UC Davis Exterior Lighting Improvement

Christopher Cioni
UC Davis Facilities Management
Associate Director, Utilities
UC Davis

Total lighting energy (50 million kWh)

- Exterior parking, road, path: 6,648,945
- Corridors: 14,778,053
- Bathrooms: 4,926,018
- Mechanical space: 2,463,009
- Stairwells: 2,463,009
- Office: 9,360,000
- Classroom: 865,922
- Residential (PG&E grid): 1,066,859
- Residential (campus grid): 1,500,000
- Special/Support: 2,880,000
- Lab: 9,600,000
- Exterior building: 1,913,213
UC Davis exterior lighting energy (8.5 million kWh)

- Traffic signals, 50,000
- Stadium, 38,160
- Exterior building fixtures, 1,913,213
- Roads (pedestrian & bike), 785,253
- Roadway lighting, 536,270
- TAPS core parking lots, 518,278
- Parking Structures, 1,956,491
- Other parking, 254,280
- Rec fields, 2,510,213
UC Davis  Smart Energy Initiative

Safety  Energy Savings

Reliability

Lighting Quality  Risk/Liability

Sustainability  Maintenance

Public Perception
UC Davis  bi-level technology demonstrations
UC Davis induction fixture

- 100 watt lamp
- Hi mode draws 110 watts, total fixture
- Occupancy sensor
- Ballast dim to 40% lumen output
UC Davis  north parking structure HPS vs. Induction
UC Davis  north parking structure HPS vs. Induction
UC Davis  LED fixture

- 100 watt equivalent
- Hi mode draws 88 watts, total fixture
- Occupancy sensor
- Ballast dim to 50% lumen output
- Low mode draws 35 watts, total fixture
UC Davis  south parking structure LEDs, top deck
Summary

- 3 parking structures (3,128 spaces)
- Replace 1,400 fixtures with bi-level technology
- 978,245 kWh annual savings
- $560,000 installed cost
- 100,000 hour lamp life expected (excl ballast)
UC Davis  Mondavi Center and south entry parking lot
Induction roadway with enhanced optics
Summary

- replace 420 parking lot fixtures
- Bi-level technology, induction lamps
- 365,000 kWh annual savings
- 100,000 hour lamp life expected (excl ballast)

Christopher Cioni, UC Davis Facilities Management – Utilities
cacioni@ucdavis.edu  tel (530)752-4471