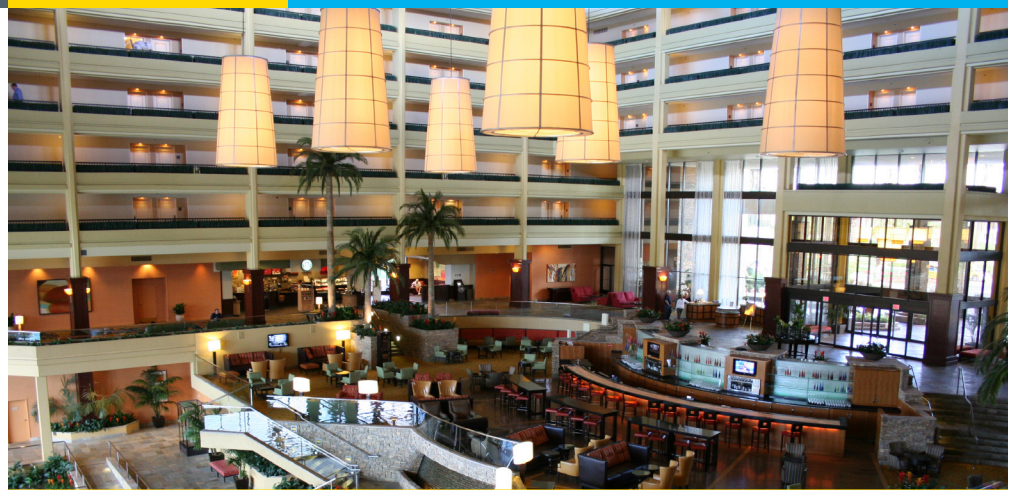


**L PRIZE® FIELD TESTING:****Desert Springs  
Resort and Spa—  
Palm Desert,  
California**

Providing comfortable amenities while controlling costs is a competitive driver in the hospitality industry. Would the Philips 60W L Prize submission live up to expectations in a luxury hotel?

In theory, the long life and low energy consumption of LED lighting should add up to a sound business case for hotel owners and managers. But how would Philips Lighting North America's 60-watt replacement lamp actually fare in a hotel environment? To find out, Southern California Edison (SCE), an L Prize partner, enlisted the Desert Springs Resort and Spa in Palm Desert, California, as a field test site in 2010,

A total of 70 L Prize samples were used throughout the resort. In the golf shop, three lamps were used in each of three chandeliers. *Photo courtesy of Southern California Edison.*



L Prize partner Southern California Edison put the Philips 60-watt replacement lamp through extensive field testing at this Palm Desert, California, resort (including in table and floor lamps in this lobby). *Photo courtesy of Southern California Edison.*

installing a total of 70 lamps at this elegant JW Marriott property.

A central aspect of the testing was comparing photometric and power measurements of the LED lamps against those of 57-watt incandescent and 13-watt spiral compact fluorescent lamps in a variety of applications. Locations included floor lamps in a spa lounge, chandeliers in the golf retail shop, and table lamps in a restaurant lobby, as well as chandeliers in the restaurant's entrance and south side, table and floor lamps in eight guest rooms, table and floor lamps in the lobby, and jar-type fixtures in the kitchen refrigerator. Qualitative surveys of users and occupants were also conducted.

Field testing at the resort included luminance maps, foot-candle measurements, light on-off/temperature for each application, as well as power measurements where possible. Photometric measurements for one application are shown on the next page.

**A Successful Experience**

SCE reported a successful experience with the Philips LED samples. According to the Emerging Technologies field assessment report of SCE Design and

Engineering Services, "The findings indicate that the lamps perform very well. When compared with a standard 60-watt (W) type incandescent lamp (actual wattage is 57W due to California standards) the L Prize entry excelled with 12 percent more light output while using about 80 percent less energy. When compared to a 60W equivalent compact fluorescent lamp at 13W, there was similar light output while using about 20 percent less energy." In a blind survey of SCE colleagues comparing the incandescent light and LED light, respondents could not distinguish a difference.

In an occupant survey, SCE gathered a total of 58 responses (with not all respondents answering every question). Regarding the lighting's brightness, 36 judged it to be just right, 20 somewhat dim, 1 too dim, and 1 somewhat bright. Regarding color, 42 deemed it to be just right, 7 somewhat cool, 7 somewhat warm, and 1 too cool. When asked about the impact of the lighting on the ability to see clearly in the space, 30 respondents reported a neutral impact, 25 a positive impact, and 2 a negative impact. With a total of 36 responding, 24 people said they would recommend the lighting to others, 10 said they may or may not

recommend, and 2 would not recommend. Regarding any problems with the lights, 46 respondents noticed no problems, 2 noted glaring, 2 noted uneven lighting, 1 noted flickering, and 1 reported an unspecified problem.

