PMD03-E1 Specifications

Version: Draft2

Date: 2025.08.26

Technical Specifications

Parameters	Value
Technical principle	Active stereo
Illumination	2 x infrared laser (λ = 940 nm) 4 x infrared floodlight
Latency of image acquisition[1]	887 ms
Frame rate[2] @ resolution （Depth）	1.57 fps @ 2048 x 1536 1.79 fps @ 1024 x 768 1.80 fps @ 512 x 384
Frame rate[2] @ resolution @ image format （RGB）	4 fps @ 2560 x 1920 @ YUYV 5 fps @ 2560 x 1920 @CSI BAYER12GBRG 15 fps @ 1280 x 960 @YUYV 15 fps @ 640 x 480 @YUYV
RGB-D alignment	√
Output data	Depth, RGB, IR, point cloud images

> **[1] Latency of image acquisition:** The latency time between the host computer sending the software trigger signal and receiving depth images with a resolution of 2048 x 1536 from the camera. This is measured when the camera works in software trigger mode with default User Set: Standard.
>
> **[2] Frame rate of depth/RGB images:** The number of depth/RGB images received by the host computer per second from the camera. This is measured when the camera works in continuous capture mode with default User Set: Standard.

Measurement Performance

Measurement Range & FOV

Parameters	Value
Working distance	1000 mm ~ 3000 mm
Near field of view	833 mm x 769 mm @ 1000 mm (H/V ≈ 45°/42°)
Far field of view	2904 mm x 2296 mm @ 3000 mm (H/V ≈ 51°/42°)

