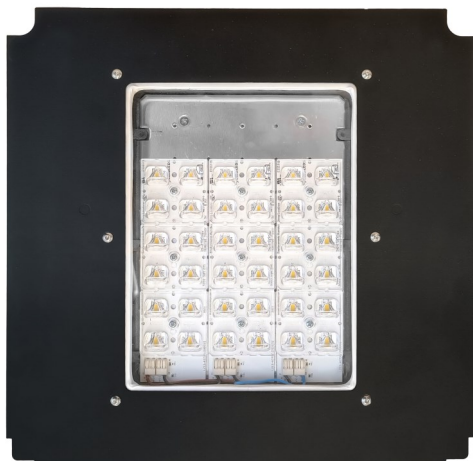


# RFV Retrofit

## GEN A



Carandini Retrofit with square tray adapted for *villas* and *fernandinas*

### KEY BENEFITS

- Tool-free top-access luminaire opening system.
- Robustness: IP66 + IK10.
- Die-cast aluminium.
- Up to 5 photometric distributions
- Energy Efficient: 156 lm/W.
- Lifetime: L90B10 100,000 hours (Ta) 25°C
- 5-year warranty. Optional up to 10 years.



### DESCRIPTION

LED technology component for the direct replacement of other light sources and associated auxiliary equipment in lantern luminaires.

Carandini has developed this solution that integrates perfectly into lantern luminaires, whether by Carandini or other manufacturers, simply by adapting the dimensions of the tray.

The LED modules feature high-quality, cutting-edge components to deliver maximum efficiency with superior mechanical reliability.



- 867 lm - 10.607 lm
- 4,5 Kg. Tray + Retrofit kit
- 156 lm/W Luminaire
- 20°C - +50°C
- Easy access system to the equipment
- <1% FHS / ULR

### STANDARD COMPLIANCE

- CE
- RoHS
- UNE-EN 60598-1
- UNE-EN 60598-2-3 o 60598-2-5
- UNE-EN 62471:2009
- UNE-EN 60598
- UNE-EN 62031
- UNE-EN 61347-2-13
- UNE-EN 62384
- UNE-EN 13032-4

220 - 240V / 50-60Hz  
L90B10 100.000h  
Ta 25°C

**\*Test reports from independent laboratories accredited by ENAC or equivalent**

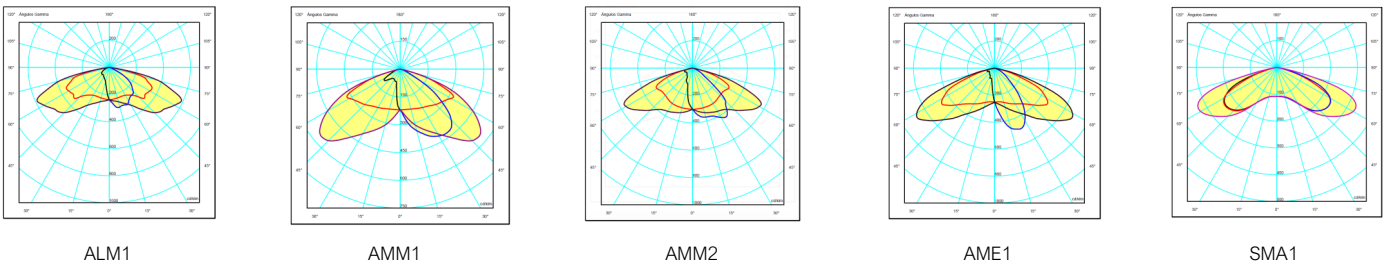
Measurements carried out in an ISO 17025 accredited laboratory.

Complies with the CEI - IDAE minimum requirements.

Distributor: **EPK elektro s.r.o.**  
info@carandini.cz - www.carandini.cz

**PHOTOMETRIC DISTRIBUTIONS**

It has 5 photometric distributions designed to suit various installation environments for this type of luminaire, thus providing an adaptable solution for all needs.



