

# E1R

The First Fully Solid-State Digital LiDAR for Robots

RoboSense Technology Co., Ltd

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RoboSense

[www.robosense.ai](http://www.robosense.ai)

# Overview

E1R is a new-generation, fully solid-state digital LiDAR based on the automotive-grade E platform. Equipped with a 120°×90° ultra-wide FOV and proprietary solid-state architecture, it combines high performance, compact design and automotive-grade reliability. Capable of real-time detection of object size, contour, and distance, E1R empowers robots to excel in obstacle avoidance, mapping, and navigation tasks.

E1R has been mass-produced and is already in practical applications, supporting various types of robots operating seamlessly in diverse lighting conditions. It enables robots to perform tasks from close-range precision sensing to wide-area environmental detection, significantly enhancing their operational efficiency and safety across a wide range of scenarios.

## Product Specifications

Wavelength	940nm	#of Lines	144
Range	30m@10%	Laser safety	Class 1 Eye Safety
Maximum range	75m	Accuracy	±3cm
FOV (H×V)	120°×90°	Blind spot	<0.1m
Angular resolution (H)	Average 0.625°	Angular resolution (V)	Average 0.625°
Frame rate (adjustable)	10Hz	Power consumption	<10W
Points per second (single return mode)	260,000 pts/s	Points per second (dual return mode)	520,000 pts/s
Dimensions (H×W×D)	69.5×95×43mm	Window dimensions (H×W×D)	35×75×7mm
Weight (without cabling)	330±20g	Operating voltage	9 - 16V
Working temperature	-40°C ~ +85°C	Storage temperature	-40°C ~ +105°C
Time synchronization	gPTP	Ingress protection	IP67、IP6K9K

