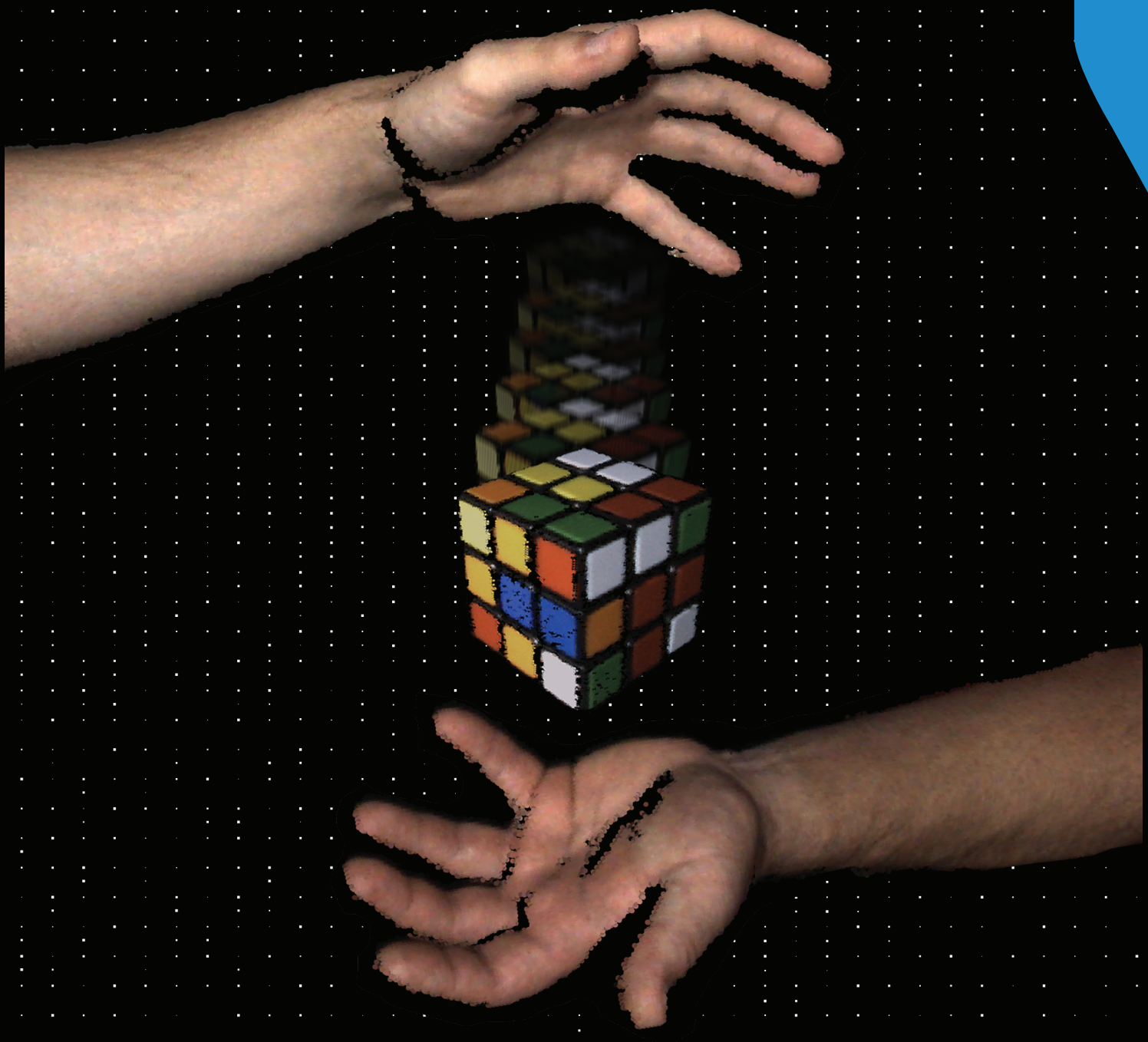
Photoneo | Focused on 3D

3D Sensors

MotionCam-3D Color

Real-time Colorful 3D Point Clouds



Motion + High resolution + Sub-millimeter accuracy + Color

Parallel Structured Light™

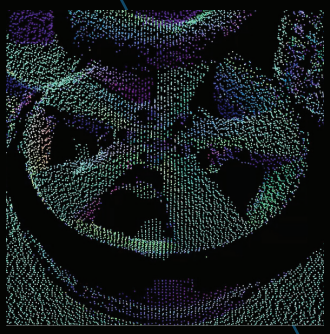
Photoneo's unique patented technology provides high quality and high resolution 3D data even for dynamic scenes. The Sequential Structured Light systems provide high quality data but at low FPS and only when the scene is completely static. Furthermore, ToF or Active Stereo systems provide real-time stream of data, however with limited accuracy and resolution.

