

cold storage case study: UK Supermarket Group



Background

Late in 2007 Light Planning Techniques Ltd. (LPT), a Metrolight UK partner, approached the Chief Executive of one of the UK's largest supermarket groups. LPT offered to save over 35% of the Group's lighting energy costs in the Company's 12 Distribution Centres where Metrolight technology could be implemented.

Early in 2008 a trial of 20 retrofitted luminaries was commissioned at one of the Distribution Centres.

Original Situation

Each Distribution Centre:

- Comprises a facility of 300,000 to 600,000 ft² (33,000 to 66,000 m²)
- Operates 24/7
- Comprises ambient, chilled and frozen storage areas

Existing lighting comprised 250w and 400w HPS (Sodium) luminaries mounted at a height of approximately 13 metres.

Lighting calculations carried out by LPT's lighting designers using Relux software proved that:

- Metal Halide lamps and Metrolight ballasts would increase level of illumination
- Selective use of presence detectors could provide further energy savings

Snapshot

Energy Savings
49%

Number of Luminaries

Reduced by 33%

Lamp Power

Reduced from 400w to 200w
(Fully controlled dimming)

Improved Color Rendition

Shift from Sodium to Metal Halide

Annual CO² Saved

2,936 Tons

ROI

70 %

Simple Payback Period

1.4 years

Total Annual Saving

£568,000

The Result

- Facilities Manager reported an energy saving of nearly 60%
- Number of luminaires reduced by 33%
- Lamp power reduced from 400w to 280w
- Presence detectors dimmed the lighting to 200w

The Board of the supermarket group then commissioned a roll out project across all 12 Distribution Centres which cover the UK and supply over 500 retail stores.

- 400w lamps replaced by 350w Metal Halide types
- Metrolight ballasts are retrofitted within existing luminaires at nominal power of 280w
- Throughout these current installations, energy savings are 49%
- Enhanced working conditions and improved colour rendition which facilitates recognition of packaging and labelling
- The roll out continues and the customer is “delighted with the result”

The next stages will comprise trials within the retail stores, external floodlighting and petrol station canopies.



Before Metrolight



After Metrolight

Features	Before Installation	After Installation	Savings
Fixture Power Consumption	460 Watts	263 Watts*	197 Watts
Operating Hours/Days	24/365	24/365	-
Annual Lighting-Related Energy Cost (GBP)	£1,080,000	£512,000	£568,000
Total Annual Savings (GBP)	£568,000		
Simple Payback/ROI	1.4 Years/70%		

*Average power per luminaire - luminaire efficiency, luminaire reduction and dimming control included

Installation Partner:
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