Zivid Two

Technical specification

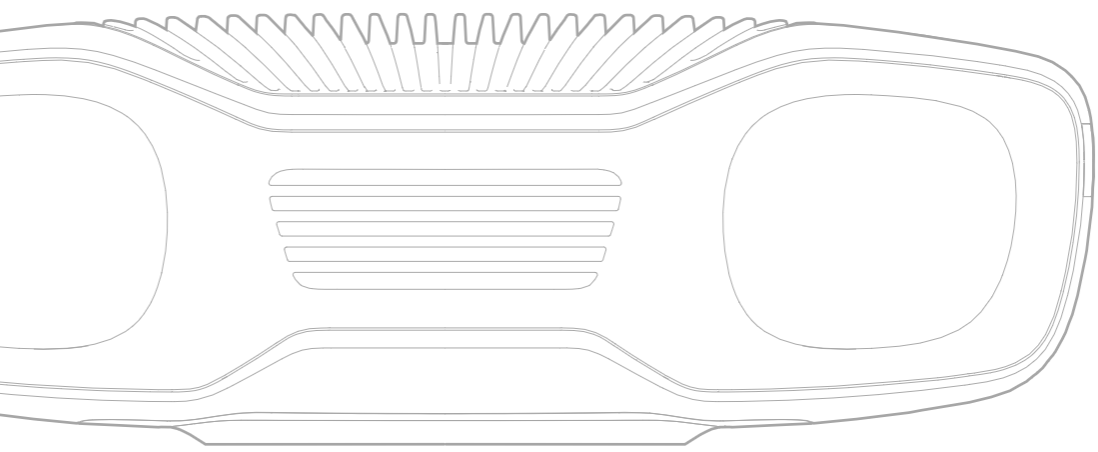


Table of Contents

Table of Contents 2
General specifications 3
Operating distance and field of view 4
Accuracy specifications 7
Common conditions 7
Typical specifications 8
Physical specifications 11
Mechanical drawings 12
Connectors 14
Revision history 15

General specifications

Model (Part number)	Zivid Two (ZVD2)
3D technology	Structured light
Imaging	1944 x 1200 (2.3 MP) Native 3D Color
Point cloud output	3D (XYZ) + Color (RGB) + SNR
Exposure time (minimum per pattern projection)	1.677 ms
Aperture (A)	f/1.8 to f/32
Gain (G)	1x to 16x
Projector Brightness (B)	0.25x to 1.8x 1x = 360 lumens
Calibration	Factory calibrated
Safety and EMC	CE CB EN62368 FCC Class B
Typical capture time [1]	80 ms to 1 s

[1] From capture initialized until point cloud is ready to copy. Includes processing. Acquisition time can be shorter.

Operating distance and field of view

Focus distance (mm)	700
Optimal working distance (mm)	500 to 1100
Recommended working distance (mm)	300 to 1500
Field of view (mm)	754 x 449 at 700
Spatial resolution (mm)	0.39 at 700 5.6×10^{-4} per distance (z) in mm

FIGURE 1 - SPATIAL RESOLUTION VS. DISTANCE

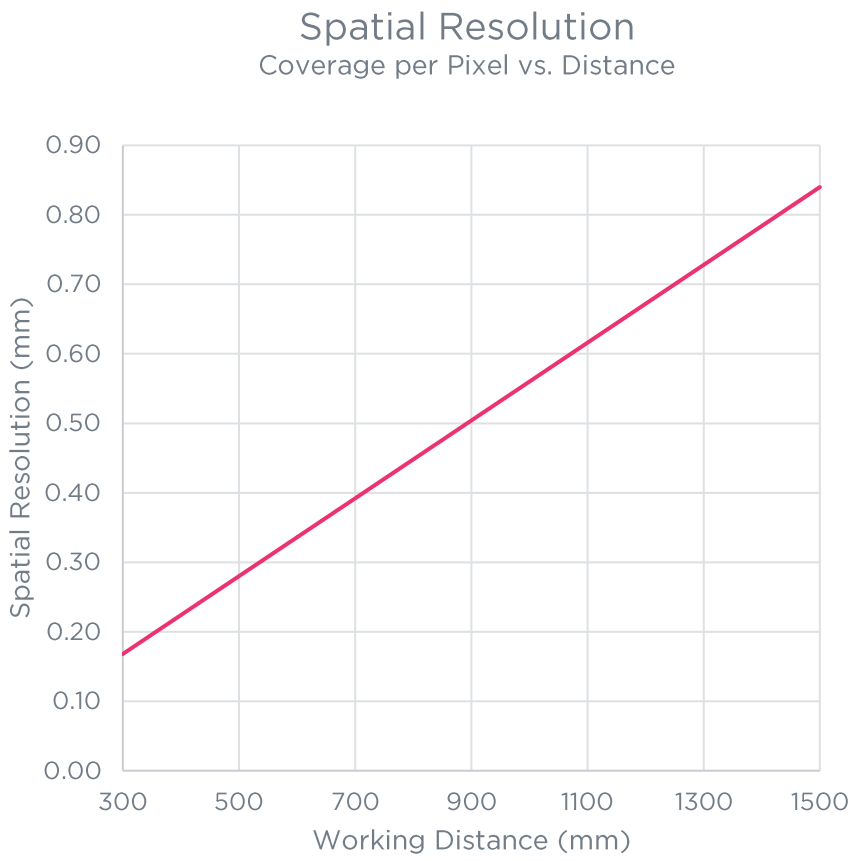


FIGURE 2 – FIELD OF VIEW

All values in degrees or mm.

