

FLEX SLS: Low Voltage LED-Based Temporary Lighting

Clear-Vu Lighting has designed, developed, and manufactured a revolutionary LED-based temporary lighting system for construction site environments that provides a significant improvement in safety, energy efficiency, sustainability, and durability.

The FLEX SLS System is comprised of LED Modules with low voltage T-connectors, a low voltage direct current bus line, and a remote driver. Each LED Module provides approximately 2700 directed lumens, which generate 5 foot candles (OSHA standard) on the ground when spaced 20' apart. Each LED Module consumes 30 Watts, and up to 15 LED Modules are connected to a low voltage bus line and remote driver. The connection to the bus line is with a proprietary T-Connector, which enables very fast and easy installation and reconfiguration as a project evolves. The remote driver optionally comes with a time clock and dimmer, which reduces light output and energy consumption by an additional 75%, for night hours to provide safety and security lighting (1-2 foot candles).

This system is intended to replace the incandescent and compact fluorescent (CFL) based "stringer" systems as well as the metal halide high bay lights typical on construction projects. When such typical stringers have bulbs spaced on 10' centers, the FLEX system can save upwards of 90% on electricity consumption compared to 100W bulbs, and approximately 60-70% when compared to CFL bulbs or metal halide high bay lights on 30' centers. In sum, the FLEX system provides OSHA standard lighting for less than 1 watt per square foot!

The FLEX SLS System is innovative in several respects. From a safety standpoint, by making the whole system low voltage, the temporary wiring becomes much less dangerous to work with on a job site. The LED Modules are never too hot to touch thus minimizing the risk of fires and burns. Also, the LED Modules utilize an automotive grade polycarbonate lens, so broken glass and mercury are no longer issues either. From a energy efficiency standpoint, as stated above, the FLEX SLS System consumes far less electricity than traditional 100W incandescent bulbs, CFL bulbs and metal halide high bay lighting systems. With respect to sustainability, the FLEX SLS System is RoHS compliant and contains no mercury or other hazardous materials. The system also has a design life of 10 years, so it can be moved from job to job, in contrast to incandescent bulbs which must be replaced monthly, and CFL and metal halide bulbs which must be replaced annually. Additionally, the cast aluminum and polycarbonate assembly is virtually indestructible, and the system performs especially well when subjected to cold weather and vibration.

The FLEX SLS System was developed by Clear-Vu Lighting in New York with the valuable input and feedback from general and electrical contractors, and was first tested with Turner Construction Company at the end of 2010 at a Columbia University Medical Center project. The FLEX system has since been deployed on several major construction projects across the country. Most notably, a Skanska project with Harvard University for a new art museum is the first construction site in the world to use entirely LEDs for illumination. Other featured projects include a the TD Ameritrade Headquarters with Kiewit Building Group in Omaha, NE, and a new Kaiser Permanente Healthcare Center with DPR Construction in Tysons Corner, VA. The FLEX System has also been adapted to suit other related applications including "bridge & shed" lighting for sidewalk scaffolding in New York City, and transit maintenance and construction work for subway systems.

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