Technology comparison

Real Scene

Parallel Structured Light

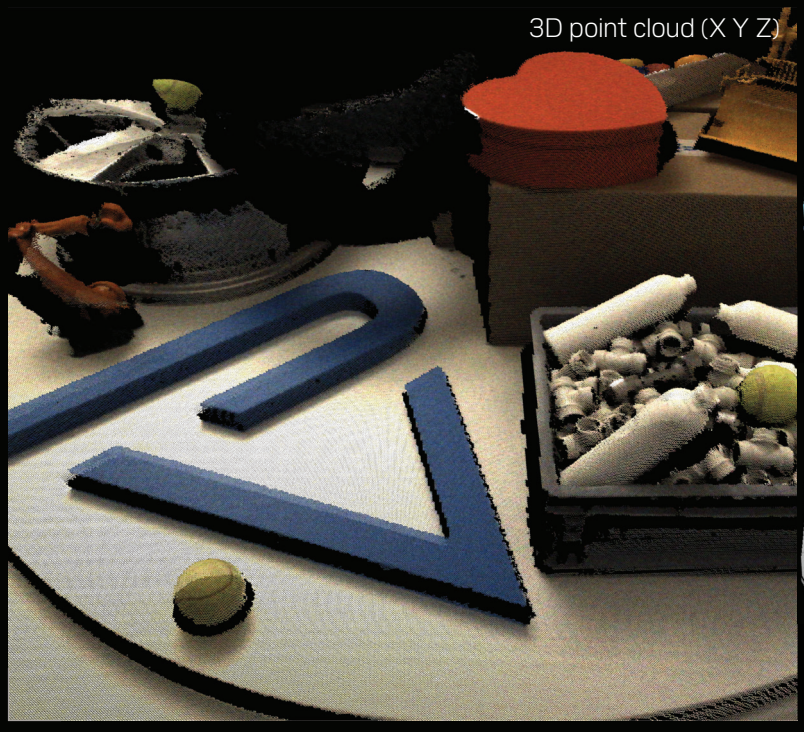
Structured Light



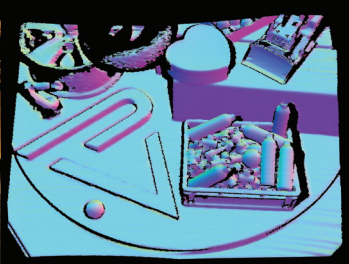
ToF / Active Stereo

	Parallel Structured Light	Structured Light	ToF / Active Stereo
Quality	●●●●●	●●●●●	●●○○○
Speed	●●●●●	●●○○○	●●●●●

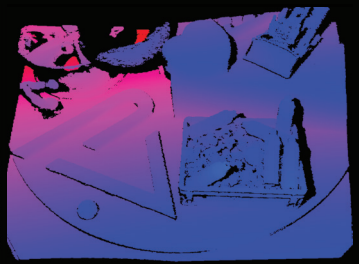
Data outputs - Parallel Structured Light™



3D point cloud (X Y Z)



Normals
(nX nY nZ)



Depth Map
(Z)

Grayscale Texture
(Intensity)

Color Texture
(RGB)

Paradigm shift in Machine Vision opens new Frontiers

Previously, the choice of a 3D system was influenced by a trade-off between the ability to scan dynamic scenes and the resulting resolution and data quality.
The ability to provide high-quality area snapshot 3D data in real-time opens new frontiers for industrial automation. Robots no longer need to stop to acquire data or manipulate randomly moving objects. Furthermore, the color information supports the decision making and is vital for AI algorithms.

