CE30-D is one of the Planar array solid-state ToF IR LiDAR in our CE30 series. CE30-D may provide detailed real-time 3D point cloud data that widely used to detect, location, or avoid objects. CE30-D is fully solid-state, which mean it contains no mechanical rotating component, has much higher reliability and stability than other single-point scanners.

Features

- Complete solid-state LiDAR
- IP65 enclosure level
- Long detection range
- Depth and gray image supported

Applications

- AGV obstacle avoidance
- Robot obstacle avoidance

■ Technical specifications

The table below listed the main parameters of CE30-D.

Table 1 Main parameters of CE30-D

Parameters		Value
Product performance	Detection range[1]	0.4-28m@90% reflectivity; 0.4-10m@10% reflectivity
	Accuracy[2]	±20cm
	Angular resolution	0.2°
	Pixel resolution	320*20
	Frame rate	30Hz
	Ambient light immunity	60Klux
	Operation temperature	0℃~50℃
	Enclosure rating	IP65
Optical parameters	Light source	VCSEL
	Central wavelength	850nm
	Photobiological safety	CLASS 1

[1] Ambient light doesn't affect CE30-D's detection range. Please refer to 'Benewake CE30-D user manual' for detailed information.

[2] Accuracy is measured with white board (90% reflectivity) and will be different in the case of different reflectivity or light sensitivity conditions.

	FoV[3]	60°*4°
Electrical parameters	Supply voltage	DC 12 V±5% （≥2A）
	Average current	≤670mA
	Power consumption	≤8W
	Communication interface	UDP
Others	Dimension	83mm*57mm*54mm (L*W*H)
	Enclosure material	Aluminum alloy
	Storage temperature	-30~70℃
	Weight	356g
	Cable length	100cm

■ Product dimensions

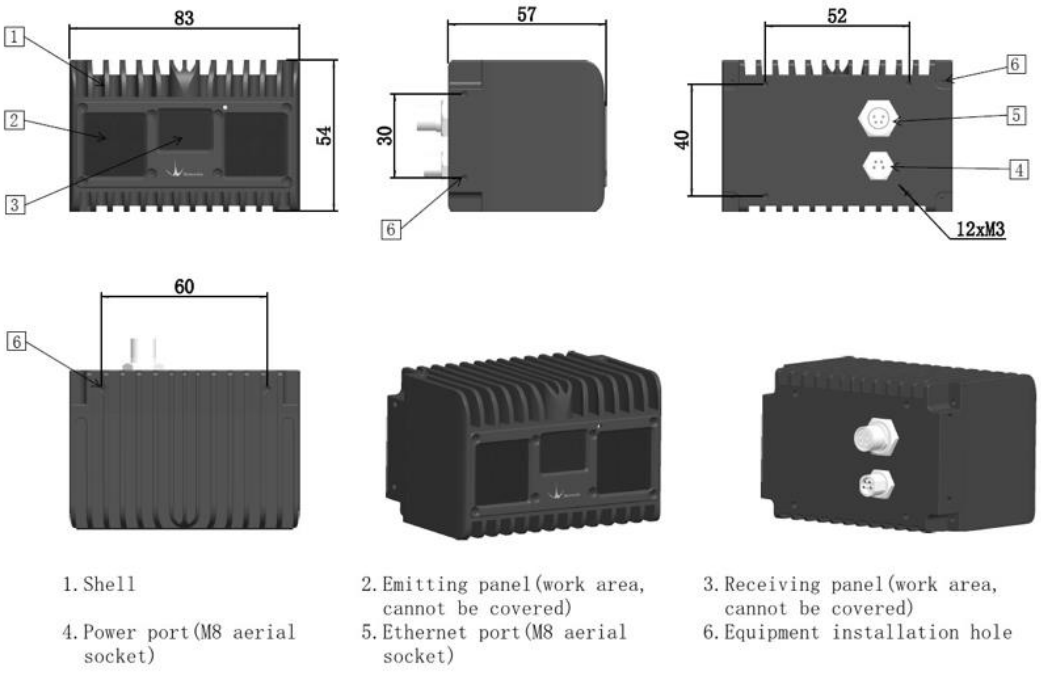


Figure 1 Dimensional drawing of CE30-D (Unit: mm)

[3] FoV: Field of view. The value listed in the table is the field angle of light emitted by CE30-D.

■ Communication interface

Since CE30-D's data output is a point cloud with 320*20 points, Ethernet is the best communication interface for it.

Check the following diagram of CE30-D's connectors.

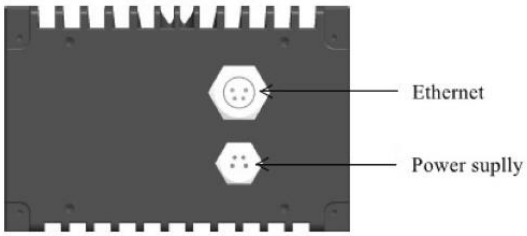


Figure 2 Diagram of CE30-D's connectors

Check the following tables for the PIN definition of the two connectors.

