AB01

harbour beacon

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Content

Who are we?

We founded Archbeacon S.L. in Barcelona in November 2004.

Our project is a commitment to innovation based on the application of the current technological resources in the field of port signalling.

Since then, we have dedicated our time to creating and designing urban structures which combine aesthetics and innovative technology.

We design, develop and market our own products.

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Background information: The current problem with seaport signalling.

When carrying out manoeuvres in order to enter a port, the first light seen is the one located on the outer breakwater, which indicates to the navigator the position of the port on the coastline. Secondly, it is the colour of this light that signals on which side of the light the entry channel can be found. Finally, the light on the inner breakwater is used to help see the dimensions of the entry channel as it is being reached.

Nowadays, the systems of markers for port entrances, which consist of these 2 lights (one at the end of the exterior dike and the second on the interior dike) is virtually identical to those established in the 19th century – around 1880.

Nevertheless, since the beginning of the 20th century, the industrialisation of the coastline, the increase in the population of coastal areas and the development of a 24 hour leisure culture have brought about the vast increase in light contamination, which, as a result, has led to the development of an urban seafront which is plagued with lights.

Theoretically, and in terms of its functioning, there are no flaws in the current system. However, in practice, the dazzle caused by these additional lights on the seafront makes it difficult for the navigator to locate the aforementioned port entry light.

The conflict derives from a lack of safety when entering port at night-time, which leads to the following consequences:

- Maritime accidents for all classes of boats.
- Disorientation when following the coastline which correspondingly leads to a lack of safety and a waste of time.
- Calculation of routes to arrive in port during the day, avoiding entry into unknown ports at night-time.

Therefore, this project has been produced on the basis of the need to create new visual references for navigators, faced by adverse weather conditions and/or technical difficulties (radio, GPS, radar or plotter malfunctioning…) in order to be able to enter port under the safest possible conditions.

The idea: AB01: halfway between a signpost and designer item

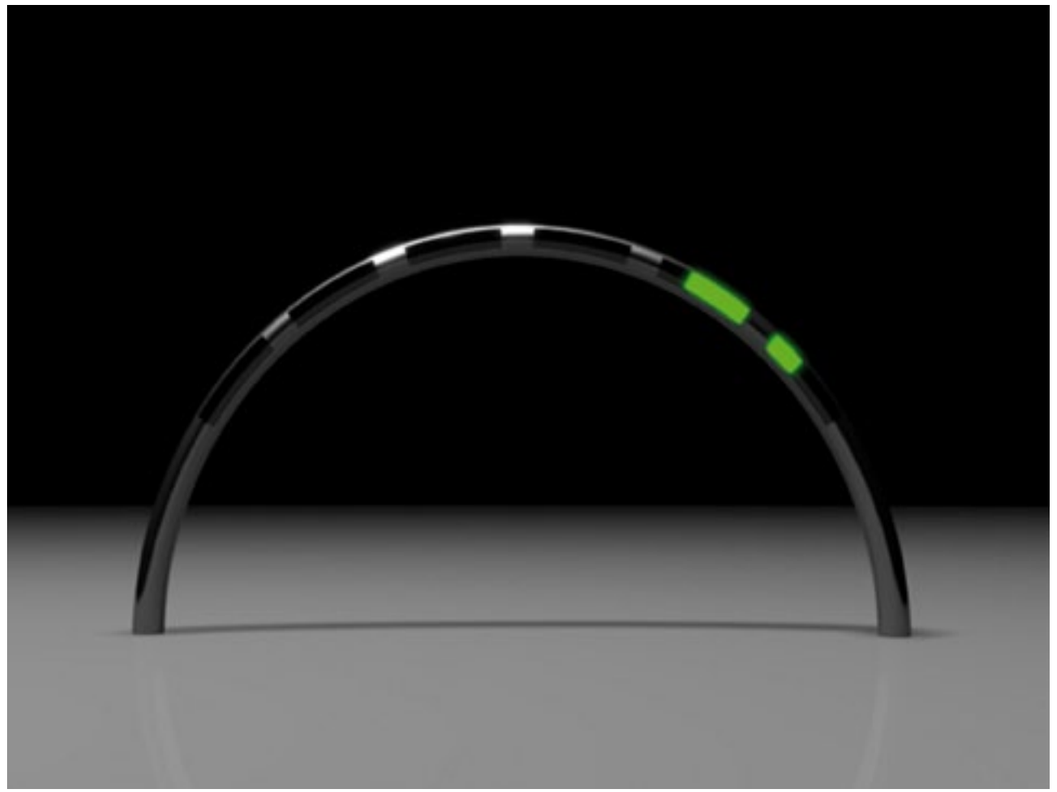
The AB01 project is committed to creating a new marker which resolves the traditional problem of locating the port entrance whilst making use of an innovative and avant-garde design.

