectronic inspection, delivering exceptional accuracy for wire bonding and fine-detail applications.

AC0x2-231M11.5

AC1x2-271P58.4

AC0x2-271P58.4C



MICRO

Software with user-friendly interface that provides effortless access to all camera parameters.



Bring the invisible to **light!**



VIVID SERIES

COMPACT & VERSATILE ENTRY-LEVEL CAMERAS

High-performance cameras optimized for vivid and accurate color reproduction, ideal for applications requiring high image quality and real-time 3D processing.

AC-213E75*

AC-213E250*

AC-222E120*

AC-223E250*

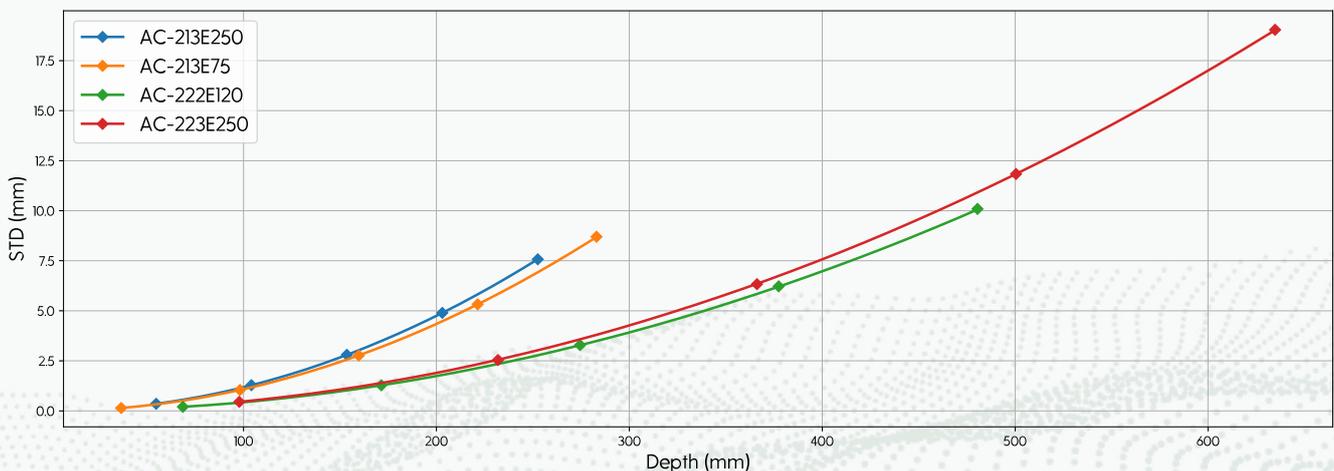
The **VIVID** family is designed for a variety of applications, generally offered in its **CUBE** form factor with a **USB 3.0** connection for fast data transfer. It can also be used for **embedded applications**, where a **MIPI** connection is available. **VIVID** is an excellent choice for compact vision systems in industrial, consumer, and embedded environments.



FOV & Precision

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD	FULL WORLD PIXEL (μm)
AC-213E75	49.8	75	69	56	41	610 μm	124
AC-213E250	52.2	250	245	198	144	7.4 mm	439
AC-222E120	35.0	120	75	61	44	630 μm	135
AC-223E250	36.2	250	163	132	96	3.0 mm	293

PRECISION CURVES

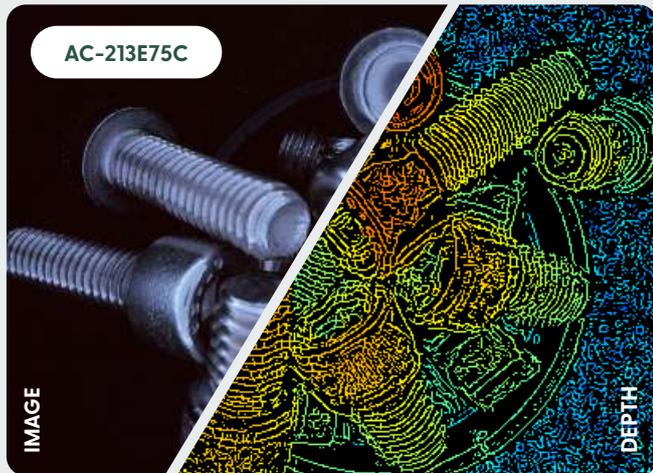




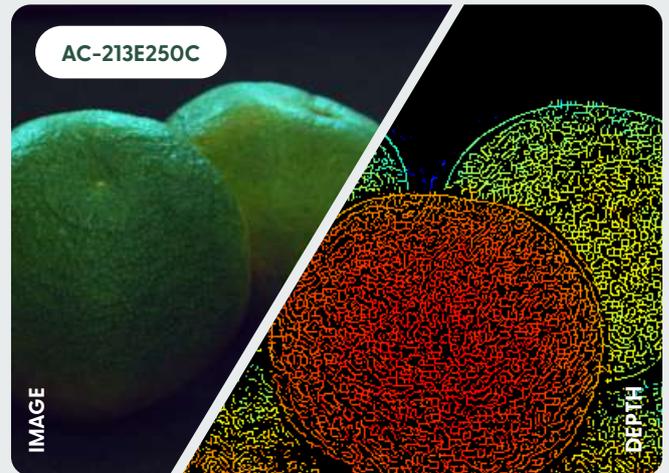
VIVID SERIES



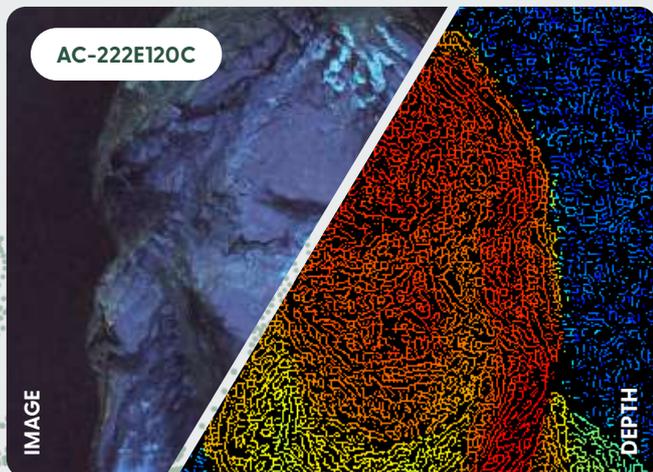
SMALL OBJECTS SORTING-PICKING



FRUIT SORTING-PICKING



3D RECONSTRUCTION



Bring the invisible to light!



VIVID+ SERIES

ENHANCED FIELD OF VIEW WITH HIGH PRECISION

Enhanced version of the VIVID series, featuring improved depth perception, higher precision, and a wider range of FOV options for detailed imaging in complex environments.

