



# TM260-E1 Specifications

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## Introduction

PERCIPIO TM260-E1 3D camera adopts direct time of flight (DToF) technology for distance measurement, compact and easy to integrate, suitable for applications such as people counting, 3D positioning and recognition, obstacle avoidance for AGV/AMR, security monitoring.

The documentation introduces the detailed technical specifications of TM260-E1 3D cameras. For more specifications of Percipio's other products, please go to [Product Specifications — PercipioDC documentation](#).



Figure 1 TM260-E1 3D camera

## Technical Specifications

| Parameters                                      | Value   |
|---|---|
| Technical principle                             | Direct Time of Flight (DToF)  |
| Illumination                                    | 1 x infrared laser  |
| Latency of image acquisition <sup>1</sup>       | 48 ms   |
| Frame rate <sup>2</sup> @ resolution<br>(Depth) | Supported resolution:<br>240 x 96<br>Supported depth quality and corresponding frame rate:<br>BASIC (25 fps), MEDIUM (15 fps) |
| Output data                                     | Depth, 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 (Resolution: 240 x 96; Depth quality: BASIC ) from the camera that works in software trigger mode.

**[2] Frame rate of depth images:** The number of depth images received by the host computer per second from the camera. This is when the camera is working in free acquisition mode.

# Measurement Performance

## Measurement Range & FOV

| Parameters                          | Value   |
|-------------------------------------|---|
| Measurement range                   | 50 mm ~ 8000 mm   |
| Field of view (Depth16-undistorted) | Near: 119 mm x 46 mm @ 50 mm (H/V $\approx$ 100°/50°)<br>Far: 19000 mm x 7460 mm @ 8000 mm (H/V $\approx$ 100°/50°) |
| Field of view (XYZ48-raw)           | Near: 173 mm x 46 mm @ 50 mm (H/V $\approx$ 120°/50°)<br>Far: 27700 mm x 7460 mm @ 8000 mm (H/V $\approx$ 120°/50°) |

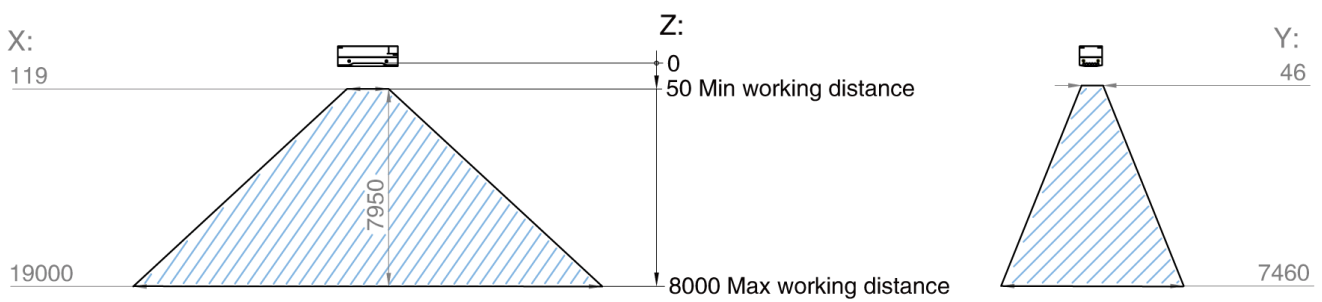


Figure 2 Undistorted FOV (unit: mm)

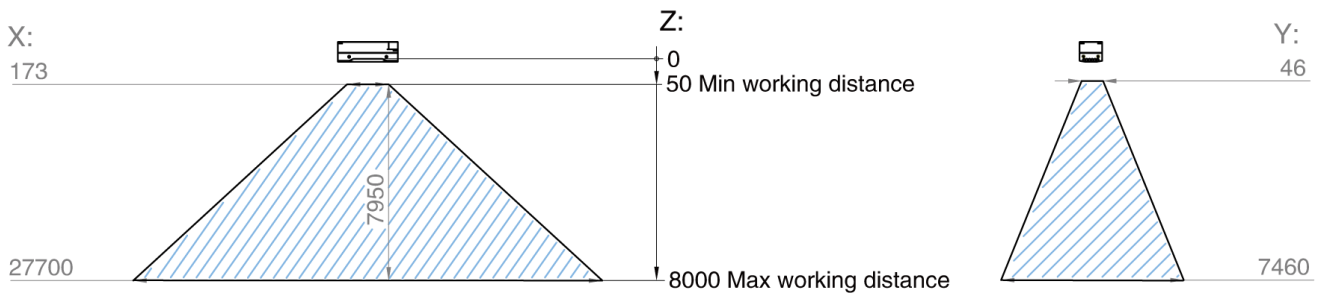


Figure 3 Raw FOV (unit: mm)

## Line Charts

The line charts below display the measurement performance metrics of TM260-E1, including z precision, point precision and planarity. The data was measured using default parameter settings.

