

Retrofitting with LED lighting enables **97%** energy savings and a 24 month payback.

**Opportunity:**

Life Technologies operates cold storage facilities in Auckland, New Zealand. Their existing lighting installation comprised a mix of 500W High Pressure Sodium (HPS) lamps, 200W High Intensity Fluorescent (HIF) lamps, and 58W T8 linear fluorescent battens. These exhibited a number of drawbacks that Life Technologies wanted to improve on, including:

- Slow or in some cases failure to restrike in the -30°C blast freezer temperatures necessitated the lighting to be operated continuously 24x7
- The lighting levels and lighting quality was sub-optimal
- Heat from the luminaires and ballasts placed additional load on the chiller units
- Heat from the luminaires and ballasts caused condensation accumulated on surrounding surfaces to melt and then form pools of ice on the floor beneath – resulting in a safety hazard to forklift and foot traffic

**Solution:**

Eco-Lighttech proposed a lighting retrofit using their 120W LED highbays to replace the HPS and HIF luminaires, and 26W LED T8 Tubes to replace the fluorescent tubes. Used mostly in a 1:1 replacement scenario to minimise the installation costs, a reduction in the number of highbay luminaires by 10% was nonetheless attained.

The LED highbay used incorporates in an integrated LED driver in an IP65 sealed enclosure. No modifications to the linear fluorescent battens were required – the old tubes were simply exchanged for new.

A comparison of the previous and new highbay installations is shown below:



Existing 200W HIF



Existing 500W HPS



Eco-Lighttech 120W LED

**Benefits:**

An immediate 45% reduction in energy consumption was attained by changing to lower wattage luminaires/tubes. Simultaneously improved lighting levels and colour rendering allows operators to perform their tasks more easily and accurately. The hazard posed by ice pooling on the floor beneath the luminaires was also eliminated - the improved efficacy of the LED luminaires releasing significantly less heat.

A further 52% saving in energy consumption, bringing the total energy saving to 97%, was achieved because the instant strike LED lighting technology enabled the use of door activated switching. This served to significantly reduce the illumination time with flow on benefits to operating costs, longevity and reduction in thermal load on the chillers.

Finally there is no maintenance or re-lamping associated with the LED luminaires – the 50,000 hour life expectancy will likely exceed the life of the facility.

To find out more or receive a comprehensive analysis of how Eco-Lighttech can transform your lighting solutions, contact us at [info@eco-lighttech.co.nz](mailto:info@eco-lighttech.co.nz)



At a glance:

- Global biotechnology company headquartered in California, USA
- \$3.7 billion (2011 revenue)
- 10,000 employees (approx.)
- More than 4,000 patents and exclusive licenses
- Over 50,000 products

**Featured Products**

LED Highbay

LED T8 Tube



45°/90°/120° Beam Angle	Variants	600/1200/1500 mm Length
50/120/150/200	Wattage	10/18/22/26
≥85	CRI	≥70
2700/3900 /6000K	Colour Temp	2700/3900 /6000K
-30°C ~ 65°C	Op. Temp	-30°C ~ 65°C
>50,000 Hrs (Expected)	Life	>50,000 Hrs (Expected)

**✓ Summary of Benefits**

- 97% reduction in energy used
- 10% fewer highbay lamps required
- Zero maintenance
- Reduced thermal load
- Improved lighting levels and colour rendering
- Eliminated the safety hazard from ice forming on the floor

*"The LED high bay lights have transformed our freezers working environment and in a way that reduces energy consumption and improves safety. We could not be happier with the result"*

*Phil Kay, Engineering Services Manager  
Life Technologies*