ACI-255D120C

ACI-255D200C

ACI-255D250C

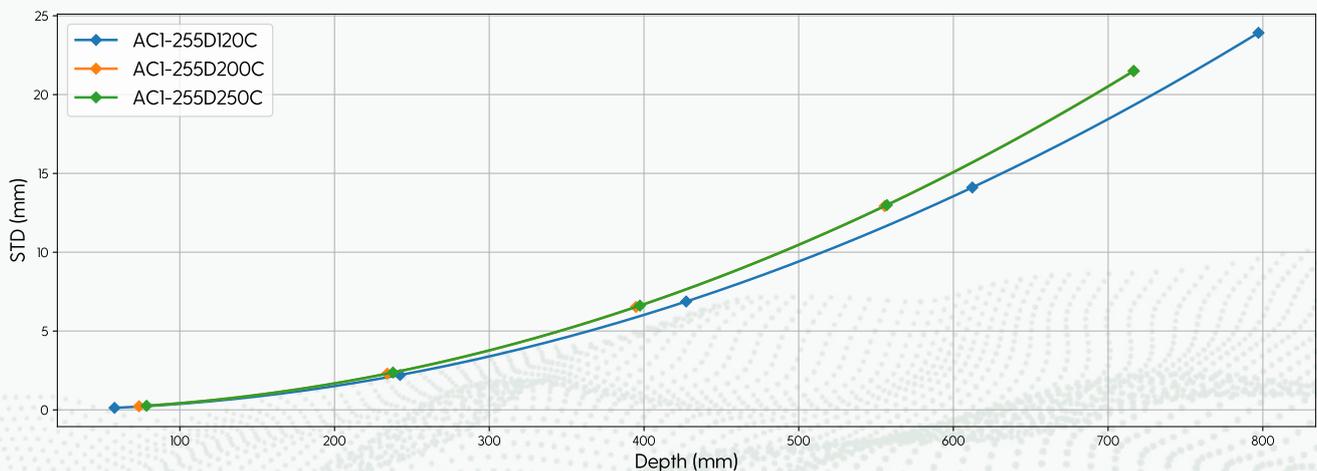
Building upon the VIVID series, **VIVID+** cameras feature a **larger sensor** for an increased **Field of View (FOV)** while maintaining high spatial **resolution** and **precision**. This makes them ideal for applications requiring a **broader perspective** without compromising detail, ensuring **superior imaging performance** across various industries.



FOV & Precision

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD	FULL WORLD PIXEL (μm)
ACI-255D120C	77.8	120	193	161	106	540 μm	277
ACI-255D200C	79.5	200	332	277	183	1.7 mm	476
ACI-255D250C	80.0	250	419	350	231	2.6 mm	601

PRECISION CURVES





VIVID+ SERIES

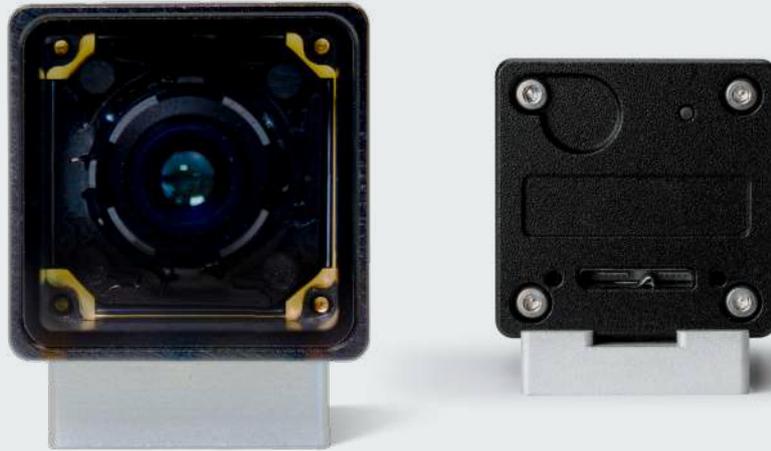
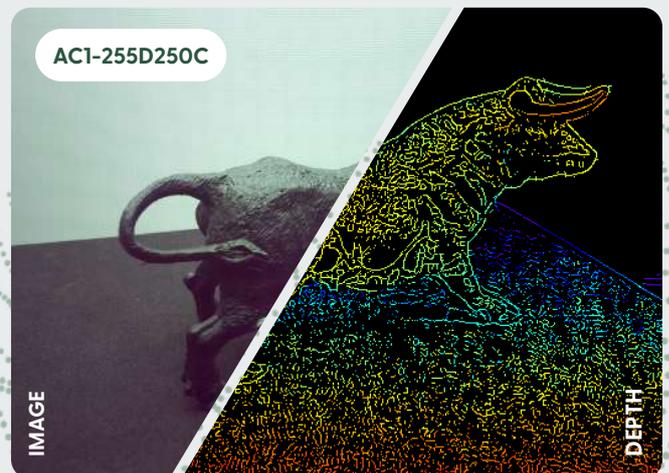


FIGURE INSPECTION

3D RECONSTRUCTION



Bring the invisible to light!



HIGH-PRECISION, COMPACT OPTICAL SYSTEM

Precision-focused cameras designed for applications requiring sharp image clarity and high depth accuracy, suitable for industrial use.

AC-231E100*

• SHORT RANGE

AC-231E132*

• SHORT RANGE

AC-232E453*

••• LONG RANGE

AC-231E500*

••• LONG RANGE

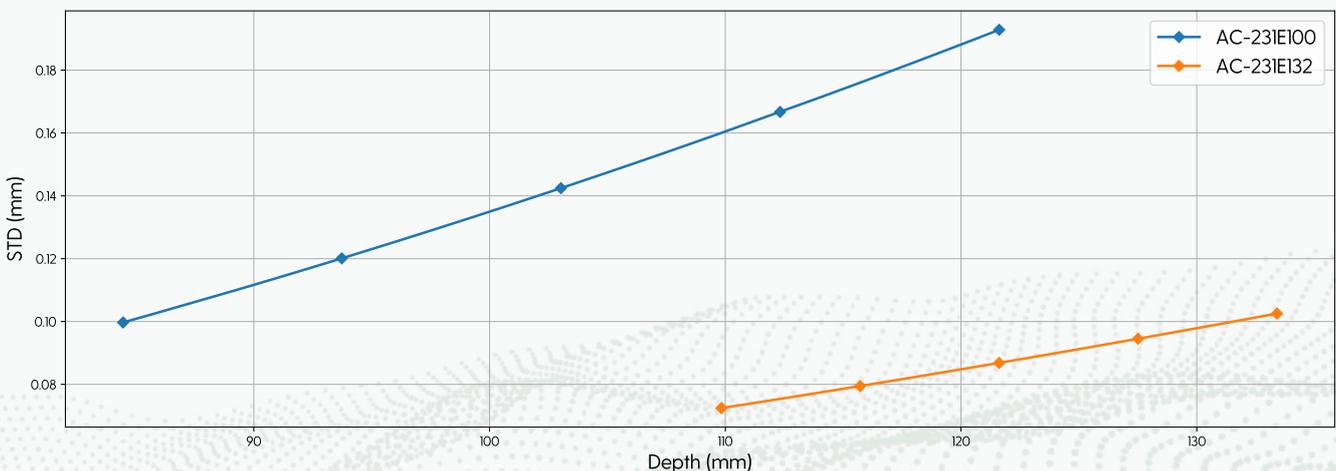
The **FOCUS** series is optimized for **precision** applications that require a **reduced form factor** while maintaining **flexibility**. Featuring **M12 optics** ranging from 16 mm to 25 mm, these cameras are perfect for a wide range of **industrial and embedded** vision applications. Their compact yet powerful design ensures **high accuracy**, making them a go-to choice for **precision-driven** tasks.



