

OPPORTUNITY

How can advanced lighting controls (ALC) support LED?

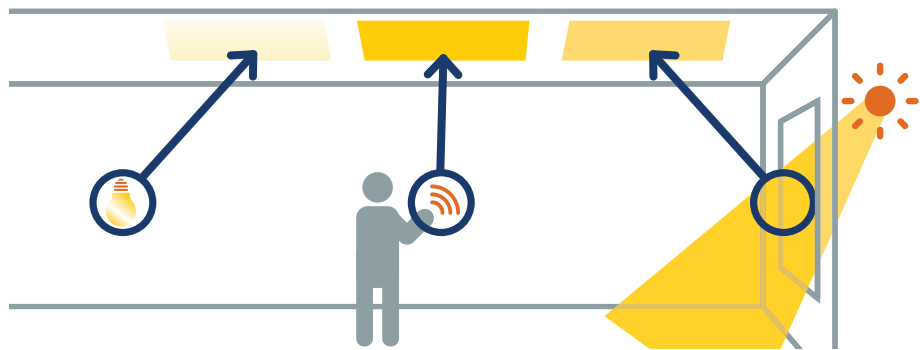
LED'S DIGITAL NATURE PROVIDES MORE PRECISE DIMMING
MAKING ALC MORE EFFECTIVE

TECHNOLOGY

What advanced lighting control strategies were assessed?

3 CONTROL STRATEGIES

LIGHT-LEVEL TUNING, OCCUPANCY SENSING, DAYLIGHT HARVESTING



M&V

Where did Measurement and Verification occur?

PACIFIC NORTHWEST NATIONAL LABORATORY (PNNL) assessed five different LED and advanced-control systems in open-plan offices at the Fort Worth Federal Center, Fort Worth, Texas

RESULTS

How did the advanced lighting controls perform in M&V?

43%

CONTROL SAVINGS

from LED baseline, even with minimal daylight availability¹

TUNING

IS CRITICAL

The ability to dim initial light levels significantly increased occupant satisfaction²

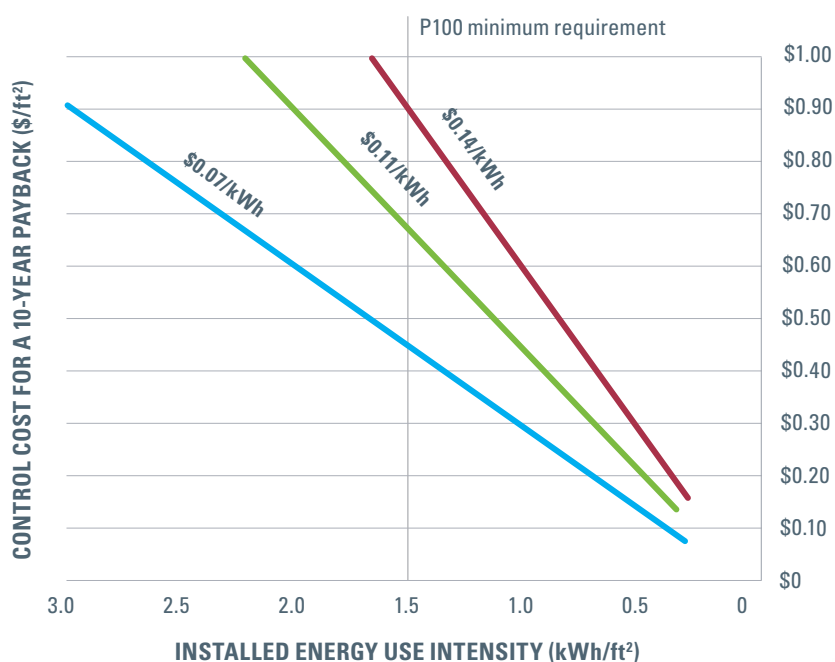
ROI

VARIABLE

Can be cost-effective when the added cost of controls is <\$70 per fixture @ GSA avg. utility \$0.11/kW³

ALC Costs Needed for a 10-Year Payback*

The more efficient the lighting, the more challenging for ALC to achieve positive ROI



ALC calculator at gsa.gov/cebt can help determine site-specific payback

*Assuming a 10-hour, 5-day work week and 43% ALC savings

DEPLOYMENT

Where does the study recommend deploying advanced lighting controls?

FACILITIES WITH HIGH UTILITY RATES

Full-featured ALC will be most cost-effective for facilities with high utility rates and/or rebate opportunities and in open offices where occupants are engaged in a variety of tasks.

If ALC is not cost-effective, choose LED systems with dedicated 0-10V drivers that provide dimming. Tuning can be key to occupant satisfaction.

¹Evaluation of Advanced Lighting Control Systems in a Working Office Environment, M. Myer, Pacific Northwest National Laboratory, (PNNL-27619), September 2018, p. 3 ²Ibid, p. 26 ³Ibid, p. 35