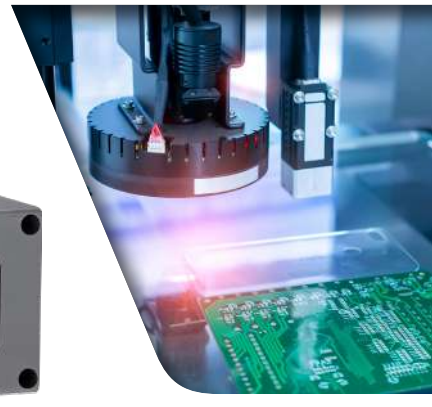
Allied Vision

Precision. Delivered.









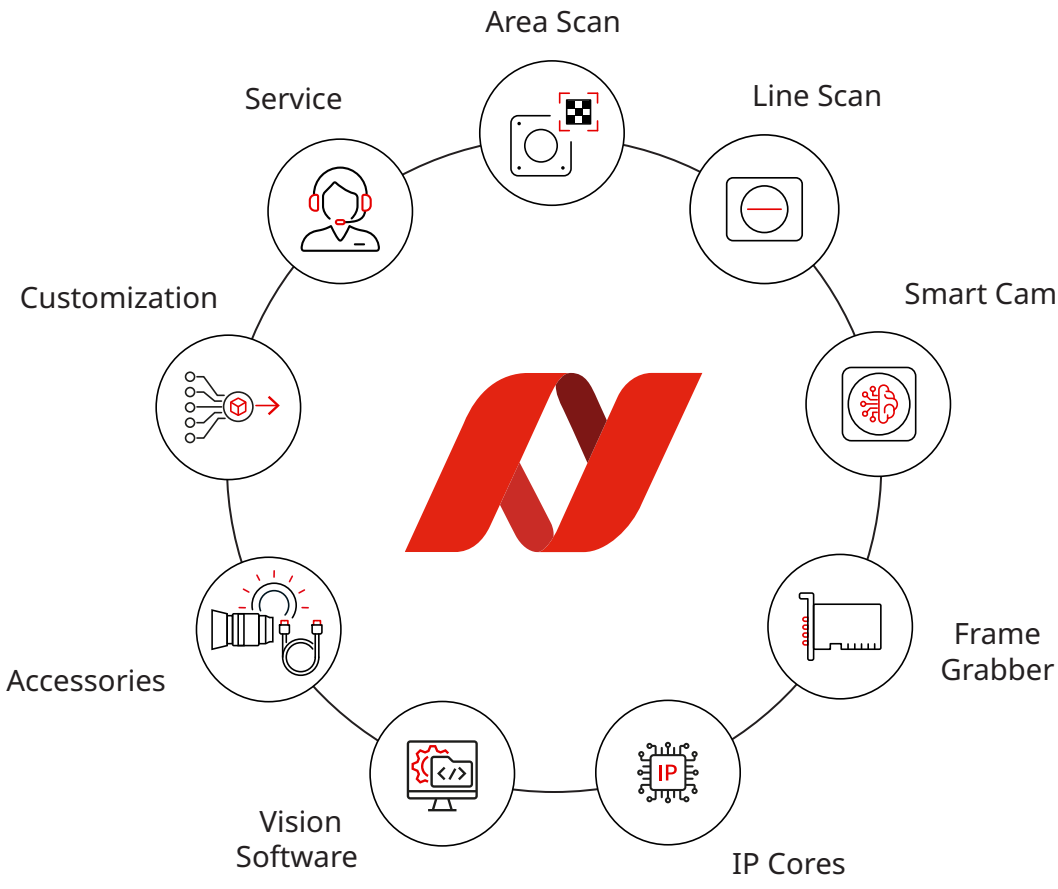


// CAMERAS, ILLUMINATIONS, OEM-SOLUTIONS

Line Scan Technologies

// MORE THAN JUST CAMERAS

One Partner. One Ecosystem



At Allied Vision, we bring together a broad range of machine vision technologies in one integrated ecosystem – cameras, frame grabbers, IP cores, software, lenses, lighting, accessories, and customization. Our technologies are designed to work together, helping you simplify sourcing, reduce integration effort, and build reliable vision systems faster. With expertise and support across the application, you benefit from compatible technologies and one trusted partner.