FOV & Precision

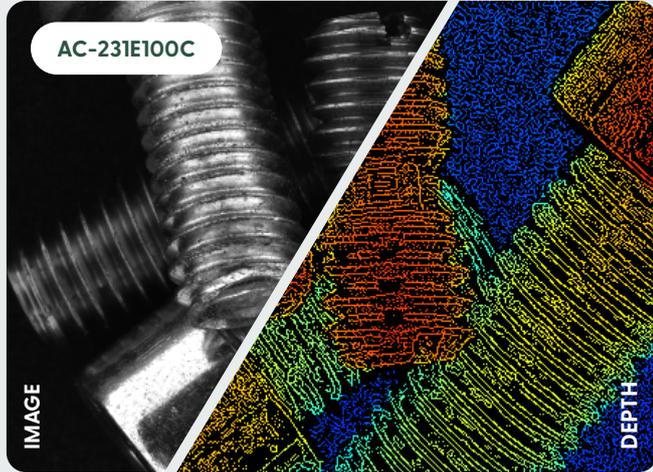
CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (μm)	FULL WORLD PIXEL (μm)
AC-231E100	16.6	100	32	26	19	130	57
AC-231E132	10.3	121	26	21	15	86	47

PRECISION CURVES

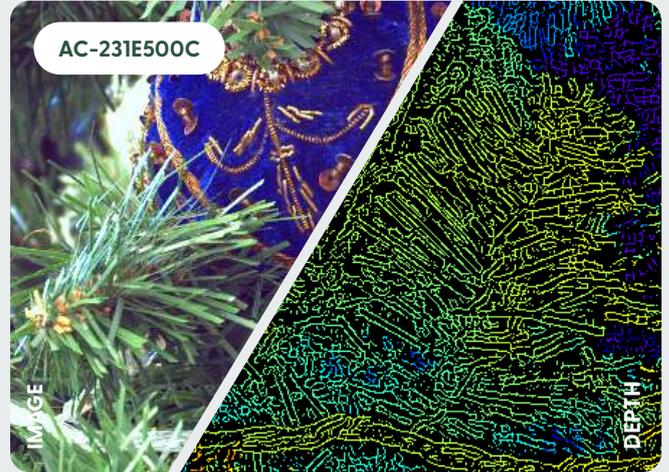




SCREW PICKING



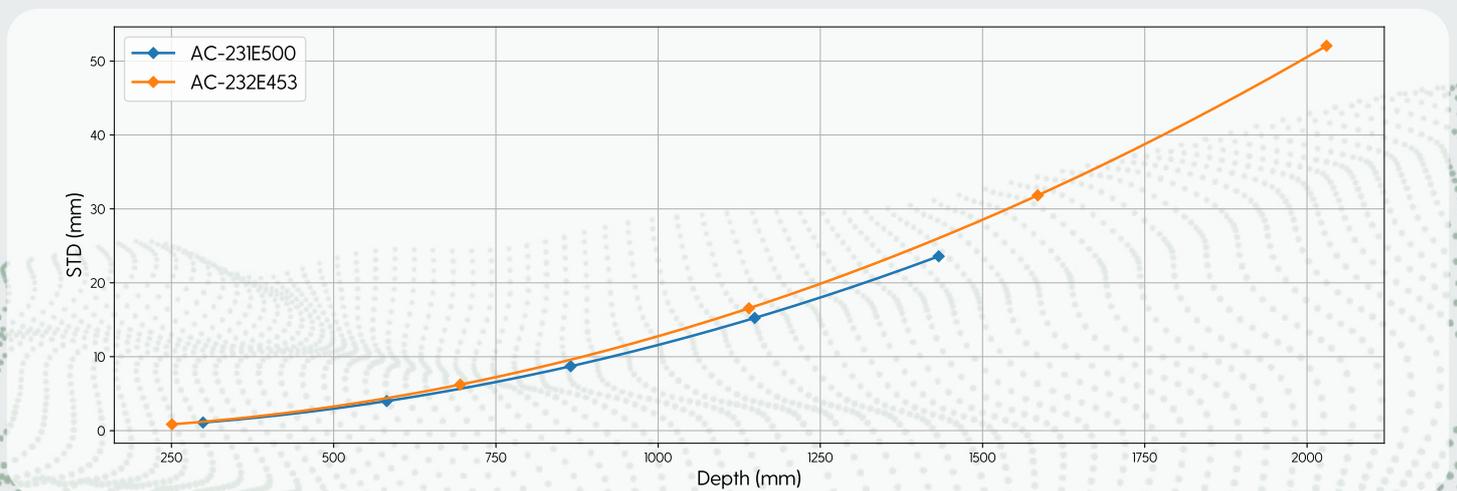
ORGANIC MATERIAL INSPECTION



FOV & Precision – long range

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (mm)	FULL WORLD PIXEL (µm)
AC-232E453	18.8	453	153.4	123.9	90.4	2.7 mm	274.7
AC-231E500	17.2	500	153.0	123.6	90.2	3.0 mm	274.1

PRECISION CURVES



Bring the invisible to light!



CHAMP

MID-TO-LONG RANGE CAMERAS FOR LOGISTICS

Robust and high-speed cameras built for challenging environments, offering exceptional frame rates, superior image quality, and the versatility to choose from different FOVs and working distances.

ACI-233F70C

• SHORT RANGE

ACI-233F100C

• SHORT RANGE

ACI-233F200C

•• MID RANGE

ACI-233F250C

•• MID RANGE

ACI-233F450C

••• LONG RANGE

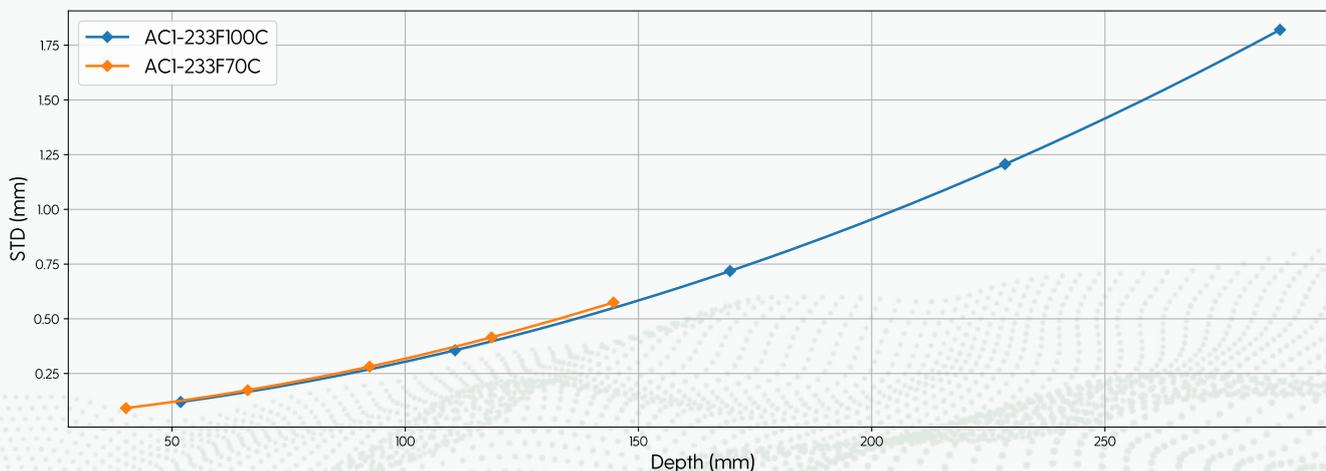
Designed for **logistics** and **industrial automation**, the **CHAMP** family offers both **mid and long-range** cameras with C-MOUNT optics and a wide FOV. The inclusion of a **larger CMOS sensor** enhances the Depth of Field (DOF), making these cameras ideal for **picking, depalletizing**, and other logistics-based applications that require extended focus capabilities.



