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How connected lighting is transforming retail.

Imagine having a map available on your smartphone when you enter a supermarket or large store. The indoor positioning app you're using knows exactly where you are and moves seamlessly with you as you make your way through the shop, supporting you in searching for your items.

Fresh vegetables? Just around the corner. That bottle of red wine? Three aisles along on the right-hand side.

What if you're looking for something very specific? Locate the product in your online catalog and you'll be guided directly to where it is on the shelves. Perhaps you'll even receive a discount voucher as a final incentive to buy.

Welcome to the world of connected lighting.

We know, of course, that more and more consumers carry smartphones with them as they shop. Very often, they'll be referring to them—checking emails, texts, and social media, or simply viewing the shopping list they prepared earlier. Now retailers have the opportunity to connect with shoppers through data-enabled LED lighting systems that can collect and send relevant information using wireless communications, specially designed mobile apps, and icloud services, letting them create innovative, interactive experiences in store.



“Find me the frozen peas!”

Technology guides shoppers directly to items they want to purchase and offers discounts.

With over 10,000 stores in more than 30 countries, Carrefour is a true giant of the retail world. Its hypermarket in Lille, France, covers 7,800 m² and was previously fitted with fluorescent lights. Replacing this conventional technology with 2.5 km of connected LED luminaires transformed the store and shopping experience, offering significant advantages.

One of the primary motivations for the installation was energy efficiency. The system cut energy consumption in half, which has had an immediate impact on the bottom line. Products, particularly fresh produce and meats, benefit from the unique qualities of LED light, giving food more color and appeal to customers.



The technology

at a glance



Unique code from the LED light beam can be detected by any smart device with a camera.



System acts like an “indoor GPS – each light point transmits a one-way location code. Once connected, customers can orient themselves in the store and receive targeted discounts via Promo C'ou, an easy-to-use mobile app developed by Carrefour.



Philips indoor positioning software is fully integrated into Carrefour's mobile app and supported by a cloud-based location database operated by Philips.



“The system has the potential to transform shopping into a more interactive experience.”

Gerben van der Lugt, Manager of LED-based indoor positioning

Hyper-accurate location

Carrefour desired more from the new lighting system than excellent illumination. The company wanted to harness the power of connected lighting to strengthen its relationship with customers.

The project included 800 linear LED luminaires, each making use of the Philips VLC technology. With indoor positioning capabilities, the system can pinpoint a customer's location within half a meter. Once registered with the system, customers can access a map to guide them around the large store, find promotions in the online catalogue, and locate them in the store. As a shopper approaches a shelf and begins comparing items, the app can show him available discounts or special offers for products in the vicinity.

Céline Martin, Carrefour's Director of Commercial Models and Innovation for the brand's French hypermarkets, is delighted with the system's impact in store.

“Thanks to this new application, which uses Philips technology, we are now able to provide our customers at the EuraLille Carrefour with a new service, enabling them to quickly search and locate their preferred promotions or detect all the promotions around them when they are in-store.”

Unique code transmitted through light

One way of wirelessly communicating with shoppers' smartphones is built right into the LED technology itself. With visible light communications (VLC) from Philips, a unique code can be transmitted through the beam of LED light. This code can be detected by a smartphone's camera, creating a real-time link between the shopper and the lighting system. As a result, it's possible for the shopper's smartphone to know exactly where it is and show relevant maps, product information, and promotional coupons.

The technology requires shoppers to opt in to accept information via an app. Since the data stream is one way, users' private information is safe.

One major retailer that has already been experimenting with the potential of VLC and connected lighting is French multinational Carrefour. RetailScene went to investigate.



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