



Benefits for LED luminaire manufacturers

Interchangeable LED light sources, which are enabled by Zhaga interface specifications, offer a number of benefits for different user groups within the lighting industry.

Zhaga specifications provide many potential benefits for LED luminaire manufacturers.

The availability of compatible components from multiple suppliers can reduce supply-chain risks and bottlenecks, while making procurement easier. Interchangeable components can allow OEMs to use a platform model to offer a broad portfolio of luminaires with diverse properties. And Zhaga-based products can reduce time to market, reduce development and production costs, and make it easier to keep pace with technology evolution in the LED market.

These benefits are explained below in more detail:

Improved supply chain

- Reduced risk of supply bottlenecks due to availability of alternative suppliers of compatible products.
- Lower inventory levels: Reduced diversity of components, and availability of alternative suppliers, means that luminaire maker has to hold less inventory.
- Lower risk of obsolescence: Upgraded generations of standardized LED light engines (LLEs) can be easily integrated into existing luminaire designs, ensuring minimal obsolete inventory designed around old LED technology.

Easier procurement of components

- Easier to compare properties of interchangeable components where some characteristics, such as dimensions, are standardized.
- Negotiations with suppliers are simpler when interchangeable components are involved and it is easier and inexpensive to change suppliers.

Broad luminaire portfolio without large development costs

- Possibility to offer a broad range of luminaires by selecting LLEs with different characteristics such as colour temperature, lumen output, CRI, reliability, stability or lifetime.
- Opportunity to segment luminaire portfolio into different price-performance categories.

Cost-saving potential in production

- Use of interchangeable components enables a platform approach to luminaire production, with reduced complexity and more flexibility.
- Mechanical compatibility means that the amount of production tools can be reduced, e. g. stamps or drilling tools for fixation holes for the LED module.
- Reduced tooling cost in other areas such as housing, optics and packaging of integrated circuits.

Lower development costs

- New LLEs or upgraded generations of current LLEs can be adopted into existing luminaire designs with less re-engineering and fewer modifications.

Faster time to market

- Ability to easily adopt new or upgraded LLEs allows luminaires to keep pace with short innovation cycles in LED technology.

Future proofing

- Technology upgrades can take place inside the interchangeable LLE, so that luminaires are future-proofed against technology evolution.