**NOTE:** When mounting Zhaga PCBs and optics, the number of possible photometries exceeds 5.

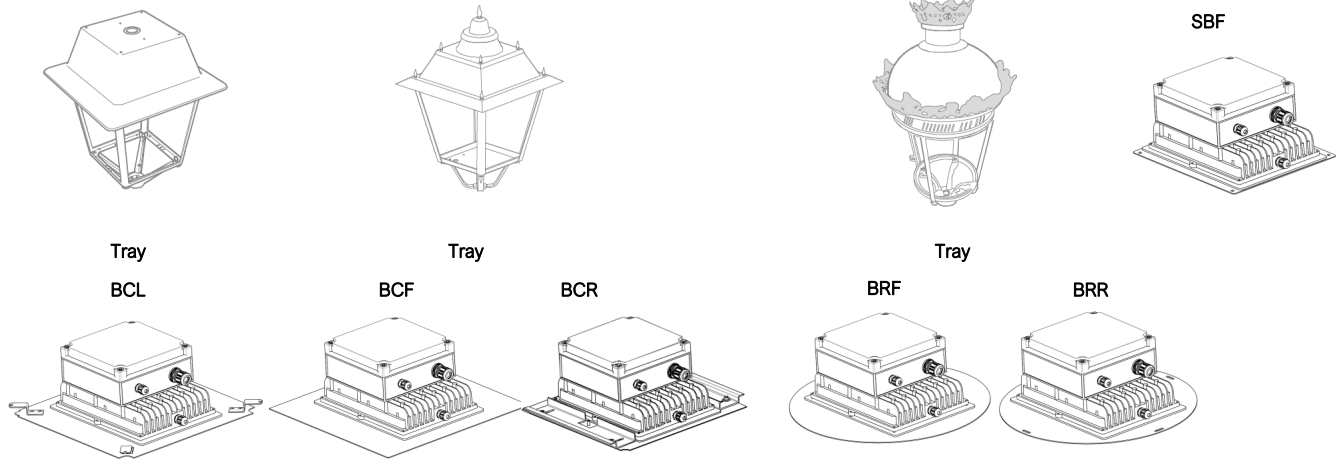
**FIXATION TRAYS**

For Clamod luminaire by Carandini

Square luminaires

Round luminaires

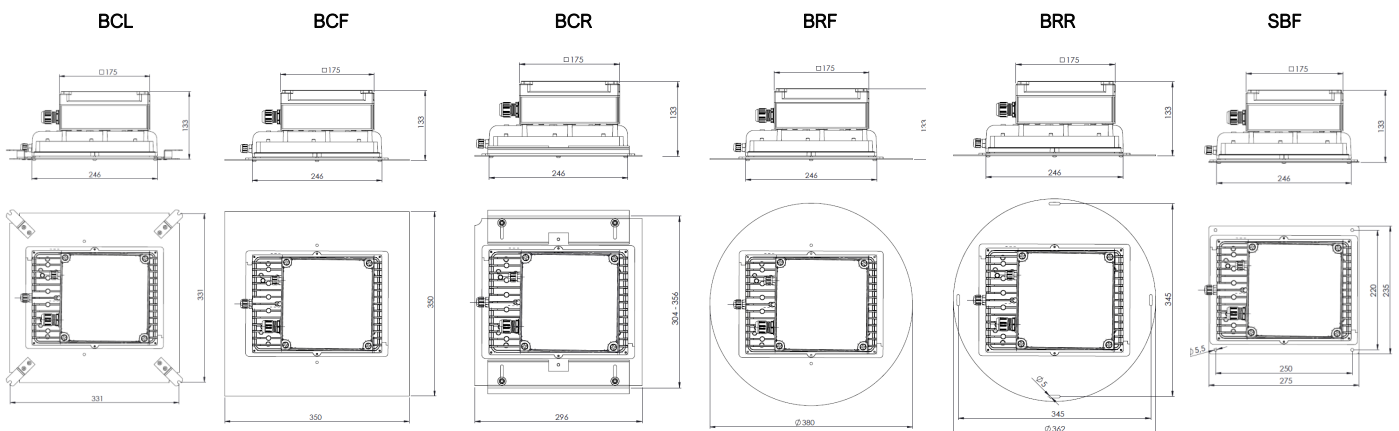
Without a tray for adaptation to any type of luminaire



**NOTE:** In any case, the customer must send the luminaire where the Retrofit is to be adapted so that Carandini can evaluate it.

**DIMENSIONS (mm)**

Fixation trays



**APPLICATIONS**

Residential areas, parks and gardens, squares, cycle paths and pedestrian areas.

## RETROFIT CHARACTERISTICS

### GENERAL CHARACTERISTICS

Body	Die cast aluminum EN-AC46100 according to the standard UNE EN 1706.
Equipment carrier plate	1.5 mm galvanised sheet steel.
Closure	With 5 mm clear tempered flat glass.
Finish	Fixations BCL, BCF, BRF, SBF: Polyester powder coating black RAL 9005 Textured (905T). Other finishes on request. Fixation BRR, BCR: RAL-9016 Traffic white glossy
Outer nuts and bolts	Stainless steel (AISI304).
Watertightness	Optics: IP66 (EN 60598-1)
	Driver: IP67 (EN 60529)
	Electrical connection: IP66 (EN 60529)
Impact protection grade	IK10 (EN 62262)
Operating temperature	Ta -20°C a +50°C. Depending on luminaire configuration.
Lifetime	L90B10 100,000h at Ta of 25°C. Light maintenance assessments to TM-21 based on LM-80 data.

