High-intensity lights may help cut energy costs

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For the past 6 months, the Silver Creek Sportsplex in San Jose, Calif., has been testing ceiling lighting from a nearby startup that holds the promise of saving huge amounts of energy.

The enormous facility -- with almost 16 acres and seven indoor sports fields -- has replaced 10 of its 400 magnetic light fixtures with new, high-intensity electronic light fixtures from HID Laboratories, based in Menlo Park, Calif.

Sportsplex Chief Operating Officer Terry Peckham is pleased.

"So far I really like it," he said.

Each lamp uses a quarter to a third less energy than the lamp it replaced. Another bonus: Each new lamp generates 150 degrees of heat instead of the current 300 degrees, which has a direct impact on the Sportsplex's air conditioning system.

The small test has enormous implications for the nation's energy use. For decades, high-intensity discharge lamps have been a mainstay for lighting warehouses, distribution centers, factories, retail stores and streets. Today, there are about 120 million HID lamps installed across the United States. In the average commercial facility, lighting can account for up to 60 percent of a business owner's energy costs, said Antonio J. Espinosa, chief executive of HID Laboratories.

The company says its new SmartPOD device, like the one being tested at the Sportsplex, will enable HID lighting that is up to 60 percent more efficient than current models. As an added bonus, its models don't require building owners and lighting engineers to replace or rewire existing installations.

"Our technology is a plug-and-play fixture that plugs right into the current infrastructure," Espinosa said. "In very simple terms, you unscrew a couple of bulbs, undo the wiring and take it out and plug in our fixture."

Espinosa calls HID lighting "the middle linebacker of lighting," because it is known for its use in very dirty, very hot and very cold temperatures.

As costs rise and efficiency becomes increasingly important, building owners and lighting engineers have turned to alternatives such as fluorescent lighting. But fluorescent lighting has significant shortcomings for many environments, and HID lighting is still preferred. Enter HID Labs' new product.

"It takes what used to be done magnetically and does it electronically to create 25 percent more efficiency," said Bruce Pelton, associate director of engineering at the California Lighting Technology Center at UC-Davis. The center, which is not an investor in the company, helped evaluate the company's technology and guide and test its applications.

In a regular incandescent light bulb, filaments heat up and give off light. But in an HID light, xenon and metal halide gases combine with mercury and metal halide salt to create a plasma that ignites to become light.

What HID Labs did is change that ignition process using electronic technology to generate more and better quality light.

Other companies, such as General Electric, Osram Sylvania and Philips, are working on or have produced similar products, Pelton said. But he says HID Labs "certainly is one of the leaders."

An HID Labs fixture costs $325, which Espinosa said is about 10 percent more than a comparable magnetic fixture.

Analysts seem impressed by the company's concept.

"In today's economy where energy conservation, cost reduction and quick return on investment are of paramount concern to businesses, intelligent HID lighting control can address these concerns and help manufacturers to effectively manage their energy costs while improving the performance of their lighting systems," said Joseph Gillespie, an analyst at ARC Advisory Group in Boston.

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