

# PERCIPIO 3D CAMERA

## FS820-E1



Depth  
Onboard  
Processing

Active  
Stereo

SDK  
Win/Linux  
OpenNI2/ROS

GigE



Accuracy  
Submillimeter

Hardware  
Trigger



Measurement  
Range  
0.3~1.4 m

Sync &  
Alignment  
RGB-D

RGB  
2M Pixels

## Overview

Percipio's 3D smart camera uses innovative active stereo vision technology with core patents to obtain more depth details and more robust environmental adaptability than traditional binocular vision.

FS820-E1 combines the structured light with the mature RGB sensor technology to provide real-time RGB and depth images.

With reliable measurement results and the compact aluminum alloy body, FS820-E1 becomes an ideal solution for robotics, industrial, commercial and consumer applications.

## Advantages

FS820-E1 includes two infrared (IR) sensors, one RGB sensor and two structured-light projectors. Comparing to the traditional binocular camera, FS820-E1 provides:

- + More depth details
- + More robust to ambient light interference

## Light & Compact

FS820-E1 has a compact design with the maximum length of 95mm and weight of 228 g, providing an ideal solution for some applications that require compact integration.

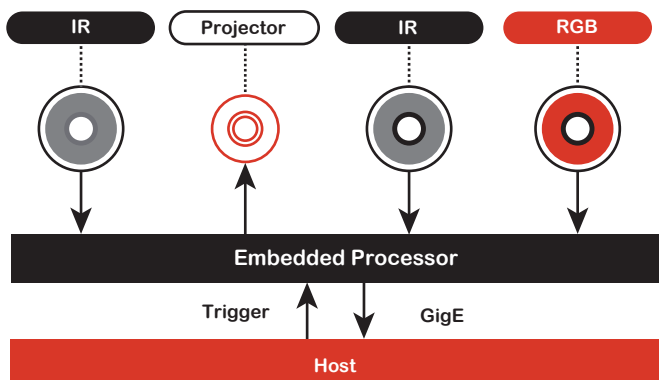
## Highlight

FS820-E1 is an industrial 3D camera with high cost-efficiency, which is specially designed for the cobot application. With accurate depth data and quality RGB images, it can be applied to various near-range scenes, such as recognition, positioning, grabbing and other tasks.

Note:

All cameras have been calibrated with intrinsic parameters before delivery. If you need to calibrate multiple cameras with extrinsic parameters, please contact Percipio technical support.

## Principle



### Structured-light Projector

Project the structured light to objects for assisting the active stereo system to calculate depth data.

### Infrared Sensor

Receive the structured light reflected from the objects surface.

### RGB Sensor

Capture RGB images.

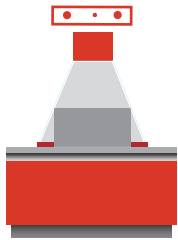
### Embedded Processor

Process infrared and RGB images:

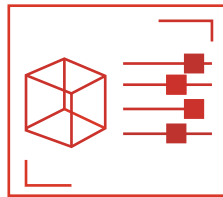
- Calculate depth data and achieve alignment and synchronization with RGB images.
- Upload data through Gigabit Ethernet (GigE).
- Receive trigger signal from the host or external hardware trigger source.

# Applications

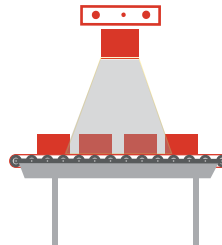
FS820-E1 is suitable for and not limited to the following applications:



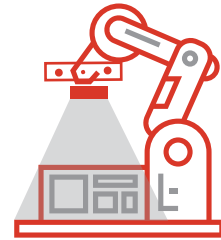
Industrial Measurement  
(Size, Volume)



3D Content Generation



Inspection Check



Robot Recognition,  
Positioning...

## Features

The main features of FS820-E1 are shown as follows:

### Dimensions&Weight

L x H x W (excluding interfaces)	95 mm × 45 mm × 43 mm
Weight	228 g

### Measurement

Measurement range(mm)	300 ~ 1400
FOV(mm)	345 x 250 @ 300; 1825 x 1140 @ 1400
Z Accuracy(mm)	0.5 @ 400; 3.0 @ 1000; 7.0 @ 1500
X/Y Accuracy(mm)	1.5 @ 400; 3.5 @ 1000; 5.0 @ 1500

### Software

OS	Linux/Windows/Android/ROS
Development platform	Percipio Camport SDK
API	C/C++

### Ambient Data

Operating temperature	0℃ ~ 45℃
Storage temperature	-10℃ ~ 55℃
Enclosure rating	IP41

### Performance

Depth	7 fps @ 1280×800
	7 fps @ 640×400
	7 fps @ 320×200
RGB	10 fps @ 1920×1080
	11 fps @ 1280×720
	11 fps @ 640×360
RGB-D Sync&Alignment	√
Output data	Point cloud, depth, infrared and RGB images

### Interface

Power&Trigger	HR10A-7P-6S (HRS)
Ethernet	RJ45

### Electronics

Supply voltage	DC 12V / 24V
Power consumption (idle)	2.8 W
Power consumption (continuous)	3.9 W
Power consumption (trigger)	3.3 W

Note:

The specs and dimension may change without notice.



PERCIPIO.XYZ

For purchase or business cooperation, please email us:

For technical support, please email us:

For more information about Percipio 3D cameras, please visit :

For online documentation, please visit :

[info@percipio.xyz](mailto:info@percipio.xyz)

[support@percipio.xyz](mailto:support@percipio.xyz)

[www.percipio.xyz](http://www.percipio.xyz)

[percipiodc.readthedocs.io](http://percipiodc.readthedocs.io)