### ELECTRICAL CHARACTERISTICS

Electrical class	Class I and Class II
Voltage / Frequency	220V - 240V / 50Hz - 60Hz Optional 120V - 277V
Power factor	> 0,9 at full load .
Harmonic distortion	< 10%
Surge protector	Protection against permanent and transient overvoltages of 10 kV

### MAINTENANCE AND ASSEMBLY

Installation and maintenance	Easy Access System to the equipment
Fixation trays	BCL: Tray for Clamod luminaire BCF: Fixed square tray 350mm BCR: Regulable square tray 300mm BRF: Fixed round tray 380mm BRR: Fixed round tray 362 mm SBF: Without tray  <b>NOTE:</b> In any case, the customer must send the luminaire to the location where they want to adapt the Retrofit for Carandini <b>to evaluate it.</b>
Weight	BCL: 4,6 Kg BCF: 4,7 Kg BCR: 4,8 Kg BRF: 4,5 Kg BRR: 4,5 Kg SBF: 3,7 Kg
Height	From 4 to 12 metres

### LIGHTING CHARACTERISTICS

Package real light	867 lm—10.607 lm (9W - 71W)
Maximum LED current	Up to 800 mA
LED colour temperature	4,000K (Neutral White, nw). 3,000K (Warm White, ww). 2,700K (Warm White, ww). 2,200K (Warm White, ww). Amber colour temperatura.
Index of reproduction chromatic (CRI)	CRI>70. Optional CRI80.
LEDs	Incorporates varios types of modules with 12, 24, 36 LEDs (Zhaga).
FHS/ULR	<1%
Optics	PMMA polymethylmethacrylate specially designed for LEDs (Zhaga)
Photometric distributions	AML1: Throw angle 10°/45° spread angle 65° (Type II)
	AME1: Throw angle 20° spread angle 60° (Type II)
	AMM1: Throw angle 35°/50° spread angle 70° (Type II)
	AMM2: Throw angle 35° spread angle 60° (Type II) SMA1: Throw angle 65° spread angle 65° (Type VS)
LED thermal control	The connection between the LED and the heatsink has to be made by thermal grease or graphene.

### MANAGEMENT AND CONTROL

Equipment	<b>1N:</b> 1 Level <b>RD:</b> DALI <b>RL:</b> Pulse adjustable LED
Autonomous regulation	Regulations programmed from the factory: <b>SC:</b> Programming according to client.

To select the **purchase reference**, consult the **configurator** at [www.carandini.cz](http://www.carandini.cz)

## LUMINAIRE DIMMING

### By programming the driver

#### Programming profile

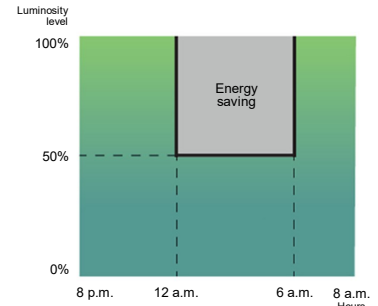
Smart luminaires drivers can be programmed in the factory without needing a control system, additional wiring or maintenance costs. A schedule is pre-programmed for light flow to be automatically reduced at quieter times of the night while respecting light levels and uniformity.

#### Programming profile 56

From 00:00 to 06:00 the luminaire reduces its initial intensity by 50%.

Up to  
**26%**  
savings

**NOTE: Programming the Dynadimmer using the multitone scheduling tool is done for wintertime. In summer everything is delayed by an hour.**



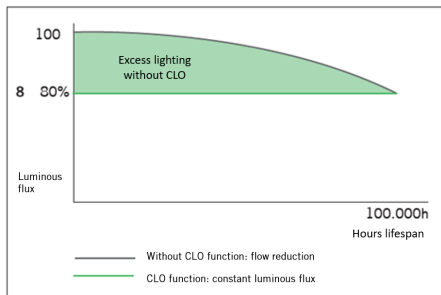
### Using the CLO function

Taking into account lighting depreciation over the years, the driver is programmed to start at a reduced level and gradually increase power over the lifetime of the luminaire, which saves energy and increases the service life of the system. In addition, the level of illumination of the area in which it is located is always kept constant.