With Allied Vision, you get the technologies you need for your machine vision system – from one source and designed to work together.
One Partner. One Ecosystem. Designed to work together.

Bundled for your Application

Combine compatible Allied Vision technologies to meet your application requirements. From cameras and frame grabbers to lenses, lighting, and software – all from one trusted partner.

Our Machine Vision Ecosystem

Area Scan & Line Scan Cameras

Our broad portfolio of area scan and line scan cameras covers a wide range of demanding machine vision applications. From continuous inspection of moving materials to specialized UV, SWIR and polarization imaging, our cameras reveal critical details across and beyond the visible spectrum. Designed for high image quality, industrial reliability and easy integration, they provide the right imaging technology for a wide range of applications.

Smart Cameras

Our open smart cameras combine high-quality image acquisition with powerful onboard processing in one industrial device. Designed for maximum flexibility, they enable you to develop your own algorithms, integrate third-party software, and adapt the system to your application.

IP Cores

Our IP cores help reduce development effort when building your own vision components. Supporting GigE Vision, USB3 Vision and CoaXPress transport layers as well as SubLVDS and MIPI-CSI2 sensor interfaces, our IP cores combine high performance with a compact design. Designed to reduce development time and increase design quality, they provide proven technology even for complex applications.

Frame Grabbers

Our high-performance CoaXPress and Camera Link frame grabbers enable high-speed image acquisition and reliable data transfer for data-intensive imaging tasks. With CoaXPress-over-Fiber, high-speed data transmission can be extended over fiber-optic cables and longer distances.

Software

Our eVision software provides powerful image processing and analysis capabilities for inspection and identification applications. Our eVision portfolio includes tools for testing, evaluation, prototyping, and development, with functional libraries available individually or in combined bundles. Designed for flexible integration, eVision helps reduce development effort and efficiently turn image data into actionable results.

Lenses, Lighting & Accessories

A carefully selected portfolio of lenses, lighting and accessories complements our cameras and helps ensure reliable imaging performance. Our components are chosen and tested for compatibility, image quality and industrial performance. Designed to work with our camera portfolio, they help simplify integration, ensure consistent imaging results and reduce engineering effort.

Customization

Our customization capabilities help adapt machine vision technology to your specific application and integration requirements. From development and volume production to support, repair and redesign, we support you throughout the entire product lifecycle. Our engineering expertise helps ensure seamless integration into new or existing production systems while reducing development effort and complexity.

// SELECTED CAMERA PORTFOLIO AT A GLANCE

Features comparison

Visit our website at **www.alliedvision.com** and compare the cameras of your choice!

	evo		neo		wave	pro	chroma	3DPIXA pro	3DPIXA evo
Image optimization features	CXP	DXGE	CXP	10GigE	CL	CL	CL	CL	CXP
Single ROI	✓	✓	✓	✓	✓	✓	✓	✓	✓
Multi ROI	✓	–	✓	✓	✓	–	–	–	–
Binning Horizontal	✓	✓	✓	✓	–	✓	✓	–	–
Reverse X / Mirror	✓	✓	✓	✓	✓	✓	✓	–	–
Gain Auto	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gain Auto Continuous	✓	✓	✓	✓	✓	✓	✓	✓	✓
Gamma Correction	✓	✓	✓	✓	✓	✓	✓	✓	✓
Brightness and Contrast	✓	✓	✓	✓	✓	✓	✓	✓	✓
Color Transformation (CCM)	✓	✓	✓	✓	✓	✓	✓	–	–
CIE-Lab / CIE-XYZ Color	–	–	–	–	–	–	✓	–	–
Flatfield Correction	✓	✓	✓	✓	✓	✓	✓	✓	✓
Keystone Correction	–	–	–	–	✓	✓	✓	✓	–
Camera control features									
Temperature	✓	✓	✓	✓	✓	✓	✓	✓	✓
Fan Enable	✓	✓	–	–	–	–	–	–	–
Infoblock mode	✓	✓	✓	✓	✓	✓	✓	✓	✓
User Set Control	✓	✓	✓	✓	✓	✓	✓	✓	✓
Frame Start	✓	✓	✓	✓	✓	✓	✓	✓	✓
Frame Active	–	✓	✓	✓	✓	✓	✓	✓	–
Frame Trigger Delay	✓	✓	✓	✓	✓	✓	✓	✓	✓
Frame Burst	✓	✓	✓	✓	–	–	–	–	✓
Frame Burst Active	–	✓	–	✓	–	–	–	–	✓
Encoder Divider	✓	✓	✓	✓	✓	✓	✓	✓	✓
Encoder Average	✓	✓	✓	✓	✓	✓	✓	✓	✓
Master Slave Control	✓	✓	✓	✓	✓	✓	✓	✓	✓
LED Flash Control	✓	✓	✓	✓	✓	✓	✓	✓	✓
IO Analyzer	✓	✓	✓	✓	–	–	–	–	–
IO Configuration	✓	✓	✓	✓	✓	✓	✓	✓	✓
Trigger debounce	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scan direction	✓	✓	✓	✓	✓	✓	✓	✓	✓