# Advantages



Ultra-wide FOV and high resolution



Automotive-grade reliability design



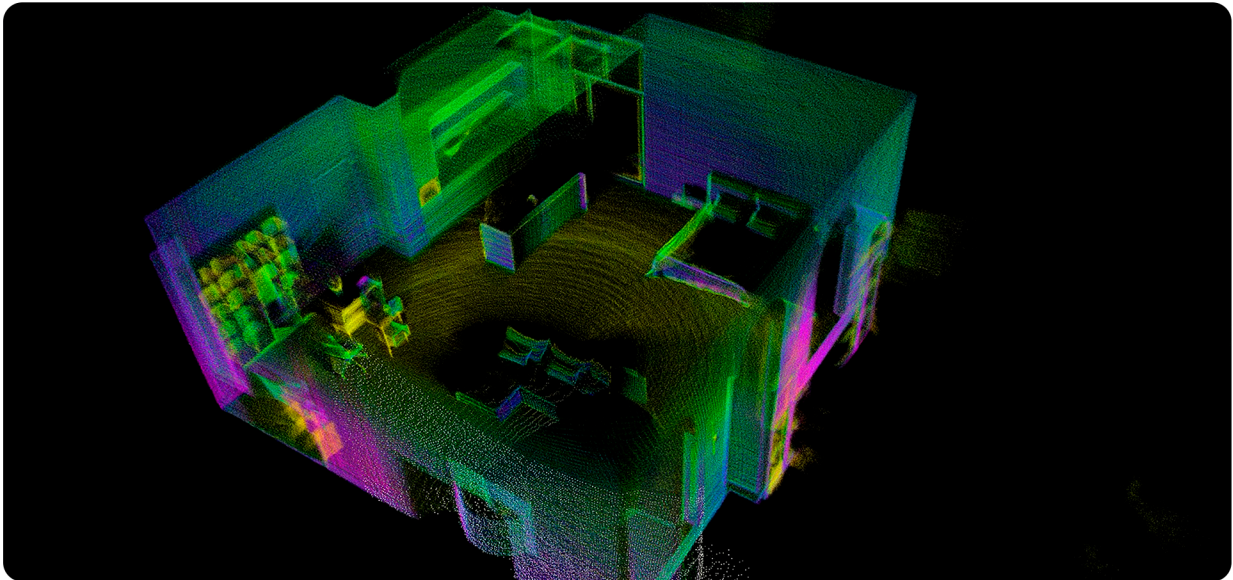
2D electronic scanning in VCSEL chip



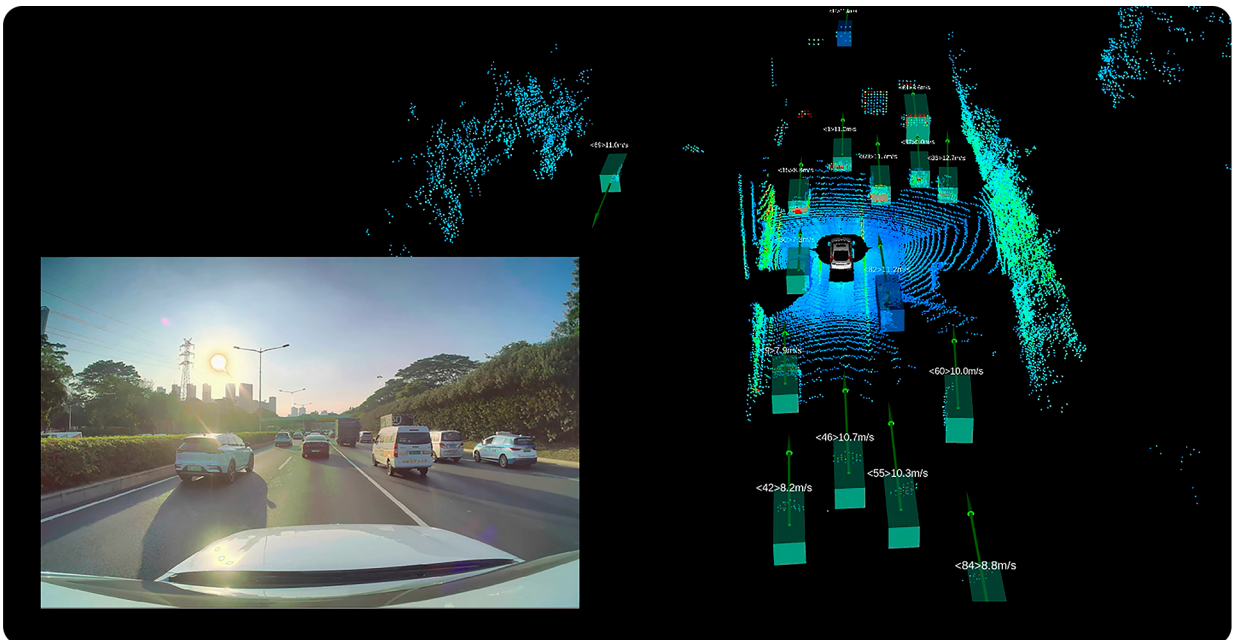
Self-developed SPAD-SoC chip

## High Performance Point Cloud

High-Performance 3D SLAM



Accurate Obstacle Detection



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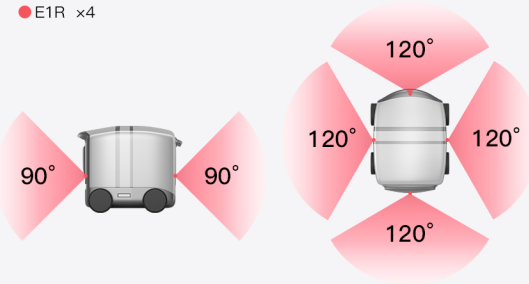
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# Applications

E1R supports 3D obstacle avoidance, mapping, navigation, recognition, etc.

