

LED Retrofit Luminaire

What is this Technology?

This technology is designed to upgrade existing recessed fluorescent troffer luminaires to LED luminaires.

Why is GSA Interested?

Lighting accounts for roughly 30% of total energy consumed by GSA buildings. Previous studies have shown that innovative lighting solutions have the greatest potential of any single building technology to substantially decrease the overall energy use of GSA's portfolio. This technology has the potential to cut lighting power density by 50%.



ENERGY EFFICIENCY LED lamps are significantly more efficient than fluorescent lamps. This technology is designed to replace a typical 3-lamp T8 2 x 4 fluorescent fixture that consumes 90 watts with an identically sized LED luminaire that consumes 44 watts, reducing energy consumption by 52%.



COST EFFECTIVENESS Preliminary evaluation shows that this technology is currently projected to have payback in less than 7 years in locations with average utility costs, 3 tube T8 troffers, and high levels of occupancy.



OCCUPANT SATISFACTION LED lamps and fixtures that are designed to deliver outstanding color rendering, put light where it is needed, and minimize glare. A key component of this study will be to document the effect of this technology on occupant satisfaction.



OPERATIONS & MAINTENANCE The study will evaluate the time required to install the retrofit kit, as well as additional potential O&M benefits, including no required relamping for ten years or longer, and avoided disposal requirements associated with the mercury in fluorescent lamps.



DEPLOYMENT POTENTIAL LED luminaire retrofits are potentially applicable to most GSA office buildings where low-bay recessed fluorescent luminaires are installed. A key component of this study will be to provide the guidance needed to prioritize its potential for deployment by GSA, should the technology prove out.

Adapted from a report by the National Renewable Energy Laboratory. The Green Proving Ground program, in association with a federal laboratory, is subjecting the LED retrofit luminaire to real-world measurement and verification in GSA buildings. Findings from that investigation will be available in late 2013 or early 2014.