(1) Selected models only, please contact our sales team for details (2) multiple RoI (up to 4) selected models only

// SOFTWARE PORTFOLIO

Discover our software



Vimba X

Vimba X stands for a new generation SDK. Fully GenICam compliant, it has been especially designed for best compatibility with the Alvium camera series and supports the latest Alvium feature set. Vimba X contains APIs for Python, .NET, C++, and C. You can port your source code from Windows to Linux or cross-compile from a Linux PC to an embedded system. Vimba X supports all GigE, 10GigE as well as USB and CXP cameras. It also provides easy connectivity to eVision image processing libraries through a dedicated Vimba X software bridge, best compatibility with the Allied Vision portfolio. It runs on Windows 10 and Windows 11, Linux, and Linux ARM (all-64-bit), and MacOS (Apple Silicon).

Vimba X provides lean yet high-performance APIs optimized for USB, GigE, CoaXPress, and CSI-2 cameras. Vimba X includes dedicated tools for defect pixel management, camera calibration, bandwidth management, and a camera simulator.

You can download Vimba and Vimba X for free from our website:
www.alliedvision.com/en/support/software-downloads

Software and drivers for embedded vision, open source projects

Visit www.github.com/alliedvision to discover our software, examples, and drivers for embedded vision and our open source projects:

// Alvium CSI-2 camera driver for NVIDIA Jetson, Raspberry Pi 5, NXP i.MX 8M Plus, AMD Xilinx ZYNQ
// V4L2 Viewer
// Examples for Alvium CSI-2 cameras (V4L2)
// gst-vimbasrc and gst-vmbsrc, plugins to access Vimba and Vimba X from GStreamer pipelines
// Broad support for the Yocto project with various meta layers.

PRECISION. DELIVERED.

Line Scan Cameras

Developed for demanding applications

Line scan cameras are special industrial cameras that only record one light-sensitive line via a line sensor – in contrast to an area scan sensor, which has a large number of lines. A line can be read out faster than an area.

Line scan cameras provide higher line rates compared to area scan cameras. This requires significantly more light, which should be distributed evenly across the entire field of view. Line scan cameras in combination with highly focused light provide reliable inspection results in machine vision systems for fast moving elements. The powerful Allied Vision light modules with focused light offer an ideal solution for object inspection on conveyor belts in surface or quality control.

Allied Vision offers color line scan cameras with trilinear/quadlinear CCD or CMOS line scan sensors that enable high-performance mono, color, color+NIR and SWIR imaging solutions.

Advanced Imaging Features

Our line scan camera products were developed for demanding industrial machine vision applications and combine advanced imaging features with flexible system integration. Versatile line and frame triggering, variable encoder inputs, color conversion, and multi-field imaging offer maximum flexibility for a wide range of inspection requirements.

Advanced synchronization and correction functions simplify system integration and start-up. Precise multi-camera synchronization, sub-pixel registration correction, internal spatial correction, and an integrated test image generator ensure reliable and efficient system setup.

The multi-field imaging function enables up to four images to be captured in a single pass, including brightfield and darkfield images. Fully synchronized multi-channel LED flash control enables flexible and precisely coordinated illumination.

In addition, relevant machine and camera data – such as timestamps, encoder position, and scanning speed – can be automatically embedded into the image data, providing comprehensive traceability and simplifying downstream image processing.