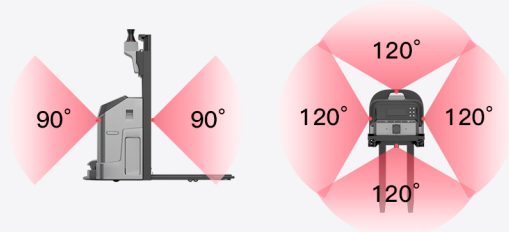
## Autonomous Delivery Robot

● E1R x4



## Self-driving Forklift

● E1R x4



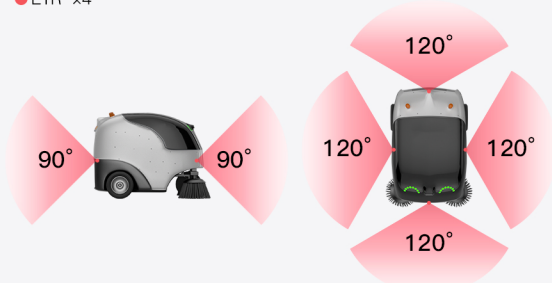
## Drones

● E1R x1



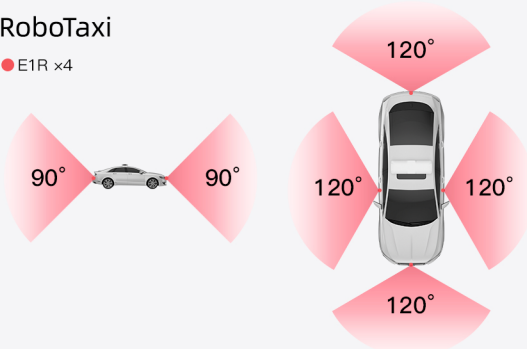
## Autonomous Cleaning Robot

● E1R x4



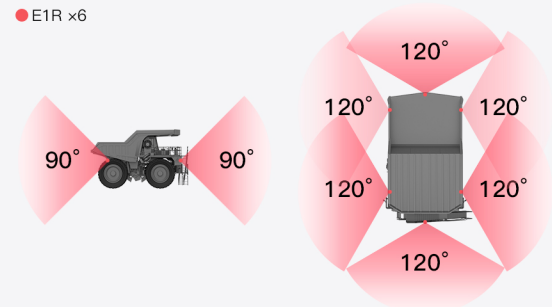
## RoboTaxi

● E1R x4