FOV & Precision

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (μm)	FULL WORLD PIXEL (μm)
ACI-233F70C	44.0	70	91	76	50	190	130
ACI-233F100C	45.4	100	119	99	65	300	170

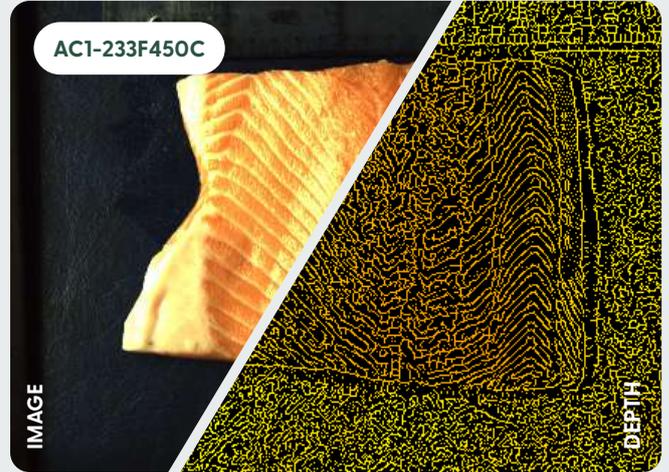
PRECISION CURVES





METALLIC SURFACE INSPECTION

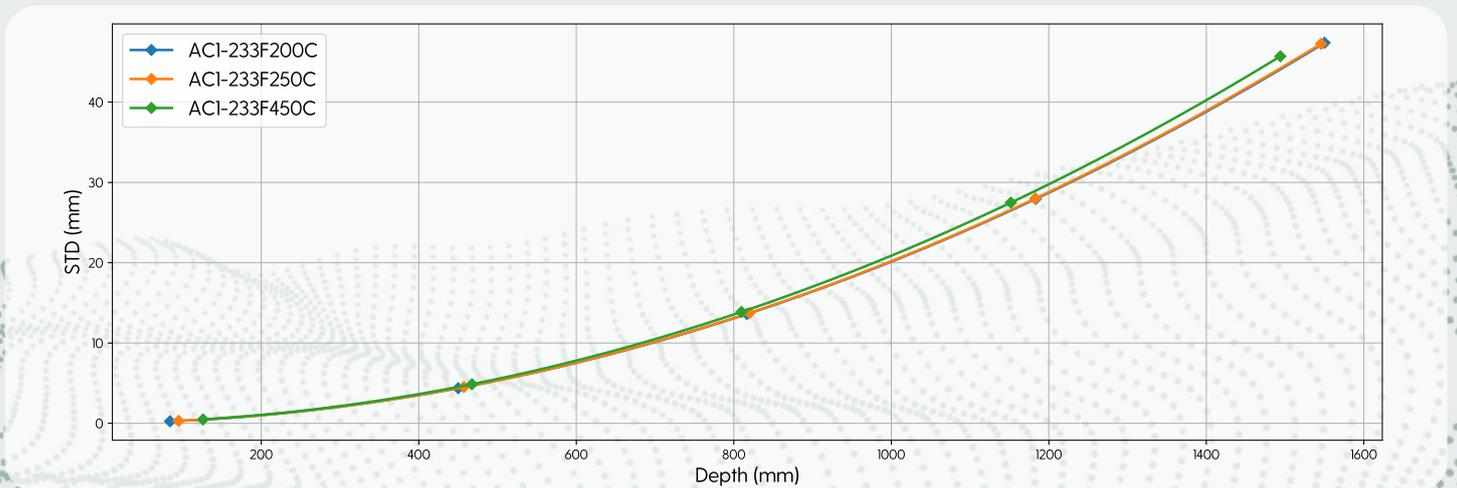
SALMON MEASUREMENT AND PICKING



FOV & Precision – mid&long range

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (mm)	FULL WORLD PIXEL (µm)
ACI-233F200C	47.5	200	213	178	117	1.0	305
ACI-233F250C	48.0	250	260	217	143	1.5	373
ACI-233F450C	49.0	450	449	375	247	4.5	643

PRECISION CURVES



Bring the invisible to light!



PRIME

HIGH-FIDELITY IMAGING FOR MATERIAL INSPECTION

Advanced imaging solutions with optimized field of view and high-resolution sensors, perfect for high-precision applications.

ACI-232F111C

• SHORT RANGE

ACI-232F150C

• SHORT RANGE

ACI-232F215C

•• MID RANGE

ACI-232F500C

••• LONG RANGE

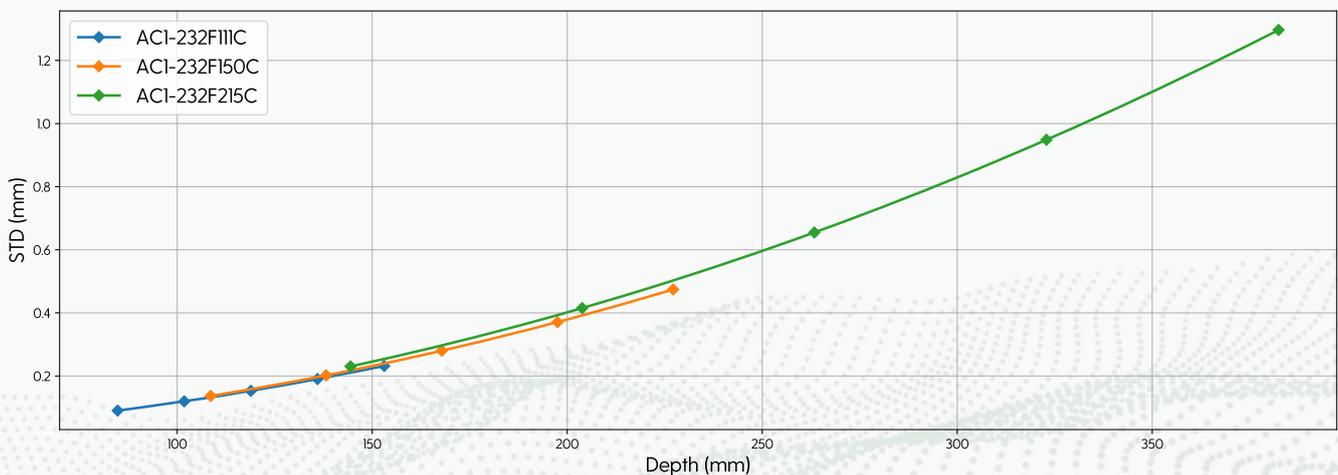
Compared to the **CHAMP** series, **PRIME** cameras feature a **narrower FOV** and **reduced DOF**, significantly **improving precision**. These characteristics make them excellent for **high-fidelity imaging** across a diverse range of materials, ensuring superior accuracy in applications that demand meticulous **detail** and **reliability**.



