

Global Luminaires

Lighting Market Analysis and Forecast 2020



 **Strategies Unlimited.**

61 Spit Brook Rd
Nashua, NH 03060 USA

Email: strategies-u@endeavorb2b.com

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Background of the LED Lighting Market

■ Regulations & Standards

- ANSI/UL 8750 was published to create a global platform of safety requirements for LED lighting equipment.
- The US Department of Energy launched a Commercial Product Testing Program as part of its Solid-State Lighting (SSL) project to foster the developing market for high-performance SSL products.
- ENERGY STAR has helped with LED adoption by allowing manufacturers to certify their products according to certain standards that qualify them for government rebates and lower the cost of their products.
- Zhaga is a consortium of companies that sets standards for interfaces between different components of LED luminaires.





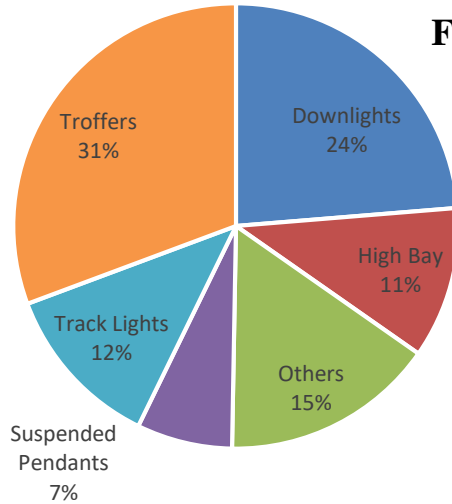
Market Summary

- Lighting designers, specifiers, architects, and engineers are becoming more comfortable recommending LED luminaires for new construction, but they do look for products where manufacturers can offer a product warranty.
- While ASPs for LED luminaires are still high, the controls options available with integrated LED luminaires make them attractive for long term energy saving practices.
 - With standards such as California’s Title 24, smart lighting could become standard for commercial new construction and large renovations/retrofit projects.
 - Aside from lighting monitoring options, LED luminaires can offer customers the ability to change the correlated color temperature.
 - Pairing controls with fluorescent lighting may in some applications end up being more expensive than pairing controls with LED luminaires.
 - When it comes to controls for indoor applications, customers are most comfortable with and interested in the gradual dimming capabilities offered in lighting solutions over other capabilities like providing data collection capabilities to monitor lighting behavior.