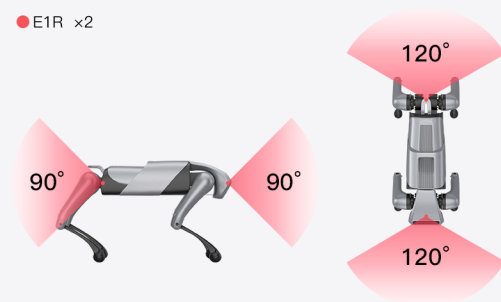
## RoboTruck

● E1R x6



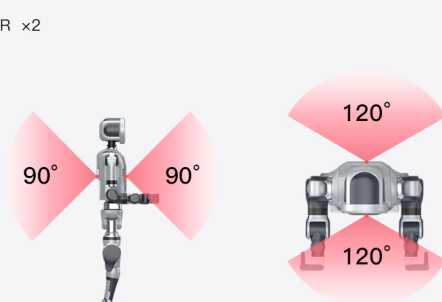
## Quadruped Robot

● E1R x2



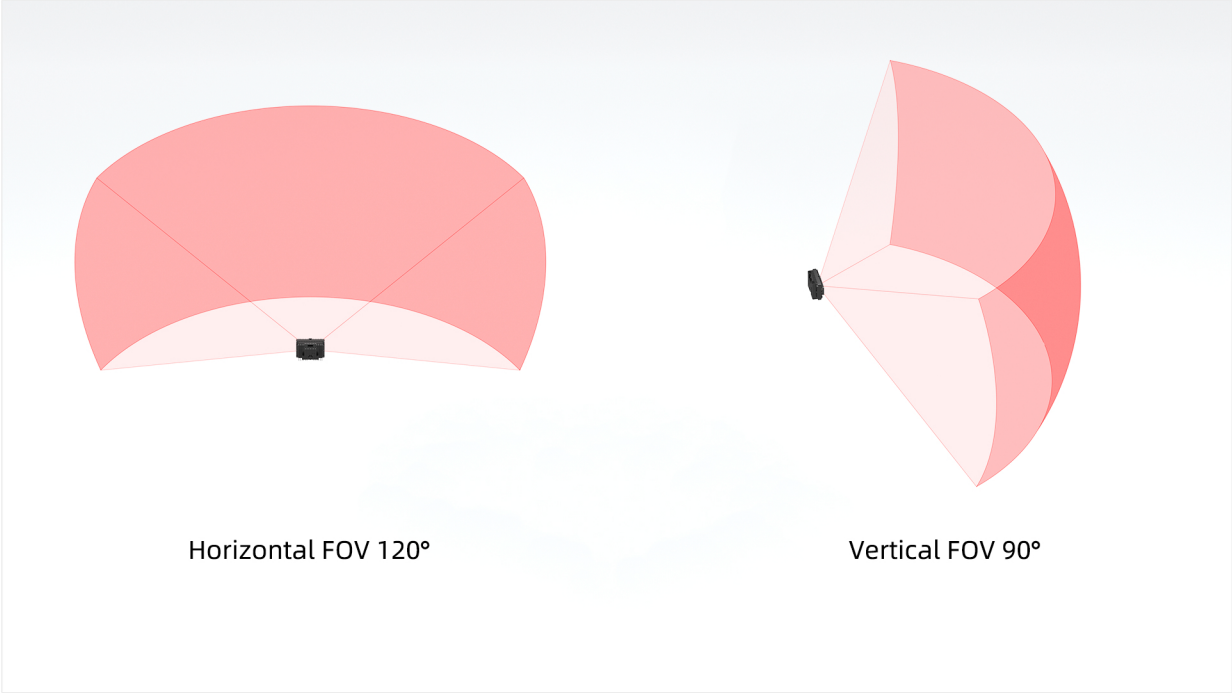
## Humanoid Robot

● E1R x2

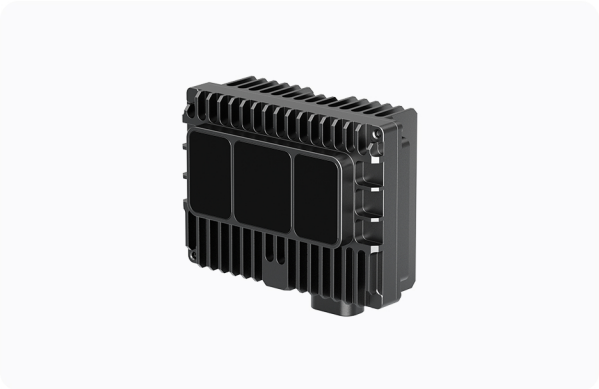
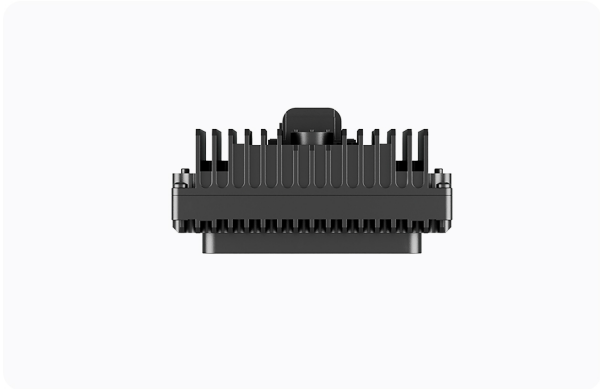
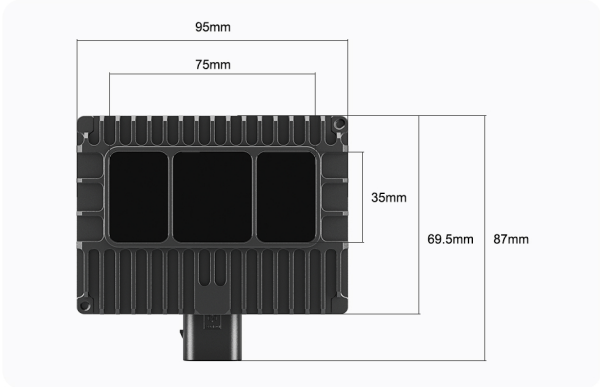


