



# Airy

The World's First 192-Beam Hemispherical Digital LiDAR

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# Overview

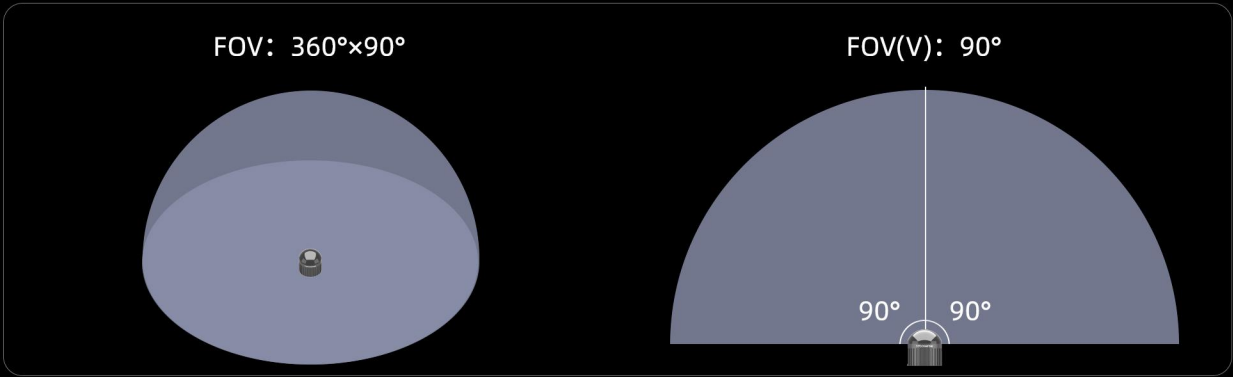
Airy is the first digital hemispherical LiDAR on the R platform, featuring a chip-based transceiver solution and a high-sensitivity digital detection scheme. Compact in size, comparable to a ping-pong ball, it delivers an ultra-wide hemispherical FOV with 360° horizontal and 90° vertical coverage, encompassing a 60-meter radius range. With 1.72 million points per second and ±1cm detection accuracy, Airy provides real-time detection of object size, contour, and distance. Its well-structured, algorithm-friendly point clouds enable exceptional performance in obstacle avoidance, mapping, and navigation tasks.

Airy also integrates an IMU, supports a wide variety of robots operating seamlessly in diverse lighting conditions, enabling all-weather continuous operations and advancing the intelligent application of robots across all scenarios.

# Product Specifications

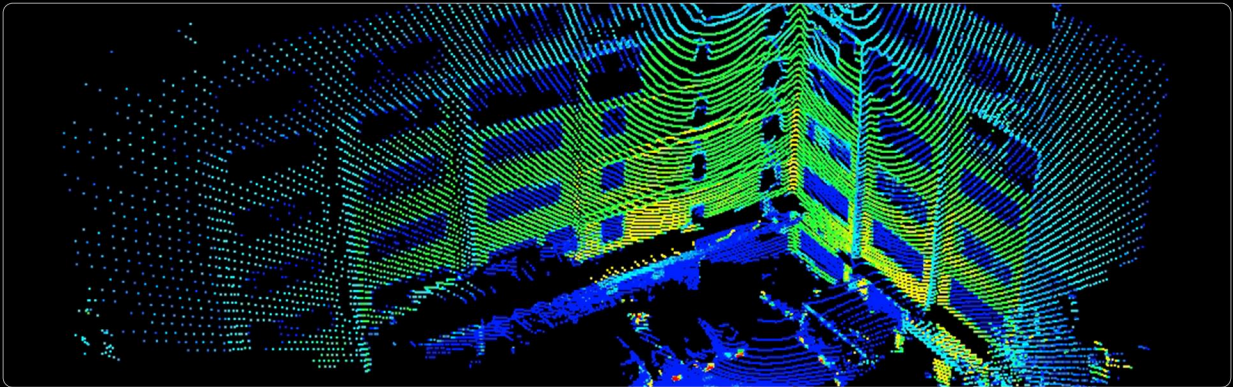
|                                        |                                                                                  |                                      |                                                                                    |
|----------------------------------------|----------------------------------------------------------------------------------|--------------------------------------|------------------------------------------------------------------------------------|
| Range                                  | 30m@10%                                                                          | #of Lines                            | 192/96/48                                                                          |
| Maximum range                          | 60m                                                                              | Accuracy                             | ±1cm                                                                               |
| FOV (H×V)                              | 360°×90°                                                                         | Blind spot                           | <0.1m                                                                              |
| Angular resolution (H×V)               | Avg.0.4°×0.47°                                                                   | Laser safety                         | Class 1 eye safety                                                                 |
| Frame rate                             | 10Hz                                                                             | Power consumption                    | <8W                                                                                |
| Points per second (single return mode) | ~1,720,000pts/s (192-Beam)<br>~860,000pts/s (96-Beam)<br>~430,000pts/s (48-Beam) | Points per second (Dual return mode) | ~3,440,000pts/s (192-Beam)<br>~1,720,000pts/s (96-Beam)<br>~860,000pts/s (48-Beam) |
| Ethernet connection                    | 100Base-TX                                                                       | Output                               | UDP packets over Ethernet                                                          |
| Dimension                              | φ60mm×H63mm                                                                      | UDP packet include                   | Spatial Coordinates<br>Intensity Timestamp, etc.                                   |
| Weight (without cabling)               | <240g                                                                            | Operating voltage                    | 9V ~ 32V                                                                           |
| Operating temperature                  | -40°C ~ +60°C                                                                    | Storage temperature                  | -40°C ~ +85°C                                                                      |
| Time synchronization                   | \$GPRMC with 1PPS, PTP&gPTP                                                      | Ingress protection                   | IP67、IP6K9K                                                                        |

