

Philips Energy Advantage CDM lamps with AllStart™ Technology



PIER Buildings Program

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The Problem

High intensity discharge (HID) lamps have become the default light source in many indoor and outdoor applications. However, most of these lamps operate at high wattages, are specified only for probe-start ballasts or pulse-start ballasts, and can be costly.

The Solution

Philips Lighting has released a ceramic metal halide, direct-retrofit lamp that can be used with both probe- and pulse-start ballasts. The Philips Energy Advantage CDM lamp with AllStart™ Technology saves energy, improves efficacy and color rendering, maintains light levels, and is more affordable than traditional metal halide (MH) lamps. Philips says the lamps “provide true universal operation regardless of orientation without compromising light quality, and make installation and maintenance easier than ever.”

The lamp is available in 145 watts (W), 205 W, and 330 W, replacing 175 W, 250 W, and 400 W lamps, respectively. Engineers at the California Lighting Technology Center (CLTC) at the University of California, Davis tested the lamps to verify Philips’ specifications. The lamps performed well in the tests and met or exceeded the company’s specifications.

Features and Benefits

- Reduced maintenance and recycling costs
- Energy savings up to 18%
- Long life of more than 20,000 hours
- Excellent color rendering: CRI 85
- 100 lumens per watt

Applications

This technology easily could be applied in retail stores, warehouses, service stations, gymnasiums, auditoriums, and convention halls, as well as for exterior and security lighting, or any space where a metal halide retrofit would be appropriate.

FIGURE 1: PHILIPS ENERGY ADVANTAGE CDM LAMP WITH ALLSTART™ TECHNOLOGY LAMP TESTING AT CLTC



California Codes and Standards

California’s Title 20 requires that all MH luminaires installed after Jan. 1, 2008, should not contain a probe-start ballast. In addition, MH luminaires should contain ballasts with a minimum ballast efficiency of 88%.

What’s next

In addition to the lower-wattage lamps, Philips has released an 830 W lamp to replace 1,000 W MH lamps.

Philips Energy Advantage CDM lamps with AllStart™ Technology are available in clear and coated finishes from Philips Lighting at www.philips.com/lighting.

Collaborators

This project is a collaboration between the Public Interest Energy Research (PIER) Program of the California Energy Commission, CLTC, and Philips.

For More Information

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TABLE 1: PULSE-START BALLAST TEST RESULTS FOR 205 W AND 330 W LAMPS

TECHNOLOGY	LAMP POWER (W)	CALCULATED SYSTEM POWER/ MEASURED SYSTEM POWER (W) ²	LIGHT OUTPUT (LUMENS)	MEAN LUMENS	RATED LIFE HOURS	CALCULATED SYSTEM EFFICACY/ MEASURED SYSTEM EFFICACY	COLOR RENDERING INDEX (CRI)	SYSTEM SAVINGS OVER BASELINE
250 W BASELINE	250	281–300	21,000–24,000	15,500–21,500	15,000–20,000	70–85/–	65–70	–
205 W SPECS	205	230–246	19,500	15,600	20,000	79–85/–	85	18%
205 W PULSE³	221 ¹	248–265/264 ¹	21,524 ¹	–	–	81–87/82 ¹	89 ¹	12%
400 W BASELINE	400	449–480/–	32,500–44,000	25,500–37,840	15,000–30,000	68–98/–	66–75	–
330 W SPECS	330	371–396/–	33,000	26,400	24,000	83–89/–	90	18%
330 W PULSE⁴	305 ¹	343–366/357 ¹	30,096 ¹	–	–	82–88/84 ¹	90 ¹	24%

¹ Average measured test values of 10 separate samples; lamps tested after 100-hour burn-in.

² System power includes the lamp and ballast

³ Comparisons conducted using an M153 pulse-start ballast.

⁴ Comparisons conducted using an M135/M155 pulse-start ballast.

TABLE 2: PULSE- AND PROBE-START BALLAST TEST RESULTS FOR 205 W LAMP

TECHNOLOGY	LAMP POWER (W)	CALCULATED SYSTEM POWER/ MEASURED SYSTEM POWER (W) ³	LIGHT OUTPUT (LUMENS)	MEAN LUMENS	RATED LIFE HOURS	CALCULATED SYSTEM EFFICACY/ MEASURED SYSTEM EFFICACY	COLOR RENDERING INDEX (CRI)	SYSTEM SAVINGS OVER BASELINE
250 W PROBE BASELINE	250	281–300/–	19,000–24,000	12,350–14,950	7,500–10,000	63–85/–	65–75	–
205 W SPECS	205	230–246/–	19,500	15,600	20,000	79–85/–	85	18%
205 W PULSE³	221 ¹	248–265/264 ¹	21,524 ¹	–	–	81–87/82 ¹	89 ¹	12%
205 W PROBE⁴	207 ¹	233–248/246 ¹	20,344 ¹	–	–	82–87/83 ¹	89 ¹	17%

¹ Average measured test values of 10 separate samples; lamps tested after 100-hour burn-in.

² System power includes the lamp and ballast

³ Comparisons conducted using an M153 pulse-start ballast.

⁴ Comparisons conducted using an M58 probe-start ballast.

About PIER

This project was conducted by the California Energy Commission's Public Interest Energy Research (PIER) Program. PIER supports public interest energy research and development that helps improve the quality of life in California by bringing environmentally safe, affordable, and reliable energy services and products to the marketplace.

Jerry Brown, Governor
California Energy Commission

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