FOV & Precision

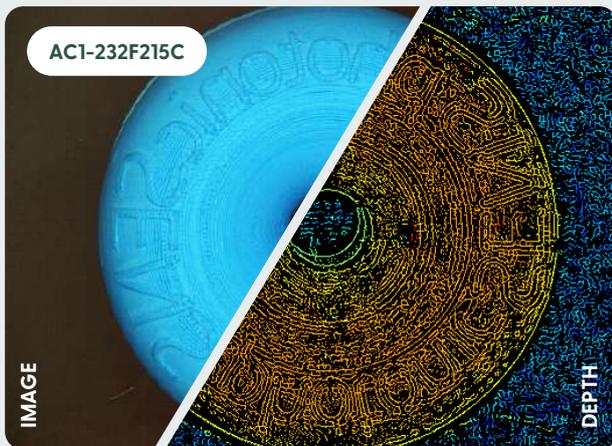
CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (μm)	FULL WORLD PIXEL (μm)
ACI-232F111C	28.2	111	75	62	41	140	107
ACI-232F150C	29.3	150	98	82	54	230	141
ACI-232F215C	30.4	215	138	115	76	460	197

PRECISION CURVES

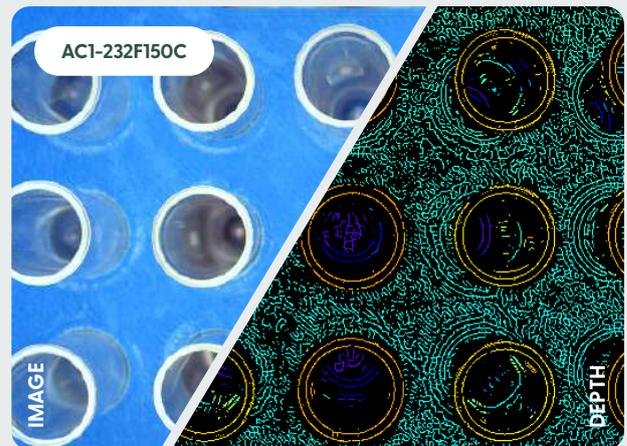




PLASTIC INJECTION QA



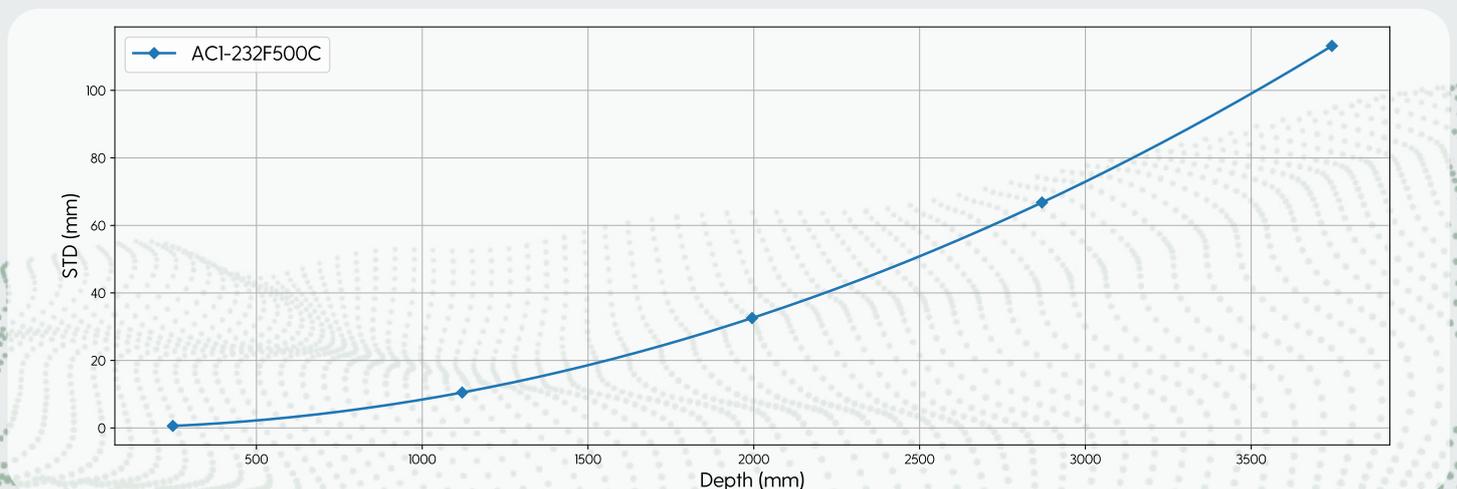
VIAL INSPECTION



FOV & Precision – long range

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (mm)	FULL WORLD PIXEL (µm)
ACI-232F500C	32.1	500	310	258	170	2.2	443

PRECISION CURVES



Bring the invisible to light!



HIGH-PRECISION IMAGING FOR SMALL PARTS

Ultra-high-performance cameras designed for large-scale industrial applications, featuring extensive depth range and superior processing capabilities.

ACI-231F152C

• SHORT RANGE

ACI-231F200C

• SHORT RANGE

ACI-231F400C

••• LONG RANGE

ACI-231F1000C

••• LONG RANGE

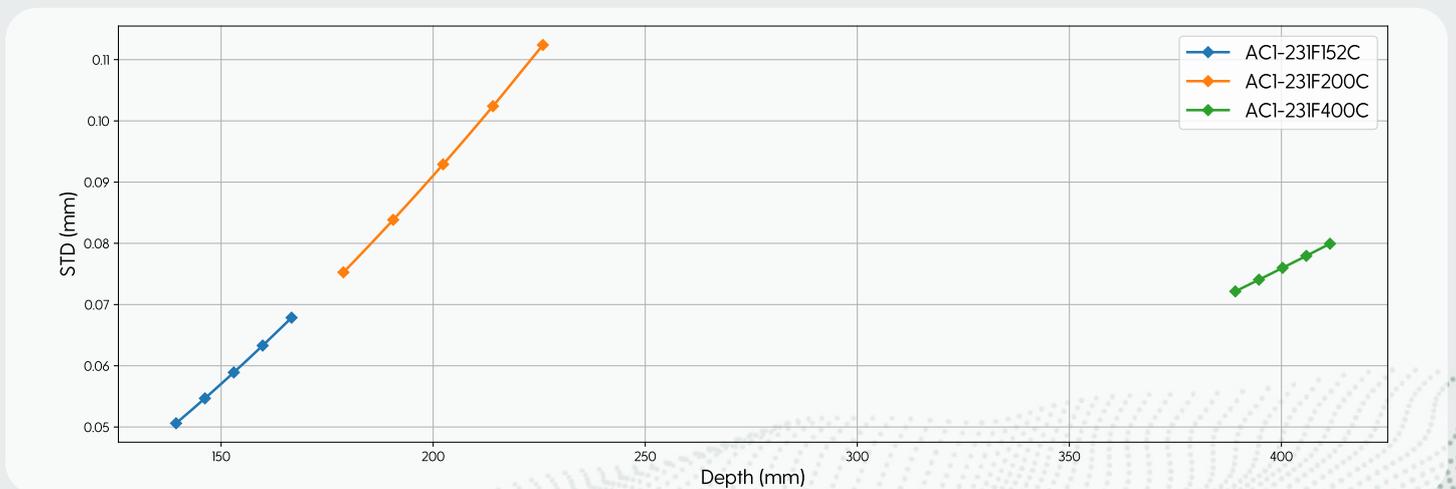
The **TITAN** series takes **precision to the next level** by further reducing the FOV and DOF, resulting in **exceptional accuracy**. These cameras deliver **high-class RGB imaging and depth sensing**, making them ideal for detailed inspection of **small parts** in **industrial, medical, and electronics** applications.