Industry and Manufacturing

Picking from conveyor

Hand-eye manipulation

Overhead conveyors

3D model creation

Logistics

Scanning of large objects

VR / AR

Maintenance

Agriculture

Sorting

Harvesting

Benefits of MotionCam-3D

Scanning in rapid motion
One-frame acquisition, 40 m/s

High resolution & accuracy
2 MP, 0.150 mm

Practical scanning range
6 models: from 360 mm to 3 780 mm

No 3D motion blur
10 µs per-pixel exposure time

Industry ready
IP65, PoE, thermal calibration

Plug & Play
Practical application & API

Integrated computing unit
Delivers 15 Million points per second

Robust scanning
Ambient light suppression methods

Patented technology
Parallel Structured Light

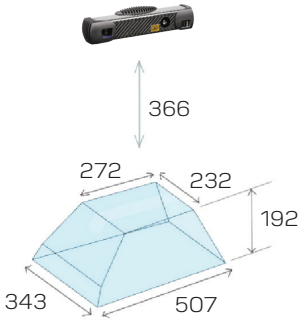
Operating modes

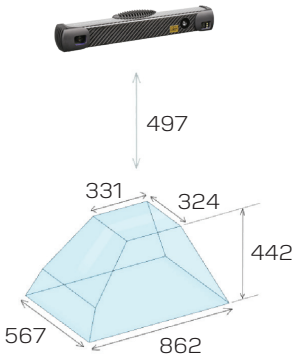
Scanner mode / Static	2 Million 3D points	@ 2 FPS	Accuracy of 0.3 mm at Z=1000 mm
Camera mode / Dynamic	0.9 Million 3D points	@ 20 FPS	Accuracy of 0.6 mm at Z=1000 mm

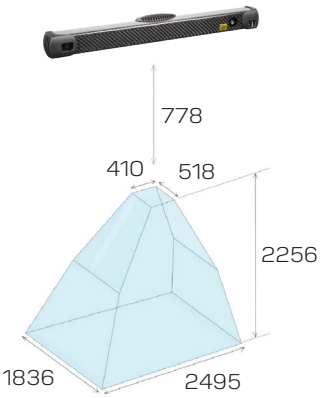
MotionCam-3D Color

Models & Datasheets

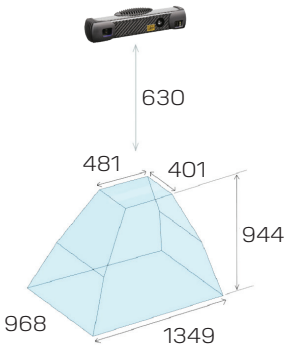
*all sizes are in mm

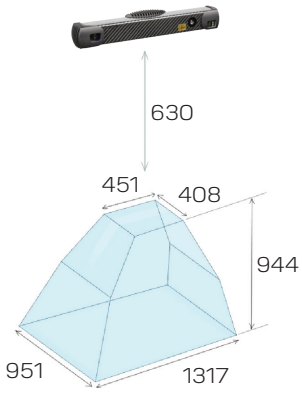


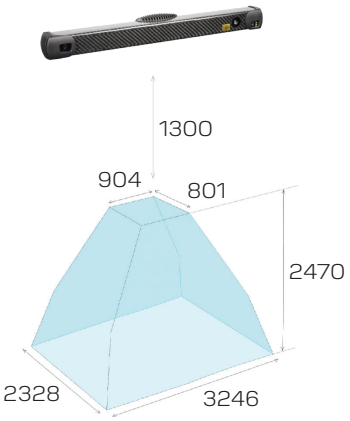




	S size		M size		L size	
	Dynamic	Static	Dynamic	Static	Dynamic	Static
Point Size	0.37 @z=442	0.25 @z=442	0.55 @z=650	0.37 @z=650	1.05 @z=1239	0.72 @z=1239
Accuracy	< 0.300	< 0.150	< 0.500	< 0.250	< 1.250	< 0.900
Temporal noise	< 0.100	< 0.050	< 0.100	< 0.050	< 0.150	< 0.100
Scanning range	366 - 558		497 - 939		778 - 3034	
Weight	1000g		1050g		1150 g	
Baseline	230 mm		350 mm		550 mm	
Dimmensions	308 x 68 x 85 mm		428 x 68 x 85 mm		628 x 68 x 85 mm	







	S+ size		M+ size		L+ size	
	Dynamic	Static	Dynamic	Static	Dynamic	Static
Point Size	0.76 @z=900	0.52 @z=900	0.76 @z=900	0.52 @z=900	1.68 @z=1944	1.15 @z=1944
Accuracy	< 1.000	< 0.500	< 0.600	< 0.300	< 2.050	< 1.500
Temporal noise	< 0.150	< 0.100	< 0.100	< 0.050	< 0.550	< 0.400
Scanning range	630 - 1574		630 - 1574		1300 - 3780	
Weight	1000g		1050g		1150 g	
Baseline	230 mm		350 mm		550 mm	
Dimmensions	308 x 68 x 85 mm		428 x 68 x 85 mm		628 x 68 x 85 mm	

Software Compatibility

Adaptive Vision · MATLAB · MATROX IMAGING · python · euresys · HALCON a product of MVTec · GENICAM

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