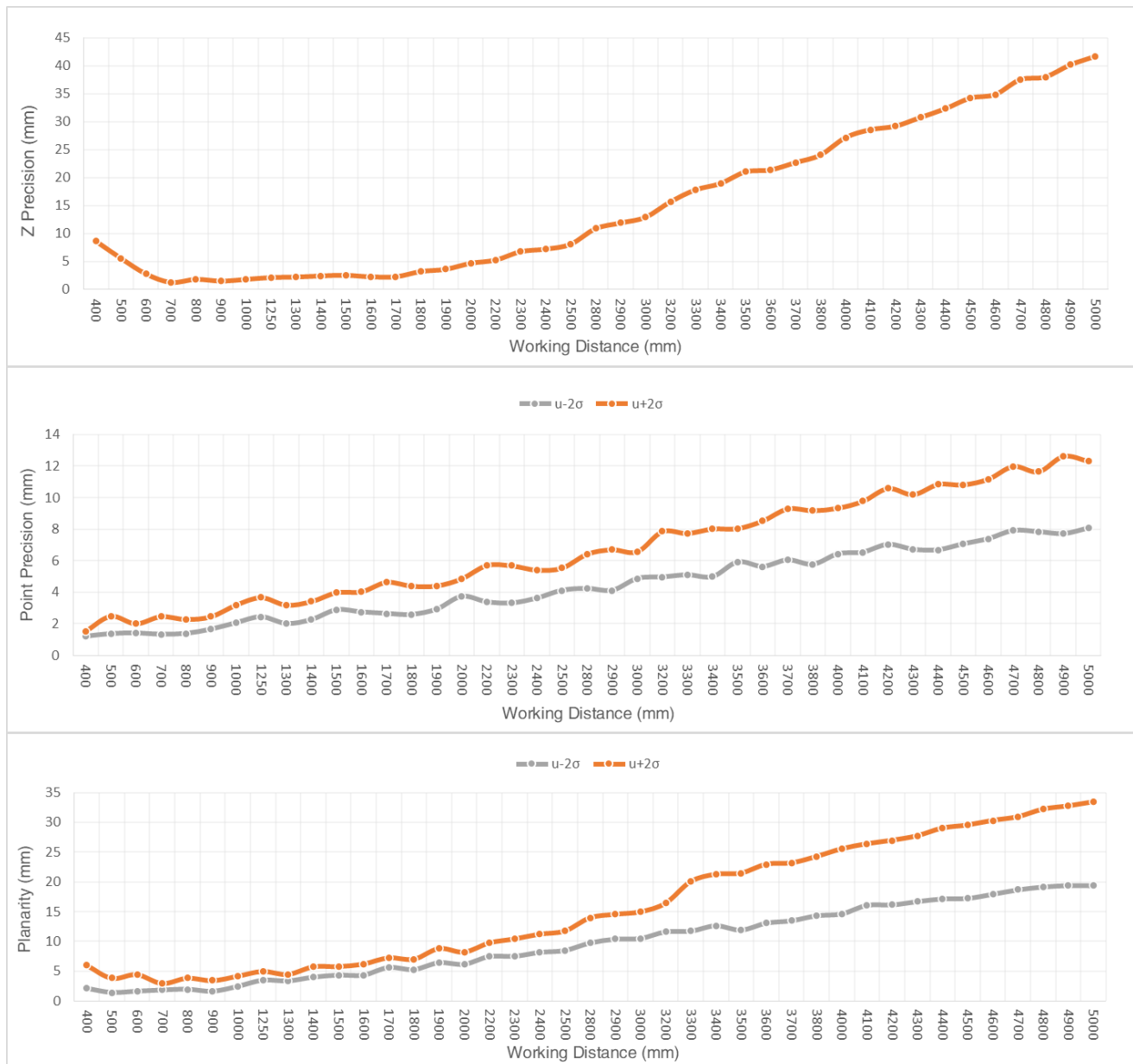


Figure 4-6 Line charts of measurement performance

**Z precision:** Refers to the average deviation between the Z measured value and the ground truth.

The line chart illustrates the Z-axis precision at different working distances.