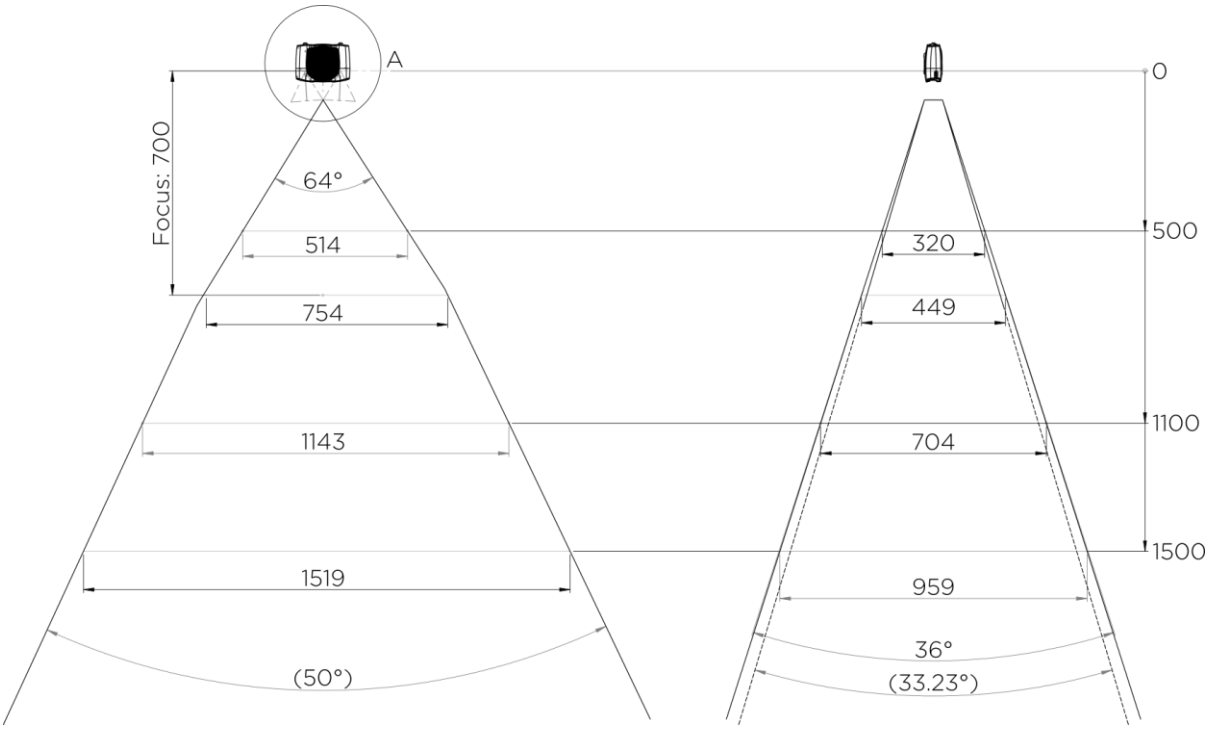


Figure 3 – Optical Angles and Baseline

All values in degrees or mm.

