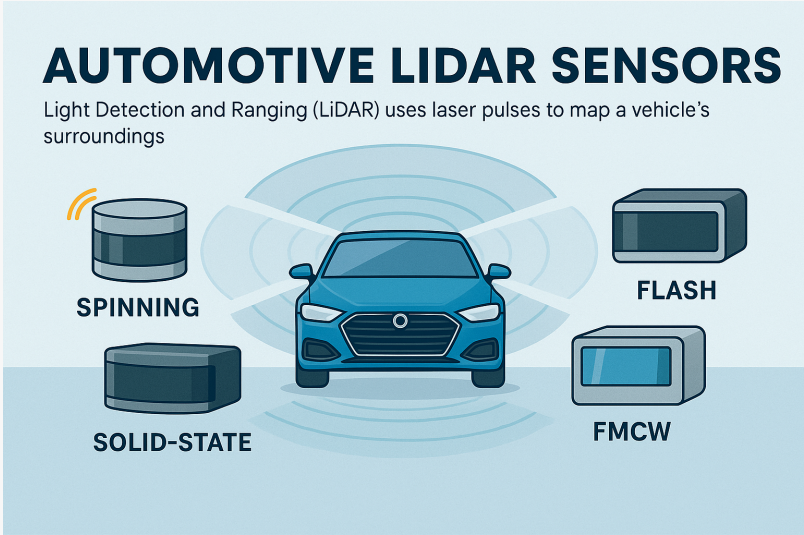
Automotive LiDAR Sensors Market Predicted to Skyrocket to $11.7 Billion by 2031, Expansion at a CAGR of 31.7%

Automotive lidar sensors market was valued at $793.2 million in 2021, is projected to reach $11.7 billion by 2031, growing at a CAGR of 31.7% from 2022-2031.



Automotive LiDAR Sensors Market 1

WILMINGTON, NEW CASTLE, DE, UNITED STATES, June 19, 2025 /EINPresswire.com/ -- According to a new report published by Allied Market Research, titled, "Automotive LiDAR Sensors Market by Type (Time of Flight (ToF), Frequency-Modulated-Continuous-Wave (FMCW)), by Technology (Solid-state, Electro-mechanical), by Image Type (2 Dimensional, 3 Dimensional), by Vehicle Type (Internal Combustion Engine (ICE), Hybrid, Battery Electric), by Application (Semi-autonomous Vehicles, Autonomous Vehicles): Global Opportunity Analysis and Industry Forecast, 2021-2031." The report offers a detailed analysis of the top winning strategies, evolving market trends, market size and estimations, value chain, key investment pockets, drivers & opportunities, competitive landscape and regional landscape. The report is a useful source of information for new entrants, shareholders, frontrunners and shareholders in introducing necessary strategies for the future and taking essential steps to significantly strengthen and heighten their position in the market. The automotive lidar sensors market was valued at $793.20 million in 2021, and is estimated to reach $11.7 billion by 2031, growing at a CAGR of 31.7% from 2022 to 2031. Automotive LiDAR sensors are also called laser scanners, time of flight (ToF), or laser radar.

> “North America market registered the highest market share in 2021 and the Asia-Pacific region is predicted to show the fastest growth during the forecast period.”
>
> *Roshan Deshmukh*

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Automotive LiDAR sensors are gaining significant popularity day by day. Due to the rise in popularity of autonomous vehicles, which need automotive LiDAR sensors for safety and accident avoidance, the market for these sensors is increasing at a rapid rate. In addition, surge in innovations by market players, such as the incorporation of sensor technology in LiDAR point clouds through feature extraction and clustering which are reflections of radar with information like velocity, position, and signal strength. These features help to sense the hurdles more effectively. Increased emphasis on government regulations for the safety of vehicles is driving the automotive LiDAR sensors market demand in the upcoming years.

The use of automotive LiDAR sensors for automation purposes in cars is anticipated to gain traction. This is because automated automobiles are easier to drive than manual cars because the driver does not have to worry as much about the clutch and gears while driving owing to automotive LiDAR sensors. Automotive LiDAR sensor technologies are frequently used in self-driving cars to create an accurate long and short-range map of their surroundings. LIDAR has important applications in safety systems in factories 3D aerial and geographic mapping. These factors are estimated to boost the automotive LiDAR sensors market size in the upcoming years.

