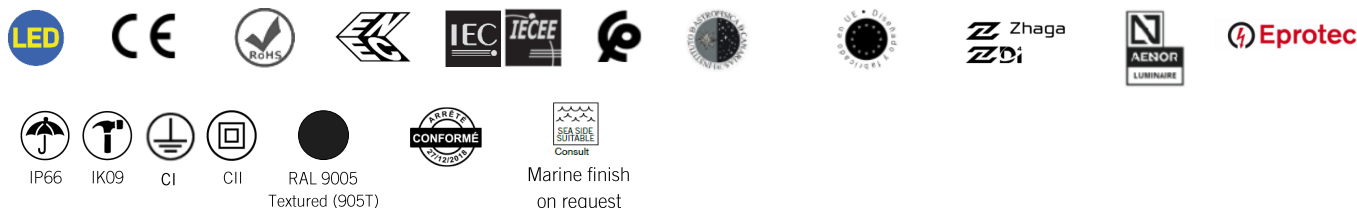


# Mikos M



## KEY BENEFITS

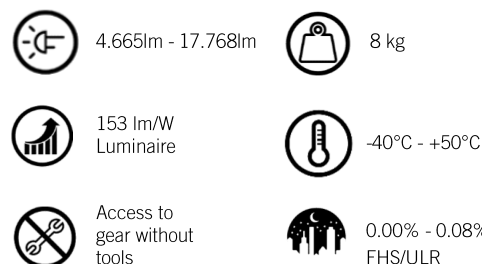
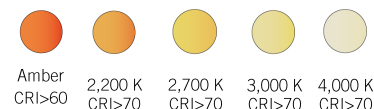
- Wide tilt adjustment:  $\pm 90^\circ$
- Tool-free from above for easy maintenance
- Flat heat dissipation surface prevents dirt accumulation.
- Robustness: IP66 + IK09.
- Injected aluminium (Cu<0.1%)
- Energy Efficient: 153 lm/W
- Up to 11 photometric distributions.
- Smart Ready: Designed to house both interior and exterior communication nodes.
- Future Proof: Complies with Zhaga standard
- Service life L90B10 100,000h (Ta 25°C)
- Night Friendly: ULR Arrêté du 27 décembre 2018



## DESCRIPTION

Mikos features a design incorporating organic lines, which fits perfectly into urban environments.

Thanks to its functionality and the wide variety of optical distributions, it is an ideal lighting solution for squares, parks, roundabouts, promenades and urban roads.



## STANDARDS / CERTIFICATES

- CE
- RoHS
- UNE-EN 60598-1
- UNE-EN 60598-2-3 or 60598-2-5
- UNE-EN 62471:2009
- UNE-EN 60598
- UNE-EN 61000-3-2
- UNE-EN 61000-3-3
- UNE-EN 55015
- UNE-EN 61547
- UNE-EN 62031
- UNE-EN 61347-2-13
- UNE-EN 62384
- UNE-EN 13032-4
- UNE-EN ISO 9227 NSS: 2017 (1000h)

220 - 240 V/100 V - 277 V  
50-60 Hz  
L90B10 100,000 h  
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.

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-carandini@carandini.com - www.carandini.com

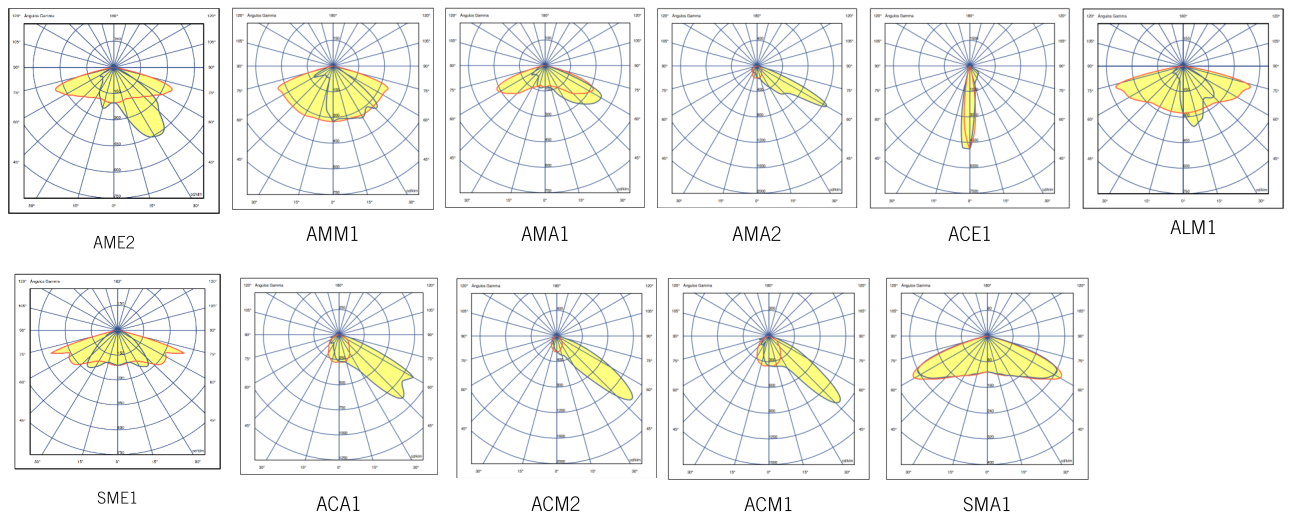
**NOTE:** We reserve the right to make changes to the product without prior notice

