



Energy Savings:
52%

Case Study

Charles de Gaulle Airport, France



Charles de Gaulle airport chooses Orus LED for energy efficient, low mounted lighting



Background

Charles de Gaulle airport is France's largest international airport and one of the world's principal aviation centres. Handling more than 62 million passengers and around 500 000 aircraft movements every year, it is the second busiest airport in Europe.

In 2011, Thorn worked with Aéroports de Paris (ADP) and Sobeca Installers to commission Thorn's innovative low level Orus HID road lantern for Charles de Gaulle's internal road network. Ideal for use in the vicinity of airfields, the lantern was chosen because of its innovative bi-directional optic which creates a unique light distribution, excellent uniformity with no glare, low energy consumption and above all, low mounting height of just 0,9m.

Lighting objective

Satisfied with the Orus HID installation, Charles de Gaulle airport once again needed a supplier to illuminate a new 700m stretch of internal road. As previously, the request was for a discreet solution avoiding the use of high columns. Having established a strong relationship with ADP through an agreed lighting retrofit program which involves monitoring and controlling energy usage, Thorn was selected to submit a proposal.

Lighting solution

Having recently launched Orus LED Thorn proposed it for the new road. Orus LED provides all the features of Orus HID but with the added benefit of significantly reducing energy consumption. Charles de Gaulle airport was so impressed with Orus LED, it requested a review by Thorn and ADP Consulting into the feasibility and benefits of also replacing the Orus HID fittings with the new Orus LED. Thorn consequently installed Orus LED on the new road as well completing a point for point replacement on the old road network.

Results and benefits

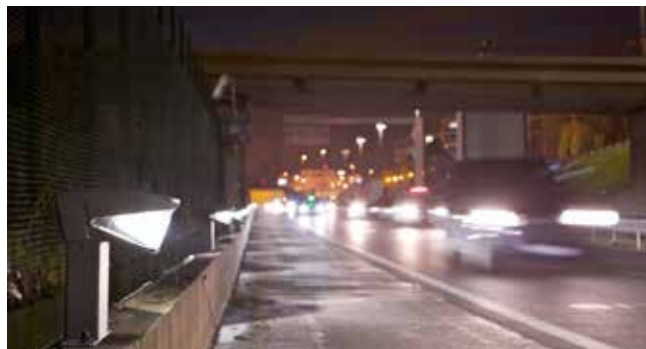
Compared to Orus HID, Orus LED more than halves energy consumption and carbon emissions (52% reduction). The annual SLEEC-L ($W/cd.m^2/m^2$) is reduced from the previous already excellent 0,33 to just 0,19.

As well as reducing energy costs, the highly efficient LED offer an 80 000-hour lifetime (@L70B10) and therefore reduce maintenance requirements and costs. The highly accessible fixtures also mean glass cleaning is easy with no requirement for an elevated platform. Importantly, Orus LED's low mounting height is discreet and ensures the lighting integrates into the landscape without interfering with the aeroplanes, specific airport lighting or guidance lighting.

In addition to many lighting performance benefits, the new LED lighting strengthens the image of Charles de Gaulle airport as a modern and environmentally conscious facility.

Christophe Durand, Functional Lighting Segment Manager at Thorn Lighting explains, "Orus LED is not only an effective choice in this location but could be considered the only solution to answer the constraints an airport presents. Looking at the lighting performance Orus LED provides excellent uniformity with superior visual comfort with no glare, all at less than a metre high. It also meets the required standard of 1cd.m²."

"The main difference between the HID and LED solutions is the energy efficiency and intelligence of the luminaire. Orus LED allows you to go even further in optimising energy consumption; I mean we are replacing a 35W lamp with a 27W system. In addition to that we are able to centrally control the level of lighting to match the road usage patterns and collect information on each individual lighting point. Furthermore the LED light source is more stable and requires fewer replacements so the airport benefits from a reduction in maintenance inconvenience and cost."



Key facts

- Road lighting provided from a low mounting height of just **0,9m**
- Energy consumption and carbon emissions reduced by **52%**
- SLEEC-L ($W/cd.m^2/m^2$) is reduced from 0,33 to just **0,19**

eControl From Thorn's 15 ways to save energy, the following are key to minimise Charles de Gaulle airport's energy consumption:



Lamp efficacy

Orus LED ensures a relatively high amount of light is emitted from the lamp compared to the amount of power used to produce it.



Luminaire distribution

With its Flat Beam® technology Orus LED allows precise beam control to maximise useful light and to provide the light where it is needed.



Waste light

Precise optical control and luminaire aiming minimises spill light, so no energy is wasted lighting the wrong area.

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