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LED Holiday Lights a Hit, and a Breakthrough

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'Transformer-less' LED Holiday Lights

When David Allen lights up his Christmas tree-and his home in the Philadelphia suburbs-with his company's LED holiday lights this year, the tradition holds more meaning than ever before.

It represents:

- The excitement created by his company's newly launched [Forever Bright](#) line, decorative LED light strands;
- The first "transformer-less" LED holiday lights;
- A successful collaboration between brothers working together while living on either end of the country;
- The culmination of five years of hard work; and,
- Great potential for the future of the Allens' Forever Bright product.



The UL-approved indoor/outdoor lights hit the retail stores this fall and, by early December, they were sold out.

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"We've gotten a tremendous amount of interest from the professional lighting and decorating market," says Allen, from owners wanting to decorate theme parks, public buildings and large properties.

Allen is hearing amazing stories about how popular the lights had become with consumers, too:

- One consumer bought an entire inventory from a local grocery store and began auctioning them off on the e-Bay Web site;
- A large shipment was sent to West Coast retailers because the energy crisis has created motivated consumers there; and,
- Because supply is limited, one West Coast retailer apparently sold Forever Brights at 300% above retail.

Frustration: Mother of Invention

"I got into this field from the pure frustration of doing the same thing year-in, year-out at Christmas," says Allen.

"My wife would begin harassing me to decorate the house, usually starting around Thanksgiving. I'd test last year's lights with an open trashcan next to me, and throw away God knows what percentage of lights. Then I'd go to the hardware store or the home center, and spend all day Sunday on the roof, in the trees and in the bushes," he recalls.

"Then I'd take the wife and kids outside and flip the switch," Allen says.

His holiday spirit nearly spent, Allen decided it was time for a change.

A Tale of Two Brothers and a Breakthrough

"My family gets together at my Mom's house every year for Christmas, and my brother Mark was visiting from California. He has his doctorate in electrical engineering, and we started discussing it," says Allen.

"Between the two of us, we reached a consensus that there's got to be a better way - and we found it," he adds.

That conversation set in motion a five-year journey for Mark, an aerospace engineer, to develop the product and for the two brothers to bring it to market.

Mark began researching fiber optics as the first possible solution to the holiday light dilemma-so they named their company Fiber Optic Designs.

When he hit on the idea of using LEDs, Mark researched the technology thoroughly for a year.

"At that point there was a big leap of faith," says David Allen. "Our original designs and prototypes were based on using a transformer. The reason we followed that line of logic is that, in the engineering textbooks, all of LED manufacturers notes and instructions for use said you had to use some kind of transformer or conditioning

device inside your circuit."

Originally, the product was built on that premise. "They looked and worked real nice. The problem was that you could use them indoors only, and you couldn't connect them end-to-end," says Allen. "That item didn't have much utility."

"That's when my brother started developing theories. He thought, 'Let's challenge what's known and see if we can run them off of AC.' He did it. That's what makes these lights unique," he explains. While Allen says "they did it," he won't say how. The Forever Bright has a patent-pending status.

Plans for Future

The Allens' fast success represents a miniscule part of the \$1.9 billion holiday light industry this year.

But their plans are to change and grow.

"The technology is so new and exciting," says David Allen, who credits his brother with focusing on theory while he's focused on practicality in the company.

Will the average \$9.99 to \$12.99 retail price for the 100-lamp set be likely to decline in 2002?

"We had two options," says Allen. "We could go for bringing the price down or improving the line further."

"Our 2002 line, instead of comparing it to a little miniature lamp, we're looking to something that would compare to a C-6 lamp. So the LEDs are larger and much, much brighter. We've improved the efficiency a bit, and retailers we've shown them to got quite excited when we're comparing them to the incandescent product of a similar size, and similar utility," he says.

Just the Specs

- LED lamps rated for 200,000 hours of use
- Uses 10% to 20% of electricity required to power incandescent light strings of similar size
- Lamps remain cool, regardless of length of time illuminated
- Available in 35, 50, or 100 per strand
- Available in red, green, gold, blue, white or mixed colors

To learn more about the energy efficiency of LED holiday lights, visit [the Energy Ideas](#) Web site.