AB01 is a tubular self-contained structure made of GRP (Glass Reinforced Plastic) which forms an arc with a 6-metre radius and is equipped with six built-in LED panels. Its optimal positioning is at the end of the outer dock together with the port entrance beacon.

The principal innovation that we are offering resides in the introduction of the concept of movement in port signalling; an element which, moreover, has already been applied in the field of air-traffic signalling and which is very common with road traffic.
Thus, the premium value of AB01 compared to conventional markers is the creation of a light beam, movement of which indicates the position of the exterior port beacon and thus distinguishes itself from all the other lights on the coastline.

However, the initial approach to the project does not end there. The idea was to add aesthetic value to a public construction beyond its functionality. For this reason, AB01 has a carefully developed design, which makes it an item that is capable of being integrated into the surroundings of the port whilst also creating an impact on the casual observer.

AB01



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AB01: Brief technical description.

The technical development of AB01 consists of two clearly differentiated parts. On the one hand, we have the structure, which brings both simplicity and strength, without the need for additional supports to hold it up. On the other hand, we have the light, formed by 6 built-in LED panels, which make it possible to create the movement of the light.

The structure

The arc:
A new perspective on a classic structure.

The structure chosen is an arc, as it fulfils a series of very favourable conditions:

•It creates a light movement which is completely different from the traditional lighting on the seafront.

•With only two points of support, it attains a considerable height and length.

•Self-contained structure, which does not need additional supports.

•It is a classic element which brings strength, calm and elegance.

GRP:
Glass reinforced plastic

In the same way, the construction material of the arc, provides a whole range of added values:

•Highly resistant against corrosion.
•Hygienic appearance and properties.
•Resistant to high and low temperatures.
•Good properties in terms of solidity, when mechanised, cut, bent and folded.
•Low maintenance cost.
•Recyclable.

Illumination

Technical specification

Ilt consists of 6 built-in panels of high luminosity LEDs.

• Special AISI-316 stainless steel box, completely hermetic (IP 65) and highly resistant against the marine environment.
• Polycarbonate window.
• Watertight silicon rubber joint.
• The lantern holds the watertight photocell and the entry for the power cable.
• Fed by a continuous low-tension current.
• Easily controlled by remote control.

The revolution of the LEDs:
Maximum performance, full guarantees.

The use of LEDs has led to a revolution in the modern field of lighting and signalling, which has been incorporated into all kinds of applications, thus optimising their performance. Their highly efficient illumination compared with incandescent lamps make them the ideal solution in order to achieve greater reliability and increased public safety.

We shall go on to highlight some of their advantages:

• Energy saving. An LED can achieve a saving of up to 90% in energy consumption when used instead of an incandescent lamp.

• Greater reliability. Their estimated failure rate is less than 3% after 100,000 hours of use.

• Greater operative safety. The failure of a single LED only represents a small percentage loss of the overall lighting. Less than 1% loss of lighting with the failure of a single LED.