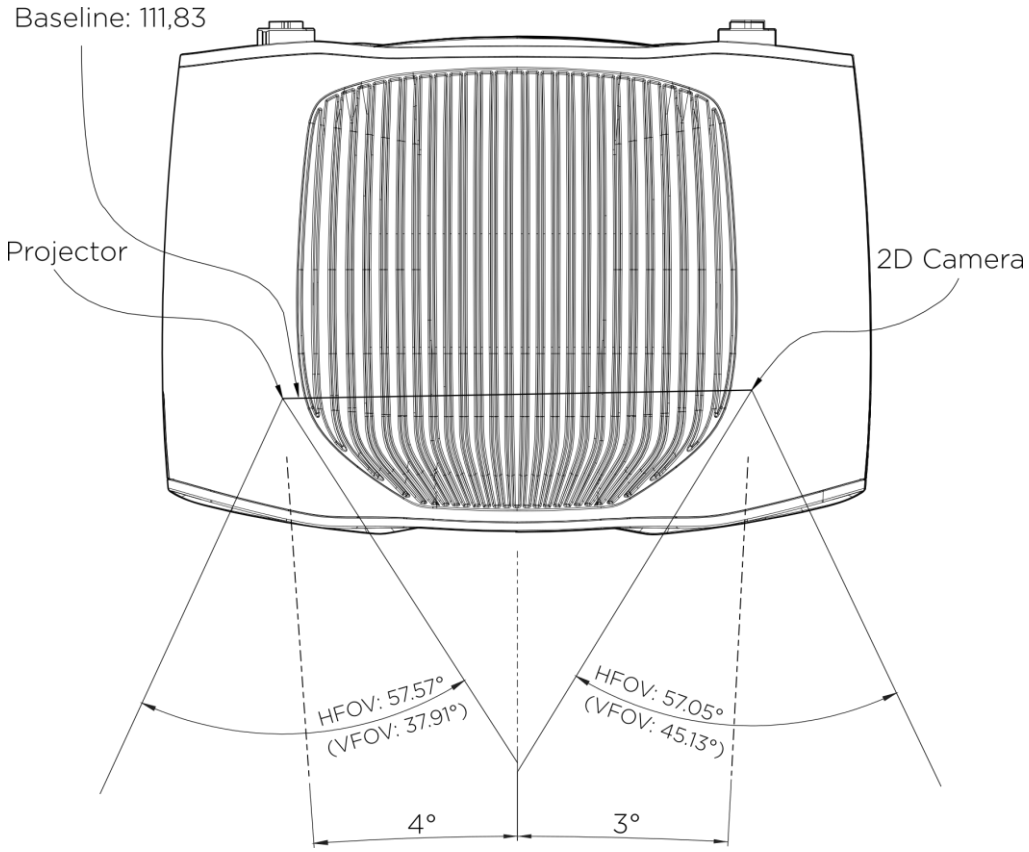
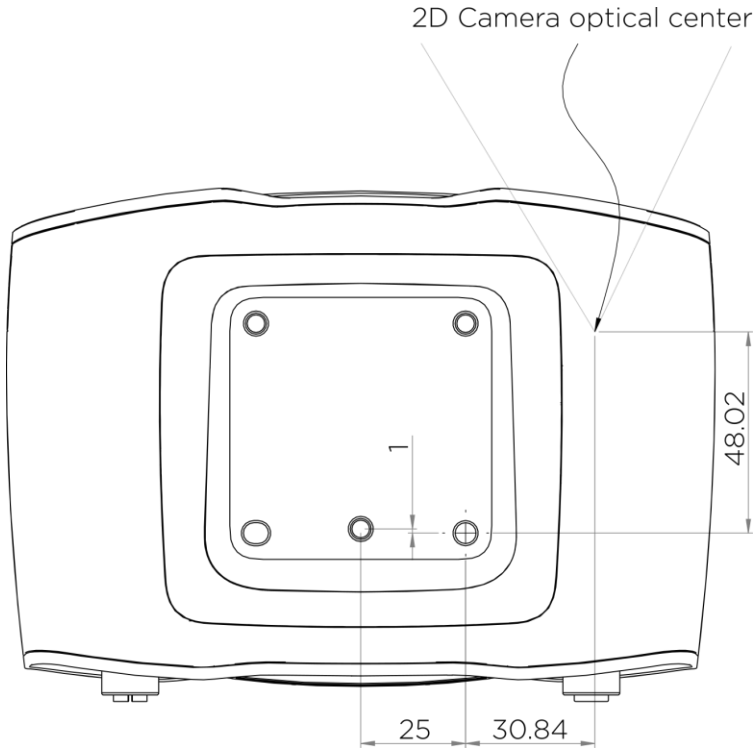


Figure 4 – Optical Center Position Relative to Mounting Holes

All values in degrees or mm.



Accuracy specifications

Common conditions

The following table outlies the conditions applied under test and to all specifications unless otherwise stated.

Parameter	Description	Typical
Working distance (D)	Focus distance	700 mm
	Optimal working distance	500 – 1100 mm
Ambient temperature (Ta)	Typical temperature	15 - 30 °C
	Full temperature range	0 – 40 °C
Ambient light (La)		0 lux
Aperture (A)		f/8.0 – f/2.0
Gain (G)		1.0x
Projector Brightness (B)		1 – 1.8 x
Capture time	Acquisition time used during measurement	> 60 ms
	Capture time used during measurement	> 100 ms
Duty Cycle	Capture-to-Idle time ratio	5 - 30 %
Other		81% center crop (90% × 90%) HDR = off 10 min warm-up Applied in-field correction

Typical specifications

Typical numbers are given at common conditions unless otherwise specified.

Property	Description	Typical
Warm-up time	Minimum recommended time needed for camera to stabilize from an idle state assuming capturing at a constant rate. Some trueness changes may be experienced during warm-up phase.	10 minutes
Point precision	1σ Euclidian distance variation for a point between consecutive measurements at focus distance, D. [2]	55 µm
Local Planarity Precision	1σ Euclidian distance variation from a plane for a set of points within a smaller local region at focus distance, D. [2]	75 µm
Global Planarity Trueness	Average deviation from a plane in field of view at focus distance, D.	< 160 µm
Dimension Trueness	70-percentile dimension error in field of view at focus distance, D, and typical temperature range.	< 0.20 %
	70-percentile dimension error in field of view within optimal working distance and typical temperature range.	< 0.30 %
	70-percentile dimension error in field of view within optimal working distance and full temperature range.	< 0.40 %

[2] Measured with Gaussian filter disabled.

