

Volumetric Display Market Assessment, By Display [Swept Volumetric Displays, Holographic Displays, Static Volumetric Displays], By Technology [Digital Light Processing, Liquid Crystal on Silicon], By Industry [Communication and Entertainment, Medical, Aerospace and Defense, Automotive, Others], By Region, Opportunities and Forecast, 2016-2030F

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Abstracts

Global volumetric display market has experienced significant growth with revenue of approximately USD 275.3 million in 2022, the market is forecast to reach a value of USD 1715.89 million by 2030, displaying a robust CAGR of 25.7% from 2023 to 2030.

Without the use of special glasses, volumetric displays provide a fascinating 3D viewing experience. They are used in medical imaging, gaming, and design to provide more realistic and accurate visualization. Furthermore, they have the potential to be used in holographic teleconferencing and augmented reality, which will drive innovation and market expansion.

The volumetric display market thrives due to the rising demand for immersive 3D experiences in gaming and medical imaging technological breakthroughs and lower production costs. Furthermore, there is a growing interest in augmented reality applications. These factors are driving market expansion and encouraging innovation.

The increasing recognition of 3DEXPERIENCE and cloud-based platforms in the software sector indirectly helps the development of volumetric displays. These platforms place a premium on collaboration, data compatibility, and the easy information interchange between various design and engineering software applications. As more

businesses in various industries use cloud-based solutions like 3DEXPERIENCE, the chance of adopting 3D modeling and visualization tools increases. The increased usage may lead to increased demand for more complex volumetric displays, which enable the creation, visualization, and interaction with 3D models and data in a collaborative, cloud-based environment. As a result, the volumetric display market is witnessing more innovation.

For instance, in July 2023, The Leia Unreal Engine plugin for Unreal Engine 5 (UE5) was introduced by Leia, simplifying the creation of 3D content for the Lume Pad 2, providing accessible 3D experiences without AR/VR eyewear.

Enhanced Diagnostics and Education to Fuel Volumetric Display Market

The use of volumetric displays in medical imaging and scientific visualization contributes significantly to the volumetric display market's growth. These displays offer healthcare workers a significant tool for realistic and immersive 3D renderings of anatomical features, allowing for more exact diagnosis, surgery planning, and treatment monitoring. Similarly, volumetric displays improve understanding of complicated 3D datasets and simulations in scientific research and education. The market expands to fulfill the demand for improved visualization solutions in these vital industries. As a result, more investment, innovation, and breakthroughs in the volumetric display market are made.

For example, in June 2022, Zebra Technologies completed its acquisition of Matrox Imaging, bolstering its position in the expanding automation and vision technology market. It is consistent with Zebra's expanding machine vision offering.

Empowering Architectural and Engineering Design with Volumetric Displays

The growing use of volumetric displays in architectural and engineering visualization is a key contributor to the expansion of the volumetric display market. These displays enable professionals to create, view, and manipulate 3D models with exceptional clarity and depth, enhancing the design and planning process. Architects, engineers, and urban planners benefit from more immersive and interactive experiences, which lead to better-informed decision-making and increased design accuracy. As demand surges in these sectors for improved visualization tools, the market responds with innovation and affordability, broadening the adoption of volumetric displays and solidifying their role as essential tools in architecture and engineering, thus fueling the market growth.

For example, in May 2021, The BYU holography research team created optical trap

displays, which can generate luminous 3D objects and animations in thin air. This technique enables the co-existence of interactive holographic virtual objects in actual space .

Dominance of Static Volumetric Displays in the Market

Static volumetric displays are gaining market domination due to their fundamental advantages. These displays generate 3D images that appear to be notable and fixed in space, resulting in a stable and immersive viewing experience. They have found widespread use in disciplines such as medical imaging, education, and product design, where stable, unchanging 3D representations are critical. Their dependability and user-friendliness make them a popular choice in a variety of industries, resulting in greater adoption and market dominance.

For instance, in June 2022, Looking Glass Factory debuted the world's largest holographic display during the Tribeca Festival's Immersive presentation. The event showcased advances in immersive technology that have influenced the volumetric display market.

North America Dominates Volumetric Display Market

North America's prominent position in the volumetric display market can be attributed to several region-specific factors. The presence of influential technology giants, coupled with a thriving startup ecosystem and world-renowned research institutions, fosters continuous innovation in display technology. Furthermore, substantial investments in research and development initiatives reinforce North America's position as a hub for cutting-edge display solutions. The region's early adoption of advanced visualization technologies, driven by a tech-savvy consumer base and strong purchasing power, fuels a substantial demand for volumetric displays across diverse sectors, cementing North America's leadership in the global volumetric display market.

For instance, in June 2022, Looking Glass Factory introduced the world's largest holographic display, a 65-inch 8K screen that allows for group viewing without the use of glasses. The display generates several 3D viewpoints and has marketing and design applications.

Government Initiatives are Acting as Catalyst

Government initiatives are critical to the success of the volumetric display market. They

can provide financial assistance, research grants, and financing opportunities to academic institutions and research teams, as illustrated by Brigham Young University's holography research group, which was funded by the National Science Foundation in the United States. Such assistance speeds up research and development, allowing for improvements in volumetric display technologies. Furthermore, government authorities can stimulate academic-industry collaboration, ease knowledge transfer, and establish standards and laws, creating a favorable climate for innovation and market expansion. These endeavors will ultimately boost volumetric display breakthroughs and market adoption.

Impact of COVID-19

Before COVID, the volumetric display market was expanding due to rising demand for immersive technologies. The pandemic interrupted supply chains and delayed product releases, affecting market momentum. The market has recovered in the post-COVID context, with a renewed emphasis on virtual communication and distant collaboration. Volumetric displays have sparked the interest of industries such as healthcare, education, and entertainment to deliver 3D content and immersive experiences. The pandemic has sped up adoption, making volumetric displays more relevant in the post-COVID environment and driving market growth.

Future Market Scenario (2024 – 2030F)

Volumetric displays will change education forever, providing immersive learning experiences ranging from virtual science labs to historical recreations.

Volumetric displays will be increasingly used by professionals for interactive 3D modeling and design, facilitating cooperation and decision-making.

Volumetric technology could be used in automotive heads-up displays and infotainment systems to make driving safer and more informative.

Scientists may be able to visualize complex data in 3D via volumetric displays, leading to advancements in a variety of sectors.

Key Players Landscape and Outlook

The volumetric display market is active and highly competitive, with significant

competitors, such as Alphabet Inc., Microsoft Corporation, Sony Corporation, Unity Software Inc., and Lightspace Technologies LTD pushing innovation. These businesses are focused on improving user experiences using immersive 3D technologies, and serve industries as diverse as gaming, healthcare, education, and entertainment. As the market matures, it is positioned for significant growth, driven by rising consumer demand for lifelike graphics and applications in a variety of industries. Collaborations, investments on research and development, and product diversity are projected to be significant strategies as companies compete for market dominance in this promising area.

In October 2023, Leia Inc., a leader in 3D display technology, bought Royal Philips' 3D Display patent portfolio, which includes approximately 500 patents. This enhances Leia's intellectual property position and promotes their Simulated Reality technology for immersive 3D experiences.

In February 2023, Accenture Ventures invested strategically in Looking Glass Factory, a holographic technology startup that has developed a 3D display platform. This investment corresponds to the growing interest in the metaverse, where 3D technology may improve customer experiences and connect the physical and digital worlds.

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