

Light Fidelity Market Size, Share, & Trends Analysis Report By Component (LED, Photodetector), By End-use (Automotive, Retail, Government), By Region, And Segment Forecasts, 2023 - 2030

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Abstracts

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Light Fidelity Market Growth & Trends

The global light fidelity market size is expected to reach USD 7,757.3 million by 2030, growing at a CAGR of 51.0% from 2023 to 2030, according to a new report by Grand View Research, Inc. The growth of the Light Fidelity (Li-Fi) market can be attributed to the factors such as high-speed data transfer, high security, energy efficiency, no spectrum shortage, and no interference with radio frequency RF spectrum.

Li-Fi is a wireless communication technology that uses the visible light spectrum to transmit data. Li-Fi uses light waves that cannot penetrate walls like radio frequency waves used in Wi-Fi. This makes Li-Fi more secure, as it is difficult to intercept the data transmitted through Li-Fi. Additionally, as the number of network users increases, the RF spectrum is likely to get crowded, lowering the speed of Wi-Fi. Li-Fi eliminates this issue by leveraging the visible light spectrum instead of the RF spectrum, propelling its adoption.

Li-Fi uses LED lights to transmit the data through their modulation. Since LEDs are already widely used in lighting, Li-Fi can be integrated with the existing infrastructure without requiring additional energy consumption, making them an energy-efficient option. Moreover, it has the potential to transmit data at extremely high speeds, up to several gigabits per second, which is much faster than traditional Wi-Fi. This makes Li-

Fi a faster and more reliable option, expected to drive the market's growth over the forecast period.

Since Li-Fi uses light signals, it can only travel within the line of sight of the light source, limiting the range. It also means that Li-Fi signals cannot travel through windows. Hence, end-users must install individual Li-Fi systems over several places to cover the whole area. Moreover, Li-Fi technology is not currently compatible with existing devices such as smartphones and laptops, so additional hardware is required to access Li-Fi. These disadvantages can prove to be a hindrance to the market's growth.

Light Fidelity Market Report Highlights

The LED segment is expected to witness significant growth over the forecast period. LEDs can be rapidly switched to ON and OFF states to create a digital signal, which is driving their adoption in the manufacturing of Li-Fi. Additionally, they are highly energy efficient, are cheaper in costs, have a longer lifespan, and are compatible with the existing lighting infrastructure, thus driving the segment's growth

The healthcare segment is expected to witness significant growth over the forecast period. Li-Fi provides multiple benefits in the healthcare industry including higher speed, improved security, reduced interference, and energy efficiency. Additionally, since it does not use RF spectrum, it reduces radio frequency pollution in hospitals, which is driving the adoption of Li-Fi in hospitals, thereby propelling the segment's growth

Asia Pacific is anticipated register significant growth over the forecast period. The regional growth can be contributed by a broader customer base and a substantial number of Li-Fi providers in the region. Encouraging government initiatives for digitization and adoption of Li-Fi also bode well for the market's growth

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