**Point precision:** Refers to the time-domain dispersion of all pixel points within the central ROI (Region of Interest).

The line chart illustrates the distribution of point precision at different working distances.

**Planarity:** Refers to the dispersion of all pixel points within the central ROI relative to the desired plane.

The line chart illustrates the planarity distribution at different working distances.

## Software Specifications

| Parameters   | Value  |
|--------------|--|
| OS           | Linux/Windows/ROS  |
| SDK          | Percipio Campport SDK;<br>Supported programming language: C, C++, C#, Python<br>See <a href="#">PercipioDC documentation</a> for more SDK tutorials.   |
| ToF features | Depth quality<br>ToF channel<br>ToF modulation threshold<br>Flying filter threshold<br>Jitter threshold<br>ToF anti-sunlight index<br>Max speckle diff<br>Max speckle size<br>ToF anti-interference<br>For the settings of ToF features, see <a href="#">API Guide</a> . |

## Hardware Specifications

| Parameters                      | Value  |
|---------------------------------|--|
| Dimension (excluding the cable) | 90 mm x 34 mm x 30 mm  |
| Weight (excluding the cable)    | 130 g  |
| Connector                       | M12 A-Code, 8-pin, female connector<br>The connector is used for power supply, data transmission and hardware trigger. See <a href="#">Connector</a> for its pinout. |
| Data transmission               | 100M Ethernet  |
| Hardware trigger                | 1 trigger input/output; falling-edge trigger   |
| Power supply                    | DC 24V $\pm$ 30% (wide voltage)  |
| Power consumption               | Idle mode: 1.5 W<br>Continuous mode: 4.0 W   |
| Housing material                | Aluminum alloy   |
| Ingress protection              | IP54   |
| Thermal dissipation             | Passive <sup>1</sup>   |
| Temperature                     | Operating: 0 °C ~ 45 °C<br>Storage: -10 °C ~ 55 °C   |

[1] The camera housing itself suffices for heat dissipation needs, eliminating the need for additional cooling strategies. To ensure optimal performance, it is recommended to install the camera in a location with good air circulation, with the metal mounting plate directly in contact with the camera.

## Connector

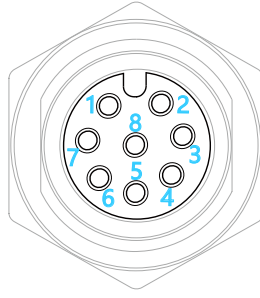


Figure 7 Connector pinout

| Pin No. | Name     | Description   |
|---------|----------|---|
| 1       | P_24V    | Power (camera or trigger circuit, DC 24V $\pm$ 30%) |
| 2       | TRIG_IN  | Trigger input signal [falling-edge]                 |
| 3       | P_GND    | GND (camera or trigger circuit)                     |
| 4       | MD1-     | —   |
| 5       | MD2+     | —   |
| 6       | MD1+     | —   |
| 7       | TRIG_OUT | Trigger output signal [falling-edge]                |
| 8       | MD2-     | —   |

**Note:** If hardware trigger is needed, please contact Percipio for assistance in customizing an A-Code to RJ45 adapter cable to route the TRIG\_IN and TRIG\_OUT signal lines externally.

## Trigger Circuit Schematic Diagram

The camera supports the falling-edge trigger, and the trigger circuit schematic diagram is shown as follows (The resistance at point A is 10k $\Omega$ ).

For details about hardware connection, see [PercipioDC documentation](#).

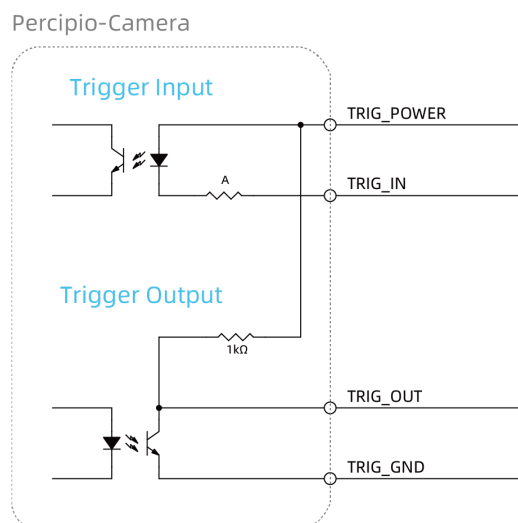


Figure 8 Trigger circuit schematic diagram (falling-edge)

