Lab Grown Diamond Market Assessment, By Manufacturing Method [HPHT, CVD], By Nature [Colorless, Colored], By Size [Below 2 Carat, 2-4 Carat, Above 4 Carat], By Application [Industrial, Fashion], By Region, Opportunities and Forecast, 2018-2032F

Market Report | 2025-02-19 | 246 pages | Market Xcel - Markets and Data

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Report description:

Global lab grown diamond market is projected to witness a CAGR of 16.39% during the forecast period 2025-2032, growing from USD 14.28 billion in 2024 to USD 48.10 billion in 2032. The market has experienced significant growth in recent years and is expected to maintain a strong pace of expansion in the coming years.

The global lab grown diamond market is experiencing growth due to several factors such as increasing consumer demand for sustainable, ethical and cost-effective alternative to natural diamonds. As awareness of environmental and ethical issues associated with traditional diamond mining grows, the lab grown diamonds are becoming more popular. These diamonds are considered a better option because they have a smaller environmental impact and are free from the ethical concerns related to mined diamonds.

Lab grown diamonds are produced using advanced technologies such as chemical vapor deposition (CVD) and high-pressure temperature (HPHT), which results in the making of products that have the same physical, chemical, and optical properties as natural diamonds but at a lower cost.

Moreover, the affordability of lab grown diamonds has made them more accessible to a broader range of consumers, particularly younger generations who prioritize sustainability and value. In addition, their customization potential allows consumers to choose from a wide variety of sizes, shapes, and colors, which further appeal to the jewelry sector.

Furthermore, the market's growth is supported by the expanding applications of lab grown diamonds beyond jewelry, including use in industrial tools, electronics, and even quantum computing.

For instance, in December 2025, De Beers, a leading diamond company, increases its focus on lab grown diamonds through its research division- Element Six. Element Six specializes in producing lab grown diamond for industrial applications including drilling, cutting and high tech uses.

Growing Consumer Consciousness Fuels Demand for Lab-Grown Diamonds

Environmental sustainability and ethical concerns are growing demand for the lab grown diamonds. As consumers increasingly seek alternatives that align with their values. Traditional diamond mining has long been associated with significant environmental degradation, which includes deforestation, habitat destruction, and water pollution. The carbon emissions from mining operations further aggravate global climate challenges. In contrast, lab grown diamonds have a significantly smaller environmental footprint as they are produced in controlled environments using advanced technologies that require far less land and generate minimal emissions.

Ethical concerns regarding natural diamonds are also crucial. Diamonds mined in conflict zones are often tied to human rights abuses such as forced labor. These blood diamonds have damaged the image of natural diamonds, which has led to social awareness among consumers to choose conflict-free options instead. Lab-grown diamonds offer a solution by replicating natural diamonds' physical and chemical properties without the ethical baggage.

Moreover, more coverage of these issues in media and documentaries, as well as advocacy campaigns, increases awareness among consumers, making them more aware of these issues when deciding to purchase. The new generations are leading this shift in prioritizing sustainability and ethical sourcing in buying choices, such as millennials and Gen Z. Jewelry brands and retailers have also responded by expanding their lab grown diamond offerings which diversifies the market's revenue streams and assures consistent demand, considerably contributing to its growth.

For instance, in October 2025, Diamond Chemistry announced its ongoing commitment to promoting ethical and affordable alternatives to lab-grown diamonds. The company emphasized the importance of certification to ensure transparency and quality in every purchase, aligning with the growing consumer demand for sustainable and conflict-free alternatives to mining diamonds.

Customization and Versatility is Acting as a Catalyst for Market Expansion

The customization and versatility of lab grown diamond has fueled the expansion of the lab grown diamond market globally. Lab grown diamonds offer various customizations that can be created as per the specific consumer preferences. The ability to tailor size, shape, color, and clarity makes them attractive options for modern buyers who are looking for unique and personalized jewelry.

Customization is one of the major advantages of lab grown diamonds which further fuels their market demand. Consumers can choose from a wide variety of cuts and colors, which includes rare hues like blue, pink, and yellow. All these wide variety of colors are difficult and expensive to find in natural diamonds. This flexibility caters to the growing trend of personalized jewelry, where buyers want pieces that reflect their style, personality, or special occasions.

Moreover, lab grown diamonds allow jewelers and designers to experiment with innovative designs without the shortage or expensive price of a natural stone. This openness has resulted in a massive surge of unique and trendy jewelry collections, especially engagement rings, wedding bands, and fashion jewelry.

Furthermore, the lab grown diamonds' versatility is not just restricted to jewelry. Due to their quality and affordable nature, lab grown diamonds are also suitable for multiple industrial and technological applications that involve precision tools, semiconductors, and optics.

