



Case study

California State University, Chico

Location

Chico, CA

Philips Day-Brite/
Wall Pack

Wall Pack

PHILIPS
Day-Brite



Before

After



Increasing savings and safety

Background

The California Energy Commission's Public Interest Energy Research (PIER) Program sponsors the development and demonstration of energy efficient building technologies. Over the past several years, PIER has developed strategic partnerships with the University of California, California State University, California Community Colleges, and California Department of General Services. These partnerships include a series of demonstration projects coupled with programmatic support and executed by California Lighting Technology Center to ensure continued deployment of energy-efficient technologies and practices across California. Examples of the latest energy efficient innovations using Philips Day-Brite technologies are described below. More information is available at www.cltc.ucdavis.edu and www.pierpartnershipdemonstrations.com.

The Challenge

DEMONSTRATION LOCATION: California State University, Chico (CSUC), Shasta and Lassen halls

Wall packs are exterior lights that often are used to bolster security and aid in wayfinding in evenings. While wall packs effectively provide lighting around buildings, in the past they have suffered from many setbacks. The problems include low fixture efficiency, minimal or nonexistent cutoff, and lack of adaptive controls. During the night, some buildings have very low usage or traffic around their perimeters. For these applications, energy is wasted by fully illuminating a vacant space that actually needs much less lighting.

The Solution

14 new bi-level NiteBrites Metal Halide luminaires were installed at Shasta and Lassen halls, twin three-story dormitories. The pathways surrounding the dorms initially were lit by a combination of 150 W HPS wall packs and 70 W HPS tall wall packs operating with magnetic ballasts. Fourteen fixtures were retrofitted — 13 wall packs, and one tall wall pack at Shasta Hall — with Philips Day-Brite NiteBrites bi-level HID wall packs. The retrofit increased average horizontal illuminance levels of the pathways surrounding the dormitories, as well as provided a high color quality and color temperature (4000K).

The Benefits

A usage profile study was conducted to track the bi-level operation of the luminaires. The study showed that on some nights, the luminaire operated in low mode for more than 50 % of the time. Such bi-level usage patterns resulted in overall project energy savings of 42%.



- **Better Light**
- **Safer Area**
- **42% Energy Savings**

Comparison between one standard HPS wall pack and one bi-level MH pack.

Technology	Annual Energy Use (kWh)	Annual Operating Cost	Lifecycle Operating Cost
Standard HPS	810	\$115	\$1,725
Bi-Level MH	455	\$77	\$1,155
Savings	355	\$38	\$570

Annual operating hours: 4,380

Cost of electricity (\$/kWh): \$0.128

Annual operating costs include energy and maintenance

Equipment lifetime: 15 years



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