FIGURE 5 - POINT PRECISION VS. DISTANCE AND AMBIENT LIGHT

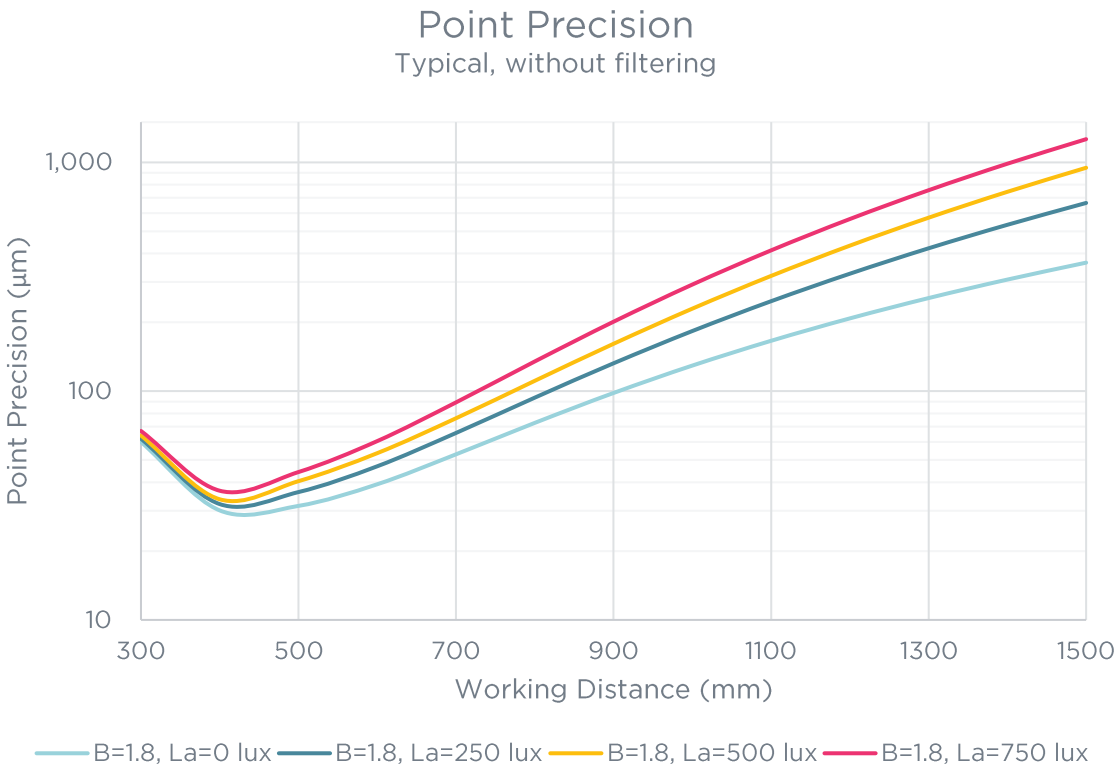


FIGURE 6 - LOCAL PLANARITY PRECISION VS. DISTANCE

