



## Cumeada with LED Street Lighting Honoring the Dark Sky® Alqueva Reserve

### Municipality of Reguengos de Monsaraz

#### GOALS

Cumeada is a small town in the municipality of Reguengos de Monsaraz, where Dark Sky® Alqueva Reserve is headquartered.

A few years ago, several countries created dark sky reserves, classified with different references according to the night sky quality and competent certification authorities, i.e. the International Dark Sky® Association and the Starlight Foundation.

In December 2011, Alqueva in Alentejo - Portugal, was the first site in the world to be certified by the Starlight Foundation as a "Starlight Tourism Destination. These reservations underscored the recognition that a dark sky is a common gain and a natural heritage to be preserved.

Due to this new and important qualification, it was mandatory to replace the traditional street lighting – with a high light pollution level - with LED lighting to ensure the minimum projection of light to the sky and respect the night sky, during the observation periods.

**Project implemented in 2016.**

#### Dark Sky® Alqueva Reserve

The Dark Sky® Alqueva Reserve, which includes the municipalities of Reguengos de Monsaraz, Portel, Alandroal, Mourão, Moura and Barrancos, was the first Reservation in the world to be certified by the Starlight Foundation as a "Starlight Tourism Destination" Certificate, awarded by UNESCO and the World Tourism Organization, attesting to the unique characteristics of the night sky in this area of Alentejo.

This Reservation is also the opportunity to create a differentiated tourism product with a clear commitment towards sustainability, reducing the energy bill and positioning the region in new marketplaces, bringing a positive impact to the region.

#### TESTIMONY

"This project is highly important to the municipality and centralizes the effort of several authorities around the Astro Tourism. Having a certified Reservation - one of the purest in the world - with very low sky light pollution levels is a unique and niche market tourism. Not many places offer the opportunity to observe around 4.900 stars at naked eye. Obviously, this is a precious asset, very treasured.

The entire Cumeada's street lighting has been upgraded to LED technology with connected luminaires that can be controlled with a simple smartphone. Making it possible to reduce by 20% or 30% the lighting flux of the luminaires when performing an observation that requires great precision.

The best of it, is the fact of not disturbing or interfering with people's normal lives and allowing a minimum of light pollution level."

José Calixto  
Mayor of Reguengos de Monsaraz Municipality



## INSTALLED SOLUTION

The full replacement of the traditional street lighting with intelligent LED luminaires in Cumeada, apart the upgrade itself, enables to respect the night sky of Dark Sky® Alqueva Reserve.

The installed solution regulates and controls the luminous flux according to the needs in each moment, saving energy and minimizing the luminous pollution.

The ECCOS STREET management system developed by ARQUILED controls the light flux of the 74 ARQUICITY R1 luminaires installed. The luminaires are controlled through a smartphone application and whenever the Observatory is up and running the light flux can be reduced from 100% to 10%.



## INTELLIGENT MANAGEMENT SYSTEM



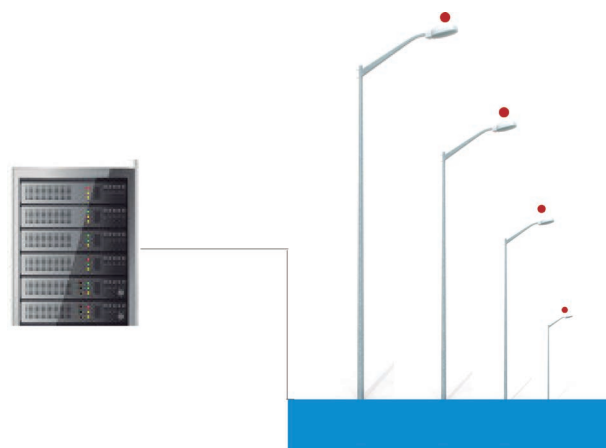
The ECCOS STREET intelligent management system offers additional energy savings, increasing the efficiency of street lighting systems and consequently reducing CO<sub>2</sub> emissions.

The ECCOS STREET allows the luminous flux regulation management that commands and controls the luminous intensity of the luminaires through a micro-cut system responding to the requirements of this unique spot for observation of the night sky.

The implemented system has two master controllers for remote access via web, as well as access to the manual control of the flux regulation, in steps of 10% in 10% (including shutdown), and the set up of flux control profiles, scheduled in time.

- Road lighting luminaires ON / OFF, with a maximum rated power of 31 W.
- ARQUICITY R1 luminaires with ECCOS STREET flux controller - controlled through a communication system of standardized suppression of the power supply, allowing to regulate the luminous fluxes.

This solution had a huge impact by casting a minimum of light to the sky, creating the ideal condition to observe the night sky and to clearly distinguish the arched arm of the Milky Way, without interfering with the proper illumination of the streets, roads and surrounding areas, conveying the sense of security to the inhabitants and tourists who visit the region.



## BENEFITS

The upgrade of replacing the traditional street lighting with LED luminaires with ECCOS STREET intelligent management system enables:

- High energy efficiency level and an energy consumption reduction of around 80%;
- Fast payback;
- Reduction of light pollution respecting the night sky;
- To improve the quality of light - Colour Rendering Index (CRI) - with a better colour restitution;
- To minimize the environmental impact with less polluting luminaires - reducing CO<sub>2</sub> emissions into the atmosphere;
- Free of Photobiological Risk Group.





consumption savings  
**80%**

reduce  
**ENVIRONMENTAL  
IMPACT**

less  
**LIGHT POLLUTION**

better visibility  
**NIGHT SKY**

more  
**QUALITY LIGHTING**

more  
**SAFETY**

## ARQUILED

Arquiled is a general LED lighting manufacturer, specialized in professional luminaires for street lighting, systems and services.

Headquartered in Mora-Alentejo, is a Portuguese industrial company, pioneering the market since 2005, that designs and develops its own products and solutions.

ARQUILED is committed to develop smart management solutions focused on reducing energy consumption and decarbonization, contributing to sustainable urban clusters.

**Arquiled, Projectos de Iluminação, S.A.**  
T: +351 217 971 964  
E: sales@arquiled.com

**Arquiled Colombia S.A.S**  
T: +571 756 00 96  
E: info@arquiled-light.com.co

Cofinanciado por:



2018, ARQUILED, PROJECTOS DE ILUMINAÇÃO, SA

All rights reserved.

All trademarks are property of ARQUILED, PROJECTOS DE ILUMINAÇÃO, SA.

