FS820-E1 Specifications

Introduction

Percipio FS820-E1 3D camera combines a compact design with high accuracy for close-range measurement, making it ideal for hand-eye coordination applications for cobots, such as object recognition, positioning and grabbing.

The documentation introduces the detailed technical specifications of FS820-E1 3D cameras. For more specifications of Percipio's other products, please go to Product Specifications — PercipioDC documentation.

Figure 1   FS820-E1 3D camera

Technical Specifications

Parameters	Value
Technical principle	Active stereo
Illumination	2 x infrared laser
Latency of image acquisition[1]	302 ms
Frame rate[2] @ resolution (Depth)	7 fps @ 1280 x 800 7 fps @ 640 x 400 7 fps @ 320 x 200
Frame rate[2] @ resolution @ image format (RGB)	10 fps @ 1920 x 1080 @ YUYV 11 fps @ 1280 x 720 @ YUYV 11 fps @ 640 x 360 @ 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 VGA depth images from the camera that works in software trigger mode.

[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 when the camera is working in free acquisition mode.

Measurement Performance

Measurement Range & FoV

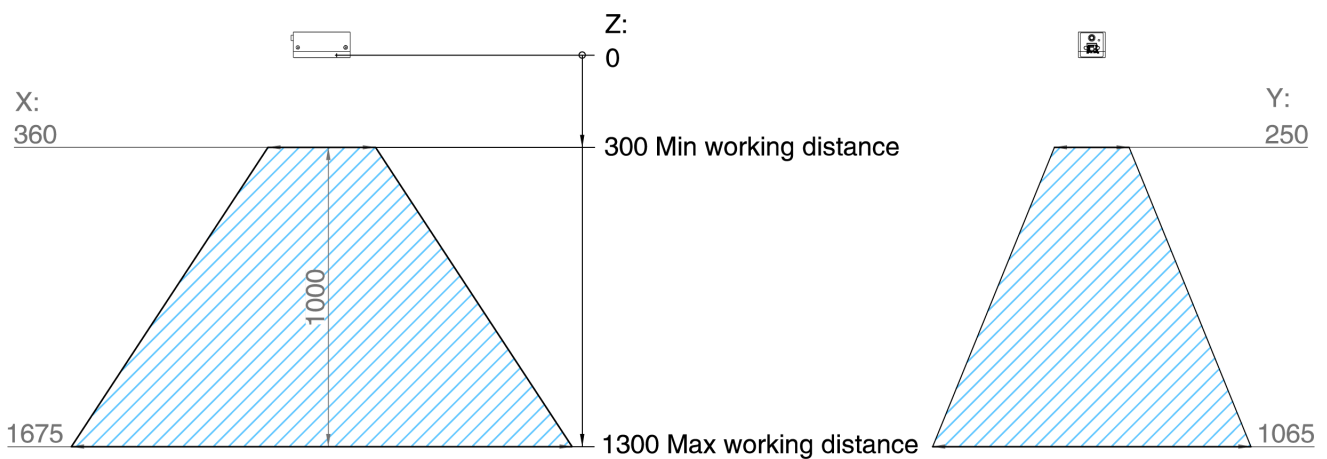| Parameters	Value
Measurement range	300 mm ~ 1300 mm
Near field of view	360 mm x 250 mm @ 300 mm (H/V ≈ 62°/45°)
Far field of view	1675 mm x 1065 mm @ 1300 mm (H/V ≈ 65°/45°)

Figure 2   FoV (unit: mm)

Line Charts

The line charts below display the measurement performance metrics of FS820-E1, including z precision, point precision and planarity. The data was measured using default parameter settings.

Figure 3-5   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 Camport SDK; Supported programming language: C, C++, C#, Python See PercipioDC documentation for more SDK tutorials.

Hardware Specifications

Parameters	Value
Dimension (excluding interfaces)	95.0 mm x 45.0 mm x 43.0 mm
Weight	228 g
Data connector	RJ45 Gigabit Ethernet
Power & trigger connector	6-pin push-pull self-locking aviation plug (male) See Power & Trigger Connector for its pinout.
Power supply	DC 12V~24V
Hardware trigger	1 trigger input/output; falling-edge trigger
Power consumption	Idle mode: 2.8 W Trigger mode: 3.3 W Continuous mode: 3.9 W
Housing material	Aluminum alloy
Ingress protection	IP41
Thermal dissipation	Passive
Temperature	Operating: 0 ℃ ~ 45 ℃ Storage： -10 ℃ ~ 55 ℃

Power & Trigger Connector
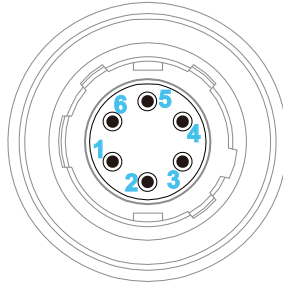
Figure 6　Pinout of the power & trigger connector

Pin No.	Name	Description
1	P_24V	Power (camera, DC 12V~24V)
2	TRIG_IN	Trigger input signal
3	TRIG_OUT	Trigger output signal
4	TRIG_POWER	Power (trigger circuit, DC 11.4V ~ 25.2V)
5	TRIG_GND	GND (trigger circuit)
6	P_GND	GND (camera)