In its economic evaluation (see Economic Evaluation chart below), SCE assumed an installation cost based on \$15 per-hour labor at 2 minutes per lamp, an energy cost of \$0.15 per kilowatt-hour, and a LED lamp purchase price of \$20. Over a 25,000-hour effective useful life, the 60-watt LED

replacement lamp had a significantly lower cost of ownership than incandescent bulbs and compared favorably with CFLs. Additional calculations show that at a purchase price of \$50, the 60-watt LED replacement lamp continues to compare favorably with incandescents.

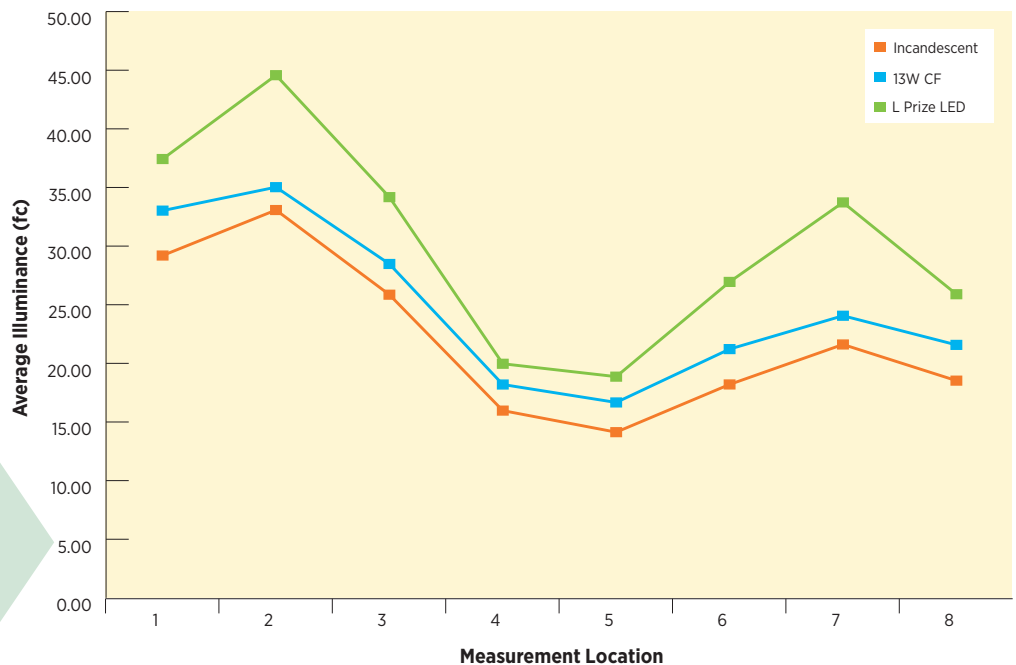
### Economic Evaluation Chart

Lamp Type	Total Lamps Needed	Total Energy Usage (kW)	Total Cost of Energy @ \$0.15/ kWh (\$)	Total Cost of Hardware (\$)	Total Cost of Installation & Maintenance (\$)	Total Cost of Ownership (\$)
LED (@\$20)	1	250	\$37.50	\$20.00	\$0.50	\$58.00
LED (@\$50)	1	250	\$37.50	\$50.00	\$0.50	\$88.00
Incandescent (60W)	25	1500	\$225.00	\$8.75	\$12.50	\$246.25
CFL	2	325	\$48.75	\$6.00	\$1.00	\$55.75
CFL (short life)	8	325	\$48.75	\$24.00	\$4.00	\$76.75



One of several installation sites in the resort lobby was this table with two symmetrically spaced lighting fixtures. Photo courtesy of Southern California Edison.

Measurements of tabletop illuminance for this installation, charted at right, show that the light output of the L Prize entries (in foot-candles) compared favorably with the outputs of 57-watt incandescent and 13-watt compact fluorescent lamps.



**L PRIZE®**

U.S. Department of Energy

### For More Information

For more information about the L Prize competition, sponsored by DOE's Solid-State Lighting program, see [lightingprize.org](http://lightingprize.org).

U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

No light bulb in history has endured more extensive public testing than the winning L Prize entry from Philips Lighting North America. A highly energy-efficient replacement for the 60-watt incandescent bulb, the Philips lamp stood up to rigorous assessments in the laboratory and in the field.

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