Oled Microdisplay Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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Report description:

The OLED microdisplay market is expected to register a CAGR of 27.69% during the forecast period. OLED microdisplays offer a compact size with high pixel density. The market is witnessing growth in demand owing to the increased use of microdisplays in devices such as smartphones, television, etc. Moreover, low entry barriers and growing avenues of revenue are the prominent attributes in the OLED microdisplay market.

Key Highlights
The display industry has advanced from the substantial cathode ray tube (CRT) to the organic light-emitting diode (OLED), owing to the different display needs of various industries. Advancements in computer sizes range from mainframes to palmtops, and now to a display frame that is less than an inch, diagonally. These frames are generating the need for microdisplay technologies. Due to power, contrast, size, and color-space advantages, NTE applications represent the largest opportunity for OLED microdisplays. This relates to electronic viewfinders (EVF) and personal viewers (PV). Currently, there are three prominent markets for near-eye OLED micro-displays. The consumer market encompasses video and VR glasses and EV, industrial covers AR smart glasses for logistics, defense market targets AR helmets for pilots.
OLED technology offers high resolution, low latency, higher contrast, and picture quality than LCOS, DLP, and LCD technologies available in the market. The demand for OLED microdisplays is increasing. For example, companies offering 4K VR headsets, 3D VR, and smart glasses for video games, prefer OLED microdisplays over other available technologies.
The low-work function of metallic cathodes and organic materials consisting of OLEDs is highly sensitive to atmospheric moisture and oxygen. Water and oxygen penetrate through plastic substrates to form dark spots and edge shrinkages in OLEDs by oxidizing the as-deposited electrodes or corroding the functional organic layers. This results in device degradation and reduced light output. Such limitations are challenging the market growth.
The COVID-19 pandemic has significantly hampered the global OLED microdisplay market. The global supply chain for the parts

and components used in OLED microdisplay systems has been severely disrupted due to the lockdown imposed in a number of nations to stop the COVID-19 virus' spread. However, as the situation is returning to normal, there is an exponential rise in demand for OLED microdisplays, which propels market expansion.

OLED Microdisplay Market Trends

Consumer Electronics Segment is Expected to Hold Significant Market Share

The rising product utilization is creating a positive outlook for the market in the consumer electronics industry worldwide. Also, to provide a better gaming experience, OLED microdisplays are frequently used in digital cameras and virtual reality headsets that are compatible with various devices, including smartphones. Accordingly, the market growth is aided by consumers' shifting preferences for smaller electronic devices with displays with clearer images and a wide field of view.
Additionally, many technological advancements, including the release of ultra-high-definition and high-definition (UHD/HD) OLED microdisplays that offer high optical performance and excellent contrast ratio, are boosting the market growth.
Also, the microdisplay market has benefited from the innovation and development of digital cameras. The OLED microdisplay has gained market share thanks to consumer demand for a display with a clearer image, a wide viewing angle, and the ability to overcome limitations. Consumers' rising disposable income increased the demand for cutting-edge and upscale goods. These products now use entertainment as a medium, which reflects the adoption of new display technologies. Digital cameras and other consumer electronics, such as virtual reality, are becoming more widely used.
The use of consumer electronics is expanding, including VR headsets. For a better gaming experience, kids use VR headsets that are more frequently compatible with smartphones and other gadgets. Besides new smartphones, manufacturers like Samsung and HTC also sell VR headsets.
During the forecast period, the market is predicted to grow favorably due to the rising popularity of VR gaming headsets and a shift in consumer preferences toward smaller, more portable electronic devices.
Additionally, the percentage of 5G smartphones is expected to increase in the upcoming years. The penetration rate of OLED folding mobile phones will grow as display technology develops. The smartphone penetration rate would increase as smartphone brands launch new flagship folding devices regularly, driven by improved specifications and more affordable pricing. According to Ericsson, the number of smartphone subscriptions globally surpasses six billion in the current year. It is forecast to grow further by several hundred million in the next few years.

Asia Pacific is Expected to be the Fastest Growing Market

The Asia-Pacific is one of the prominent regions for the market studied due to the rising urbanization and technological advancements in display screens. There is a massive potential for OLED microdisplays in Asia-Pacific due to the presence of major players across the region, increasing adoption of advanced technology, increasing capital investments, and rapidly growing economies.
China has emerged as the leading destination in the Asia-Pacific's micro-OLED display market. The large customer base, along with investor-friendly regulations, is attracting new players to enter the market. The increasing demand for advanced consumer electronic products and innovative display technologies are also creating a favorable market scenario for the growth of the market studied.
Furthermore, the increasing demand for OLED displays is also encouraging new and existing vendors to enter the market to increase their investment in new manufacturing facilities. For instance, in June this year, BCDTEK, a leading OLED microdisplay developer, announced that it would construct a 12-inch OLED microdisplay production site in Huainan, China, according to the

company, would have a production capacity of 20,000 monthly substrates.
The increasing demand for HMDs and HUDs is expected to propel the market in Japan as Japan also comprises major suppliers of HMDs and HUDs. Automotive, consumer, industrial, and enterprise are key industries in Japan in which microdisplay-based devices are used. Major microdisplay providers in Japan include Seiko Epson, Sony, and Citizen Finedevice.
Apart from the countries like China, Japan, and South Korea, the growth of the electronics sector across countries such as Taiwan and India is also favoring the market's growth. Furthermore, the increasing disposable income among the middle-class population across these countries is also creating new opportunities for the market studied.

OLED Microdisplay Market Competitor Analysis

The OLED microdisplay market is highly fragmented with the presence of major players like Microoled SA (Photonis Technologies SAS), Yunnan Olightek Opto-electronic Technology Co. Ltd, Winstar Display Co. Ltd, Emagin Inc., and Kopin Corp. Players in the market are adopting strategies such as partnerships and acquisitions to enhance their product offerings and gain sustainable competitive advantage.

In August 2022, Micro OLEDs supplied by Sony were used in Xiaomi's new camera and data glasses, "Mijia". The display supplied by Sony offers a maximum brightness of 3,000 nits and a resolution of 3,281 PPI. MijiaGlasses camera is an AR HMD device with a Snapdragon 8 chipset and dual cameras with 5X optical zoom.

Additional Benefits:

The market estimate (ME) sheet in Excel format
3 months of analyst support

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