

ElectroniCast Consultants



LEDs Used in Medical and Biophotonic Devices Global Market Forecast and Analysis (2010-2017)

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This report by ElectroniCast Consultants provides the research findings of our study of the worldwide consumption of packaged Light Emitting Diodes (LEDs), in Medical and Biophotonic Devices. This report provides global market data covering the years 2010-2017.

The market data are segmented into the following geographic regions, plus a Global summary:

- North, Central and South America (America)
- Europe, plus Middle Eastern and African countries (EMEA)
- Asia Pacific (APAC)

The LED market is segmented into the following sub-application categories:

- Sensing/Detection and Analytical/Monitoring
- Photo-therapy/Sanitation/Cell Regeneration/Curing
- Instrumentation Light Source and Imaging
- Operating Theater (OT)/Surgical/Dentistry Lighting

The market data for are also segmented by the following colors (type):

- Red
- Green
- Blue
- White
- Multiple Color/Multiple Chip
- UV and Other

Compared to previous ElectroniCast studies on this subject matter:

Previous studies included the use LEDs for test/measurement, which were not necessarily consumed in medical and/or biophotonics; however, this study report only covers medical and/or biophotonic applications (devices).

The term biophotonics denotes a combination of biology and photonics, with photonics being the science and technology of generation, manipulation, and detection of photons, quantum units of light.

Biophotonics has become the established general term for all techniques that deal with the interaction between biological items and photons. This refers to emission, detection, absorption, reflection, modification, and creation of radiation from biomolecular, cells, tissues, organisms and biomaterials. Areas of application are life science, medicine, agriculture, and environmental science.

Similar to the differentiation between "electric" and "electronics" a difference can be made between applications, which use light mainly to transfer energy via light (such as therapy or surgery) and applications which excite matter via light and transfer information back to the operator (like diagnostics). In most cases the term biophotonics is only referred to the second case; however, in this ElectroniCast study, we cover both uses of the LED packaged chips in medical and/or biophotonics:

- Use light mainly to transfer energy via light (such as therapy or surgery)
- Applications which excite matter via light and transfer information back to the operator, such as diagnostics

LED Level Quantified in the ElectroniCast Study Below, are four levels (or "food chain") of LEDs. For the purposes of *THIS* ElectroniCast study, we quantify and provide a market forecast for "Level 2"

Level 1 - The chip or die

Level 2 - The LED component (component-level bulb)

Level 3 - LED array; may include optics, heat sink (consumer-level lamp/bulb)

Level 4 - LED luminaire (light fixture/light fitting)

This report provides the 2010-2017 market data by the following functions:

- Consumption Value (US\$, million)
- Quantity (number/units)
- Average Selling Prices (ASP \$, each)

Announcement: LEDs in Medical/Biophotonic Devices – Market Forecast

The value is determined by multiplying the number of units by the average selling price (ASP). The ASPs are based on the price of the packaged LED at the initial factory level (prior to FOB – Free On Board). The value is then based on the end-use application and the end-use region.

This study is based on analysis of information obtained continually over the past several years, but updated through the middle of May 2011. During this period, ElectroniCast analysts performed interviews with authoritative and representative individuals in the following sectors relative to the use of LEDs: medical, science, biophotonic, display industry, test/measurement, instrumentation, R&D, university, military defense and government. The interviews were conducted principally with:

- Engineers, marketing personnel and management at manufacturers of LED test/measurement & medical science equipment/devices and related equipment, as well as other technologies
- Design group leaders, engineers, marketing personnel and market planners at major users and potential users of LEDs and test/measurement & medical science equipment/devices
- Other industry experts, including those focused on standards activities, trade associations, and investments.

The interviews covered issues of technology, R&D support, pricing, contract size, reliability, documentation, installation/maintenance crafts, standards, supplier competition and other topics.

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