V1: 20/01/2022

MIKOS

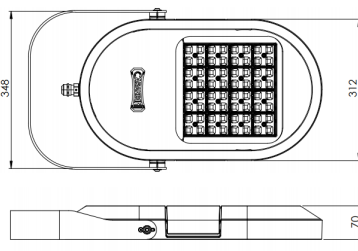
## PHOTOMETRIC DISTRIBUTIONS

Provides the 11 photometric distribution patterns suited to the environments in which this luminaire is typically installed, making it adaptable to all requirements:

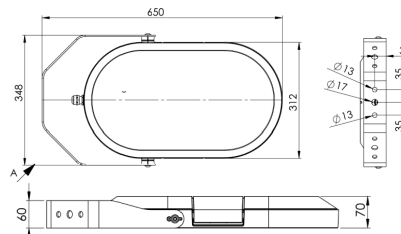


## DIMENSIONS

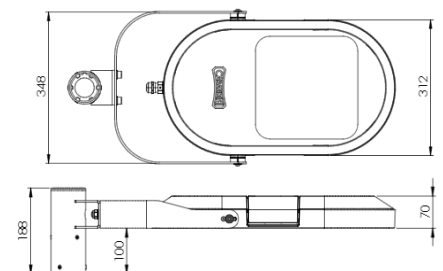
Fixing by means of bracket H01:



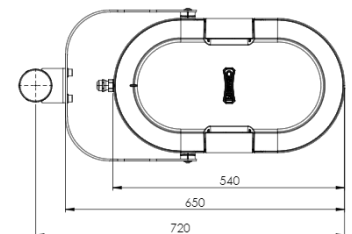
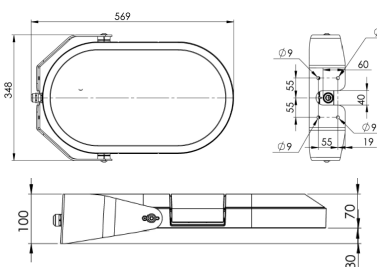
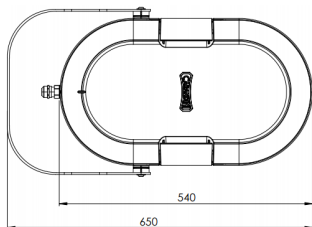
Fixing by means of H45° bracket:



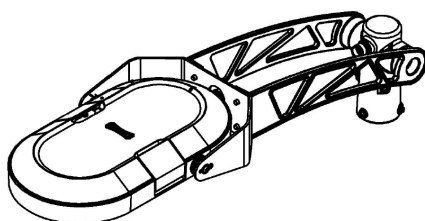
Vertical fixing for  $\varnothing 60$  mm columns: PT2



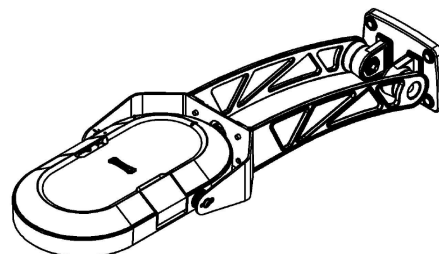
Bracket fixing wall bracket/ HBM/ HBC column:



View with HBC arm 321367



View with HBM arm 321366



## MIKOS M CHARACTERISTICS

## GENERAL INFORMATION

Sustainability	Recyclability: 98.71% Maximum carbon footprint during use: 0.03615 kg kW/h de CO2
CE Mark	Yes
ENEC Certificate	Yes
RoHS compliance	Yes
Test standard	LM 79-80 (all laboratory measurements certified in accordance with ISO17025)

## GENERAL CHARACTERISTICS

Body	Die-cast aluminium EN AC-44100 with low copper content <0.1%
Finish	Polyester powder paint RAL 9005 textured black (905T). Other finishes, on request
Enclosure	Tempered 5 mm flat glass.
External bolts	Stainless steel (AISI304).
General watertightness	IP66 (EN 60598-1 and EN 60529)
Impact resistance rating	IK09 (EN 62262)
Operating temperature	Ta -40°C to +50°C Depending on luminaire configuration.
Estimated service life	L90B10 100,000h at Ta of 25°C. Light maintenance values at 25°C. They are calculated in accordance with TM-21 based on LM-80 data.

