Aircraft hangar LED high bay lighting

Case study - key benefits:

- Lighting energy needs down by 45% without wireless lighting control, 82% with wireless lighting control
- 390 tonnes reduction annually in CO₂ emissions
- 5 times the life expectation of metal halides
- Huge savings in maintenance
- Payback possible in less than a year at UK rates
- Average lux levels up by 125%
- Improved CRI from 60 to 80+
- Increased work efficiency and improved productivity

The H1 Hangar of Etihad Airways reduced power needs by up to 82% with LED high bays and wireless lighting control system

The challenge

With the capacity to accommodate three out of the fleet of 120 aircraft at one time, the hangar is in operation 24/7. This placed continuous stress on its 450W metal halide fittings, accelerating lumen depreciation and necessitating repeated re-lamping. As the lights were mounted at 25 metres height, it was a challenge to access them for replacement while also running a timely maintenance operation for such a large fleet of aircraft. Additionally, the metal halides were delivering less than 200 lux for tasks which needed an average of 400-450 lux.

The solution

After an on-site survey the 500W SEGA High Power LED high bay was selected to replace 226 x 450W metal halides fittings using only 113 of the LED fittings from Hadar Lighting’s industrial and commercial lighting partner GigaTera. It was also decided to include GigaTera’s Wireless Lighting Control System (GeSS) in the installation.
**The result**

Not only did the LED high bays improve the average illuminance level by 125%, meeting the target of 400-450 lux and taking the CRI (colour rendering index) from 60 to 80+ with a high level of uniformity, they were able to deliver 45% energy savings from the reduced wattage when running at full power. These savings were further increased to a maximum of 82% by the use of the GeSS lighting control system.

Through the GeSS system six zones were created for the hangar for customisable lighting based on sections of the facility and operational schedules, so lighting can be turned off in unoccupied bays from an IPC wall switch located in the duty manager’s office. Lighting maintenance is no longer an issue as the SEGA high bays carry a 5-year warranty and the convenient GeSS method of controlling and turning off lights adds to the longevity of the LED lighting to further eliminate maintenance needs by more precisely using the light only when it is needed.

A similar installation in the UK would see the project pay for itself in less than a year based on savings in energy use and maintenance costs.

See our full range of LED industrial high bays, area lights and floodlights at www.hadar-lighting.com

**SEGA** - IP65 Industrial LED High Bay
80W / 100W / 130W / 160W

**SEGA-High Power** - IP65 Industrial LED High Bay
500W

**EFL** - IP65 Industrial LED High Bay
70W / 100W / 130W
A-Belco Group’s Hadar Lighting Division is a specialist manufacturer of hazardous area products for the oil, gas, petro-chemical, pharmaceutical and marine industries worldwide offering the design and production of products for Zone Classification Areas 1, 2, 21 & 22, Gas and Dust. Working in partnership with established leading manufacturers we also offer the Hadar Industrial and Commercial LED lighting range which complements our hazardous area range for a wide variety of industries.

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