HIGH RESOLUTION LINE SCAN CAMERAS

allPIXA evo CXP

Line Scan Cameras with 4× CoaXPress Interface

The allPIXA evo CXP line scan camera series combines exceptional resolution, high line rates and outstanding CCD-quality image performance with the latest CMOS sensor and machine vision interface technologies. Available in resolutions from 8k to 32k and with mono and true-color RGB capabilities.

allPIXA evo CXP	Camera Family Specification				
Interface	4× CoaXPress				
Interface Connector	Micro BNC				
Sensor Type	CMOS				
Data Format	8/10/12 Bit				
Power Supply	12 – 24V (±10 % Hirose) PoCXP				
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder				
Operating Temperature	0 – 60 °C (Housing Temperature)				
Resolution	8k	10k	15k	16k	32k
Dimensions (W × H × D) [mm]	102 × 76 × 82	102 × 76 × 82	102 × 101 × 82	102 × 113 × 100	102 × 113 × 100
Weight [g]	900	900	1,000	1,100	1,100
Lens Mount	M72 × 0.75	M72 × 0.75	M 95 × 1	M 95 × 1	M 95 × 1
Certifications	CE; RoHS				



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA evo 8k CXP	Color + Mono	8,192 × 16	5 µm × 5 µm	100 kHz	100 kHz	100 kHz
allPIXA evo 10k CXP Color	Color	10,240 × 3	5.6 µm × 5.6 µm	_	68.4 kHz	–
allPIXA evo 10k CXP Mono	Mono	10,240 × 1	5.6 µm × 5.6 µm	68.4 kHz	_	–
allPIXA evo 15k CXP Color	Color	15,360 × 3	5.6 µm × 5.6 µm	_	68.4 kHz	–
allPIXA evo 15k CXP Mono	Mono	15,360 × 1	5.6 µm × 5.6 µm	68.4 kHz	–	–
allPIXA evo 16k CXP Color	Color	16,384 × 3	5 µm × 5 µm	–	73 kHz	–
allPIXA evo 32k CXP Mono	Mono	32,768 (16,384 × 2)	5 µm × 5 µm	73 kHz	–	–



HIGH SPEED LINE SCAN CAMERAS

allPIXA neo 4k / 6k

Line Scan Camera with 10GigE or CoaXPress Interface

The new allPIXA neo CMOS line scan camera delivers highest performance in mono, RGB and NIR with 4k / 6k resolution. Equipped with 10 GigE and CoaXPress interfaces it is the best solution for all high-speed and web inspection tasks. With its small size, it enables simple and scalable integration in small installation spaces.

allPIXA neo	Camera Family Specification
Interface	10GigE, 2x CoaXPress
Interface Connector	RJ45, Micro BNC
Sensor Type	CMOS
Data Format	8/10/12 Bit
Power Supply	12 – 24V (±10 % or, PoE, PoCXP
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder
Operating Temperature	0-60 °C (Housing Temperature)
Dimensions (W × H × D) [mm]	62 x 62 x 62
Weight [g]	350
Lens Mount	M42 x 0.75 / F-Mount adapter / TFL adapter
Certifications	CE; RoHS



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA neo 4k 10GigE Mono	Mono	4,096 × 1	7 µm × 7 µm	250 kHz	–	–
allPIXA neo 4k 10GigE Color	Color + Mono	4,096 × 4	7 µm × 7 µm	–	90 kHz	70 kHz
allPIXA neo 6k 10GigE Mono	Mono	6,144 × 1	5 µm × 5 µm	180 kHz	–	–
allPIXA neo 6k 10GigE Color	Color + Mono	6,144 × 4	5 µm × 5 µm	–	60 kHz	45 kHz
allPIXA neo 6k 10GigE Color-NIR	Color-NIR	6,144 × 4	5 µm × 5 µm	–	60 kHz	45 kHz



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA neo 4k CXP Mono	Mono	4,096 × 1	7 µm × 7 µm	250 kHz	–	–
allPIXA neo 4k CXP Color	Color + Mono	4,096 × 4	7 µm × 7 µm		90 kHz	80 kHz
allPIXA neo 6k CXP Mono	Mono	6,144 × 1	5 µm × 5 µm	240 kHz	–	–
allPIXA neo 6k CXP Color	Color + Mono	6,144 × 4	5 µm × 5 µm	–	80 kHz	60 kHz
allPIXA neo 6k CXP Color-NIR	Color-NIR	6,144 × 4	5 µm × 5 µm	–	80 kHz	60 kHz