Trigger Circuit Schematic Diagram

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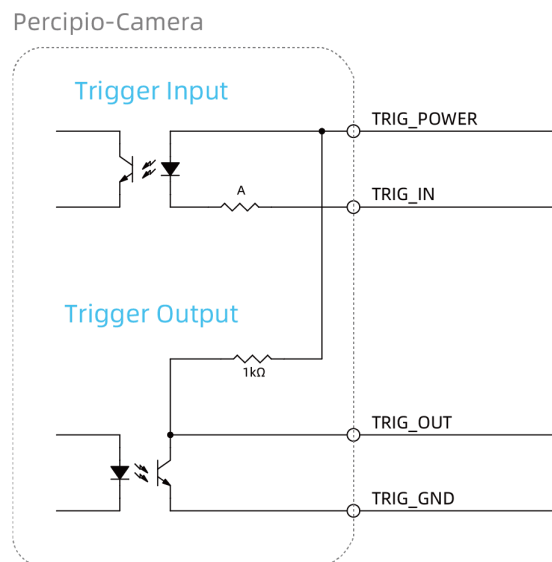

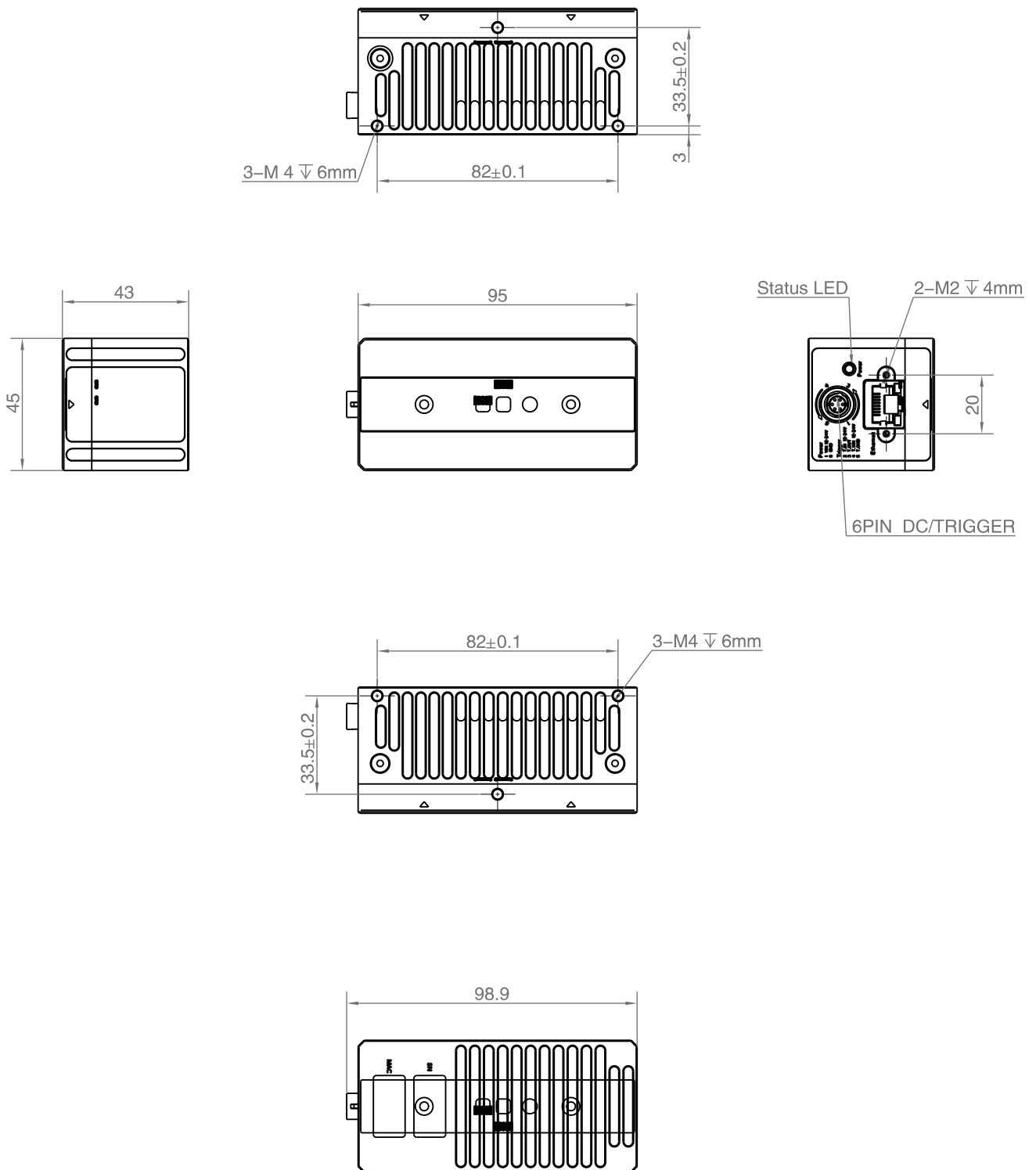Figure 7　Trigger circuit schematic diagram (falling-edge)

Mechanical Dimensions

3–M 4 ⊽ 6mm

33.5±0.2

3

82±0.1

43

45

95

Status LED

2–M2 ⊽ 4mm

20

6PIN DC/TRIGGER

82±0.1

3–M4 ⊽ 6mm

33.5±0.2

98.9

Figure 8   FS820-E1 Mechanical dimensions (unit: mm)

Percipio.XYZ is an industry leading provider of 3D cameras. We provide a broad range of 3D camera products to meet requirements from various applications, such as industrial, automotive, inspection, logistics, medical, education, security and commercial etc. We will continue to develop and optimize our product roadmap to support more 3D vision applications.

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

Purchase : info@percipio.xyz
Technical : support@percipio.xyz
Website : www.percipio.xyz
Documentation : doc.percipio.xyz/cam/latest/

Statement

YouTube