

THORN

LIGHTING PEOPLE

Case Study

Copenhagen Zoo, Denmark



Thorn illuminates Copenhagen Zoo's biggest attraction



Founded in 1859, Copenhagen Zoo in Denmark is one of the oldest zoos in Europe. It comprises 27 acres and attracts more than a million visitors every year, making it one of Denmark's top attractions.

In February 2013, the zoo opened The Arctic Ring – a new and unique home for its polar bears, North Atlantic birds and seals. As well as offering the animals much better living conditions and space, the 3,200 sq m facility also allows visitors to get up close both above and below the water. Exceptional architecture combined with carefully configured building design and lighting from Thorn provide an enchanting arctic experience which is unparalleled in Europe.

Products used



Base LED



Cruz LED



7297D



Troika

Key facts

Exhibition ground floor

- Luminaire: Cruz LED
- Lighting level: 300 lux
- Lamp efficacy: 59 lm/W

Exhibition balcony

- Luminaire: Base LED
- Lighting level: 100 lux
- Lamp efficacy: 50 lm/W

For further product information:

www.thornlighting.com/BASE www.thornlighting.com/CR16

www.thornlighting.com/7297 www.thornlighting.com/TRKA



A journey to The Arctic Ring

Copenhagen Zoo's arctic journey begins in the polar bears' summer home. Visitors are led through a tunnel illuminated by Base LED downlights, which combine energy efficiency and longevity with true colour quality. Sounds of polar bears enrich the journey while posters offer the opportunity to learn about their life. Visitors then enter a submerged acrylic tunnel, allowing for a spectacular view of swimming polar bears.

In The Arctic Ring's impressive exhibition, penguins are ready to take over the entertainment. Visitors can also try to compete with the polar bear by holding their breath under the glow of Cruz LED – a high output recessed LED downlight with passive cooling, dimming and consistent colour performance.

In the outdoor polar bear cave, Troika floodlights provide illumination when daylight fades with excellent light control minimising obtrusive light for the surrounding environment. Finally, the neighbouring bird hill's rural environment is lit by the particularly robust and corrosion-proof fluorescent 7297D. This luminaire is suitable for harsh environments and resistant to bird droppings.

Michael Petersen, Manager of The Arctic Ring exhibition says: "When visitors enter The Arctic Ring it is important that the transition from the bright daylight into the artificial light in the tunnel and exhibition is as pleasant as possible.

In the exhibition we also value the LED lighting because of its ability to show colours correctly and long lifetime, which minimises the cost of renewing light sources."



eControl From Thorn's 15 ways to save energy, the following are key to minimising energy consumption at Copenhagen Zoo:



System efficacy

The use of LED luminaires with passive cooling ensures optimal running conditions. This maximises the system efficacy of the luminaire, giving the high output light for low input power, whilst requiring no parasitic energy to operate cooling systems.



Daylight Control

The use of daylight switching ensures that exterior lighting is only active when natural light is insufficient, preventing energy usage during daylight times.



Waste light

The use of luminaires providing tight optical control allows a lighting design sympathetic to the natural environment, minimising spill light which in turn ensures energy is only used to light the target area, reducing energy consumption.



www.thornlighting.com

Thorn Lighting is constantly developing and improving its products. All descriptions, illustrations, drawings and specifications in this publication present only general particulars and shall not form part of any contract. The right is reserved to change specifications without prior notification or public announcement. All goods supplied by the company are supplied subject to the company's General Conditions of Sale, a copy of which is available on request. All measurements are in millimetres and weights in kilograms unless otherwise stated. Printed on Luxo Light.

Publication Date: 07/13