Table 2 CE30-D power supply connector pin definition

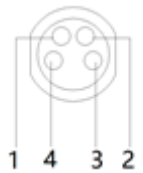
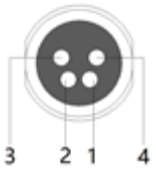
Diagram	PIN number	PIN definition
	1	/
	2	/
	3	GND
	4	12V

Table 3 CE30-D's UDP connector pin definition

Diagram	PIN number	PIN definition
	1	ETH_RX_P
	2	ETH_RX_N
	3	ETH_TX_P
	4	ETH_TX_N

■ Detecting area

The detecting area of CE30-D is a sector in both horizontal and vertical direction, see Figure 3.

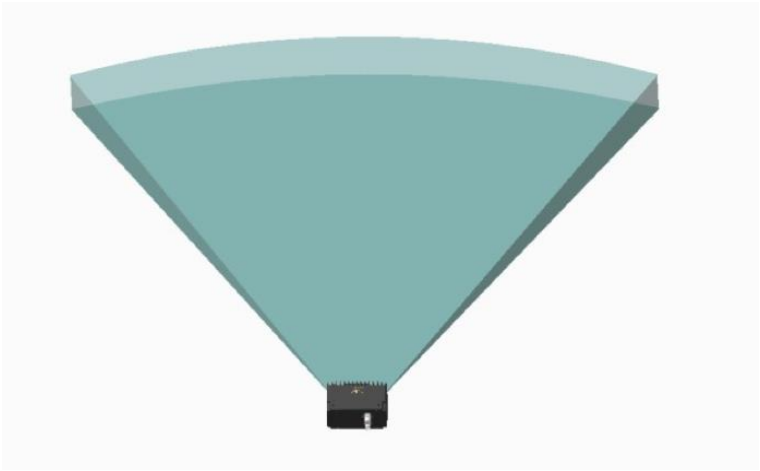


Figure 3 Detecting area of CE30-D

While collecting the original point cloud data, CE30-D can also generate colored depth image and gray image. See the following figure.

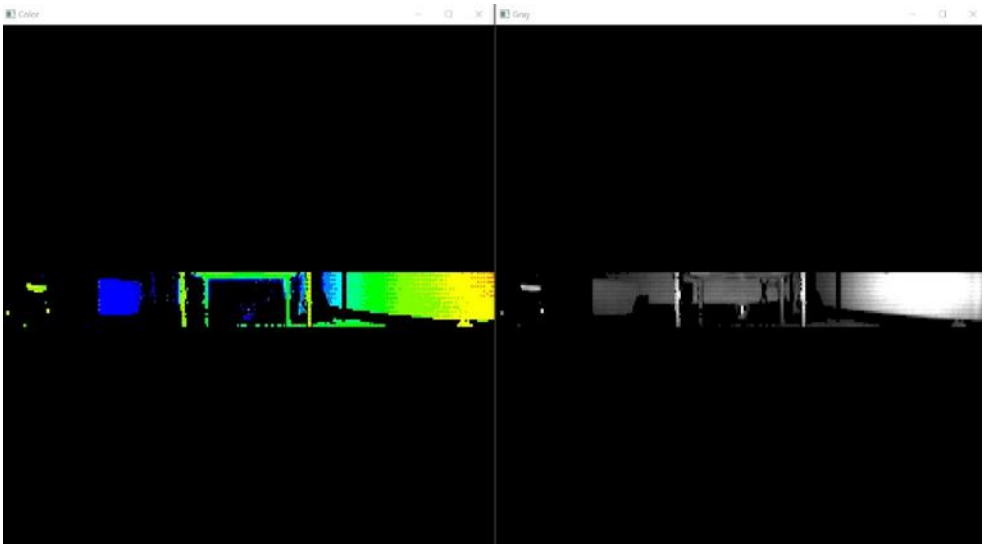


Figure 4 Figure of CE30-D detecting result. Depth image rendered with color(left). Gray image(right)

■ Configurable parameters

In order to meet the needs of actual scenarios, CE30-D opens some common parameters' configuration. By configuring these parameters, CE30-D is more suitable for use scenarios.

Table 4 Configurable parameters of CE30-D

Configurable parameters	Description	Default
Output switch	Enable or disable the output with command	Enabled
Frame rate	Frame rate could be configured by related command.	20Hz
IP address	Set the IP address of CE30-D	192.168.1.80

Note: More configuration parameters and command could be found in the user manual.

Benewake(Beijing) Co., Ltd.

Address: No.28 Xinxi Road, Haidian District, Beijing, China

Tel: +86-010-57456983

Email: bw@benewake.com (Company)

support@benewake.com (Technical support)

Mouser Electronics

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