

Candela LED

Gonzalo Milá, 2012

LONG WORKING LIFE, OVER 50,000 HOURS, TRIPLING THE AVERAGE WORKING LIFE OF THE MAJORITY OF THE PRESENT DAY DISCHARGE LAMPS. MOREOVER, DOES NOT REQUIRE MAINTENANCE



Candela LED streetlamp

Urban streetlamp to light up big roads with basic and tested shapes, designed so that from the road it is seen as a homogeneous element integrated in the urban landscape. Its shape, designed for its function, contains the optical and electric units in an orderly manner, prevents light pollution and its easy handling aids its maintenance. It is manufactured in aluminium injection with a painted finish, recycled and recyclable material.

The Candela LED streetlamp is composed of three pieces: a clamp which is adapted to columns with a circular cross-section, an arm with a rectangular cross-section of different lengths, and an oval-shaped luminaire.

Luminaire

- **Optical unit**
Set of PC LEV 1700 optical lenses
- **Electronic equipment**
Offers the possibility of powering the lamp from 350 mA to 500 mA.
Adjustable 1-10V or Dali power sources can be supplied as an option.

Materials and finishes

- **Body**
The whole unit is manufactured in recycled aluminium with painted finish.
Body, lid and latch in aluminium injection finished with grey powder paint (RAL 9007). Internal dissipator in aluminium extrusion black anodized finish and diffuser in toughened glass.
- **Arm**
The luminaire arm is presented in two sizes (75 and 150 cm) with the aim of adapting the distance between the light source and the column in accordance with the type of road to be lit up and the presence of trees overhead.

On being aluminium extrusion, the arm can be adapted to any length between both measurements, or extend to 3 m, the latter incorporating a reinforcing brace. The arm incorporates an aluminium injection clamp at one of its ends.

- **Columns**
Columns with a height of 8.20 or 10.20 m, with two sections of circular cross-section tube, the lower part Ø 168 mm and the upper part Ø 127 mm.
The columns are manufactured in hot galvanized steel and painted finish for 1 or 2 luminaires at the same or a different height. The 8.20 and 10.20 m columns are also manufactured in extruded aluminium.

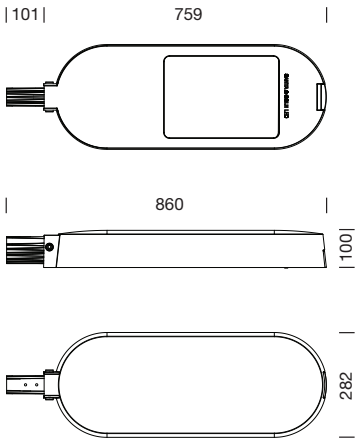
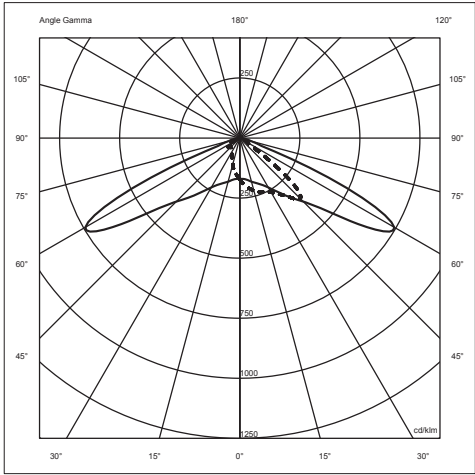
Lamp

The Candela LED incorporates a LED module which allows the following options:

- 140W - 96 LED (500 mA - 12064 lm - 3950k)
- 105W - 72 LED (500 mA - 9048 lm - 3950 k)

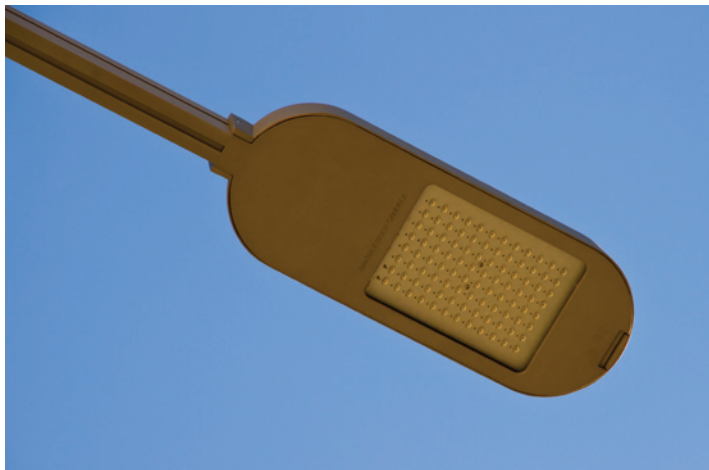
Luminaire efficiency >90%

- Upper flux fraction 0,0%
- **Power supply** 230 V - 50 Hz
 - **Degree of protection** IP 66
 - **Electrical Class** I
 - **EC Marking**



