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Automotive Passenger Car Emergency Braking System Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Sensor Type (Camera, Lidar, Radar), By Technology (Forward Collision warning, Dynamic brake support, Crash imminent braking), By Region & Competition, 2021-2031F

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Abstracts

The Global Automotive Passenger Car Emergency Braking System Market is projected to expand from USD 25.51 Billion in 2025 to USD 44.87 Billion by 2031, reflecting a CAGR of 9.87%. This market encompasses active safety technologies that employ cameras, radar, and sensors to identify potential crashes and autonomously engage the brakes if the driver is unresponsive. Key drivers fueling this growth include strict government regulations mandating standard collision avoidance systems and an increasing consumer preference for high vehicle safety ratings. These regulatory and purchasing influences differ from general technological trends, serving as immediate compliance needs and fundamental demand requirements that ensure current market volume.

Nevertheless, a major obstacle hindering market growth involves technical constraints where systems demonstrate lower reliability during high-speed driving or adverse weather, which can diminish user confidence. This gap in performance is emphasized by recent industry assessments regarding system efficacy. According to the Insurance Institute for Highway Safety, 2024 testing showed that automatic emergency braking systems in nine out of ten popular small SUVs failed to earn a good rating at higher speeds, highlighting the urgent need for enhanced sensor refinement and robust software solutions.

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Market Driver

Strict government mandates for automatic emergency braking are transforming collision avoidance systems from optional features into non-negotiable compliance standards. Regulatory bodies are enforcing aggressive rules that compel manufacturers to standardize these technologies across all vehicle types to reduce traffic fatalities. According to the National Highway Traffic Safety Administration's April 2024 'NHTSA Finalizes Key Safety Rule to Reduce Crashes and Save Lives,' new federal standards dictate that by 2029, all passenger cars must possess systems capable of stopping to prevent collisions at speeds up to 62 miles per hour. This regulatory clarity guarantees significant production volumes for component suppliers, establishing a consistent demand baseline. As noted by Mobileye Global Inc. in their April 2024 'First Quarter 2024 Results,' the company secured future volume for design wins totaling over 26 million units, illustrating the scale of this mandated adoption.

At the same time, technological progress in AI integration and sensor fusion is resolving critical performance issues to ensure these systems operate reliably in complex real-world situations. Manufacturers are advancing from basic configurations to sophisticated multi-sensor arrays that merge radar with AI-driven image processing to improve detection accuracy. This evolution is resulting in quantifiable safety enhancements that validate the strict mandates. According to the AAA 'Progression of AEB Technology' report from October 2024, model year 2024 vehicles featuring the latest generation systems successfully avoided 100 percent of forward collisions when tested at speeds up to 35 mph, a marked improvement over the 51 percent avoidance rate of 2017 systems. These innovations are essential for sustaining user trust and adhering to rigorous modern safety protocols.

Market Challenge

The main obstacle restricting the expansion of the Global Automotive Passenger Car Emergency Braking System Market is the continued technical inconsistency of these systems during real-world operations, especially at highway speeds. Although regulatory mandates spur basic adoption, the market for advanced, high-margin safety packages is constrained by consumer skepticism regarding system reliability. When technology fails to perform critical interventions in high-velocity situations, it undermines the perceived value of the hardware and software, leading cost-conscious buyers and fleet managers to regard these features as unreliable add-ons rather than vital safety investments.

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This performance disparity is quantitatively highlighted in recent independent evaluations that reveal the operational limits of current sensor technology. According to the American Automobile Association, 2024 testing demonstrated that while systems functioned well at lower speeds, none of the vehicles evaluated successfully prevented a forward collision when traveling at 55 mph. This failure to operate effectively at standard highway speeds validates market hesitation, as the technology struggles to match the speed profiles where severe accidents occur most often. Consequently, this functional limitation confines the market's potential revenue growth by limiting the technology's perceived utility to low-speed settings rather than offering comprehensive safety solutions.

Market Trends

A significant functional evolution in the market is the expansion of detection capabilities to include Vulnerable Road Users (VRUs), particularly in low-light settings. Manufacturers are re-engineering sensor suites to focus on identifying pedestrians and cyclists, aiming to fix a critical performance deficit where legacy systems often failed during nighttime driving. This technological shift is a response to elevated safety standards that now incorporate specific darkness-detection requirements into vehicle scoring metrics. According to the Insurance Institute for Highway Safety's February 2024 report, 'IIHS updates its testing criteria to focus on pedestrians and back-seaters,' the organization mandated that vehicles must achieve an advanced or superior rating in a new single-test protocol explicitly evaluating pedestrian crash prevention in dark conditions to qualify for 2024 Top Safety Pick awards.

Concurrently, the adoption of Reverse Automatic Emergency Braking systems is appearing as a distinct trend aimed at mitigating low-speed backing collisions. This technology takes active safety beyond forward-facing situations by using rear sensors to detect cross-traffic and stationary obstacles, intervening autonomously when visibility is blocked. While adoption is growing to prevent property damage, the effectiveness of the technology remains a key area of analysis. According to the American Automobile Association's February 2024 'Reverse Automatic Emergency Braking' performance evaluation, tests of equipped vehicles showed that the systems successfully applied brakes in 75 percent of runs involving a stationary child-size target, underscoring their utility in preventing back-over accidents.

Key Market Players

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Robert Bosch GmbH

Continental AG

ZE Friedrichshafen AG

Delphi Automotive LLP

Hyundai Mobis

Aisin Seiki Co. Ltd

Hitachi Automotive System Ltd.

Mando Corporation

Netradyne

Valeo S.A.

Report Scope

In this report, the Global Automotive Passenger Car Emergency Braking System Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Automotive Passenger Car Emergency Braking System Market, By Sensor Type

Camera

Lidar

Radar

Automotive Passenger Car Emergency Braking System Market, By Technology

Forward Collision warning

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Dynamic brake support

Crash imminent braking

Automotive Passenger Car Emergency Braking System Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

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Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Automotive Passenger Car Emergency Braking System Market.

Available Customizations:

Global Automotive Passenger Car Emergency Braking System Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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