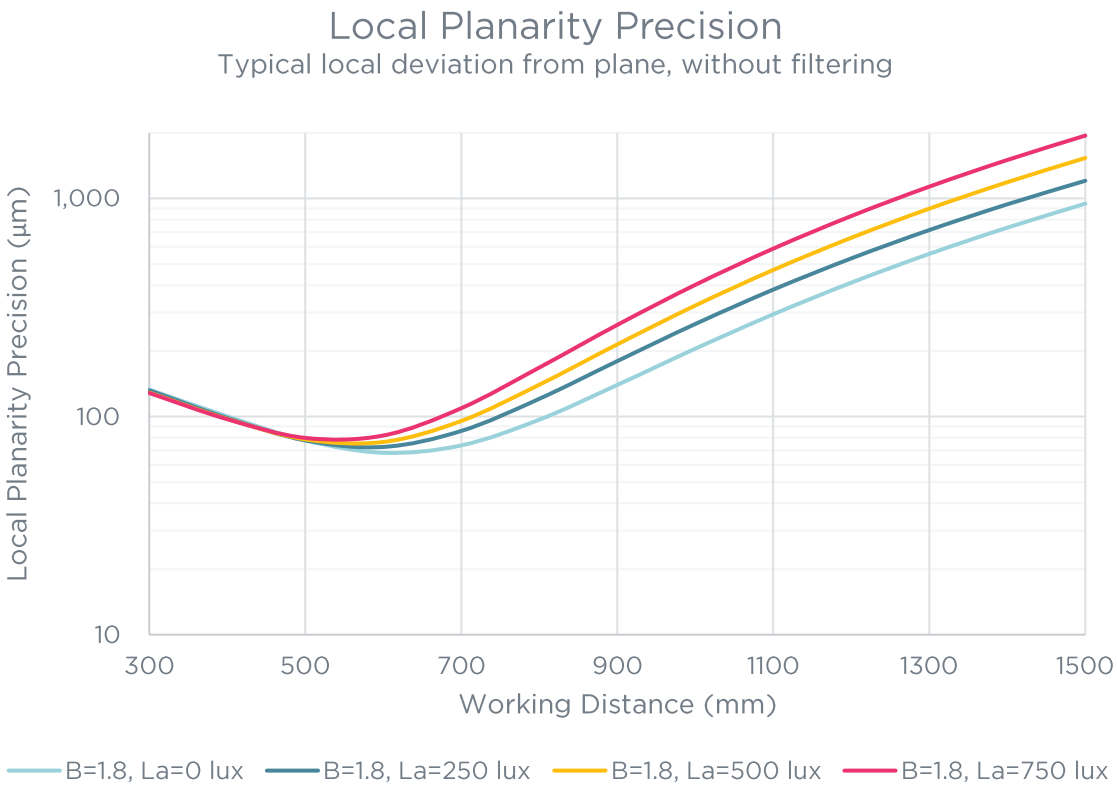


FIGURE 7 - GLOBAL PLANARITY TRUENESS VS. DISTANCE

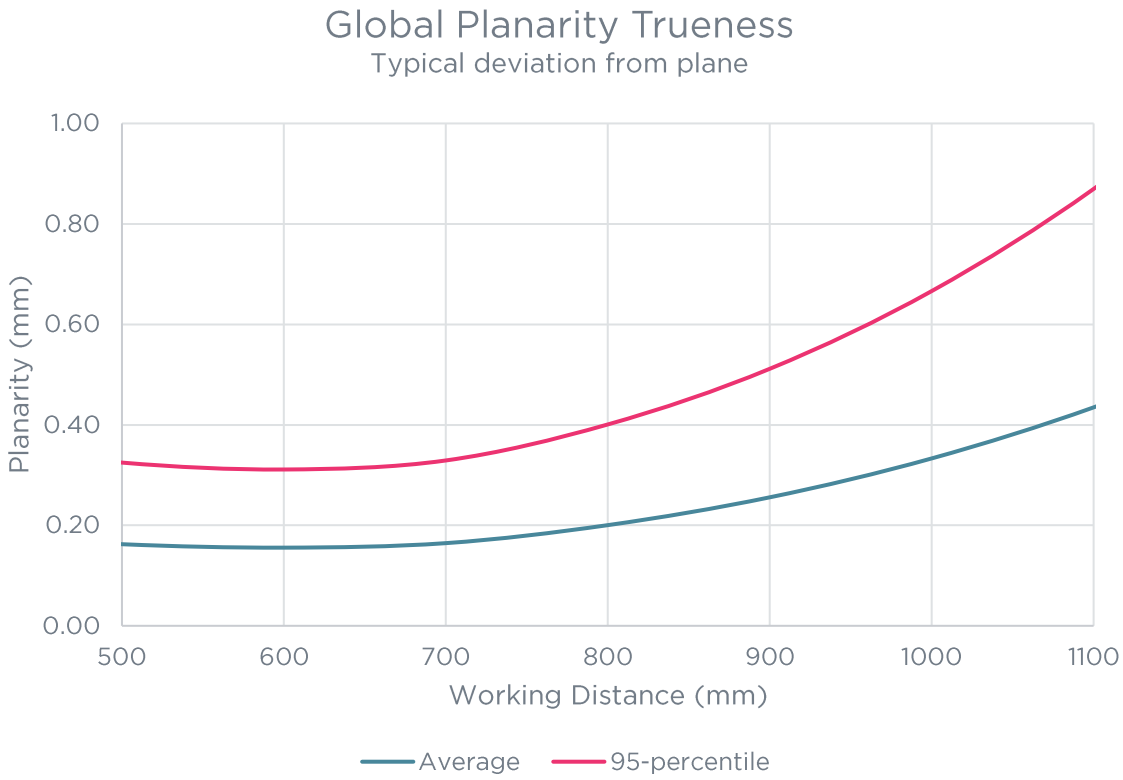
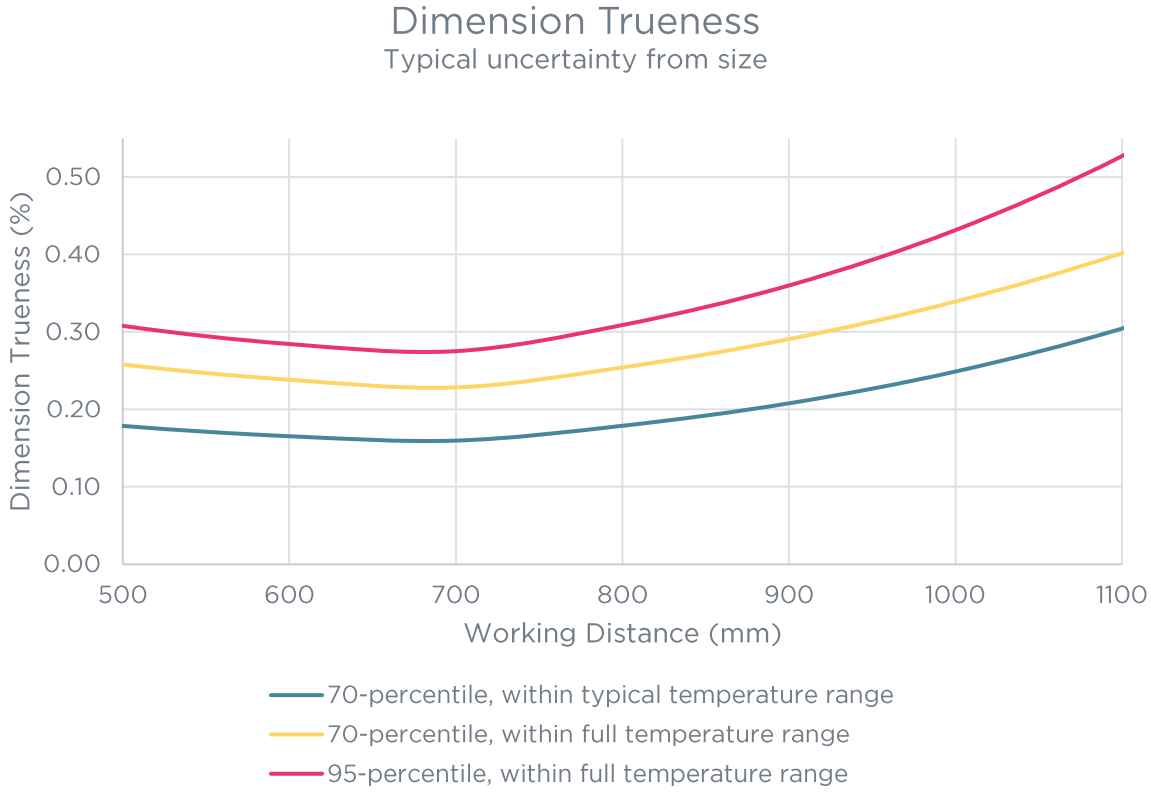