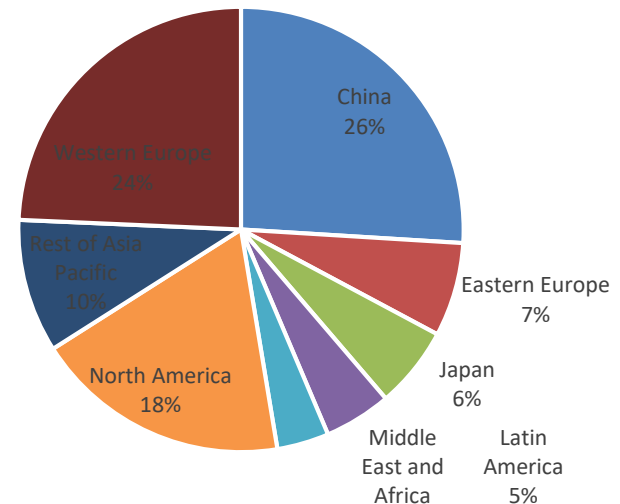


Market Review

2019 Revenue Distribution (\$87.9 Billion) by Luminaire Form Factors



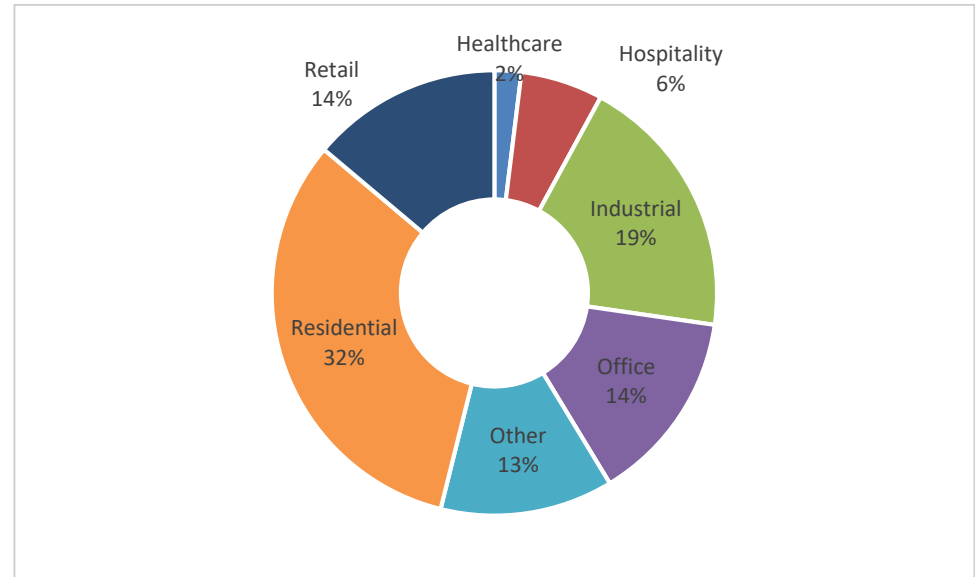
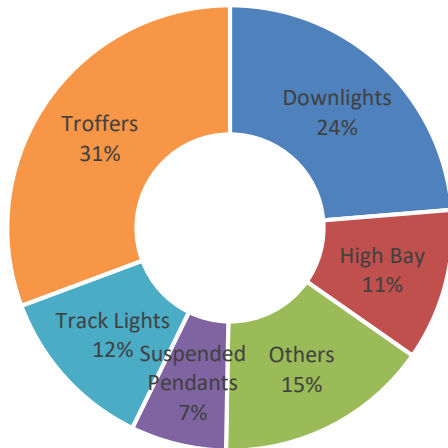
2019 Revenue Distribution (\$87.9 Billion) by Region





Global Luminaire Form Factors

2019 Revenue by Luminaire Form Factor and Application

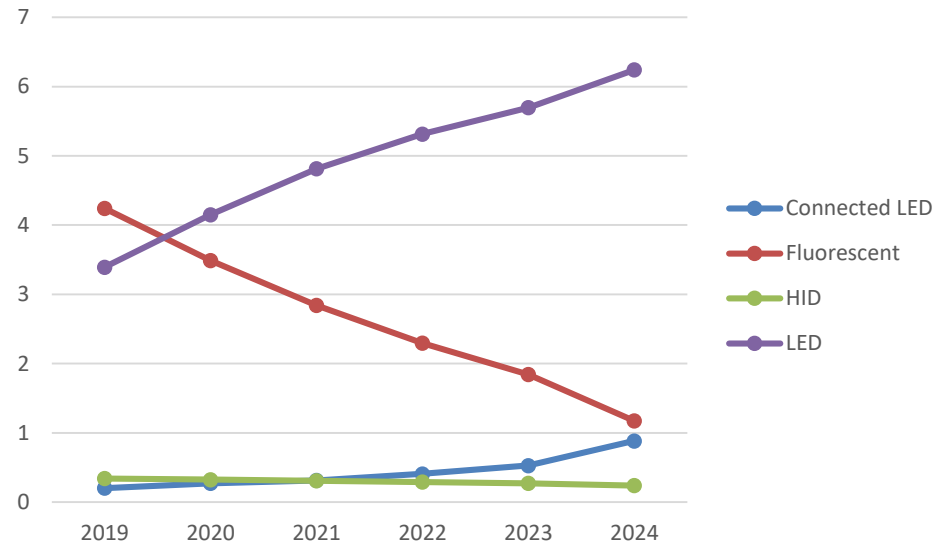


The total global luminaire market was evaluated to be \$87.9 billion in 2019. The major luminaire form factors were divided as shown in the above figure. 24% of the total market is due to sale of downlights, 31% due to troffers, and 15% from other luminaire form factors. The other luminaire form factors include architectural lighting, decorative, undercabinets, wallbrackets, outdoor area, site lighting, etc.



High Bay Shipments

Luminaire Unit Shipments for High Bays (M)



- In 2019, the ASP of LED high bay luminaires was evaluated at \$313. Prices at this level made LED high bays attractive when compared to fluorescent high bay luminaires. ASP of LED high bays dramatically decreased from \$385 in 2015.
- High bay applications have historically been a difficult area for LEDs to penetrate due to their high price point and the high lumen output requirements. In 2016, as ASPs dropped, a litany of new products were put on the market, proving that the market was looking more attractive to manufacturers. Total revenue shipments for high bay luminaires was calculated to be \$1 billion for 2019. Unit shipments for fluorescent and HID lighting are forecasted to decline at a CAGR of -23% and -7%, respectively, from 2019 through 2024. Unit shipments of LED high bay luminaires and connected LED luminaires are expected to increase with a CAGR of 13% and 34%, respectively.



Western Europe

- Of the total European luminaire market, around 74% of the market demand can be attributed to Western Europe.
- Western Europe is a large region with an installed luminaire base of more than 4 billion units.
- The region is mostly developed and is not expected to experience large new construction projects in the near future.
- With strict energy conservation targets as described in Europe's 20/20/20 climate change initiative and expensive energy costs, the region is expected to favor adoption of LED technologies, even with its high price points.
- Lighting behavior and assumptions are similar to what is specified for the North American region.