THE INCORPORATION OF LED TECHNOLOGY MANAGES TO REDUCE THE THICKNESS OF THE LUMINAIRE AND FAVOURS ITS INTEGRATION INTO THE URBAN LANDSCAPE



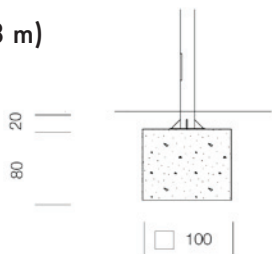


THE CANDELA STREET LAMP HAS BEEN DEVELOPED IMPROVING ENVIRONMENTAL AND INNOVATION ASPECTS THROUGHOUT THE PRODUCT'S DESIGN, MANUFACTURING AND MARKETING PROCESS

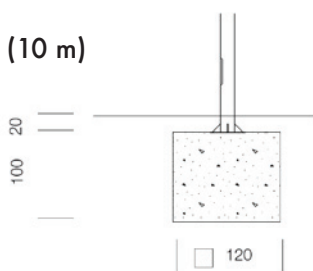
Models

- For lighting of big avenues, heights of 8 and 10 m.
- Flexible system, allows 2 luminaires to be placed at the same or a different height.
- The clamp of the unit is adjusted to the diameter of the column of the Rama family of street lamps (127/129 cm), offering a lighting system at several heights which allows all kinds of urban projects to be tackled with an element which combines design and function.

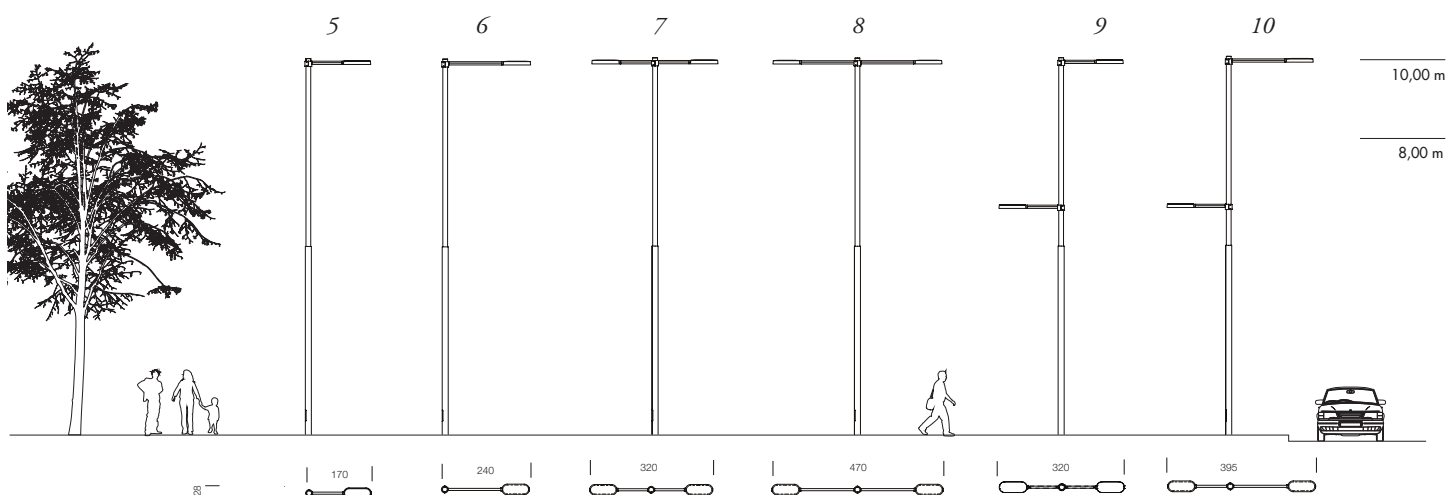
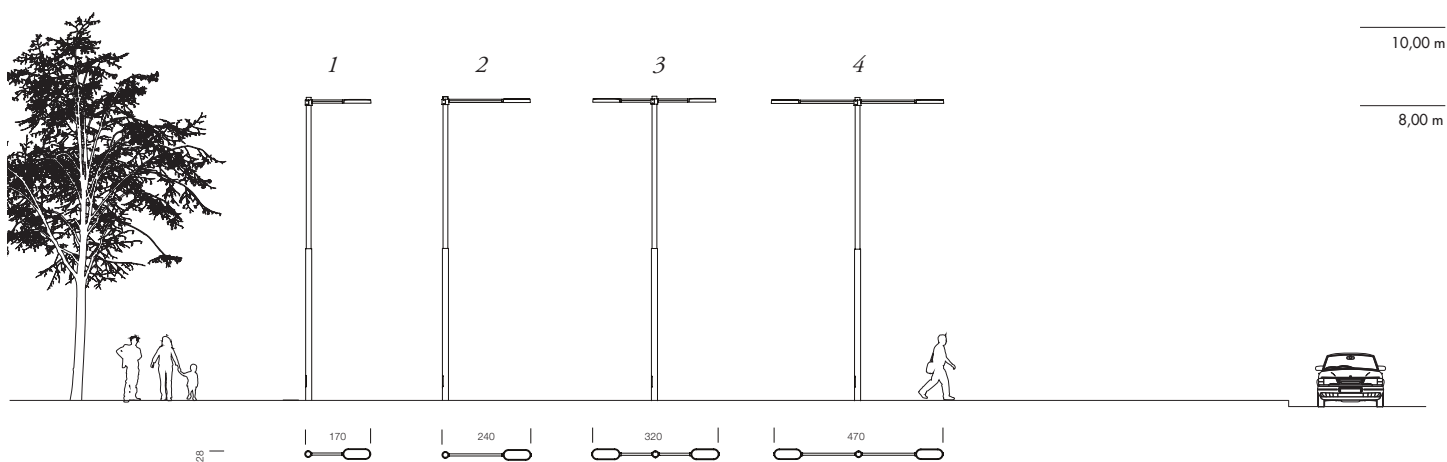
(8 m)