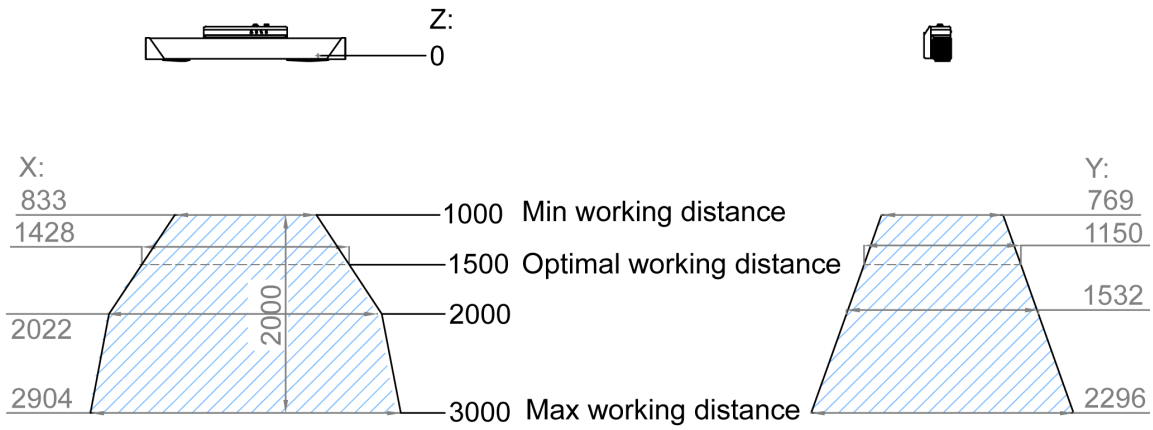
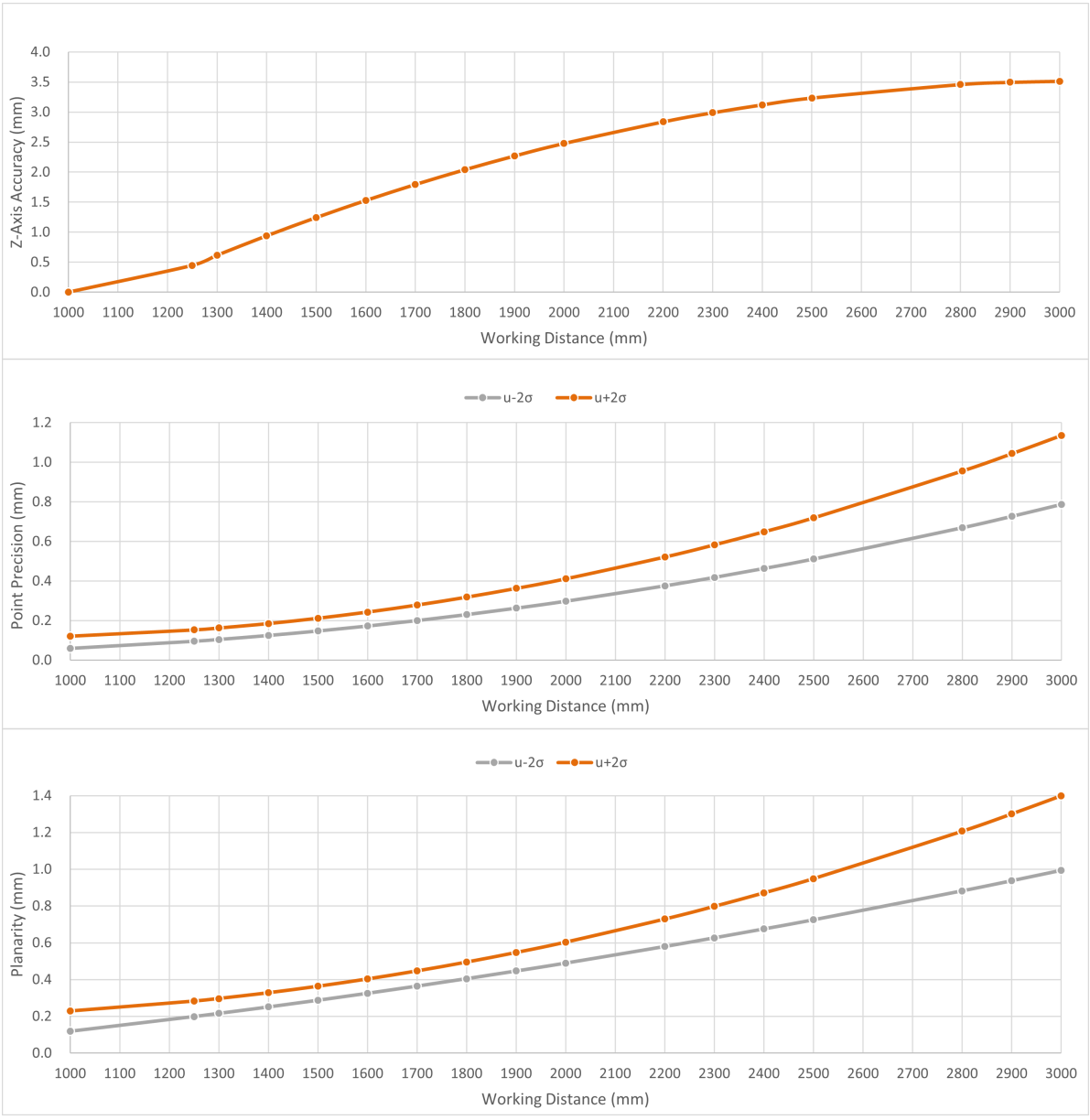


Figure 1 FOV (unit: mm)

Performance Evaluation Metrics

Parameters	Descriptions
Z-axis accuracy	The average deviation between measured distance values and true distance values in the Z-direction.
Point precision	The degree of oscillation of depth values for all pixel points in the central region of the field of view over time.
Planarity	The dispersion of all pixel points in the central ROI relative to the desired plane.

> The line charts below illustrate the measured distribution ranges of Z-Axis Accuracy, Point Precision, and Planarity for PMD03-E1, with User Set set to Quality. The horizontal axis represents the distance values, with the unit in millimeters (mm).



Software Specifications

Parameters	Value
OS	Linux/Windows/ROS
SDK	Percipio Camport SDK 4; Supported programming language: C/C++ See PercipioDC documentation for more SDK tutorials.

