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Global LiDAR for Autonomous Vehicles Supply, Demand and Key Producers, 2026-2032

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Abstracts

The global LiDAR for Autonomous Vehicles market size is expected to reach $ 3377 million by 2032, rising at a market growth of 14.3% CAGR during the forecast period (2026-2032).
LiDAR for autonomous vehicles is an active optical perception sensor based on principles such as Time-of-Flight (ToF) and Frequency Modulated Continuous Wave (FMCW). Its core function is to scan the vehicle's surroundings by emitting a laser beam, receiving the laser signals reflected from targets, and calculating the round-trip time difference or frequency difference to accurately acquire three-dimensional spatial information such as the target's distance, orientation, and speed, and construct a high-precision environmental point cloud map. It possesses key advantages such as all-weather operation (resistant to strong light, fog, rain, and snow interference), high resolution, and a large detection range. It can compensate for the perception shortcomings of cameras and millimeter-wave radar, and is a core sensor for autonomous vehicles to achieve environmental perception, obstacle recognition, and path planning, directly determining the safety and reliability of the autonomous driving system.
In 2025, the global production of LiDAR for autonomous vehicles was 3.49 million units, with an average price of $372 per unit.
Upstream of LiDAR for autonomous vehicles mainly includes laser emitter chips, detector chips, optical components, MEMS or scanning modules, ASICs and processing chips, precision mechanical parts, and automotive-grade electronic components, with stringent requirements for performance consistency and automotive reliability.
Downstream demand is concentrated among autonomous vehicle OEMs, EV manufacturers, ADAS suppliers, and Robotaxi operators, extending to commercial vehicles, autonomous delivery, and purpose-built autonomous platforms. Key downstream concerns focus on detection range, angular resolution, point cloud density,

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environmental robustness, functional safety levels, and total integration cost, with front-installed mass production becoming the mainstream as L2+ to L3 systems gain penetration.

Industry trends show a shift from mechanical LiDAR toward semi-solid-state and solid-state solutions, emphasizing cost reduction, compact design, and automotive-grade mass production, while multi-sensor fusion and algorithm integration become standard. Major drivers include rigid safety requirements associated with higher automation levels, OEM focus on safety differentiation, and rapid cost declines in LiDAR hardware. Constraints mainly arise from fragmented technology routes, investment risks, margin pressure from aggressive pricing, competition with cameras and millimeter-wave radar, and regulatory uncertainty affecting autonomous driving deployment timelines.

Gross margins in automotive LiDAR vary significantly. Early high-performance mechanical systems achieved margins of 40% to 60%, while current mainstream semi-solid and solid-state front-installed products typically operate at 25% to 40%. As volumes scale and supply chains mature, hardware margins are expected to decline, with long-term profitability increasingly dependent on scale, system-level integration, and value-added software and algorithms.

This report studies the global LiDAR for Autonomous Vehicles production, demand, key manufacturers, and key regions.

This report is a detailed and comprehensive analysis of the world market for LiDAR for Autonomous Vehicles and provides market size (US$ million) and Year-over-Year (YoY) Growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of LiDAR for Autonomous Vehicles that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global LiDAR for Autonomous Vehicles total production and demand, 2021-2032, (Units)

Global LiDAR for Autonomous Vehicles total production value, 2021-2032, (USD Million)

Global LiDAR for Autonomous Vehicles production by region & country, production, value, CAGR, 2021-2032, (USD Million) & (Units), (based on production site)

Global LiDAR for Autonomous Vehicles consumption by region & country, CAGR, 2021-2032 & (Units)

U.S. VS China: LiDAR for Autonomous Vehicles domestic production, consumption, key domestic manufacturers and share

Global LiDAR for Autonomous Vehicles production by manufacturer, production, price, value and market share 2021-2026, (USD Million) & (Units)

Global LiDAR for Autonomous Vehicles production by Type, production, value, CAGR, 2021-2032, (USD Million) & (Units)

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Global LiDAR for Autonomous Vehicles production by Application, production, value, CAGR, 2021-2032, (USD Million) & (Units)
This report profiles key players in the global LiDAR for Autonomous Vehicles market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Hesai Technology, RoboSense, Seyond, Huawei, Valeo, ZF Friedrichshafen, Continental, Koito Manufacturing, Cepton, Innoviz Technologies, etc.
This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.
Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the World LiDAR for Autonomous Vehicles market
Detailed Segmentation:
Each section contains quantitative market data including market by value (US$ Millions), volume (production, consumption) & (Units) and average price (US$/Unit) by manufacturer, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.
Global LiDAR for Autonomous Vehicles Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global LiDAR for Autonomous Vehicles Market, Segmentation by Type:

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Mechanical LiDAR

Semi-Solid-State LiDAR

Solid-State LiDAR

Global LiDAR for Autonomous Vehicles Market, Segmentation by Wavelength:

905nm

1550nm

Global LiDAR for Autonomous Vehicles Market, Segmentation by Detection Range:

Less than 50 Meters

50-150 Meters

More than 150 Meters

Global LiDAR for Autonomous Vehicles Market, Segmentation by Installation Location:

Forward

Lateral

Rearward

All-Around

Global LiDAR for Autonomous Vehicles Market, Segmentation by Application:

Passenger Vehicles

Commercial Vehicles

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Special Vehicles

Companies Profiled:

Hesai Technology

RoboSense

Seyond

Huawei

Valeo

ZF Friedrichshafen

Continental

Koito Manufacturing

Cepton

Innoviz Technologies

Aeva

AEye

MicroVision

Livox

SOSLAB

Bosch

Ouster

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LeiShen Intelligent System (Leishen LiDAR / Islidar)

Key Questions Answered:

1. How big is the global LiDAR for Autonomous Vehicles market?
2. What is the demand of the global LiDAR for Autonomous Vehicles market?
3. What is the year over year growth of the global LiDAR for Autonomous Vehicles market?
4. What is the production and production value of the global LiDAR for Autonomous Vehicles market?
5. Who are the key producers in the global LiDAR for Autonomous Vehicles market?
6. What are the growth factors driving the market demand?

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