

ElectroniCast Consultants



OLED General Lighting Global Market Forecast (2011-2021)

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This ElectroniCast report provides a 2011-2021 market forecast of the worldwide consumption of Organic Light Emitting Diodes (OLEDs) used in General Lighting applications. The OLEDs defined in this report are often referred to as OLED devices, OLED light sources, OLED panels or sub-panels, and OLED tiles.

OLED Description An organic light-emitting diode (OLED) is a light-emitting diode (LED) in which the emissive electroluminescent layer is a film of organic compounds, which emit light in response to an electric current. This layer of organic semiconductor material is situated between two electrodes. Generally, at least one of these electrodes is transparent.

General Lighting Applications The definition for General Lighting in this particular study report is – lighting that is used to *provide the main illumination of an area*. ElectroniCast includes Directional Lighting, Supplementary Lighting and Architectural Lighting in the General Lighting category; however, “architainment” lighting, such as large display units are not considered in the General Lighting segment. OLED panels/tiles used in vehicles, wearable/clothing, signage, displays, signals, decorative Christmas/holiday lighting are not included in the market forecast data for this study.

The increasing development of OLED technology in General Lighting is indeed encouraging, driven by the architectural lighting industry; therefore, full cooperation and partnerships with between the OLED device manufacturers and the architectural industry is of paramount importance, based on analysis by ElectroniCast Consultants. Since OLEDs can be fashioned onto large surfaces, they are a viable alternative to fluorescent tubes for building lighting or other applications.

The United States Department of Energy (DOE) estimates that lighting for buildings accounts for more than 20 percent of U.S. energy use. Over the next 20 years, the agency estimates that widespread adoption of LED and OLED lighting could reduce electricity demands 60 percent and prevent almost 260 metric tons of carbon emission.

OLED Level Quantified in the ElectroniCast Study Below in particular, are three levels (or “food chain”) pertaining to the OLED marketplace. For the purposes of this ElectroniCast study, we quantify and provide a market forecast for “Level 2”

Level 1 – Organic Materials (layers), anode and cathode

Level 2 – OLED (without electronics and driver)

Level 3 – OLED Module, one or more panels with control circuits, other value added components

OLED devices will require value-added components, complete with the electronics (plugs and wires), driver integrated circuits, and possible structural packaging (cap, metallic/plastic panel frames). Also, these packaged/equipped OLED modules will typically be available as part of other value-added product, such as lamp-holders/ fixtures. Therefore, it is important to note that this market forecast data only quantifies the OLED device (sometimes referred to as a tile, light source, panel or sub-panel) and not the complete module, lamp/fixtures or other value-added product(s).

This report provides the market data by the following regional segments and sub-regions:

- Global (Total)
 - America
 - United States and Canada
 - Latin America
 - EMEA
 - Northern Europe
 - Southern Europe
 - Western Europe
 - Eastern Europe
 - Middle East and Africa
 - APAC
 - People’s Republic of China (PRC)
 - Japan
 - Republic of Korea (ROK)
 - Rest of APAC

This report provides the 2011-2021 forecast by the following functions:

- Consumption Value: US\$, Million
- Quantity: Number of square meter (m²) in Millions
- Average Selling Prices: ASP US\$, per square meter

ElectroniCast analysts performed interviews with authoritative and representative individuals in the lighting industry, plus – R&D and manufacturing, from the standpoint of both suppliers and users of lighting general illumination products. The interviews covered issues of technology, R&D support, pricing, contract size, reliability, documentation, installation/maintenance crafts, standards, supplier competition and other topics. The interviews were conducted principally with:

- Lighting Designers/Installers concerns, engineers, marketing personnel and management at manufacturers of OLED and LED lighting and related equipment, as well as other lighting technologies.
- Design group leaders, engineers, marketing personnel and market planners at major users and potential users of OLEDs and LEDs and lighting.
- Other industry experts, including those focused on standards activities, trade associations, government and investments.

Beyond the “light-bulb” Mentality The ElectroniCast market opportunity analysis (MOA) shows the OLED panel market should *not* be limited to (only) lamps and typical (conventional) lamp fixtures for general lighting (table lamps, wall/ceiling fixtures). ElectroniCast assumes that the OLED panel general-lighting market will grow beyond the “light-bulb” mentality to a broad base of applications, which currently may not even be in the idea-stage. Applications that have been mentioned by industry participants include (but not limited to) OLED incorporated into the following applications; however, to fall under the General Lighting definition the illumination of an area must be the primary purpose of the OLED lighting source:

- Windows/Skylights
- Wall panels or wall panels; Mirrors with light function
- Flooring/Steps-stairs
- Furniture, structural and roadside lighting
- Other (almost endless possibilities)

According to ElectroniCast, there is enough overall OLED interest and activity in 2011 by substantial leading lighting competitors with existing capable manufacturing capabilities, working with evolving technology, to pushing for “mass-production”. Also, industry players have been very active in establishing the required strategic supplier and IP agreements, as well as progressing in sales/distribution channel (planning) strategy.

