Controls for outdoor lighting

DESCRIPTION

Energy used to fully light outdoor spaces at night when they are not in use can be significantly reduced using advanced controls. Advanced control systems for outdoor lighting go beyond dusk-to-dawn photocell control or timeclocks. These advanced controls, applied to compatible lighting systems, can respond to occupancy, time of day, season, weather conditions and light levels. Compatible lighting systems have dimmable luminaires. If the system is not dimmable, new fixtures may be needed in addition to the controls.

Using wireless mesh networks, lights can be controlled over a large area. A group of fixtures or individual fixtures can be controlled using a remote computer or smart device. New, smart integrated sensors and controls can allow fixtures to respond independently to changing conditions. Light levels can be adjusted from 100 percent to as low as 10 percent (although the fixtures can be shut off completely, this isn't recommended due to safety concerns). And two-way communication can be used to report problems, reducing labor costs.

DEMONSTRATING THE TECHNOLOGY

Advanced controls are suitable for most outdoor lighting uses, including walking/biking paths, parking lots, campuses, courtyards, parks, street lighting and building mounted lights. Participants in commercial lighting programs could be recruited for testing and demonstrating this technology. Public sector street lighting projects would also be good candidates for validating this technology.

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CRITERIA	VALUE
Electricity savings	0.08 kWh/ft^2
Cost savings	\$0.01/ft^2
Measure life	8 years
2017 simple payback	5 years
Carbon emissions avoided	5.5E-05 MT equivalent CO_2
How it saves energy	Adjusts light levels to the conditions
Non-energy benefits	Reduced maintenance
Barriers to adoption	High first cost; perceived safety concerns.

FOR MORE INFORMATION

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