

Prototype LED Lamp Delivers More Than 1,300 Lumens at 152 Lumens per Watt



Cree, Inc. (unveiled a concept LED light bulb from its lighting research and development team. Redefining what is possible with high-performance LED lighting, the lamp delivers more than 1,300 lumens at 152 lumens per watt (LPW) using Cree TrueWhite Technology. Cree's prototype LED light bulb exceeds the performance goals set by the U.S. Department of Energy (DOE) for the 21st Century Lamp, the third category in its L Prize SM competition.

"Cree's concept lamp is a far cry from its 20th century counterparts," said Gerry Negley, Cree LED lighting chief technology officer and co-inventor of Cree TrueWhite Technology. "No one has fully envisioned what the lighting of the future will look like, which allows Cree to continue to innovate without constraint."

Neal Hunter, Cree co-founder, added, "Not long ago, fixture efficacy of 100+ lumens per watt was impossible, but Cree is shipping fixtures at 110 LPW today. We calculate that if fully deployed, LED lighting at 150 LPW could bring a 16.5 percent reduction in the nation's electric energy consumption, returning it to 1987 levels. By pushing the limits of what is possible in LED lighting, Cree continues to design products that help reduce global demands for energy."

LED lighting at this level of performance is only made possible by advancements across all elements of the LED lighting system - lighting-class LEDs, optical elements, drivers and power supplies. Optimizing each element was critical in achieving the performance reached by Cree's prototype LED lamp. As an efficiency comparison, a traditional 75 watt incandescent light bulb produces 1,100 lumens at only 14.6 lumens per watt.

"Cree's innovation, technology breakthroughs and focus on energy-efficient lighting solutions continue to re-shape the LED lighting market," said Dave Morton,

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Courtyard Program Director, Marriott International.

Third-party testing by independent lab OnSpeX confirmed that Cree's lamp delivered more than 1,330 lumens and consumes only 8.7 watts. The lamp uses Cree TrueWhite Technology to deliver a high-quality, energy-efficient light with a CRI of 91 at a warm white color of 2800 K. This project benefits from technology developed under DOE-funded contracts, which are part of Cree's ongoing collaboration with DOE to advance the successful adoption of energy-saving solid-state lighting.

The Energy Independence and Security Act of 2007 directed the DOE to establish the Bright Tomorrow L Prize competition. The 21st Century Lamp competition is the third category in the legislation, joining competitions to create replacements for some of the most widely used and most inefficient lighting technologies on the market today, 60W incandescent lamps and PAR 38 halogen lamps. The preliminary specifications for the 21st Century Lamp include: >1200 lumens, >150 lumens per watt, >90 CRI and CCT between 2800-3000K.

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