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Cree provides the US Pentagon with 4200 LED luminaires

08 Jan 2009

Government studies conclude that the LED lighting installation will have a payback of <4 years and is estimated to save 140 tons of carbon dioxide emissions per year.

On January 6, two Pentagon officials signed an intra-departmental memorandum of agreement kicking-off the initiative to install LED lighting in the Pentagon as part of its ongoing 10-year renovation.

As part of the initiative, more than 4200 Cree LR24 recessed LED luminaires will be installed in Wedge 5 of the 5-sided building.

The Cree LR24 luminaires have undergone extensive government testing and business-case analysis, including a preliminary Pentagon installation to meter the fixtures and compare the results to the alternative fluorescent technology. This independent analysis demonstrated a 22-percent reduction in energy usage and improved light quality, Cree said in a statement.

The business-case analysis yielded a payback of less than four years. The payback analysis considered energy savings, lifetime maintenance savings, savings from reduced load on the HVAC system, and elimination of hazardous waste disposal fees for mercury-laden fluorescent bulbs. Extensive modeling was also performed to determine optimal lighting design - analyzing the light distribution and spacing to ensure superior lighting and energy efficiency. The Wedge 5 installation is estimated to save 140 tons of CO2 emissions per year.

"The US federal government is taking a leadership role in energy efficiency for federal buildings both through existing mandates, as well as President-elect Obama's American Recovery and Reinvestment Plan, which calls for the renovation of public buildings to make them more energy efficient," said Chuck Swoboda, Cree chairman and CEO.

Department of Defense's (DoD) Title III program will purchase the LR24 units as a part of its ongoing development program with Cree, and provide them to the Washington Headquarters Services (WHS), which oversees the Pentagon renovation program. Albert C. Ellet, acting director of the WHS, was one of the men who signed the MoA, along with John J. Kubricky, Deputy Under Secretary of Defense for Advanced Systems and Concepts.

"The Title III program has long supported the development and deployment of SiC substrates and devices for use in high-power RF and power-switching applications for DoD systems," said John Palmour, Cree co-founder and CTO for advanced devices. "The program realized the importance of ensuring a strong domestic supply of SiC substrates and related devices, and the potential growth of solid-state lighting in the US."

The Pentagon renovation

According to the official Pentagon renovation and construction web site, "Wedges 2-5" is a phased design/build renovation of 4 million square feet of space in the Pentagon. The project brings all remaining un-renovated areas of the building into compliance with modern building, life safety, ADA and fire codes.

Work includes removal of all hazardous materials, replacement of all building systems, addition of new elevators and escalators to improve vertical circulation, and installation of new security and telecommunications systems. The project, underway since September 2001, is on an accelerated schedule for completion in December 2011, three years sooner than originally planned.



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