## ELECTRICAL CHARACTERISTICS

Electrical class	Class I or Class II
Input voltage	220V - 240 V/50 Hz - 60 Hz Optional 100 V - 277 V
Power factor	> 0.99
Harmonic distortion	< 10%
Surge protection	Surge protection (1.2/50) 10 kV Maximum current (8/20) 10 kA Maximum voltage (L-N) 320 V Maximum voltage (L/N-GND) 400 V Optional surge protection: 20 kA, 20 kV.

## LIGHTING CHARACTERISTICS

Package real light	4,665 lm to 17,768 lm (30 W - 137 W).
LED colour temperature	4,000 K (Neutral White, nw). 3,000 K (Warm White, ww). 2,700 K (Warm White, ww). 2,200 K (Warm White, ww). Optional amber colour temperature.
Colour rendering index (CRI)	CRI>70. CRI80 upon request.
LEDs	It incorporates 48 and 64 LEDs.
FHS/ULR	<0.08%
Optics	Acrylic PMMA lenses especially designed for LEDs.
Photometric distributions	<b>ACA1:</b> Throw angle 10° spread angle 45°/65° (Type III) <b>ACM1:</b> Throw angle 15° spread angle 45° (Type II) <b>ALM1:</b> Throw angle 75° spread angle 10°/45° (Type III) <b>AMA1:</b> Throw angle 70° spread angle 45°/70° (Type IV) <b>AMA2:</b> Throw angle 15° spread angle 65° (Type III) <b>AME2:</b> Throw angle 70° spread angle 15°/40° (Type II) <b>AMM1:</b> Throw angle 70° spread angle 35°/55° (Type III) <b>SMA1:</b> Throw angle 65° spread angle 65° (Type VS) <b>SME1:</b> Throw angle 70° spread angle 40° (Type II) <b>ACE1:</b> Throw angle 0° spread angle 50° (Type III) <b>ACM2:</b> Throw angle 10° spread angle 50° (Type III)
LED thermal control	Heat dissipation by conduction, radiation and convection via specific design for LED technology.

## MIKOS M CHARACTERISTICS

MAINTENANCE AND ASSEMBLY	
Installation and maintenance	Tool-free access to the driver from above via top panel.
Mounting	<b>H01:</b> Steel bracket. <b>PT2:</b> Vertical fixing 60mm . <b>HBM:</b> Wall bracket fork. <b>HBC:</b> Column bracket arm . <b>H45:</b> Bracket 45°.
Accessories	<b>NF76-1=&gt;</b> Die-cast anchor point for 76 mm column (1 luminaire) <b>NF76-2=&gt;</b> Die-cast anchor point for 76 mm column (2 luminaires) <b>NF101-1=&gt;</b> Die-cast anchor point for 101 mm column (1 Luminaire) <b>NF101-2=&gt;</b> Die-cast anchor point for 101 mm column (2 luminaires) <b>NF114-1=&gt;</b> Die-cast anchor point for 114 mm column (1 luminaire) <b>NF114-2=&gt;</b> Die-cast anchor point for 114 mm column (2 luminaires) <b>C.SENS=&gt;</b> Presence sensor for column*
Weight	8 kg