Hardware Specifications

Parameters	Value
Dimension (excl. connectors)	480 mm x 84 mm x 65 mm
Weight	1368 g
Data connector	M12 X-Code, 8-pin, female connector Gigabit Ethernet
Power & trigger connector	M12 A-Code, 8-pin, male connector See Power & Trigger Connector for its pinout.
Power supply	DC 24V ±10%; PoE (IEEE802.3 at)
Hardware trigger	2 trigger input/output; Input/Output 1: rising-edge trigger Input/Output 2: falling-edge trigger
Power consumption	＜21.5W
Housing material	Carbon Fiber + Aluminum alloy
Ingress protection	IP65
Thermal dissipation	Passive
Temperature	Operating: 0 ℃ ~ 45 ℃ Storage: -10 ℃ ~ 55 ℃

Power & Trigger Connector

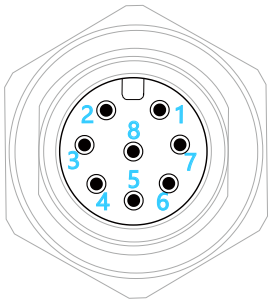


Figure 2 Pinout of the power & trigger connector

Pin No.	Name	Description
1	TRIG_OUT 1	Trigger output signal 1 [rising-edge]
2	P_24V	Power (camera, DC 24V ±10%)
3	P_GND	GND (camera)
4	TRIG_POWER	Power (trigger circuit, DC 11.4V ~ 25.2V)
5	TRIG_GND	GND (trigger circuit)
6	TRIG_IN 2	Trigger input signal 2 [falling-edge]
7	TRIG_IN 1	Trigger input signal 1 [rising-edge]
8	TRIG_OUT 2	Trigger output signal 2 [falling-edge]

Trigger Circuit Schematic Diagram

The camera supports the rising-edge trigger and falling-edge trigger, and the trigger circuit schematic diagrams are shown as follows (The resistance at point A is 10kΩ). For details about hardware connection, see PercipioDC documentation.

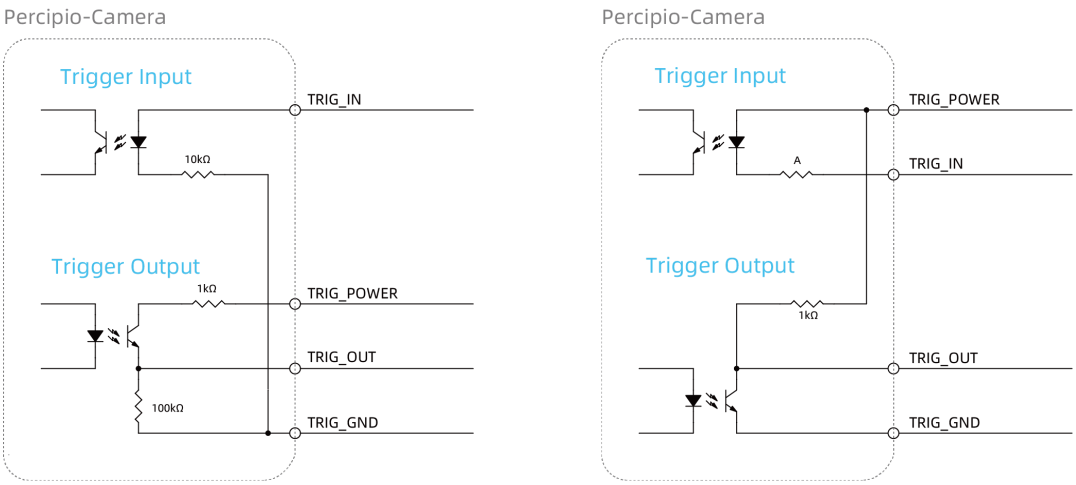


Figure 3 Rising-edge trigger circuit (left) and falling-edge trigger circuit (right) schematic diagrams