As consumers increasingly value individuality and innovation, the customization and versatility of lab grown diamonds position them as a preferred choice which further drives lab grown diamond demand. This diversification diversifies the market, assuring long-term growth in traditional and emerging markets.

For instance, in March 2024, Helzberg Diamonds announced the launch of "reve", a lab grown diamond collection that is 100% third-party rated and certified for sustainability by SCS Global Service under the SCS-007 standard, but also showcases the adaptability of lab grown diamonds in meeting diverse consumer preferences.

Chemical Vapor Deposition (CVD) is Leading the Lab Grown Diamond Market Share

Chemical vapor deposition (CVD) has cemented its dominance with strong statistics in the market due to its ability to produce high-quality diamonds with precision and consistency. The CVD process involves breaking down carbon-rich gases in a controlled chamber, where atoms deposit layer by layer onto a diamond seed, which forms a pure diamond crystal. This method offers significant advantages over the high-pressure temperature process, which makes it a preferred choice for both jewelry and industrial applications.

One of the key strengths of CVD is the superior quality of diamonds it produces. These diamonds typically have fewer inclusions and impurities which enhances their clarity and appeal in the jewelry market. Moreover, the CVD process allows for greater

customizations which enable the production of diamonds in various shapes, sizes and even in rare colors. This adaptability meets the rising demand for personalized and unique jewelry pieces.
CVD is also more energy-efficient and environmentally friendly when compared with HPHT which further aligns with consumer preference for sustainable products. The process has a smaller carbon footprint which resonates with environmentally conscious buyers.
Furthermore, CVD diamonds are highly valued in industrial sectors, including electronics and optics, where purity and precision are crucial. The CVD process's scalability and cost-effectiveness further strengthen its market dominance, as it allows for large-scale production while maintaining quality.
For instance, in September 2024, South Korea-based lab-grown diamond manufacturer KDT Diamonds received approval from the Indian Ministry of Commerce & Industry to establish a lab-grown diamond manufacturing and polishing plant in India, focusing on the chemical vapor deposition (CVD) method. This strategic expansion underscores the growing dominance of CVD technology in the lab grown method.
Asia-Pacific Dominates Lab Grown Diamond Market Share
Asia-Pacific is exerting its dominance in the lab grown diamond market due to its extensive manufacturing capabilities, cost efficiencies, and increasing consumer demand. Countries such as China and India play a central role in the region's leadership, with China emerging as the largest producer of lab grown diamonds and India excelling in cutting and polishing these gems.
China's dominance is due to its advanced infrastructure and adoption of chemical vapor deposition (CVD) and high-pressure high-temperature (HPHT) manufacturing methods. These technologies allow for high volume production at competitive costs which makes Asia-Pacific a global hub for lab grown diamond manufacturing. Moreover, India complements this with its expertise in diamond cutting and polishing which is supported by its skilled labor force and long-standing industry presence.
Additionally, the growing awareness amongst consumers regarding ethical and sustainable products is also derived from growth in this region. China, India, and Japan markets are going all out in demand for lab grown diamonds as there has been a sudden rise of these younger, environmentally conscious customers seeking conflict-free alternatives. The cost-effectiveness of lab-grown diamonds makes them much more accessible in price-sensitive Asia-Pacific markets.
Furthermore, the region's robust export network allows lab grown diamonds to be supplied globally, which further solidifies its position in the global market.
For instance, in February 2024, the Indian government allocated USD 283 million to establish the India centre for lab grown diamond at the Indian Institute of Technology Madras (IIT Madras). This initiative aims to develop Indigenous technologies for lab grown diamond production and explore their application beyond jewelry.
Future Market Scenario (2025 – 2032F)
- Growing awareness of the environmental and social impacts of traditional diamond mining has led consumers, particularly millennials and Gen Z, to prefer lab-grown diamonds as a responsible alternative, which will boost the demand for lab grown diamonds.
- Improvements in production techniques have enhanced the quality and reduced the costs associated with lab grown diamonds, further driving their adoption in various applications, including jewelry and industrial uses.
- Lab grown diamonds are cheaper than natural diamonds which makes them more accessible to a broader audience.

Key Players Landscape and Outlook
Continuous innovation characterizes the landscape of lab grown diamond market globally, as the companies compete to outperform one another in terms of sustainability ethical practices, and product differentiation. The market prognosis remains positive due to increased environmental sustainability, ethical concerns, customization, and versatility. Lab grown diamond manufacturers are focused on advancing the technology, design flexibility, and competitive pricing, which will likely define the industry's future. Collaborations and developing technologies are projected to increase competition in this fast-paced market.
For instance, in November 2024, Fenix Diamonds and Dholakia Lab-Grown Diamond, two leading players in the lab-grown diamond industry based in New York, announced a strategic partnership to acquire Israeli diamond grower Lusix for USD 4 million.

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