

SUPPLY CHAIN

LIGHTING AND LED TECHNOLOGY

The LED luminaire market has seen a rapid rise in demand and production over the past twenty years. The global revenue for LED luminaires was around \$88 Billion in 2019 and LED lighting accounted for almost 60% of that market. Only 18% of unit sales were in North America, as Asia and Europe have been faster in adopting the technology. LED technology is rapidly growing, which will result in an expected decline and phase out of fluorescent and incandescent lighting.

MEET THE TEAM

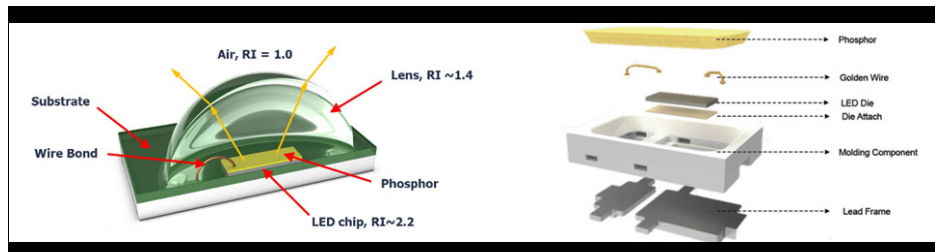
Michael Verbeek

Michael serves as SourceBlue's Lighting Products Supply Chain Product Manager



Michael specializes in analyzing and dissecting worldwide supply chains to find innovative and creative solutions that are best suited to client needs. With 6-years of experience in hospitality and event management, Michael learned to build and foster vendor relationships. By engaging directly with manufacturers, he is ensuring the needs and wishes of the client are met.

Michael runs SourceBlue's own line of Solidian™ light fixtures. Solidian™ utilizes industry leading technology to develop custom solutions for clients. The brand strives to offer clients the best value proposition, by removing as many non-value add steps as possible to ensure the client receives the highest quality products at the best possible price.



LED MANUFACTURING FAST FACTS

- » **LEDs (Light-emitting diodes)** – are manufactured in four major platforms, High-Power, Mid-Power, Chip on Board (COB) and Chip Scale Packages. Cost Drivers for LEDs are the Die, Packaging, and Phosphor.
- » **DIE** – Light emitting semiconductor device.
- » **Phosphor** – Simplified Phosphor is required to make LED lighting operational. Phosphors convert blue light into white light and depending on the Phosphor utilized the color rendering is affected.
- » **LED** – Luminaires are the assembled product consisting of LEDs, printed circuit boards, optics, drivers, housing and overhead. The main manufacturing cost drivers are the housing, but it will depend on the product. An exterior luminaire will have less cost related to the optical system than a downlight, while for exterior light fixtures the housing will have a higher relative cost than the optics.
- » **Drivers** – Convert AC to DC power and enable dimming capabilities. Choosing the driver is important when designing an LED light fixture.

LED BENEFITS AND DRAWBACKS

- » **Lifetime & Maintenance** – LED fixtures have a long lifetime and low maintenance cost, but often need to be completely replaced when their lifetime expires.
- » **Efficiency & Power Consumption** - LED fixtures are efficient and have a comparably low power consumption, but many LEDs are required to achieve the same lumen output as with the traditional offerings.
- » **White LEDs** – White LEDs can be very inconsistent and the difference visible to the human eye depending on the LED. E.g. at 4000K CCT (Correlated Color Temperature) the white may vary by fixture depending on the LEDs purchased.
- » **Drivers** – Choosing the correct driver for the LED application is crucial in determining the functionality and lifetime of the LED fixture.
- » **Design Issues** – LED manufacturers and design teams are still working on communication to properly design projects. This can lead to issues such as incorrect maintenance and inconsistent CCT over the project. As LED light is emitted directionally, a lot of engineering goes into an LED fixture to direct the light.

- Traditional prescriptive-based specifications include detailed construction requirements around a specified manufacturer, while performance-based specifications are tied to operational requirements and industry standards.
- Bid competition is increased on performance based-specifications, reducing manufacturing lead times and design risk.
- Prescriptive-based specifications forces manufacturers to work outside of their traditional supply chains, resulting in increased lead times.
- Specifying performance eliminates these inefficiencies and places the responsibility on the equipment manufacturer to ensure system performance.
- SourceBlue supply chain professionals can assist owners and designers in developing performance-based mechanical specifications.



ANDY VEZOS
MECHANICAL PRODUCTS MANAGER
SUPPLY CHAIN TEAM

- SourceBlue can engage OEM vendors for switchgear and switchboard proposals, which can result in reduced lead times for our clients.
- Breaking out Automatic Transfer Switch (ATS) units out from generator packages can help with tracking and management of those pieces.
- We continue to research and qualify offshore manufacturers of our core product sets to offer more options to our clients.
- We are continuing to engage with our vendor partners in Quarterly Business Reviews (QBR) where we discuss past performance and future plans to manage expected demand by manufacturers, helping with the planning process.
- SourceBlue offers a temporary lighting system as a rental option, Solidian™, that can be implemented across multiple jobsites and administered and managed by SourceBlue.



KEVIN BURKE
ELECTRICAL PRODUCTS MANAGER
SUPPLY CHAIN TEAM

- European Manufacturers continue their summer schedules and immediate availability of product is impacted.
- Overall lead times for Appliances have normalized. However, new models are anticipated and may impact orders not yet placed.
- SourceBlue continues to develop direct factory sources for Plumbing Fixtures and manufacturer partnerships to benefit projects.



NATE GOLDMAN
FINISH PRODUCTS MANAGER
SUPPLY CHAIN TEAM

FOR MORE INFORMATION, PLEASE CONTACT



SUZANNE BENNETT
OPERATIONS MANAGER
SDBENNETT@SOURCEBLUE.COM

IN CASE YOU MISSED IT:
Q2 2023 COST INDEX REPORT