FOV & Precision

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (μm)	FULL WORLD PIXEL (μm)
ACI-231F152C	13.1	152	48	40	26	58	68
ACI-231F200C	13.8	200	62	52	34	91	89
ACI-231F400C	6.3	400	41	35	23	76	60

PRECISION CURVES

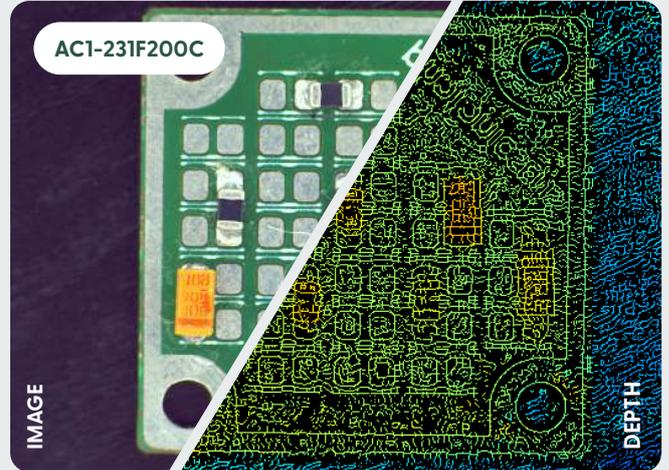
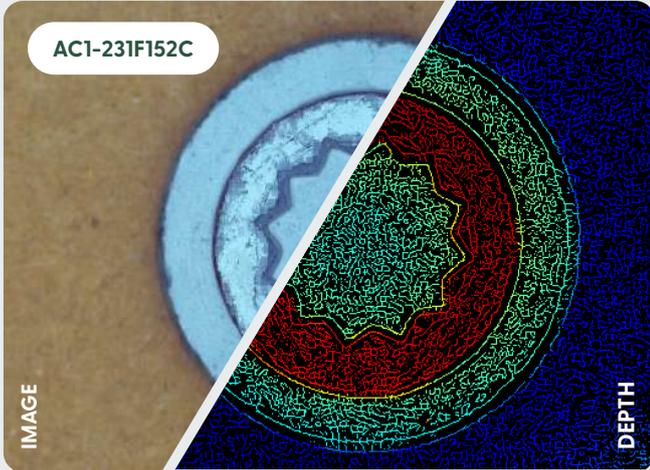


*This chart includes ACI-231F400C for visualization purposes.



SCREW HEAD INSPECTION

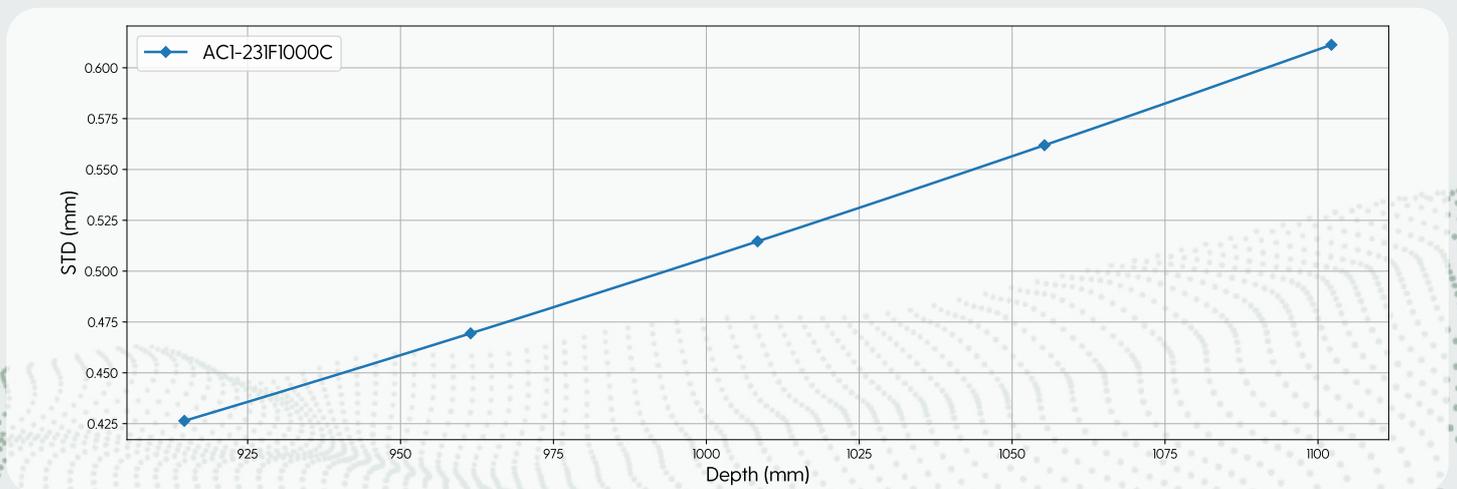
PCB INSPECTION



FOV & Precision – long range

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (µm)	FULL WORLD PIXEL (µm)
ACI-231F1000C	7.7	1000	132	110	73	510.0	189

PRECISION CURVES



Bring the invisible to light!



QUANTUM

BEST-IN-CLASS MICRON-LEVEL ACCURACY

Cutting-edge cameras with breakthrough imaging technology, designed for specialized applications requiring extreme precision and reliability.

AC-241F59.9

AC-231F88.7

ACI-241E131C

ACI-241E150C

ACI-241E206C

Engineered for the **most demanding applications**, the **QUANTUM** series features C-MOUNT professional lenses and offers an **unparalleled precision** of up to 9 microns. Perfect for **electronics, microelectronics, and high-precision** small part inspections, these cameras set the **standard** for cutting-edge **industrial imaging**.



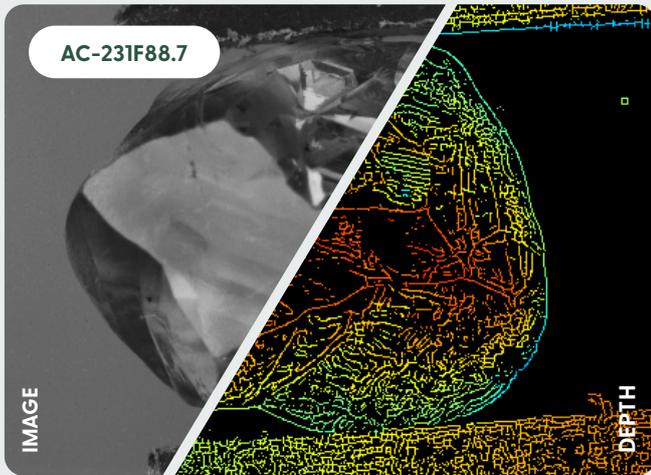


ACI-241E131C

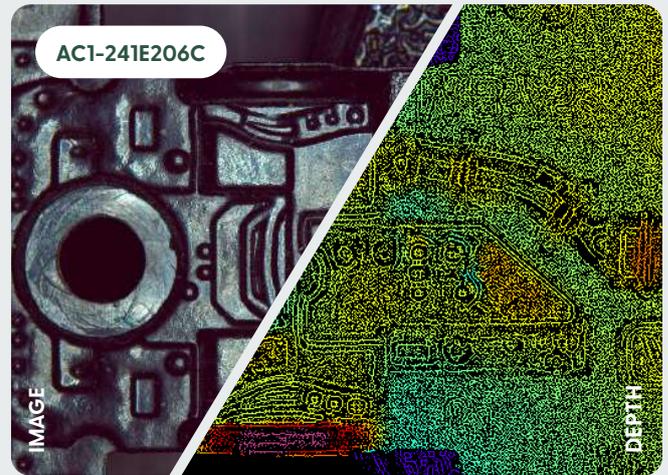


Ensure flawless quality with 3D PCB inspection. Thanks to precise 3D depth data, all potential defects across every PCB component can be easily detected - guaranteeing top-tier quality in every finished product. RGB image and depth map are perfectly matched, ensuring consistency across all data.

