

Inditex

Case Study



Retail



Casambi drives Inditex's retail lighting towards sustainability.

THE CHALLENGE

Enhance operational and energy efficiency across an expansive network of physical stores for Inditex, a multinational fashion retail conglomerate.

THE SOLUTION

Casambi's wireless lighting control system provides user-friendly dynamic control. [CBU-DCS](#), [CBU-TED](#) and [CBU-ASD](#) modules enable Casambi connectivity for non-wireless products.

THE BENEFITS

Casambi minimized wiring requirements, reduced installation and commissioning time, achieved up to 70% energy savings, and improved user experience with intuitive controls.

Inditex, the multinational fashion retail conglomerate known for its ownership of popular brands such as Zara and Bershka, has embarked on an ambitious endeavor to enhance both the operational and energy efficiency of its expansive network of physical stores. This initiative is a cornerstone of Inditex's broader [sustainability strategy](#), which aims to slash emissions by more than 50% across all facets of its operation by the year 2030. Furthermore, the firm has set its sights on achieving net-zero emissions by 2040, targeting a minimum 90% reduction in its carbon footprint from 2018 levels. In pursuit of these goals, Inditex meticulously evaluates and refines its distribution chains and store operations, constantly seeking innovative methods to mitigate its environmental impact. A pivotal aspect of this process involves the continual improvement and optimization of the energy consumption within its physical stores.

A significant step in achieving these sustainability objectives has been the adoption of Casambi-controlled lighting solutions across several of Inditex's flagship stores. These advanced systems are specifically designed to adjust lighting dynamically according to how spaces within the stores are used, which significantly boosts energy efficiency without compromising the customer experience. Considering that these stores typically occupy more than 3,500 square meters, where lighting is a major consumer of energy, the role of sophisticated lighting control becomes critical. The multifaceted lighting requirements of such large retail spaces make the integration of Casambi's smart and efficient lighting solutions a key component in Inditex's broader sustainability strategy.



Bershka Milan, Italy.

Inditex lighting requirements

Optimization of electrical consumption	The lighting system must adjust intensity based on specific needs and applications, optimizing energy use.
Extended fixture lifespan	Properly managed lighting intensity is required to prolong the life of fixtures, reducing maintenance and replacement costs.
Construction process refinement	Wireless smart lighting control sought to contribute to the overall design and construction efficiency of stores.
Simultaneous light management	The system must handle the operation of thousands of lights simultaneously across large spaces.
Centralized control system	A central system is required for uniform management of all networked luminaires.
Compatibility with advanced protocols	The control system should be compatible with protocols like SCADA, MODBUS, and BACNET for comprehensive management.
Multilevel integration	The system needs to work across multiple floors, ensuring consistent lighting and control throughout the store.
Operational coherence and rich functionality	Ensure that all lighting functions cohesively for optimal store operation and customer experience.

How Casambi works?

Casambi's lighting control system operates on a mesh network utilizing Bluetooth® Low Energy (BLE) for secure, device-to-device wireless communication within the network. This mesh topology is self-healing, ensuring high reliability and no single points of failure because each device can reroute communication through other nodes if needed. The entire network functions without the need for central routers or gateways, with each of the devices in a network containing backup and full intelligence, enabling a robust and responsive lighting system.

Off-the-shelf Casambi Ready luminaires can seamlessly integrate into a Casambi network, while existing luminaires lacking Casambi connectivity can be easily converted using a CBU (Casambi Bluetooth Unit). All products are paired, configured and commissioned using the Casambi app.



Casambi for Retail

For retailers, Casambi offers significant benefits, enhancing both the flexibility and efficiency of lighting management. The system supports seamless design changes and easy reconfiguration directly via the Casambi app - without the need for any physical rewiring - catering to the dynamic nature of retail layouts. Installation is discreet and straightforward, with minimal hardware required, and the system scales effortlessly, supporting any number of networks on a single site. Integration with IoT systems also allows for further analytics and smarter energy management, making Casambi a powerful tool for modern retail environments seeking both sustainability and customer experience optimization.