Mechanical Dimensions

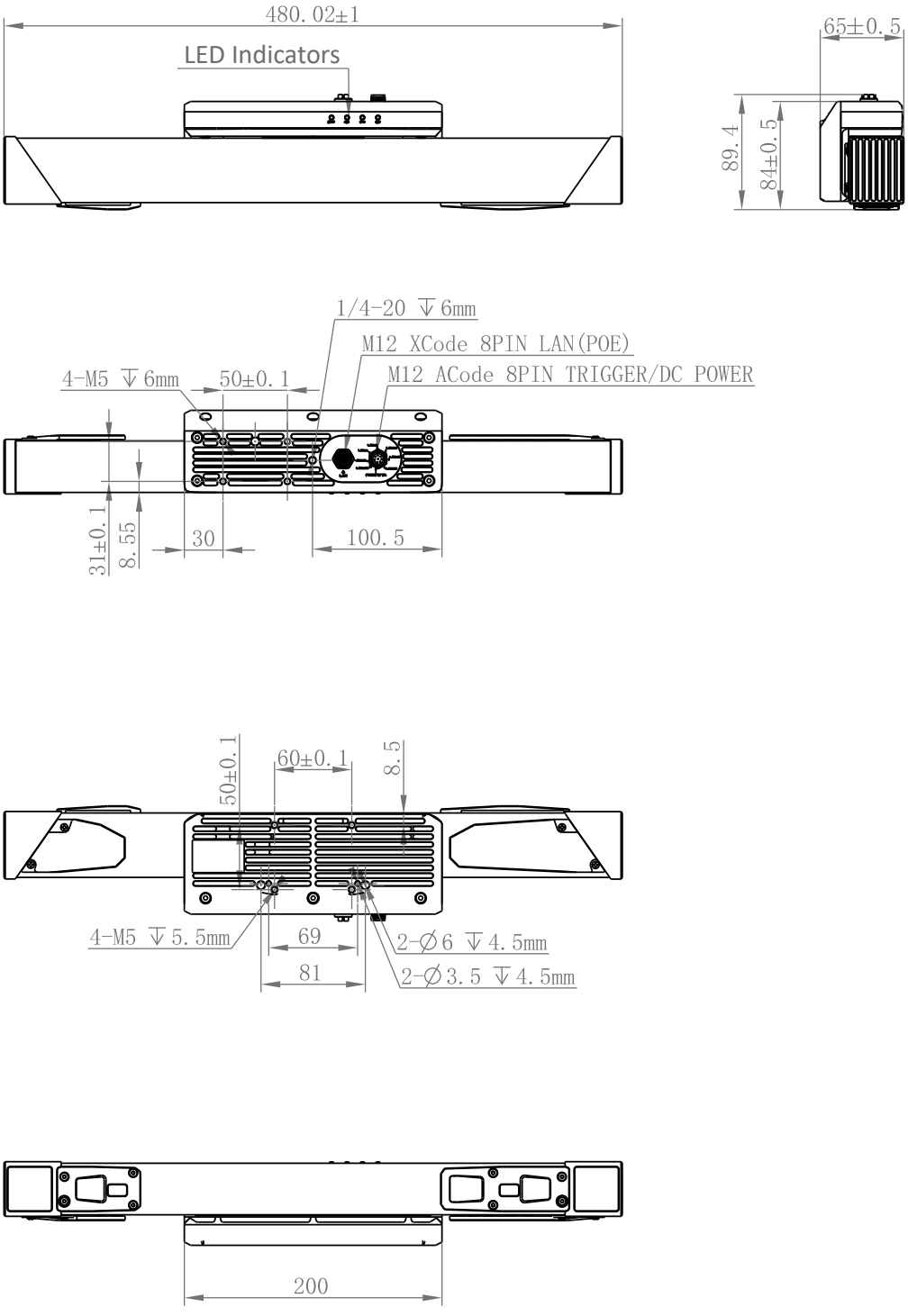


Figure 4 PMD03-E1 mechanical dimensions (unit: mm)

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Percipio is an independent vendor of 3D machine vision solutions. We provide products and services to system integration customers rather than end users. This marketing strategy allows us to serve multiple sectors and segments, and also means that our success will be based on our customer's success. Together with our customer's industry specific expertise, we can support end users with implementing machine intelligence, which will improve productivity and/or reduce cost.

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