HIGH RESOLUTION LINE SCAN CAMERAS

allPIXA evo DXGE

Fast and cost-effective: Dual 10GigE Interface

The allPIXA evo DXGE line scan cameras combine high-performance CMOS technology with CCD quality imaging and the fast, cost-efficient Dual 10 GigE interface. Available with 8k, 10k and 15k sensors, the cameras deliver exceptional resolution and high line rates.

allPIXA evo CXP	Camera Family Specification		
Interface	DXGE (Dual 10GigE)		
Interface Connector	2x SFP+		
Sensor Type	CMOS		
Data Format	8/10/12 Bit		
Power Supply	12 – 24V (±10 % Hirose)		
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder		
Operating Temperature	0 – 60 °C (Housing Temperature)		
Resolution	8k	10k	15k
Dimensions (W × H × D) [mm]	102 × 76 × 82	102 × 76 × 82	102 × 101 × 82
Weight [g]	900	900	1,000
Lens Mount	M72 × 0.75	M72 × 0.75	M 95 × 1
Certifications	CE; RoHS		



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA evo 8k DXGE	Color + Mono	8,192 × 16	5 µm × 5 µm	100 kHz	90.1 kHz	68.2 kHz
allPIXA evo 10k DXGE Color	Color	10,240 × 3	5.6 µm × 5.6 µm	_	68.4 kHz	–
allPIXA evo 10k DXGE Mono	Mono	10,240 × 1	5.6 µm × 5.6 µm	68.4 kHz	–	–
allPIXA evo 15k DXGE Color	Color	15,360 × 3	5.6 µm × 5.6 µm	_	68.4 kHz	–
allPIXA evo 15k DXGE Mono	Mono	15,360 × 1	5.6 µm × 5.6 µm	68.4 kHz	–	–



8k MONO RGB

High Resolution Camera Link Line Scan Cameras

allPIXA wave

Camera Link Interface

The allPIXA wave line scan cameras combine CMOS performance with CCD-quality imaging and feature a trilinear true-color RGB CMOS sensor in ultra-high resolution. The established Camera Link interface enables reliable high-speed data transmission, with support for cable lengths of up to 15 m at full bandwidth.

allPIXA wave	Camera Family Specification
Interface	Camera Link
Interface Connector	Camera Link MDR
Sensor Type	CMOS
Data Format	8/10/12 Bit
Power Supply	12 – 24V (±10 % Hirose)
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder
Operating Temperature	0 – 60 °C (Housing Temperature)
Resolution	8k
Dimensions (W × H × D) [mm]	102 × 100 × 56
Weight [g]	900
Lens Mount	M95 × 1 mm
Certifications	CE; RoHS



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA wave 15k Camera Link	Color	15,360 × 3	5.6 µm × 5.6 µm	–	18 kHz	–
allPIXA wave 15k Camera Link Mono	Mono	15,360 × 1	5.6 µm × 5.6 µm	22 kHz	–	–



4k 7.3k RGB

Color Measure ment Line Scan Cameras

chromaPIXA

Stable and accurate

The chromaPIXA line scan cameras are designed for stable, pixel-accurate inline color measurement and enable reliable color evaluation in a wide range of absolute color spaces. A key advantage is the camera's internal real-time color conversion into standard color spaces such as sRGB, eciRGB, AdobeRGB, CIE-Lab* and CIE-XYZ.

chromaPIXA	Camera Family Specification	
Interface	Camera Link	
Interface Connector	Camera Link MDR	
Sensor Type	CCD	
Data Format	8/10 Bit	
Power Supply	24V (±10 % Hirose)	
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder	
Operating Temperature	0 – 60 °C (Housing Temperature)	
Resolution	4k	7.3k
Dimensions (W × H × D) [mm]	102 × 100 × 56	
Weight [g]	900	
Lens Mount	Large variety of adapters: F-Mount, C-Mount, M39×1, M42×1, M72×0.75	
Certifications	CE; RoHS	



