

THORN

LIGHTING PEOPLE

Case Study

Heriot-Watt University, UK

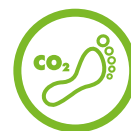
Energy Savings:
76%



Thorn's Isaro LED lantern reduces energy costs, maintenance and light pollution for Heriot-Watt University



Energy Savings:
76%



CO₂ Savings:
112 tonnes/yr



Summary

Thorn's Isaro LED lantern was chosen to refurbish the outdoor lighting at Heriot-Watt University in Scotland. Following an initial trial and successful installation, Isaro LED has reduced annual energy consumption by 76%, is delivering associated maintenance savings and has also reduced light pollution.

Background

With a history dating back to 1821, Heriot-Watt University in Scotland is known for being a world-class teaching facility with practical, leading-edge research. It has become one of the top UK universities for business and industry.

The project included the refurbishment of the university's 3-4 miles of roads and pathways which were lit with more than 460 SON lamp luminaires.

Thorn provided a high quality, reliable product along with a local service with product knowledge and design input.

Lighting objectives

The refurbishment project was based on replacing the old luminaires on a one for one basis. It therefore required a cost effective product that would fit onto a 34mm spigot, weigh no more than 10kg and provide high optical performance.

The three main objectives were to reduce energy consumption, reduce maintenance costs and reduce light pollution.

Lighting solution

Thorn's Isaro LED lantern offered the ideal solution for the university's outdoor lighting. Isaro LED is an economic, accurately controlled luminaire for minor and major roads. Its simple style offers an excellent refurbishment solution while advanced optical and thermal control ensures precision efficiency and a long lifetime.

Isaro LED was trialled on site to confirm its optical performance and demonstrate its ease of installation by arriving ready to be installed, straight from the box.

Key facts

- Annual energy consumption reduced by **76%**
- Annual carbon dioxide saving of **112 tonnes**
- Long lamp lifetime of more than **60 000 hours** (L70 @ Ta 25°C) reduces maintenance and associated costs
- Light pollution reduced by utilising Isaro LED's adjustable tilting



Following a successful trial, the Thorn Isaro LED 42W (93lm/W) and Isaro LED 31W (83lm/W) were chosen to light the roads and pathways.

Results and benefits

The refurbishment of the university's old, inefficient lighting with Isaro LED has reduced annual energy consumption by 76%.

A long lamp lifetime of more than 60 000 hours (L70 @ Ta 25°C) also reduces maintenance and the associated costs.

In addition to reducing energy consumption and maintenance costs, Isaro LED offers adjustable tilting -20° to +10°. This reduces light pollution by allowing the light distribution to be matched with the geometry of the road with no upward stray light. The adjustable tilting also enabled the existing columns to be utilised, making the installation easy and cost effective.

Graeme Ramage, Key Account Manager at Thorn Lighting says: *"The use of Isaro LED to refurbish the outdoor lighting at Heriot-Watt University has enabled the required illuminance to be achieved using a lower wattage luminaire. The installation of Isaro LED was really smooth and in fact, the programme was completed four weeks ahead of schedule."*

eControl From Thorn's 15 ways to save energy, the following are key to minimising energy consumption at Heriot-Watt University:



System efficacy

Advanced optical and thermal control enables Isaro LED to efficiently convert energy into light to maximise energy savings.



Luminaire distribution

High performance optics distribute the light very efficiently, allowing a lower lumen output light source to be used to achieve the required levels of illuminance.



Waste light

The LED light source within Isaro LED is carefully controlled and distributes light only where it is required. Reducing waste light ultimately reduces energy consumption.



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