• Minimum maintenance. More than 10 years of useful life, with the resulting reduction in maintenance costs for the optical device.

• Greater safety for transport. Signalling using LEDs involves increased brightness and luminosity.

What does AB01 have to offer?

Functional value:

The new concept of port beacons.

During the whole process of creating AB01, the need to support the signalling of the entrances to ports has been endorsed by consultations, interviews, and small-scale statistical studies carried out by various people in the field of navigation. Sports navigators, fishermen, and employees from various port administrations have repeatedly corroborated the flaws in the current signalling system for port entry.

AB01, thanks to its lighting sequence, manages to indicate the position of the beacon at the port entrance without any interference, thus resolving the aforementioned problem of light contamination on the coastline.

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Aesthetic value:

The last piece of the balcony overlooking the sea.

The recovery of public port space through its use by citizens requires the incarnation of a design that identifies the image that the city wishes to project.

AB01 unites historic continuity with innovation by means of a simple combination: the use of a classic structure and state of the art materials, providing an exclusive finish in harmony with an atmosphere of proximity to the sea.

Furthermore, the union of strength, simplicity and elegance achieves the necessary balance between its optimal adaptation to the environment – the new port of the 21st century – and the renown and impact required for an object of these characteristics. In this vein, it should be pointed out that the positioning of the AB01 on the dock means that it can be seen both from the sea and from land.

Value of innovation:
At the forefront of maritime signalling.

AB01 is an R&D product which is the fruit of studying a problem and certain necessities. Without the need to amend the current regulations, its development revolutionises current maritime signalling, adding the concept of movement to port markers.

For all of these reasons, we are dealing with a pioneer object, which is ahead of its time and has created a unique opportunity for an increasingly competitive global market.

AB01

Symbolic value:
From object to emblem.

The entrance into a city has always been an element through which the inhabitants of that city have expressed the symbols and values with which they identify themselves at any given moment in history. This is where the idea of the emblem originates, which figures from one or more representative icons of the city, and which have continued to be created since ancient times.

In spite of being an ancient concept, the use of emblems is becoming increasingly common nowadays; it runs in parallel with the idea of branding in commerce, to the point where the qualities of the emblem are extended and attributed to the city (or to the entity) which they represent.

As an emblem, AB01 brings together the whole series of qualities which are mentioned above; from the ideas of innovation and progress to its application in practice, including a finish which is both simple and elegant.

Thus, AB01 is converted into a gate into the city, whose arc represents an icon of culture, a signal of welcome, a symbol of triumph and an element of union between the citizenship and the sea.

Making AB01 a reality.

Patent.
As AB01 is a product of R&D, it has been protected by means of a Spanish patent since January 2005 and internationally since January 2006.

Suppliers.
The suppliers of the materials for AB01 are companies of national and international prestige, not only owing to their assured position in their respective fields, but also owing to the various projects which have appeared along their paths.

Assessment.
In the development of the installation and functioning of the AB01 project, we were able to rely on the assessment of a team of engineers.

Delivery.
Guarantee of delivery within a period of 6 to 9 months “keys in hand”.

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AB01
Barcelona harbour, Spain.

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Technical specifications

Arch Material:	Glass Reinforced Plastic (GRP) Galvanised metal base flanges 6 x LED panels
Physical Size:	Tube Diameter 0.5 m Arch Radius 6 m Arch Diameter: 12 m
Weight:	650kg
Visual Range:	3 to 5 Nm
Flashing Pattern:	Adjustable via pre-set (6 options) Other sequences via laptop programming
Maximum Power	200W
Power Consumption:	Dependent on flash pattern
Voltage:	24V DC (AC power option available)
Control:	Control panel within hinged access door
Installation:	Two sections joined via bolted flange at installation
Typical foundation:	12 x M26 bolts with a typical length of 1500mm chemically set in reinforced concrete
Warranty:	24 months from delivery


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