# Mechanical Dimensions

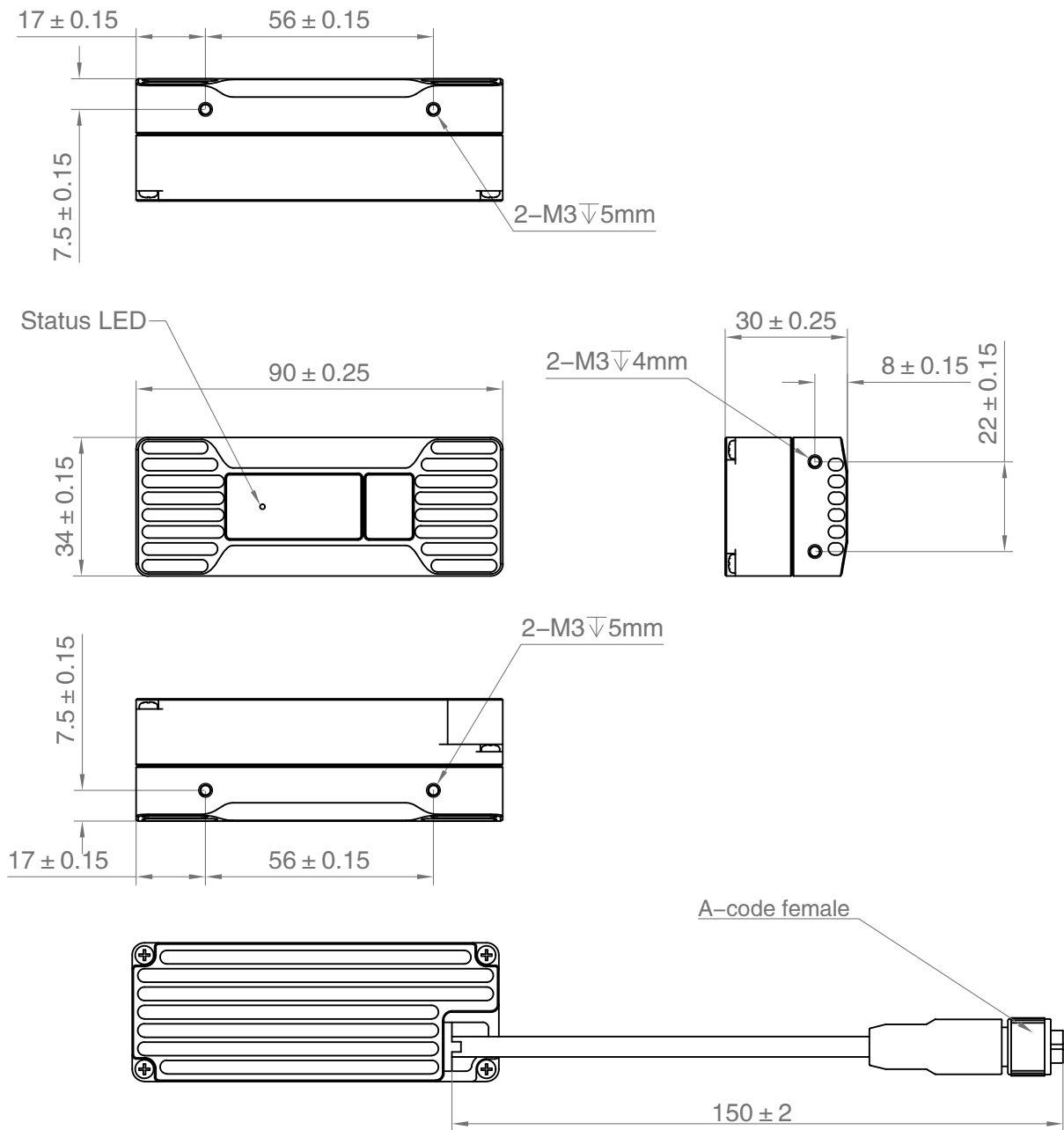


Figure 9 TM260-E1 Mechanical dimensions (unit: mm)

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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.

## Make 3D Machine Vision Everywhere

### Contact Us

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