

Warehouse Case Study

Carrefour Le Rheu Logistics Center



Main Achievements

- ▶ **Reduced 44% of lighting energy consumption**
- ▶ **Delivered required light level**
- ▶ **complied with union lighting requirements**

Background

Over the past 40 years, the Carrefour group has grown to become one of the world's leading distribution groups. The world's second-largest retailer and the largest in Europe, the group currently operates four main grocery store formats: hypermarkets, supermarkets, discounted and convenience stores. The Carrefour group currently holds over 15,000 stores, either company-operated or franchised.

As Carrefour delivers great volumes of products to hundreds of stores, the optimization of its logistic centers is paramount. Carrefour Le Rheu is a large logistic center that operates 24 hours a day. Carrefour, wanting to modernize its lighting system, was faced with a challenge: meeting all technical requirements, ensuring the safety of the employees and reducing energy consumption.

Original Situation

The existing system consisted of 400W metal halide fixtures mounted across the entire area. The old system enabled lamps in a particular segment of the hall to automatically switch on and off using a light sensor. In addition, the light levels only reached 82 lux when 200 lux were required. Therefore important considerations included:

- ▶ Maximum energy savings and cost reduction
- ▶ Increase light levels from 82 lux to 200 lux
- ▶ Provide dimming capabilities

Snapshot

44%

Energy Savings

Lamp Power

Reduced from 400W to 350W
50% Dimming, 25% of time

Annual kWh Saved

378,686 kWh

Annual CO₂ Saved

272 metric tons

Total Annual Savings

\$78,522

The Solution

The existing lighting solution was replaced with 350W metal halide lamps powered by Metrolight. Even though lamp power was reduced, the required lux level was achieved. In addition, the new solution provided Carrefour with control over their lighting system by delivering dimming capabilities.

The Result

Metrolight's 350W solution automatically controlled by a web server located in the maintenance office has achieved the following:

- 44% energy savings
- Reduced lamp power from 400W to 350W
- Required light level of 200 lux
- Improved light level by 143.41%
- Digital scheduled dimming profile of 50% during 25% of time using daylight harvesting
- Significantly reduced maintenance costs (approximately 50%) due to extended lamp life

Features	Before Installation	After Installation	Savings
Fixture Power Consumption [W]	440	364	76
Dimming level - time period	None	50%-25% of time	172W
Light level [lux]	82	200	-
Operation Hours/ Days	24/365	24/365	-
Annual lighting-related energy cost	\$265,980	\$187,458	\$78,522
Total annual saving		\$78,522	



➤ Metrolight's Solution Installation

"When we decided to modernize our lighting system, we had some very definite requirements including increasing light levels, ensuring worker safety and ensuring the maximum possible energy savings and cost reductions. The solution implemented by the project team of Masselin, Metrolight and Novalux easily met and exceeded our requirements."

Service Maintenance Management

About Metrolight

Metrolight provides proven energy-efficient eHID and LED solutions for high-power lighting. Metrolight's ballasts and managed lighting solutions are used in retail, industrial, commercial and municipal installations to reduce energy consumption and carbon emission by 70%. Pioneering lighting energy solutions since 1996, Metrolight operates worldwide with over 750,000 systems deployed and over 8 billion hours in operation. For more information, please visit our website at www.metrolight.com

Integration Partner:

NOVALUX

Novalux is a young, dynamic and growing company with designated expertise in intelligent, cost saving lighting systems in the commercial sector. Situated in Leipzig, Novalux operates in Germany and Europe, with current projects in the Czech Republic, Hungary and Croatia. For more information visit www.novalux.ag

