

E1R

The First Fully Solid-State Digital LiDAR for Robots

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



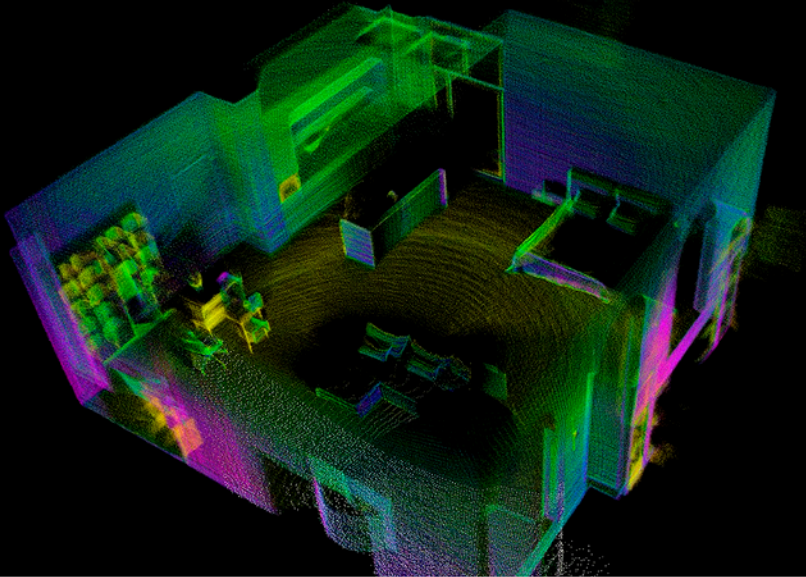
2D electronic scanning in VCSEL chip



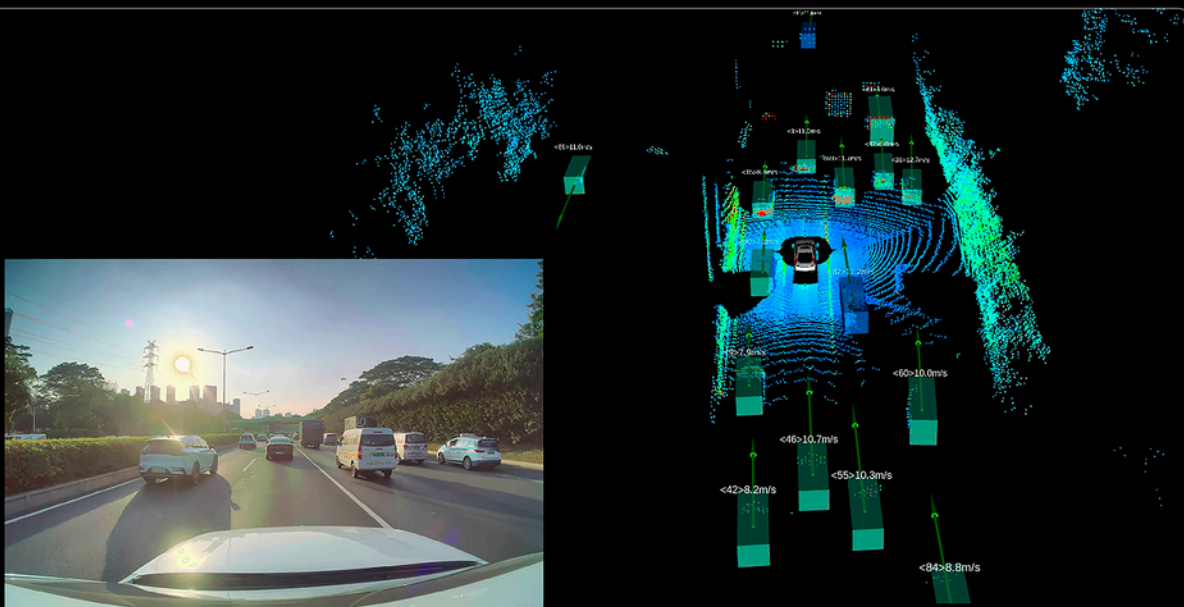
Self-developed SPAD-SoC chip

High Performance Point Cloud

High-Performance 3D SLAM



Accurate Obstacle Detection

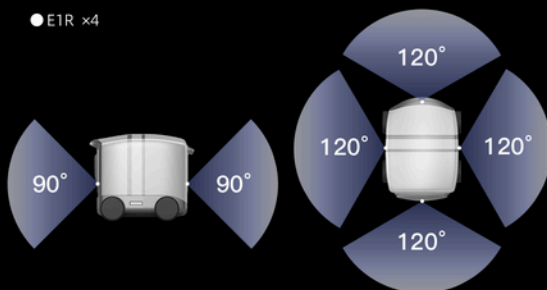


Applications

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

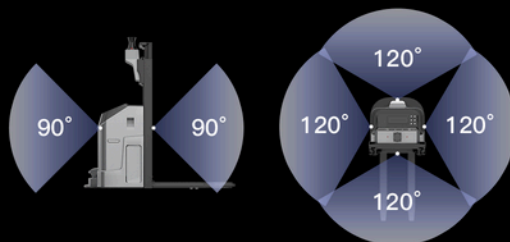
Autonomous Delivery Robot

● E1R x4



Self-driving Forklift

● E1R x4



Drones

● E1R x1



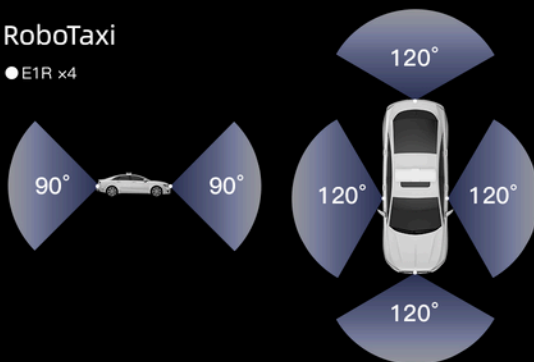