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
chromaPIXA 4k	Color	4,096 × 3	10 µm × 10 µm		50.8 kHz	
chromaPIXA 7k	Color	7,300 × 3	10 µm × 10 µm		29.7 kHz	



4k 5k 6k 7.3k RGB

High Sensitivity Line Scan Cameras

allPIXA pro Line Scan Cameras

High speed and high sensitivity

The allPIXA pro combines outstanding CCD image quality and precise color reproduction with high speed performance. Highly sensitive 10 µm CCD pixels and 14-bit A/D conversion ensure excellent image quality and color fidelity.

allPIXA pro	Camera Family Specification			
Interface	Camera Link			
Interface Connector	Camera Link MDR			
Sensor Type	CCD			
Data Format	8/10 Bit			
Power Supply	12 – 24V (±10 % Hirose)			
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder			
Operating Temperature	0 – 60 °C (Housing Temperature)			
Resolution	4k	5k	6,000px	7.3k
Dimensions (W × H × D) [mm]	102 × 100 × 77			
Weight [g]	1,000			
Lens Mount	Large variety of adapters: F-Mount, C-Mount, M39x1, M42x1, M72x0.75			
Certifications	CE; RoHS			



	Chroma	Number of Pixel	Pixel Size	Line rate		
				Single-line	Tri-linear	Quad-linear
allPIXA pro 4k	Color	4,096 × 3	10 µm × 10 µm	–	50.8 kHz	–
allPIXA pro 5k	Color	5,120 × 3	10 µm × 10 µm	–	40.9 kHz	–
allPIXA pro 6000 px	Color	6,000 × 3	10 µm × 10 µm	–	34.3 kHz	–
allPIXA pro 7.3k	Color	7,300 × 3	10 µm × 10 µm	–	29.7 kHz	–



4k 5k 6k 7k 15k RGB 3D

3D Line Scan Cameras

3DPIXA Stereo Line Scan Cameras

For demanding applications

The 3DPIXA stereo line scan cameras combine high-resolution line scan technology with GPU-accelerated stereo algorithms to enable fast, precise inline 3D inspection and measurement. The cameras capture a high-resolution color image and a 3D height map in a single scan, providing comprehensive information for demanding inspection applications where both surface structure and color are critical.

3DPIXA	Camera Family Specification (Stereo line scan camera with lenses, factory calibrated)		
Camera	3DPIXA evo compact	3DPIXA pro dual	3DPIXA wave dual
Interface	4× CoaXPress	Camera Link	Camera Link
Interface Connector	Micro BNC	Camera Link MDR	Camera Link MDR
Sensor Type	CMOS	CCD	CMOS
Data Format	8/10 Bit		
Power Supply	24V (±10 %)		
Trigger mode	Free run / External / Line trigger / Frame trigger / Encoder		
Operating Temperature	0 – 60 °C (Housing Temperature)		
Software	Allied Vision 3D-API for real time 3D data calculation on NVIDIA GPU board (Windows ×64); Allied Vision 3D Viewer		
Software output	Rectified color image (3 × 8 Bit); Height map (16 Bit); 3D point cloud		
Supported software libraries	Halcon (MVTec)		
Certifications	CE; RoHS		



	Optical resolution [µm/pixel]	Field of view [mm]	Measurement points	Height resolution [µm]*	Height range [mm]**	Free working distance [mm]**	Max. speed [mm/s]	Dimensions [mm]
3DPIXA evo compact 8 µm CXP	8	36	4,500	2.25	1.32	155	547	240 × 110 × 114
3DPIXA evo compact 10 µm CXP	10	56	5,600	3.22	1.89	183	684	240 × 110 × 114
3DPIXA evo compact 12 µm CXP	12	75	6,250	4.35	2.55	210	820	240 × 110 × 114
3DPIXA pro dual 5 µm HR	5	35	7,000	0.55	0.50	77.9	148	363 × 99 × 278
3DPIXA pro dual 200 µm	200	1,400	7,000	60	400	1,645	5,940	220 × 99 × 463
3DPIXA pro dual 615 µm	615	4,400	7,154	188	300	2,158	18,265	141 × 140 × 478
3DPIXA wave dual 30 µm	30	450	15,000	5.87	12.9	612.4	552	247 × 99 × 341

*Height range and height resolution depend on object surface, **For well-structured surface the height range can exceed the specific values

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