The global automotive LiDAR sensors market share is segmented on the basis of type, technology, image type, and vehicle type. By type, the market is classified into Time of Flight (ToF) and Frequency-Modulated-Continuous-Wave (FMCW). By technology the market is classified into solid-state and electro-mechanical. By image type, it is classified into 2 Dimensional and 3 Dimensional. By vehicle type, the market is classified into internal combustion engine (ICE) and hybrid battery electric, By Application (Semi-autonomous Vehicles and Autonomous Vehicles). By region, the market is analyzed across North America, Europe, Asia-Pacific, and LAMEA.

By type, the Time of Flight (ToF) sub-segment dominated the market in 2021. An active form of 3D imaging and scanning technology is Time of Flight. In comparison to the other two 3D imaging approaches, structured light and stereo vision, ToF is faster, more dependable, and energy-efficient. Given its affordability, ToF technology is expected to see a rise in demand for 3D imaging and scanning applications. These are predicted to be the major factors affecting the automotive LiDAR sensors market size during the forecast period.

By image type, 2 dimensional sub-segment dominated the market in 2021. Increasing awareness about the benefits of using 2D LiDAR sensors in various sector such as security and surveillance, industrial automation, robotic technologies, and logistics is expected to drive market growth in future. LiDAR is a form of remote sensing that determines an object's distance by using a laser to illuminate the target and then examining the reflected light. This makes it possible for the sensor to determine the precise distances between objects. Only one laser beam is required for a 2D LiDAR sensor. It is fast processing and has fast acquisition system. These are predicted to be the major factors affecting the automotive LiDAR sensors industry growth during the forecast

period.

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By technology, solid-state sub-segment dominated the market in 2021. Solid-state LiDAR sensors are ideal for the automotive industry because they conserve space, are almost unnoticeable, and provide an elegant and robust solution. A solid state of LiDAR sensor is typically illuminated by a single laser beam, and the 3D data that is returned is captured by a ToF sensor array. These solid-state sensors are more affordable and reliable than traditional scanning LiDAR sensors since they have few to no moving parts. These are predicted to be the major factors affecting the automotive LiDAR sensors market share during the forecast period.

By vehicle type, the internal combustion engine (ICE) sub-segment dominated the market share in 2021. The majority of ICEs are employed in mobile applications and serve as the main power source for automobiles, aircraft, and watercraft. Natural gas or petroleum-based fuels such as gasoline, diesel, or fuel oil are the most common sources of energy for ICEs. Compression ignition (CI) engines use biodiesel as a fuel, while spark ignition (SI) engines use bioethanol or ETBE (ethyl tert-butyl ether), which is made from bioethanol. These are predicted to be the major factors affecting the automotive LiDAR sensors market demand during the forecast period.

By application, semi-autonomous vehicles sub-segment dominated the market as fully autonomous vehicle may operate on its own without assistance from a person. On the other hand, in semi-autonomous vehicles, the driver still has primary control over driving while being assisted by a number of advanced driver assistance technologies.

By region, Asia-Pacific region is estimated to show the fastest growth during the forecast period. The demand for LiDAR sensors in countries, namely China and India, is growing rapidly.

Key Benefit For Stakeholders:

 The report provides an exclusive and comprehensive analysis of the global automotive LiDAR sensors market trends along with the automotive LiDAR sensors market forecast.
 The report elucidates the automotive LiDAR sensors market opportunity along with key drivers, and restraints of the market. It is a compilation of detailed information, inputs from industry participants and industry experts across the value chain, and quantitative and qualitative assessment by industry analysts.
 Porter's five forces analysis helps analyze the potential of the buyers & suppliers and the competitive scenario of the market for strategy building.
 The report entailing the automotive LiDAR sensors market analysis maps the qualitative sway of various industry factors on market segments as well as geographies. The complete analysis of lidar for automotive market is provided in this study.
 The data in this report aims on market dynamics, trends, and developments affecting the

automotive LiDAR sensors market growth.

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