DIAMOND QA AND 3D RECONSTRUCTION



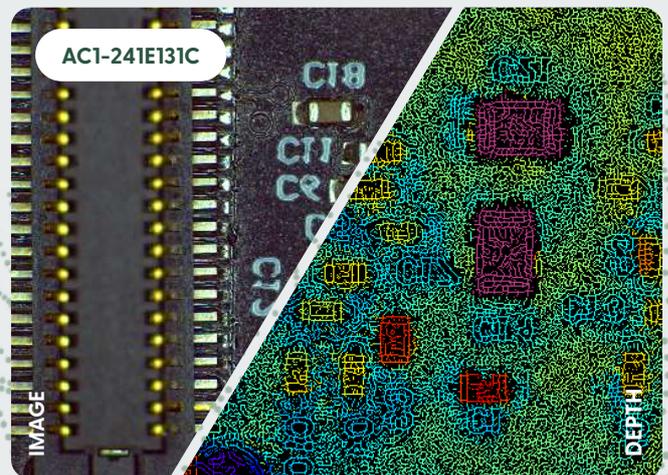
INJECTED MOLD INSPECTION



WATCH MANUFACTURING



PCB INSPECTION



Bring the invisible to light!



ULTRA-FINE PRECISION FOR WIRE BONDING INSPECTION

Ultra-precision cameras tailored for microelectronic inspection, delivering exceptional accuracy for wire bonding and fine-detail applications.

AC0x2-231M11.5

AC0x2-271P58.4

AC1x2-271P58.4C

The MICRO series is engineered for **ultra-high precision** applications, delivering measurement accuracy down to 3 microns with a 6.3-micron resolution. Specifically designed for wire bonding inspection and other microelectronic tasks, MICRO offers unparalleled detail and reliability at the **microscopic** level. Its advanced optics and sensor technology ensure consistent, high-fidelity imaging, making it the go-to solution for industries where micron accuracy is critical.

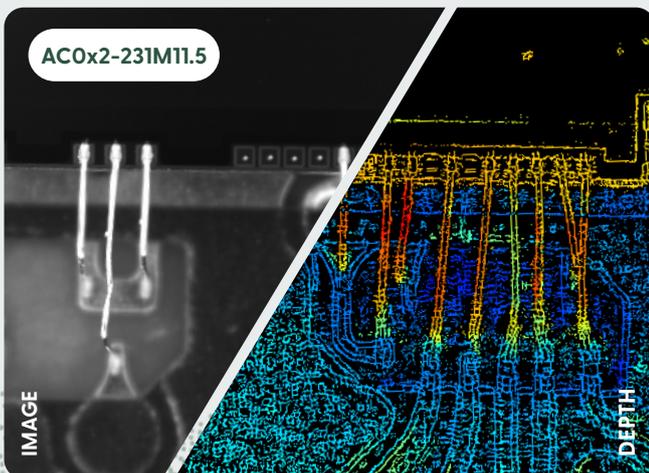


AC0x2-231M11.5

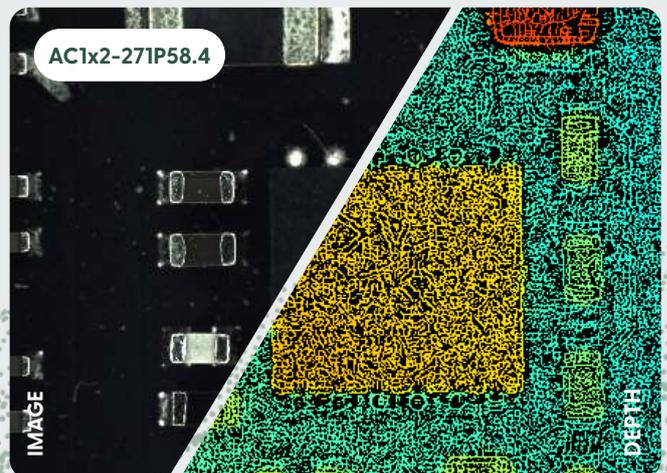
FOV & Precision

CAMERA MODEL	FOV DEGREES	WORKING DISTANCE (mm)	DFOV (mm)	HFOV (mm)	VFOV (mm)	STD WD (μm)	FULL WORLD PIXEL (μm)
AC0x2-231M11.5	19.9	11.4	4.1	3.3	2.4	2.30	6
AC0x2-271P58.4	4.2	58.4	4.4	3.5	2.6	3.00	6
AC1x2-271P58.4C	7.4	58.4	7.7	6.4	4.2	4.00	13

