

Specification

3D AI People Counter

HX-CCD21 (AI Version)

Version 2025-1.8

❖ Product Introduction

The 3D AI people counter HX-CCD21 (AI version) uses high-precision 3D imaging technology and can count the number of people in real time with an accuracy rate of up to 99%. The built-in AI algorithm can identify the number of people entering, exiting, passing, staying, and returning, as well as gender, age (<10 years old, 10-16 years old, 17-30 years old, 31-45 years old, 46-60 years old, >60 years old) and other data collection to generate richer crowd portraits and conduct deeper data analysis. It can also accurately filter employee entry and exit data through employee badge recognition to avoid data interference. It can be widely used in shopping malls, retail stores, public transportation buses, scenic spots, libraries, museums, restaurants, factories, supermarkets, parks, buildings, toilets, etc.

❖ Product Features

- ◆ **Performance:** Intelligent dual-core architecture achieves 20% energy efficiency improvement and supports synchronous multi-modal data processing.
- ◆ **Computing Power:** 2 TOPS heterogeneous computing power engine, real-time AI inference speed reaches millisecond response.
- ◆ **Storage:** 1GB LPDDR4 intelligent cache technology, data throughput efficiency increased by 50%.
- ◆ **Built-in AI Algorithm:** can realize age recognition and gender recognition, generate richer crowd portraits, and conduct deeper data analysis.

- ◆ **REID Deduplication:** through the deep learning model of human features, it can realize the removal of repeated counts of the same person entering and leaving or staying multiple times in a day.
- ◆ **Real-time and Accurate Statistics:** real-time and accurate identification of human bodies, with an accuracy rate of up to 99%, accurately filtering children and other large objects.
- ◆ **Employee Identification:** can accurately filter employee entry and exit data through employee badge identification to avoid data interference.
- ◆ **Strong Environmental Adaptability:** adapt to outdoor scenes with strong sunlight, scenes with decorative lights at the door, and scenes with dim light and darkness.
- ◆ **Automatic Zoom:** supports software automatic zoom, the device supports installation height range of 1.9-6m, and can adapt to different installation environments.
- ◆ **Wide Area Coverage:** the coverage range is 1.1-8.4 meters, which can easily adapt to various places.
- ◆ **Data Upload Timeliness:** the data upload server time can be customized, and can support real-time, 1 minute, 5 minutes, 30 minutes, etc.
- ◆ **Multi-protocol Support:** The device provides HTTP POST/HTTPS POST/FTP/SFTP/Modbus-RTU/ MQTT protocol data transmission, and supports secondary development data docking of the device.
- ◆ **Rich Open Interfaces:** The device has rich local open application interfaces and RS-485 expansion support, so developers can integrate and develop flexibly and quickly.
- ◆ **Network Intelligent Device:** supports local computing, no local server required, flash offline storage, network disconnection and resuming, Poe power supply, and wired/wireless connection.
- ◆ **Privacy Compliance:** complies with privacy protection specifications, does not extract attribute information such as face, and protects privacy.
- ◆ **High-definition Image and Video Acquisition:** equipped with a 2-megapixel imaging system, it can obtain high-definition, color image and video data.
- ◆ **Scene Mode:** wheelchair mode, limited mode, child mode, control mode, data display mode, channel mode, stand-alone mode.

❖ Packing List

• Product Pictures



Front View



Back View

• Product Accessories



Waterproof Cap



Screw



I/O and 485 Connectors



Power Connector



Instructions



Inner Hexagon Spanner



Bracket



Power Adapter



Employee Badge

⚠ If any of the above items are damaged or lost, please contact your supplier in time.

❖ Product Parameters

Product Name	3D AI People Counter
Product Model	HX-CCD21
Sensor Parameters	
Image Sensor	1/3" Progressive Scan CMOS
Image Resolution	1920*1080
Pixel Size	2.7um*2.7um
Image Output Format	RAW RGB
Lens Focal Length	1mm (fisheye lens)
Focus Adjustment	Software zoom
Lens Field of View	Horizontal 140°, vertical 120°
Frame Rate	25fps
Function Parameters	
Counting Accuracy	Up to 99%
Height Range	1.9~6.0m
Coverage Range	1.1~8.4m
Filtering Height	0.5~1.2m
AI function Parameters	
Human Attributes	Gender 95%/Age 80%/Employee 80%/Deduplication 80%
AI Function Expansion	On-demand assessment
Height Range	Using AI function, the recommended installation height is 2.5~4.0m
Technical Parameters	
Power	3.2~3.6W
Addressing	Static IP / DHCP
Offline Cache	90 days
Data Expansion Interface/Signal	485 interface x 1 / 6V~24V (IO input x 1, IO output x1)
Network	Category 5e network cable / Wi-Fi
Power Supply Method	POE (802.3af/at) / DC-(9V-36V)

Data Upload Method	HTTP POST/HTTPS POST/FTP/SFTP/Modbus-RTU/ MQTT
Working Environment	
IP Rating	IP66
Working Temperature	-10°C ~ 50°C
Working Humidity	20% ~ 80%
Storage Temperature	-20°C ~ 60°C
Storage Humidity	20% ~ 80%
Packaging	
Product Specifications (mm)	143 x 70 x 40, weight (Kg): 0.42/unit
Packaging Specifications (mm)	240 x 110 x 100; Weight (Kg): 0.7/unit (including accessories)
Outer Box Specifications (mm)	500 x 500 x 250 (20 units per box); Weight (Kg): 14/box
Installation Method	Ceiling/Suspended/Embedded Installation
Certificate	
Product Related Certificates	CE/FCC/ROHS/IP66 waterproof report/quality inspection report /high and low temperature test report/appearance patent/utility model/MTBF report /BIS certification/shock and vibration test report

❖ Regional Coverage

Installation Height (m)	Coverage Width (m)
1.9	1.1
2.5	3.7
3.0	5.2
3.5	6.4
4.0	7.3
4.5	8.0
5~6	8.4

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