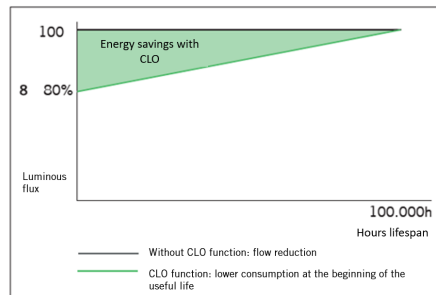
#### Constant luminous flux 8

Luminaire luminous flux at 80% to maintain light levels throughout its service life.

Luminous flux chart



Consumption graph



Up to  
**10%**  
savings  
and increase in luminaire  
service life

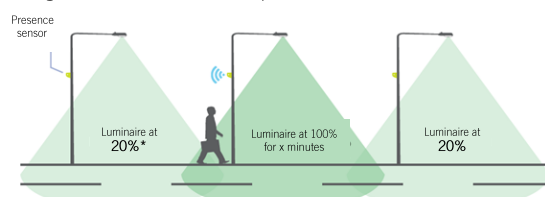
### By incorporating an additional element

#### Presence sensor

Thanks to the presence sensor, the lighting can be dimmed according to the level of activity in the area where the luminaire is located.



The light level rises as soon as a pedestrian or vehicle is detected in the area.



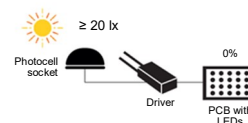
#### Photocell

The photocell allows the luminaire to be switched on or off depending on the intensity of the sunlight it captures.

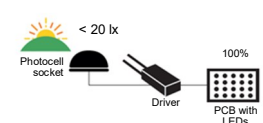
This is very useful, to avoid having luminaires on at times when there is still

#### Example with 20 lx photocell:

If the photocell detects more than 20lx it will not activate the luminaire.



When light levels start to fall, the photocell detects 20 lx and switches the luminaire on.



**INNOVATIVE AND UPDATABLE OVER TIME (Zhaga)**

"All luminaires incorporating Nema Bases or Zhaga Bases, where the control system is not the responsibility of Carandini, must always incorporate IP 66 covers in order to ensure the correct safety and operation of the product.

The sale of luminaires with Nema or Zhaga Bases without the IP 66 cover will only be permitted upon receipt of a written assurance from the customer that the control system using NEMA or ZHAGA Nodes will be installed by the customer at the same time as the luminaires".

**Zhaga - Future Proof**

Zhaga is an industry-wide consortium that aims to standardise specifications for interfaces between LED luminaires and light sources. The aim is to achieve interchangeability between products made by different manufacturers. Zhaga defines test procedures for luminaire and LED light sources so that the luminaire can receive the LED source.

**BOOKS PER APPLICATION. A COST-EFFECTIVE SOLUTION.**

	Office & Industry	Retail & Hospitality	Outdoor
Integrated LED light engines	14, 2,8	17, 16	
LED modules (non-integrated)	7, 21, 14	12, 9, 5, 3,10	4, 15, 19
Drivers	13	LED set 22,23	24,25
Sensor and communication modules	20		18

The specifications that mark a component as Zhaga-compliant are contained in a series of books, available only to consortium members, that allow you to design to the marked standard. The benefits for society are evident since, apart from reducing the consumption of materials, it favours the reuse of luminaires, aiming towards a circular economy.

**CERTIFICATION PROGRAMME**

Zhaga-D4i certification covers all essential features, including automatic setting, digital communication, data reporting and power requirements within a single luminaire, ensuring plug-and-play interoperability for luminaires (drivers) and peripherals such as connectivity nodes.

**STANDARDISATION AS A MEANS TOWARDS SUSTAINABILITY**

The **Retrofit** has been designed to operate with the latest tried and tested technology available on the market, in accordance with current standards, which allows it to meet CARANDINI's values of sustainability, making it a product that conforms to CARANDINI's values of sustainability and that can guarantee future maintenance while respecting society and the environment.

Luminaires marked as **Zhaga** feature **Future Proof** design, meaning that they are based on and designed around Zhaga standard components. These components are mainly LED modules and drivers. The electrical compartment and dissipation area for the LED modules have additional space and mountings to integrate any driver that complies with Zhaga standard Book 13, based on the required dimensions for drivers on the market or any LED module that complies with Zhaga Book 15, based on the LED driver interface specifications.

Eso permite tener un producto sostenible y actualizable en el tiempo.

**CONNECTIVITY**

The D4i specification takes the best of the DALI2 standard protocol and adapts it to an intra-luminaire environment, but it has certain limitations. Only the control devices installed within the luminaires can be combined with a Zhaga-D4i luminaire. In accordance with the specification, the control devices are limited to an average power consumption of 2W and 1W respectively.