FIGURE 8 - DIMENSION TRUENESS VS. DISTANCE



Physical specifications

Size	169 mm x 122 mm x 56 mm
Weight	945 g
Flatness tolerance of mounting surface [3]	±0.05 mm
Cable strain limit	125 N
Environmental	IP65 5 g sinusoidal [4] 15 g shock [5]
Operating temperature	0° to 40° C
Storage temperature	-20° to 60° C
Noise, typical at 1 m distance	< 28 dB, typical use 67 dB, at maximum fan speed
Data connector	10 GigE M12-8, X-coded CAT-6
Power connector	M12-5
Power adapter	24V ⎓ 5A EU, US, and UK power plug options
Power consumption, typical	15 W, Idle 45 W, TDP [6] 120 W, Peak

[3] The surface which the camera is mounted to should meet this specification.
[4] IEC 60068-2-6, 10-150 Hz, 5 g, in X, Y and Z direction, 2 hour per axis. Sweep rate 1 octave per minute sweep rate.
[5] IEC 60068-2-27, 15 g / 11 ms half sine shock pulses. 3 shocks per direction, 18 shocks in total.
[6] Thermal Design Power is the maximum power consumed by the camera when capturing 3D images in a continuous stream.

Mechanical drawings

FIGURE 9 – DIMENSIONS

All values in degrees or mm.