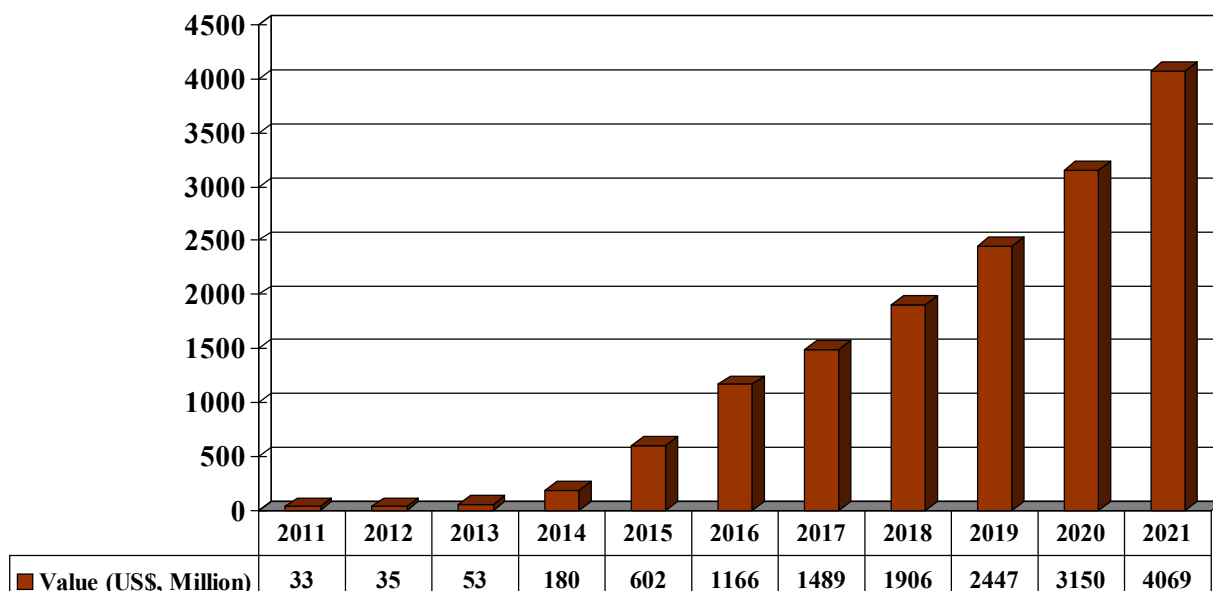
Therefore, the stage is set for a “Build-it and They Will Come” marketing strategy. The question is, how many customers will come and when. At the same time, other (competing) lighting solutions already work, have substantial customer base and

established sales/distribution channels, occupying store footprint; therefore, OLED will need to find unique style/designs to provide a common-sense approach to providing lighting solutions that the other technologies do not currently provide.

ElectroniCast estimates that in 2011, the worldwide consumption value of General Lighting OLEDs will reach \$33.46 million; consumption value is forecast to increase at an average annual growth rate of 103.4 percent to nearly \$1.17 billion in 2016. From 2016-2021, the total consumption value of General Lighting OLEDs is forecast an increase 28.4 percent per year, reaching nearly \$4.07 billion in the year 2021.

The vast majority of the consumption of OLEDs in 2011 is in R&D, product prototype and product samples (kits), based on a relatively high average price. As the year 2012 rolls around, the average selling prices (ASPs) are forecast to decrease substantially as the devices become more readily available to the open market in a competitive environment. Since the ASPs are forecast for such a steep decline, some of the overall consumption values for 2012 are forecast to be nearly flat compared to 2011. Generally, the consumption value is forecast to increase with strongly rising quantity growth partially offset by declining average prices.

**OLEDs Used in General Lighting
 Global Market Forecast (Value Basis, US\$ Million)
 Source: ElectroniCast Consultants**



Market forecast data in this study report refers to consumption (use) for a particular calendar year; therefore, this data is not cumulative data.

OLED General Lighting Market Analysis & Forecast

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