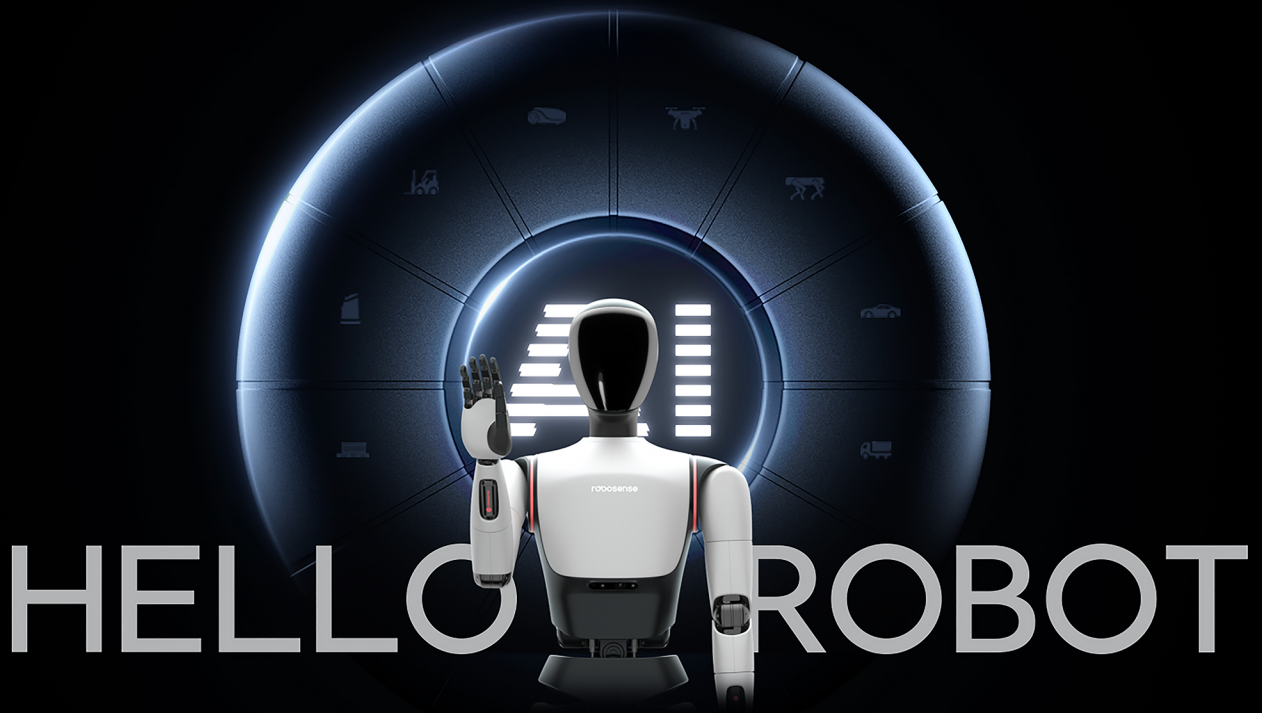


# Ultra-wide FOV



# Appearance





# HELLO ROBOT

## About RoboSense

RoboSense (2498.HK), founded in 2014, is an AI-driven robotics technology company that supplies industry-leading incremental components and solutions for the robotics market. The company is committed to "Become the global leader in robotics technology platforms", and its mission is "Safer world, Smarter life". Headquartered in Shenzhen, China, RoboSense employs over 1,400 professionals and operates offices in various countries and regions, including Shanghai, Suzhou, Hong Kong in China, Stuttgart in Germany, and Detroit, Silicon Valley in the United States.

With a strong foundation in robotic systems, RoboSense develops and supplies solutions for mobile and operational robots. In the automotive market, known for its stringent requirements on mass production and delivery, the company has established partnerships with over 290 global automotive OEMs and Tier 1 suppliers. In the rapidly growing intelligent robotics market, RoboSense serves over 2,600 customers across robotics and other industries, offering incremental components and solutions tailored to diverse scenarios and tasks. The company actively supports robotics developers and promotes the growth of the intelligent robotics technology ecosystem.

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