# Perfect Hemispherical FOV

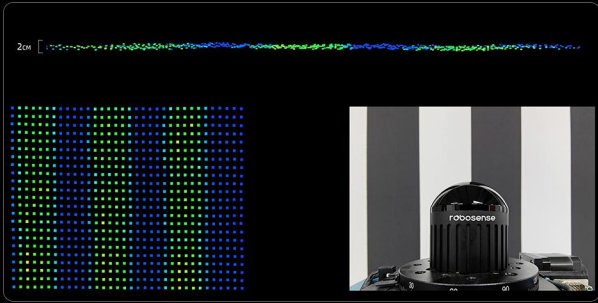


# Neat and High Resolution Point Cloud

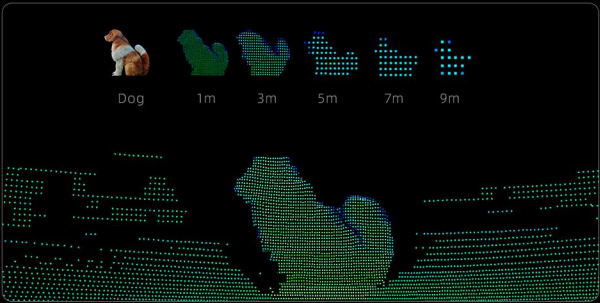
Ultra-wide FOV



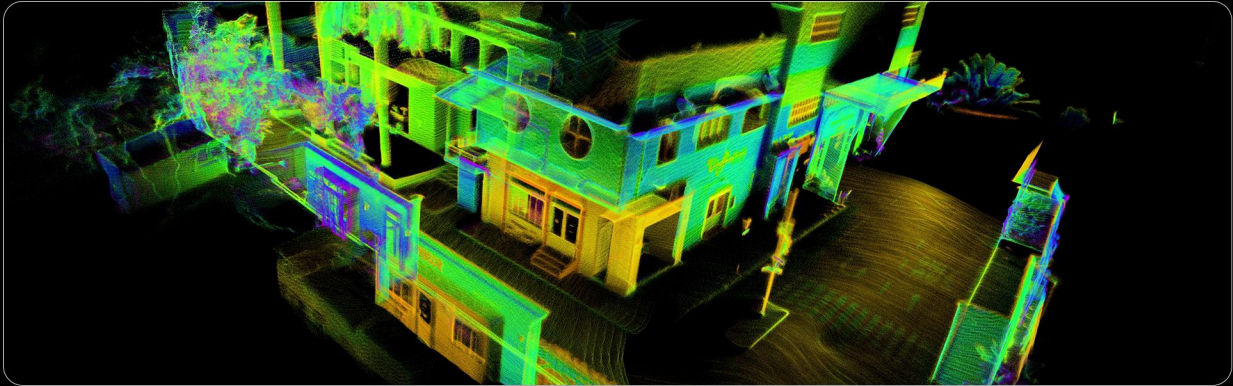
Achieves a distance measurement accuracy of up to ±1cm



