Uv Led Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 100 pages | Mordor Intelligence

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Report description:

The UV LED Market is expected to register a CAGR of 23.2% over the forecast period. UV LED lighting offers longer lifetimes, greater reliability, and smaller sizes, enabling system designers maximum design freedom. Radiations with wavelengths from 180 to 280 nm are referred to as UV-C, and this is the range needed to be used effectively in decontamination, disinfection, and sterilization.

Key Highlights
The critical advantage UV LEDs have over UV lamps is that they have a narrow band compared to UV lamps. The risk of exposure to the wrong wavelength gets reduced significantly. The applications, such as printing and medical operations, benefitted the most during the initial years.
The printing solution market is expected to witness a considerable increase in demand, owing to constant developments such as partnerships and innovations in the market. In January 2021, RMGT announced a UV LED partnership with GEW. RMGT adopted the high-performance GEW product as its definitive new solution in the ongoing technology improvement after months of evaluating all significant UV LED manufacturers.
UV LED lighting provides the user with a much more energy-efficient and environmentally friendly solution. With reduced maintenance, small compact sizing, and no preheating requirement, it is a more cost-effective and convenient option. UV-C LED lighting is more sustainable than traditional, providing evenly dispersed heat, instantaneous preheating, a concentrated light source, and durable housing. With such a flexible, user-friendly implementation, they can be integrated into various systems and improve the efficiency of the disinfection process.
Additionally, the electrical-to-UV-C conversion efficiency is already lower than that of mercury lamps. They consume substantially low power, making UV LEDs more energy efficient. UV LEDs can also be turned on and off instantly, whereas mercury tubes have a warm-up period before they reach full power, which means their energy consumption is less controllable.
With the COVID-19 outbreak, the ultraviolet LED market is witnessing significant growth in demand due to the rapid usage of germ-killing properties and disinfecting surfaces. Several countries, such as China and the United States, use ultraviolet lamps to clean surfaces and prevent people from getting infected. According to Photonics Media, the pandemic has increased the demand

for ultraviolet LEDs that disinfect spaces.

UV LED Market Trends

Sterilization to Hold Significant Market Share

The scope for a UV LED is becoming abundant in sterilization applications, as it is being proved to be the cheapest way to provide safe drinking water across the globe. This also offers monetary benefits to the players with increasing consumption.
The growing concern for water purity in developed and developing nations presents a substantial growth opportunity for ultraviolet LEDs to be adopted by consumers in both residential and commercial sectors. The rise in the world population and the scarcity of pure water have attracted many UV LED manufacturers toward the untapped water purification application market.
According to (IUVA) (International Ultraviolet Association), the portion of the ultraviolet spectrum that effectively works against germs in the water and air ranges between 200nm-300nm. This corresponds to the UV-B range, often to UV-C, and is sometimes termed germicidal ultraviolet light. Within such a range, ultraviolet light can penetrate the cells of microorganisms and disrupt the DNA, eliminating the ability to multiply and cause diseases.
UV germicidal irradiation has been considered one of the essential processes in the decontamination and disinfectant industry for decades. This process utilizes short-wavelength UV-C light to kill the microbes from 100 to 280 nm, but the effective wavelength range for decontamination is between 250-260 nm.?
UV LED is increasing significantly for sterilization applications, as it is considered of the cheapest ways to provide safe drinking water globally. The products would offer monetary advantages to companies and increase consumption.
The considerable investments in the sterilization sector further contribute to the market growth. GERMITEC, a global healthcare pioneer, in May 2022, commercialized and created high-level UV-C disinfection systems for ultrasound probes that essentially simplified health providers' time tasks, safety, and responsibilities and announced the completion of a EURO 11 Million fundraising round.

Asia-Pacific to Witness Significant Growth

The Asia-Pacific is expected to witness significant market growth over the forecast period. Several vendors based in Japan and China are making considerable investments in the expanding applications of UV LEDs.
The prominent ink manufacturers operating in China (like Toyo Ink Co. Ltd, DIC Corporation, and Japanese chemical companies operating in China) highlighted the increasing demand for ultraviolet inks, owing to the environmental advantages and the faster curing rates. For instance, the application of ultraviolet LEDs are materials (such as aluminum foil, paper, and plastic) package printing in end-user industries, such as wine and cigarette) ?
The Chinese central government expects China's automobile production to reach 35 Million units by 2025. With the increasing growth in automobile production, the need for ultraviolet LED is expected to increase owing to ultraviolet applications in painting, etc. ?On the contrary, ultraviolet LEDs last more than ten times longer, with lifespans of over 10,000 hours. This means UV LED decontamination can be run overnight to decontaminate more persistent pathogens.
Japan is considered a vast hub for technological advancements and hosts an active research and development base for efficient and newer UV-curable adhesives. Recently, novel UV-curable adhesive products are finding applications in the country's electrical, packaging, and automotive sectors. ?
Several vendors based out of Japan are making considerable investments in the expanding applications of ultraviolet LEDs, like sterilization and disinfection, in addition to the expansion activities.?
South Korea has comparatively low consumption levels of UV-curable resins, which is still prominent in the production phase. LED

vendors based out of South Korea are expected to launch new series of UV-C LED products shortly. UV-C LEDs, which are challenging to manufacture technologically, are expected to significantly contribute to the market's growth in the Asia-Pacific region.?

UV LED Market Competitor Analysis

The UV LED Market is competitive in nature. The market is highly fragmented. Some of the significant players in the market are Lumileds Holding B.V, Signify Holding, Nordson Corporation, GEW (EC) Limited, Seoul Viosys Co. Ltd, and Nichia Corporation.

March 2022 - Signify collaborated with Perfect Plants on grow lights. Two new climate cells are equipped with dimmable Philips GreenPower LED toplighting compact to grow lights and the Philips GrowWise Control System, providing a light system that can be used effectively and efficiently in every growth phase. The company is competing for a Dutch license for the legal cultivation of cannabis and recently invested in facilities for research and production. Signify supplies flexible GreenPower LED systems and specialist knowledge.

Additional Benefits:

The market estimate (ME) sheet in Excel format
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