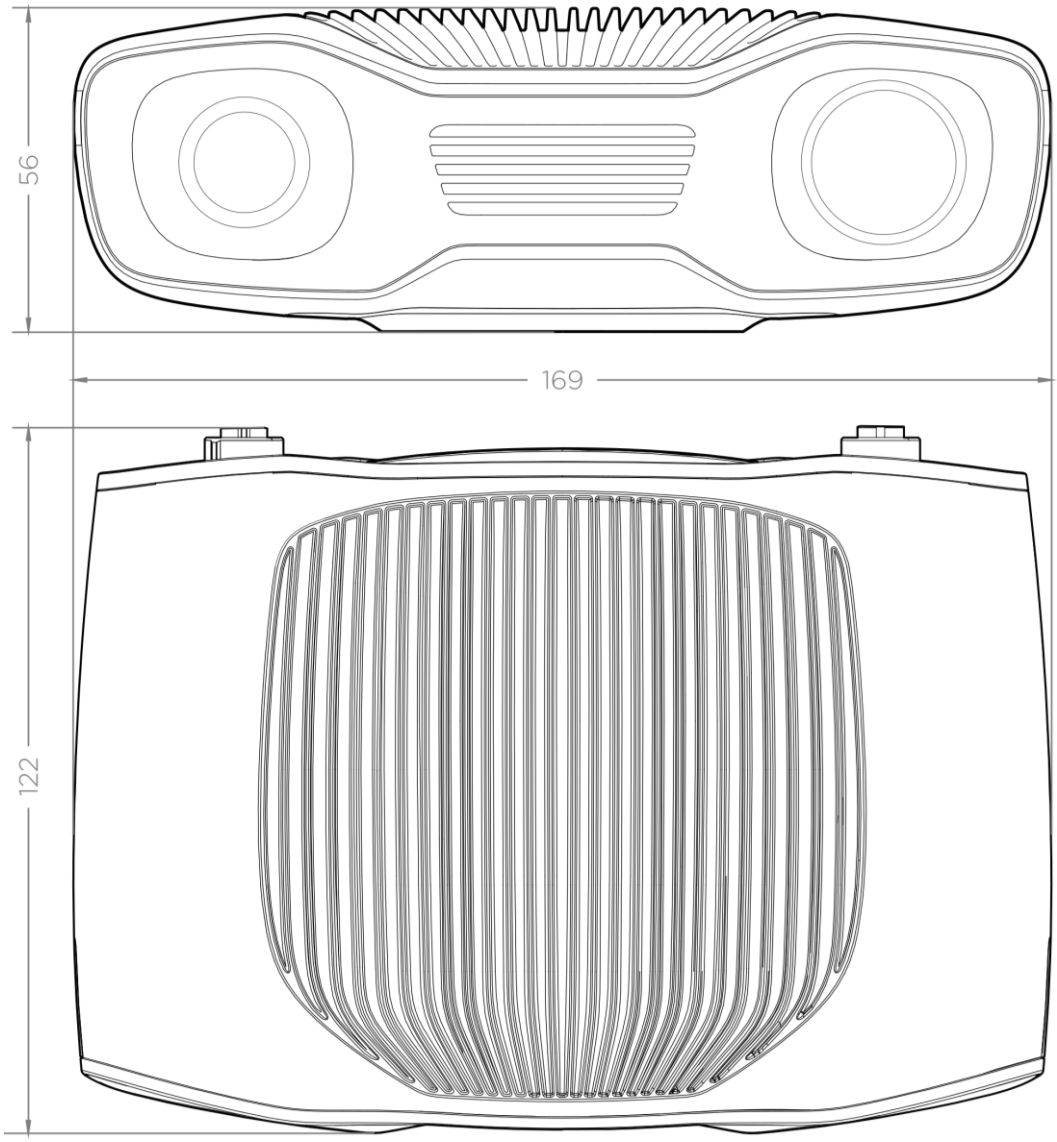
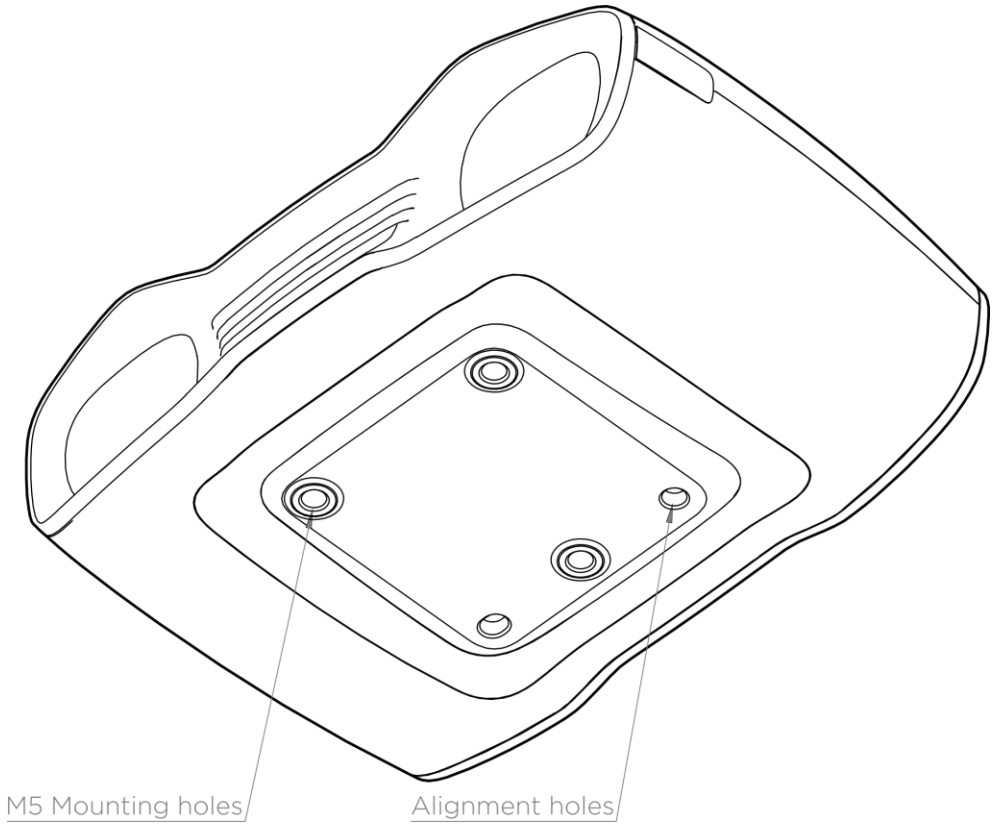
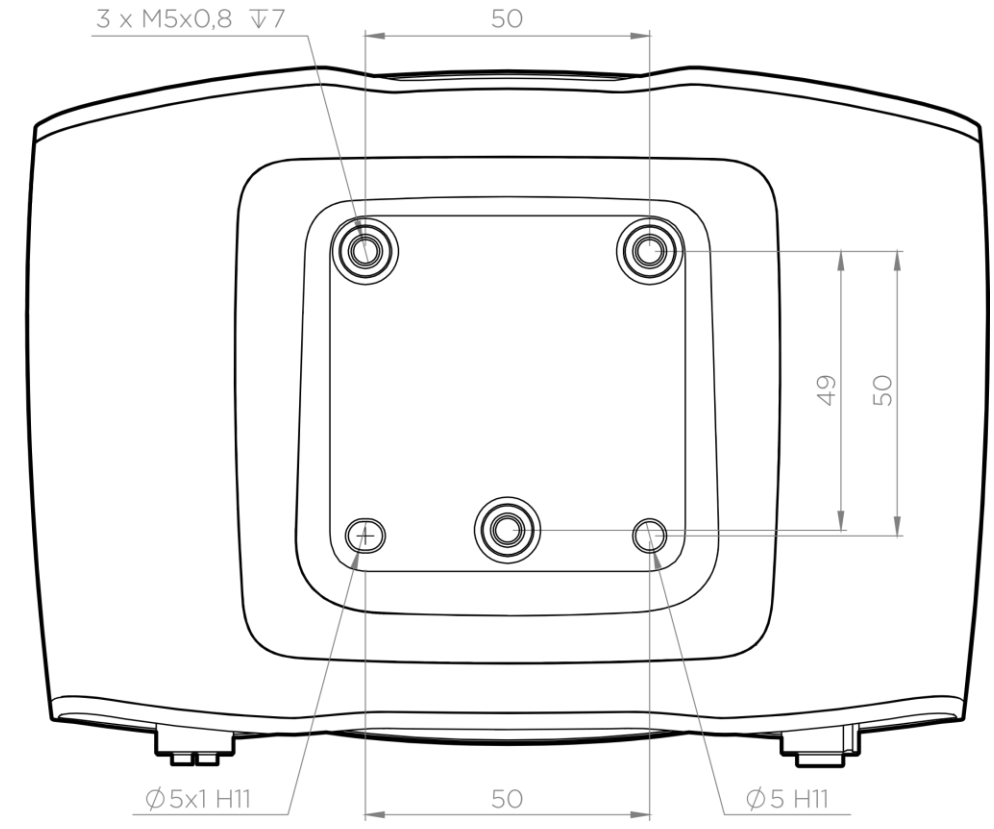