High-Definition Detection of Small Animals



3D SLAM

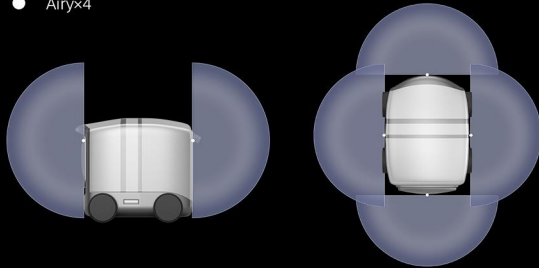


# Applications

Airy delivers an ultra-wide hemispherical FOV with 360° horizontal and 90° vertical coverage, spanning a 120-meter diameter range. This significantly enhances robots' efficiency in obstacle avoidance, mapping, and localization.

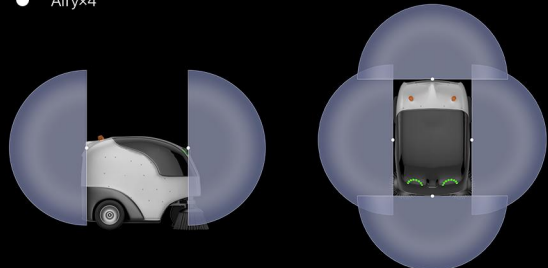
## Autonomous Delivery Robot

● Airyx4



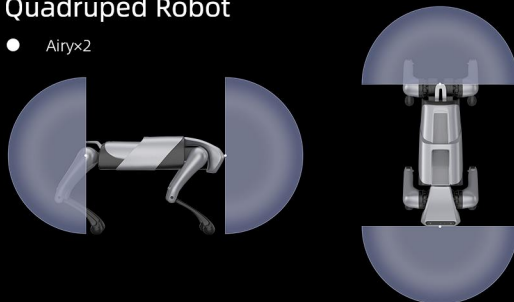
## Cleaning Robot

● Airyx4



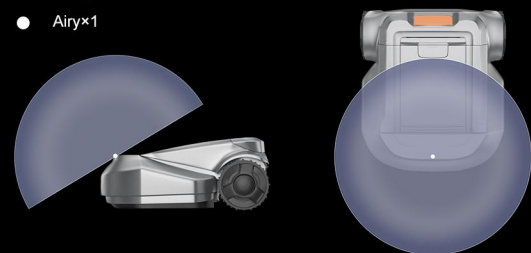
## Quadruped Robot

● Airyx2



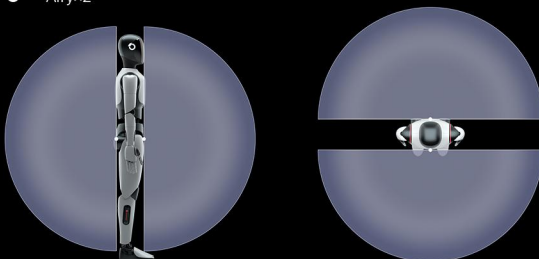
## Courtyard Robot

● Airyx1



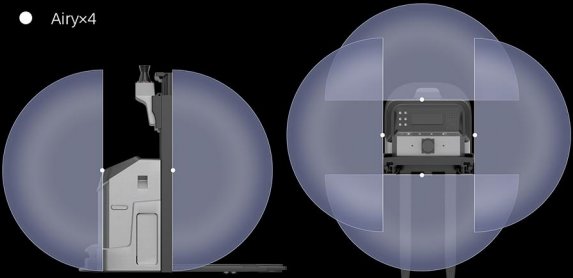
## Humanoid Robot

● Airyx2



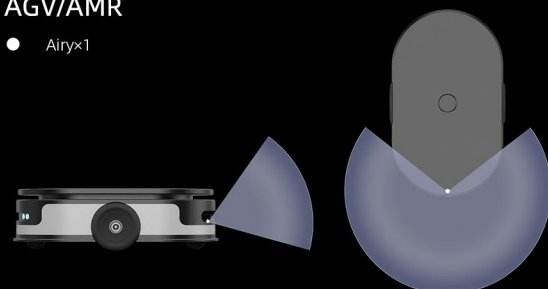
## Unmanned Forklift

● Airyx4



## AGV/AMR

● Airyx1



## Service Robot

● Airyx1