Autonomous Cleaning Robot

● E1R x4



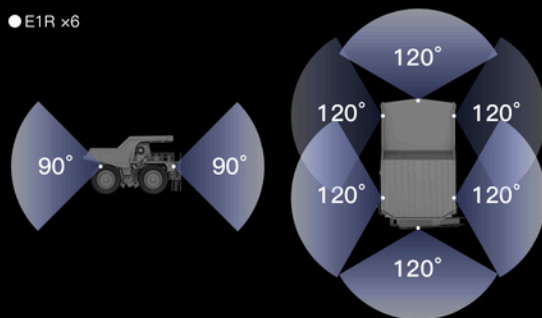
RoboTaxi

● E1R x4



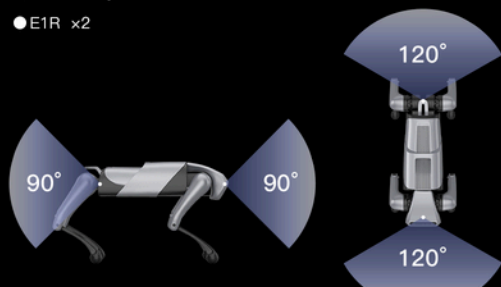
RoboTruck

● E1R x6



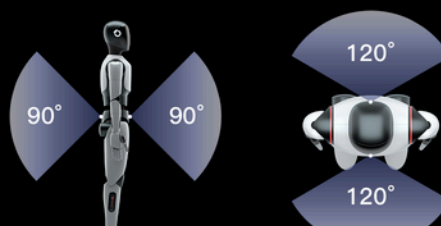
Quadruped Robot

● E1R x2

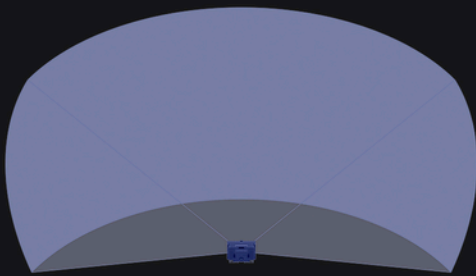


Humanoid Robot

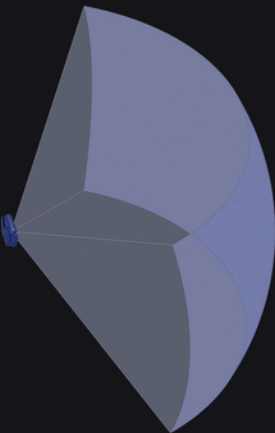
● E1R x2



Ultra-wide FOV

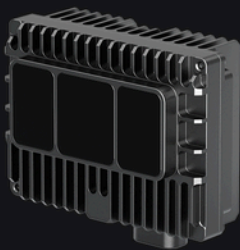
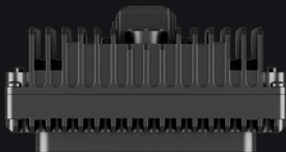
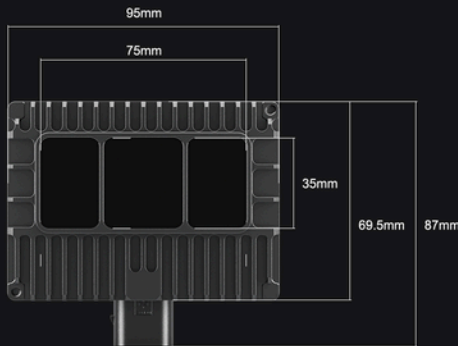


Horizontal FOV 120°



Vertical FOV 90°

Appearance



Generation ROBOTS

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