Figure 10 – Mounting options

All values in degrees or mm.

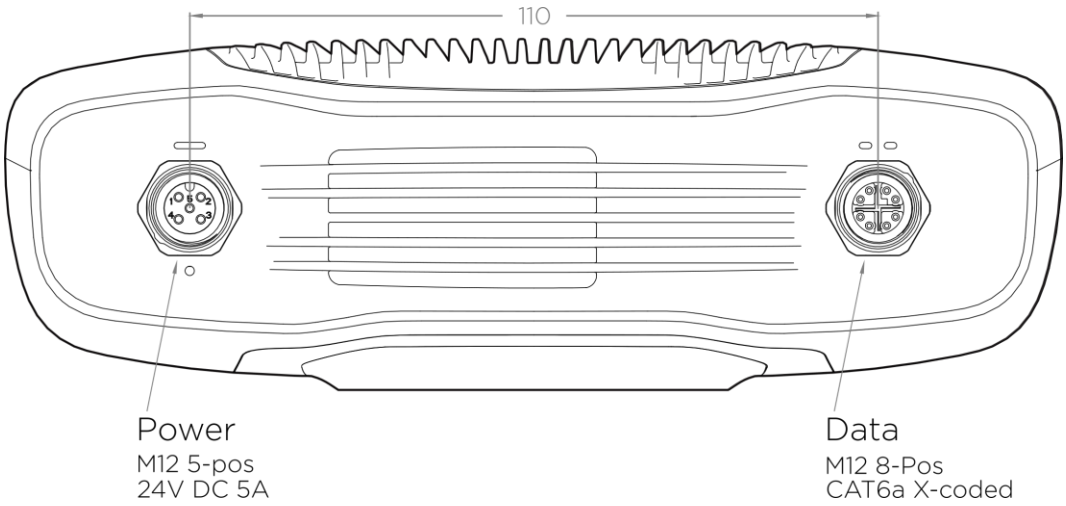




Connectors

FIGURE 11 – CONNECTORS

All values in degrees or mm.



Revision history

Ver.	Date	Notes
1.0	5/31	Production version. Added introduction. Updated table “General specifications” Updated table “Operating distance and field of view” Updated “Figure 1: Field of View” Updated “Figure 2: Optical Angles and Baseline” Added “Figure 3: Spatial resolution” Updated table “Common conditions” Updated table “Typical specifications” Added figures 4-10. Updated table “Physical specifications”
0.1	10/20	Initial version.

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