(10 m)



- | | | | | | |
|---|----------------|--|----|----------------|---|
| 1 | 8,20 m | · 2 sections
· 1 medium-arm luminaire | 6 | 10,20 m | · 2 sections
· 1 long-arm luminaire |
| 2 | 8,20 m | · 2 sections
· 1 long-arm luminaire | 7 | 10,20 m | · 2 sections
· 2 medium-arm luminaires at same height |
| 3 | 8,20 m | · 2 sections
· 2 medium-arm luminaires at same height | 8 | 10,20 m | · 2 sections
· 2 long-arm luminaires at same height |
| 4 | 8,20 m | · 2 sections
· 2 long-arm luminaires at same height | 9 | 10,20 m | · 2 sections
· 2 medium-arm luminaires at different height |
| 5 | 10,20 m | · 2 sections
· 1 medium-arm luminaire | 10 | 10,20 m | · 2 sections
· 2 long-arm luminaires at different height |



Maintenance

This luminaire does not require maintenance.

Installation

The element is delivered dismantled in four parts: the column, the luminaire, the arm with the front clamp and, finally, the rear clamp with the screws. The column is fixed by means of a concrete bucket installed in situ and anchor bolts, 20/30 cm below the level of the finished paving. The foundations must foresee the groove for the electric connection. The template and the anchor bolts are delivered with the column.

Weights

- **Luminaire**
14,5 Kg.
- **Stainless steel columns**
140 Kg (8,20 m), 170,5 Kg (10,20 m)

Life cycle of the product, design for dismantling

The candela street lamp has been developed improving environmental and innovation aspects throughout the product's design, manufacturing and marketing process.

- The main aspects considered in the technical design of this product were: aid the maintenance as much and simply and the recovery and reuse of the product's materials and components at the end of its working life. It is therefore a design conceived to optimize the production of all its components, and their subsequent assembly and dismantling.
- The material used, the geometry of the parts, the surface as possible, be able to replace its components quickly

finish, the grouping of its components and the assembly techniques limit the quantity of the element's production processes. A series of aspects have been considered which have allowed a manufacture adapted to environmental sustainability criteria:

Use of a modular design

Three basic parts: housing, arm + clamp and optical unit. Combining different parts, we can generate a family of products (single luminaire or double luminaire with different arm lengths).

Design to aid the manufacture and recycling of the parts

Aluminium injection used for three of its basic components: lid, base and clamp. Allows a reduction in thicknesses (less quantity of material), very precise tolerances, smooth surfaces and high resistance to the elements. Aluminium extrusion for the production of the arms which hold the luminaire. Means there can be different arm lengths using the same production process. The aluminium allows an easy and economical reuse.

Design to aid assembly and dismantling

Use of mechanical joints, minimization of the variety of screws. No use of adhesives (the joint and the glass are assembled by pressure). All the electric components are assembled on the base, to aid the assembly and subsequent maintenance.

Minimization of the quantity of components

We obtain the maximum functionality with the minimum quantity of pieces.

Use of standard components

All the electric components are standard and easily replaceable.

Packing

Packing made from "Bico" cardboard (70% recycled material and 100% recyclable). The packing has been conceived to minimize the transport costs as much as possible, generating a minimum volume. We can serve the different models offered by the product using only three types of packing





THE COMBINATION OF RAMA AND CANDELA STREET LAMPS OFFERS A LIGHTING SYSTEM AT VARIOUS HEIGHTS WHICH ALLOWS ALL TYPES OF URBAN PROJECTS TO BE COVERED