

# LIXIL Logistics Corporation Kanto Logistics Centre Lighting Replacement

Location : Shimotsuma city, Ibaragi prefecture  
Install Date : October, 2016  
Product Type : High-Ceiling LED MB-400 440 units



The Kanto Logistics Center is the biggest East Japan logistics center of LIXIL Group Corporation, which owns in total 15 logistics centers throughout Japan. Kanto Logistics Center occupies a land area of approx. 74,203 square meters - equal to double the size of Tokyo Dome, the biggest baseball stadium in Japan. Within this distribution center a large volume and high variety of housing, building and built-in kitchen materials are stored in a zoned layout, serving the market of Kanto and surrounding regions. In March 2016, LIXIL Group Corporation developed their corporate 'Environmental Vision 2030' initiative, with its distribution department aiming to reduce CO2 emissions by 5% as a mid-term 2020 target. As part of this effort, approx. 30% (440 lamps) out of a total of 1,500 ceramic metal-halide lamps have been replaced with Lumiqs MB-400.



Kanto Logistics Center of LIXIL Logistics Corporation  
Director Mr. Murayama Shigetoshi

**After replacement**

High-Ceiling LED Sensor Light MB-400-E39

130 W x 440 units

Illumination Time Rate 21%

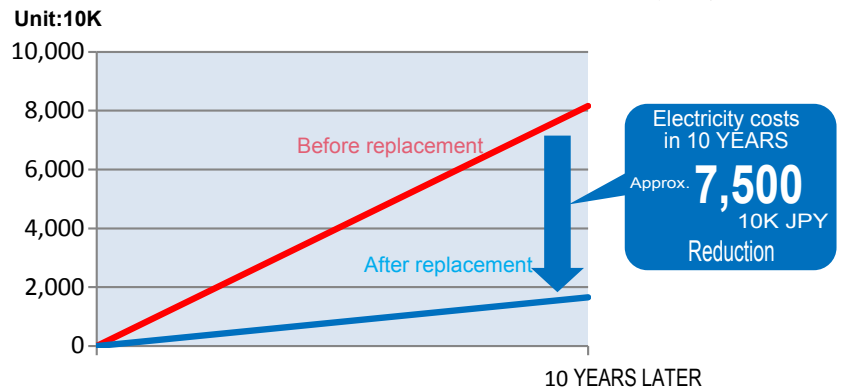
**Before replacement**

Ceramic metal halide lamp 230W

250 W x 440 units

**Energy Consumption**

85% Reduction

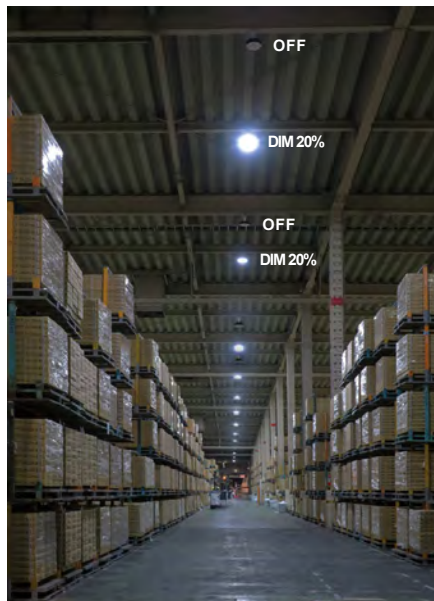


## Aiming for significant scaling down of energy consumption via use of LED

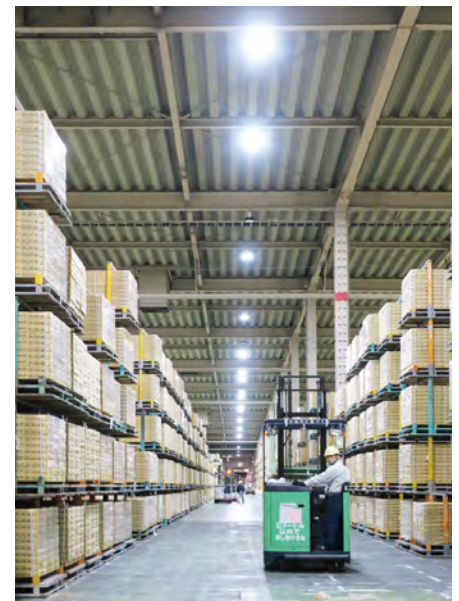
90% of the total electricity consumption in the logistics center comes from lighting, and data already confirms that significant reductions are being made as a result of the lighting replacement program. Energy consumption has already decreased from initial 800kW to the current 600kW. LIXIL now plan to replace the remaining 70% of existing light fittings with Lumiqs LEDs with the aim to drive energy consumption below 500kW.

## When unoccupied, dimmed standby illumination (20%) is effectively used

Guided by feedback from their operators, LIXIL have been able to reduce energy consumption in unoccupied areas by alternating the lighting between completely OFF and dimmed at 20% - a safe, workable level of constant illumination is maintained whilst maximising energy savings.



In each aisle, the LED lights are alternated between being completely OFF and dimmed at 20% when the aisle is unoccupied, maintaining a level of constant illumination whilst also saving energy.



When the PIR motion sensor detects the presence of human beings or forklift trucks, the LED lights automatically illuminate at full power.

### ■ Replacement light fixture



MB-400-E39  
Luminous flux 13,500 lm  
Lamp efficacy 132lm/W

### ■ Electricity cost reduction simulation

		AFTER			Estimated cost reduction	
		Ceramic Metal halide lamp 230W	MB-400-E39 Light OFF when unoccupied	MB-400-E39 Light DIM when unoccupied		Total
Number of Unit	Unit	440	220	220	440	
Rated electricity consumption	W/Unit	250	130	130		
Average electricity consumption	W/Unit	250	28	48	38	212
Annual electricity consumption	kWh/Year	422,400	23,393	40,679	64,071	358,329
Annual illumination hours	Hour	3,840	818	818	818	3,022
Annual demand charge	JPY/Year	0	0	0	0	0
Annual energy charge	JPY/Year	0	0	0	0	0
Annual electricity costs	JPY/Year	8,870,400	491,243	854,255	1,345,498	7,524,902
10-year electricity costs	JPY	88,704,000	4,912,428	8,542,550	13,454,978	75,249,022
Cost reduction rate	%					85%

### ■ Simulation Conditions

Operating hours a day	16.0 Hours
Annual operating days	240 Days
Annual operating hours	3,840 Hours
Annual illumination hours	3,840 Hours
Basic demand charge	JPY/kW
Basic energy charge	JPY/kWh
Estimated electricity charge	21 JPY/kWh
Total monitoring hours	Hours
Sensor activated hours	Hours
Illumination time rate	21.3 %