WIRE BONDS INSPECTION



PCB INSPECTION





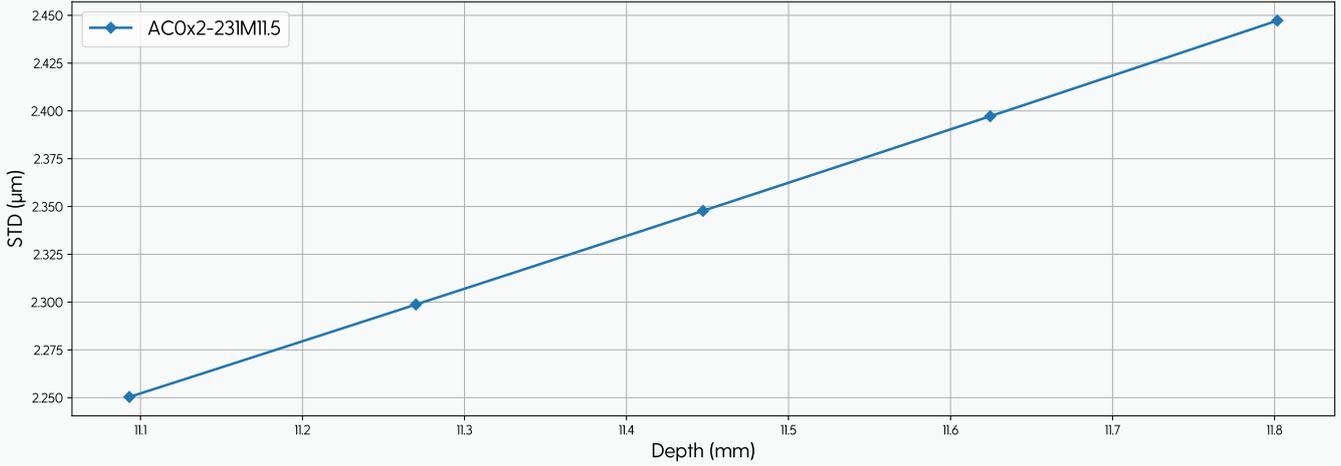
ACOx2-271P58.4



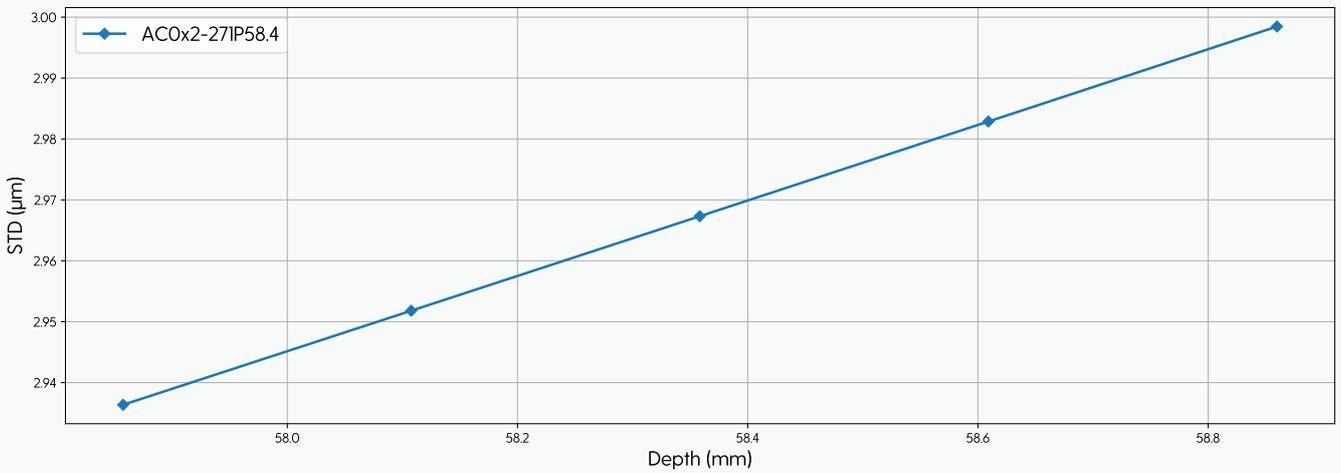
PRECISION CURVES



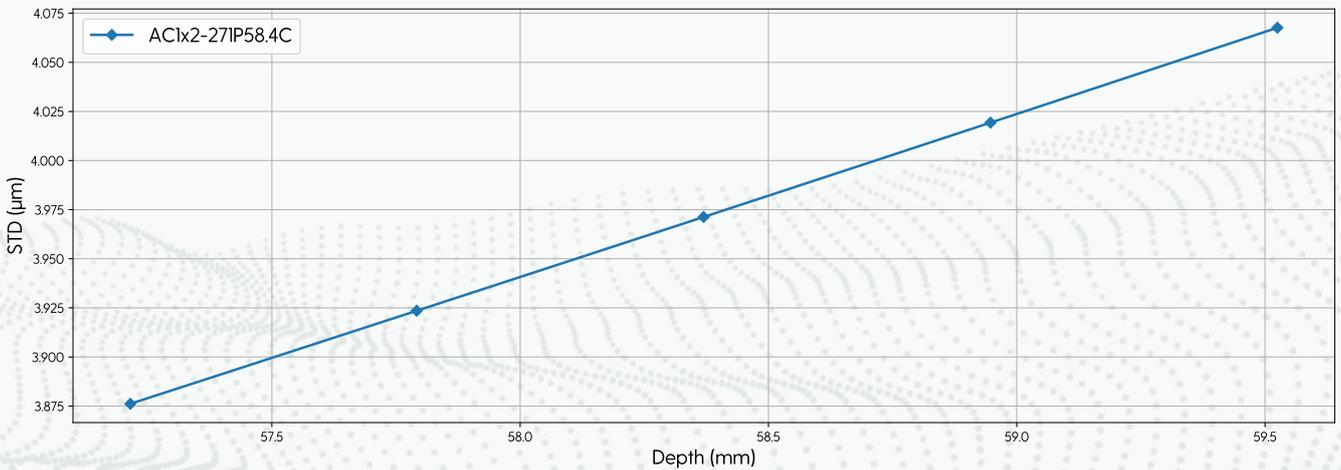
ACOx2-231M11.5



AC1x2-271P58.4



ACOx2-271P58.4C



Bring the invisible to light!

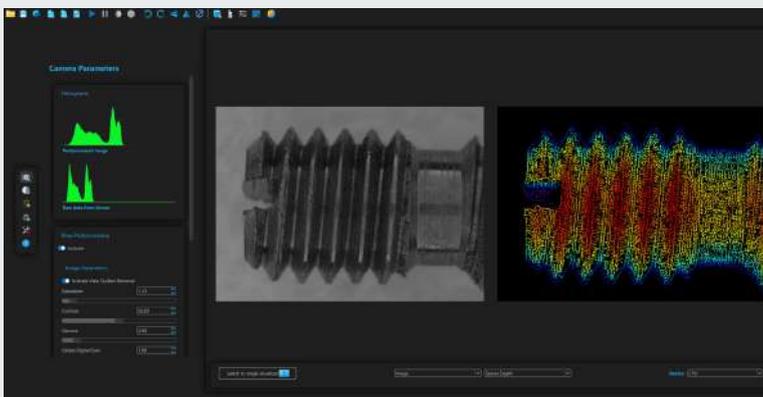


POWERFUL CONTROL SOFTWARE TAILORED FOR OUR CAMERAS

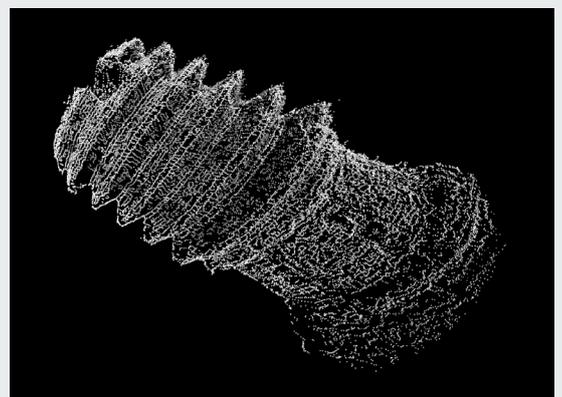
With its user-friendly interface, our software provides effortless access to all camera parameters.

It is easy to change every parameter of the camera, including **exposure time, brightness, contrast,** and **various threshold levels.** Enhancing usability, it features histograms that seamlessly **display both the 2D image and the depth map simultaneously** during streaming.

INTERFACE



3D POINT CLOUD

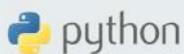


Designed for effortless integration across **Windows, Linux, and Android** platforms, this versatile tool speaks the language of developers worldwide. Whether you're fluent in C++ or Python, our SDK is your passport to seamless programming. Experience the ease of extracting both depth data and images simultaneously from a single camera shot.

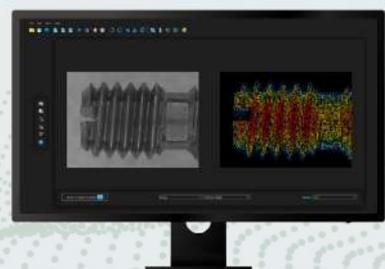
Plus, our output format plays nicely with any programming language and open-source library you prefer. Dive into the future of development with apiCAM SDK, where compatibility meets innovation!



SDK



STUDIO



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