



PROJECT 8 – LED Downlights

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Industry Partner - Cooper

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Goals

- The goal of this project is to design, develop, demonstrate and commercialize an LED downlight meeting the following criteria
 - Develop an LED optical head that has a combined fixture efficiency of at least 75%.
 - Develop and demonstrate a downlighting control system capable of dimming controlling LED sources down to at least 10% light output.
 - Develop an appropriate thermal management system

- The Development will focus on leveraging the unique characteristics of LEDs
 - Dimmable
 - Optical Control
 - Small size
 - Lower power
 - Extended lamp life

- As industry partner Cooper Lighting will contribute by providing their
 - strong market knowledge
 - market connections
 - downlight platform (housing, joist hangers, etc)
 - Engineering staff

Current Activities

- Finishing up market analysis research
 - Business students from UC Davis are Collaborating with Cooper marketing staff on market research
- Review Cooper's proof of concept prototypes and system design to date
 - Cooper visited CLTC and presented both thermal and optical simulations as well as a physical prototype
 - CLTC is reviewing current system design and provided feedback as well as presenting new concepts

Planned Demonstrations

- CLTC will monitor a minimum of 30 downlights based on the following criteria
 - Baseline characterization
 - An energy-savings metering plan
 - A user/installer survey plan
 - An in-situ photometric test plan
- CLTC will utilize it's utility contacts to find a demonstration site

Input

- Cooper distribution chain used to incandescent and CFL.
 - LED Downlights represents paradigm shift
- Other obstacles primarily technical
 - Thermal
 - Optical
 - Manufacturing (price)