



Carrasco International Airport

Sustainable LED Relighting: How ERCO illuminates Uruguay's Gateway to the world

Airports are not just operational hubs - they are spaces that connect people, evoke emotions, and symbolize national identity. They reflect the values and culture of their nation while creating memorable experiences for travellers. Uruguay has embraced this idea by turning the 2009 built Carrasco Airport into an architectural landmark that stands as a symbol of national pride on the global stage. Its signature architecture requires careful preservation, especially in the face of technological advancements, to ensure it remains a beacon of identity.

Project data:

Project:
Carrasco International Airport,
Montevideo, Uruguay

Architecture:
Rafael Viñoly Architects,
New York / Montevideo

Lighting design:
Estudio Hofstadter-Fregosi & Asociados,
Montevideo

Maintenance and Infrastructure Manager:
Jorge Navarro

Photography:
Santiago Chaer

When modernising the lighting system, it was crucial to retain the original concept in order to preserve the integrity of the architectural design. Transitioning seamlessly from ERCO luminaires with metal halide lamps to LED ensures that the airport not only retains its iconic design but also adapts to modern standards of sustainability and efficiency. The relighting unlocked tangible benefits: An impressive energy-saving of 63% and enhanced lighting quality.

An architectural vision followed by a thought-out lighting concept
The airport, designed by renowned Uruguayan

architect Rafael Viñoly, stands as a monumental tribute to his homeland. Since its opening in 2009, this architectural masterpiece has remained as a testament to Uruguay's transformation into a global destination for trade and tourism. The architectural concept features a curved, monolithic roof inspired by the rolling dunes along the Uruguayan coast, creating a harmonious connection to the surrounding landscape. [In 2009, the lighting system](#) was already considered energy-efficient for its time. With an energy value of 14 W/m² and low maintenance, ERCO luminaires operated for 15 years without needing replacement.

A necessary update after 15 years of reliable performance

After 15 years, Carrasco Airport needed to upgrade its lighting system due to the obsolescence of the original light sources. The challenge was to maintain the lighting design for both indoor and outdoor areas created by Ricardo Hofstadter's Lighting Studio in 2009. His concept remains effective today: indirect lighting of the vaulted roof unifies interior and exterior spaces with homogeneous light quality, enhancing the expressive character of the architecture. The airport's impressive overhang provides a smooth transition between indoor and outdoor lighting. The cooler 4,000K colour temperature creates a welcoming atmosphere that complements the modern architecture while ensuring sufficient brightness for both visual comfort and operational needs.

When it came to harmonising high visual comfort and efficiency in both indoor and outdoor areas, a flexible lighting system was required – one that could adapt to its surroundings while maintaining spatial coherence. Given their successful partnership from the original installation, the airport once again chose ERCO for the upgrade. This ensures a reliable service beyond the installation and guarantees a high-quality lighting solution that meets the operational standards of Carrasco Airport.

1-to-1 replacement respecting the original lighting concept

New luminaires from ERCO incorporating advanced LED technology complement the existing lighting design. The 365-meter-wide canopy structure at the airport entrance—a striking architectural feature providing shelter and visual continuity—is now uniformly illuminated by [Kona projectors](#). Equipped with oval and wide flood lenses, these projectors replicate the even lighting effect of the old ERCO Powercast floodlights without any loss of brightness. Significant energy savings were achieved: while the old Powercast luminaires had a connected load of about 170W, the new [LED Kona projectors](#) operate at just 109W. With an unchanged number of 27 luminaires, the LED update of the canopy leads to a 37% reduction in connected load and thus to a reduction in energy consumption. Updating a lighting system at an airport is a challenge due to its 24/7 operation, so a smooth replacement with the support of ERCO was crucial in order to minimize disruptions to daily operations.

Lighting in the outdoor areas of an airport requires a high degree of precision to prevent light from spilling into the sky and dazzling pilots. The [precise optical system](#) is recessed in the luminaire. In addition to precise optical system, this extra shielding ensures that the light is directed only where it is needed, thereby avoiding spill light and [light pollution](#).

Enhancing passenger experience indoors: In the airport terminal, indirect ceiling lighting elevates the grandeur of the space and enhances the lightness of the tensioned fabric ceiling. Environmental conditions have made the colour of the ceiling brighter and more reflective over time. To ensure balanced lighting without glare or bright spots, wide-flood optics were used for the relighting. The original ERCO Parscoop floodlights were replaced by [Lightscan outdoor projectors](#), maintaining uniform illumination and to underline the architectural splendour of the area. The LED upgrade has led to an impressive 65% reduction in energy consumption for the interior areas, significantly enhancing the airport's sustainability profile.

Low maintenance and future-proof lighting for the next decades

To protect the environment, it is crucial to use resources responsibly. ERCO contributes to this goal by developing durable luminaires that meet customers' long-term needs.

Housings, mechanical components, LED modules, and optics are developed and manufactured in-house. This enables ERCO to meet the highest quality standards, ensuring high performance over a long time. To maximise the [durability of the luminaires](#), the LEDs used have an average failure rate of less than 0.1% over 50,000 operating hours – well above the market average and evidence of long service life. Over this time, at least 90% of the LEDs still maintain 90% of their original luminous flux ([L90/B10](#)).

The relighting reinforces Carrasco Airport's role as a modern gateway to the world, where LED technology meets responsible resource management to uphold its iconic status.

Luminaires used in the project



Kona Projectors



Lightscan Projectors

About ERCO

ERCO is an international specialist for high-quality and digital architectural lighting. The family-owned company, founded in 1934, operates globally in 55 countries with independent sales organisations and partners.

ERCO understands light as the fourth dimension of architecture – and thus as an integral part of sustainable building. Light is the contribution to making society and architecture better and, at the same time, preserving our environment. ERCO Greenology® – the corporate strategy for sustainable lighting – combines ecological responsibility with technological expertise.

At the light factory in Lüdenscheid, Germany, ERCO develops, designs and manufactures

luminaires with a focus on photometric optics, electronics and sustainable design. The lighting tools are developed in close collaboration with architects, lighting designers and electrical designers. They are used primarily in the following applications: Work and Culture, Community and Public/Outdoor, Contemplation, Living, Shop and Hospitality. ERCO lighting experts support designers worldwide in transforming their projects into reality with highly precise, efficient and sustainable lighting solutions.

If you require any further information on ERCO or image material, please visit us at www.erco.com/press. We can also provide you with material on projects worldwide for your media coverage.

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For further information or image material please contact:

ERCO GmbH

Katrin Klein
Content Manager / PR
Brockhauser Weg 80-82
58507 Lüdenscheid
Germany
Tel.: +49 2351 551 345
k.klein@erco.com
www.erco.com

mai public relations GmbH

Arno Heitland
Senior PR Consultant
Leuschnerdamm 13
10999 Berlin
Germany
Tel: +49 30 66 40 40 553
erco@maipr.com
www.maipr.com