Luxled Técnica S.L.U. Emotions Lighting Design Studio



In 2012, Eliseo Ciurana Roca, a seasoned commissioning engineer with expertise in lighting management and control, established Luxled Técnica S.L.U. Emotions Lighting Design Studio. His introduction to Casambi technology in 2015 proved pivotal, leading to its seamless integration into various projects spanning corporate offices, schools, hospitals, and retail spaces. Eliseo's refined methodology and structured approach to unleashing the full potential of Casambi has earned his firm the trust of clients like Inditex, who have entrusted it with designing and implementing Casambi control systems for their stores.

“By mastering Casambi, an integrated smart control system, we’ve been able to offer a solution for our clients that not only slashes the need for control wiring by 99.9% but also optimizes lighting usage achieving up to 70% reduction in energy consumption. We can also program lighting for specific activities—ranging from full retail operations to after-hours cleaning and night-time security.”

- Eliseo Ciurana Roca



Zara store in Seville, Spain

CONSTRUCTION

GOA Invest

ARCHITECTURE & INTERIOR DESIGN

Zara Studio

INSTALLATION

Osmos

BMS & AUTOMATION

Arceclima

ELECTRICAL INSTALLATION & CASAMBI COMMISSIONING

Luxled Técnica S.L. Emotions light

LUMINAIRES

Ilumisa, Fagerhult, Flos

This installation consists of 16 Casambi networks, which unify a total of 2,789 Casambi nodes, drivers, relays, [CBU-DCS](#) modules, sensors, [CBU-TED](#) and [CBU-ASD](#) modules, which together control approximately 4,000 luminaires.

The entire lighting system operates seamlessly from a centralized control system, connecting the Casambi networks with the BMS control and alarm center. This enables the store's illumination to adapt uniformly to scheduled activities, specific usage scenarios, or designated areas, such as during product unloading, where only essential lighting is activated for the task at hand.

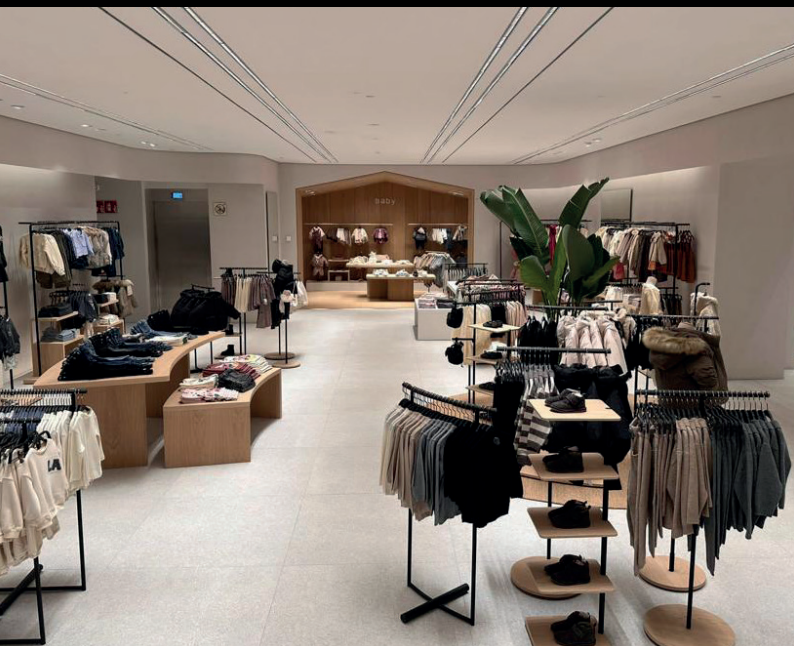
Here, the first step in the commissioning process involved using the Casambi app to pre-set the maximum level at which the luminaires must work per the client's request. In many cases, Eliseo explains, this adjustment, which is hidden from normal use, can result in a reduction of up to 20% of the total installed power. Specific light levels were also established for certain products and passage areas, and luminaires providing accent lighting were programmed. Where installation or ceiling heights vary, light levels were tweaked to obtain uniformity and stabilize the lighting throughout the space.

Secondly, a series of scenes was established, which act on the entire lighting system, adjusting the intensities for each cycle of store use. For instance, the time-based scene function has been employed to dim the lighting during off-peak hours, such as early morning when foot traffic is minimal, or during store cleaning and closing operations.

“This project is truly unique. As of today, we’ve not implemented a Casambi installation quite like it, with numerous networks seamlessly controlling countless luminaires as one cohesive system. It sets a new standard for complexity and efficiency in lighting management.”

“The reduction of the carbon footprint is evident. Depending on the scene applied to the system, energy consumption can drop significantly. Likewise, with the information received back from the system, it is easier for maintenance teams to locate faults in any luminaires and replace components, without having to replace the entire luminaire. Additionally, by applying power cuts, it is also possible to extend the lifespan of the luminaires.”

- Eliseo Ciurana Roca



Pictures: Zara store in Seville, Spain



Bershka flagship store in Milan, Italy

CONSTRUCTION

GOA Invest

BMS & AUTOMATION

Arceclima

ARCHITECTURE & INTERIOR DESIGN

OMA

CASAMBI SPECIFICATION & COMMISSIONING

Luxled Técnica S.L. Emotions light

LIGHTING DESIGN

Javier Susaeta

LUMINAIRES

Ilumisa

INSTALLATION

Osmos

The lighting design for this store focused on creating a visually appealing and uniform aesthetic. Special attention was given to the alignment of luminaires, with two light planes developed for a cohesive and ordered ceiling-mesh appearance. Different lighting scenes were envisioned based on the purpose of specific areas within the store.

The first plane comprises uniform linear lighting without any gaps, while the second upper plane houses 48 V accent projectors with 24-38° optics, serving to emphasize areas and furniture. A significant portion of the store's display area, with lower heights than the rest, features a black square grid ceiling where the lighting is embedded in perfect order with luminaires that offer very low glare and high visual comfort.

The 'fast' fitting rooms share the general lighting of the grid ceiling, while the 'slow' fitting rooms, dedicated to personal shopper experiences, feature general ceiling lighting with scenes synchronized with video and music.

The lighting, all with a color temperature of 3000K and a high CRI>90, is wirelessly controlled through Casambi to be able to assign the correct illuminance levels required across the expansive store. Casambi nodes, drivers, relays, CBU-DCS modules, sensors, CBU-TED and CBU-ASD modules, which together control approximately 3800 luminaires.

Given the magnitude of this store, the challenge lay in orchestrating the simultaneous operation of thousands of luminaires. The solution involved a centralized control system compatible with SCADA, MODBUS, BACnet protocols, enabling unified and synchronized control across different levels of the building.

The installation consists of eight Casambi networks, which unify a total of 1400 Casambi nodes, drivers, relays, CBU-DCS modules, sensors, CBU-TED and CBU-ASD modules, which together control approximately 3800 luminaires.



Pictures: Bershka Milan, Italy.

Smart lighting control propels retailer towards sustainability objectives.

The integration of Casambi control in Eliseo Ciurana Roca's Inditex store lighting projects has yielded remarkable benefits. Firstly, the system has substantially minimized control wiring, significantly streamlining installation processes. Secondly, the dynamic control capabilities of the lighting system, which adjust intensity levels based on specific usage scenarios, have led to a remarkable up to 70% reduction in energy consumption during non-public hours. Moreover, the incorporation of Casambi control, alongside other control elements and systems, has enhanced fault detection within luminaires, simplifying maintenance procedures and enabling targeted component replacement rather than entire luminaire replacements.

In essence, Casambi offers a forward-looking lighting control solution that not only meets sustainability objectives but also enhances operational efficiency while maintaining an excellent customer experience in-store.

casambi.com

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