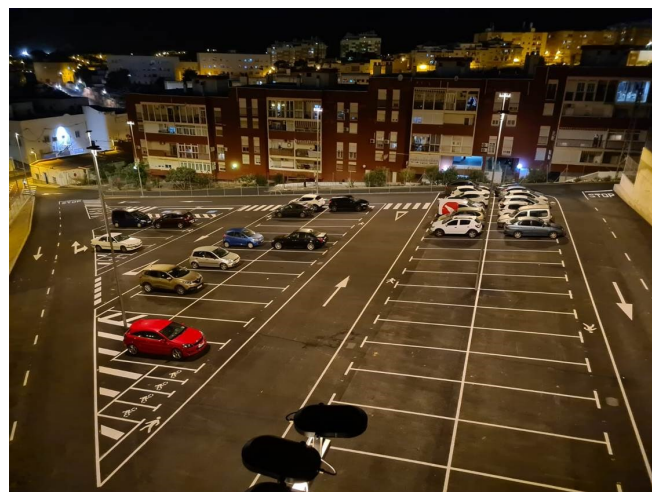
MANAGEMENT AND CONTROL	
Devices	<b>1N:</b> LED 1N <b>RC:</b> Adjustable LED in head <b>RD:</b> Adjustable LED Protocol DALI <b>AF:</b> Adjustable LED Protocol 1 - 10V <b>RL:</b> Pulse adjustable LED <b>2N:</b> Dual level <b>SR:</b> Smart Ready D4i
Autonomous dimming	Factory-programmable dimming: <b>56:</b> 50% from 24:00 to 06:00. <b>66:</b> 60% from 24:00 to 06:00. <b>76:</b> 70% from 24:00 to 6:00h. <b>SC:</b> As requested by the client.
CLO regulation	Percentage flow during product lifespan: <b>7:</b> 70% luminous flux during luminaire lifespan. <b>8:</b> 80% luminous flux during luminaire lifespan. <b>9:</b> 90% luminous flux during luminaire lifespan
Sockets	<b>3-U:</b> NEMA 3 pin socket with/without IP66 cover <b>5-V:</b> NEMA 5 pin socket with/without IP66 cover <b>7-W:</b> NEMA 7 pin socket with/without IP66 cover <b>4-X:</b> Zhaga socket with/without IP66 cover
Photocells	<b>1:</b> Photocell for NEMA 3, 5 and 7 pin socket (20 lux) <b>2:</b> Photocell for larger Zhaga socket (20 lux)
Node	<b>BS:</b> Controlux One

## PHOTOS MIKOS M



## APPLICATIONS

Squares, parks, roundabouts, urban roads and promenades.



## ACCESSORIES

Column presence sensor C.SENS



### Accessories for $\varnothing$ 76, 101 and 114 mm columns:

#### Die-cast knot point for mounting 1 luminaire

- **NF76-1**: Cast knot to attach  $\varnothing$ 76 mm pole.

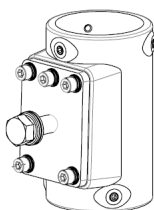
Code: 318531

- **NF101-1**: Cast knot to attach  $\varnothing$ 101 mm pole.

Code: 318504

- **NF114-1**: Cast knot to attach  $\varnothing$ 114 mm pole.

Code: 318534



#### Die-cast knot point for mounting 2 luminaires

- **NF76-2**: Cast knot to attach  $\varnothing$ 76 mm pole.

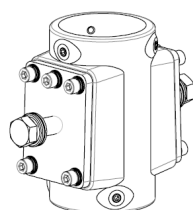
Code: 318532

- **NF101-2**: Cast knot to attach  $\varnothing$ 101 mm pole.

Code: 318533

- **NF114-2**: Cast knot to attach  $\varnothing$ 114 mm pole.

Code: 318535



#### Top cap for column

- **TS76**: Top cap for  $\varnothing$  76 mm column.

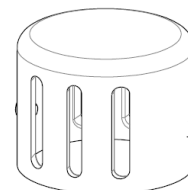
Code: 318541

- **TS101**: Top cap for  $\varnothing$  101 mm column.

Code: 318542

- **TS114**: Top cap for  $\varnothing$  114 mm column.

Code: 318543



The knot includes:

- To fix the knot point to the column: Allen bolts M8 x 10 mm.
- To fix the luminaire to the knot point: M16 x 50 mm bolt and washers.

The knot point includes:

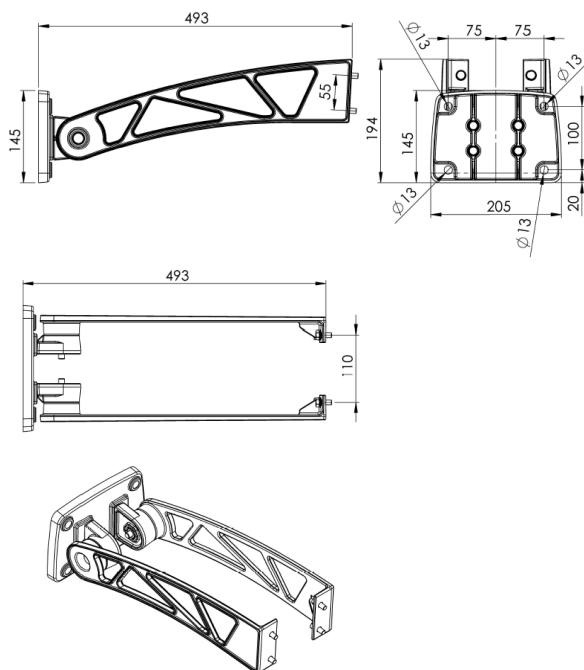
- To fix the knot point to the column: Allen bolts M8 x 10 mm.
- To fix the luminaire to the knot point: M16 x 50 mm bolt and washers.

The cap includes:

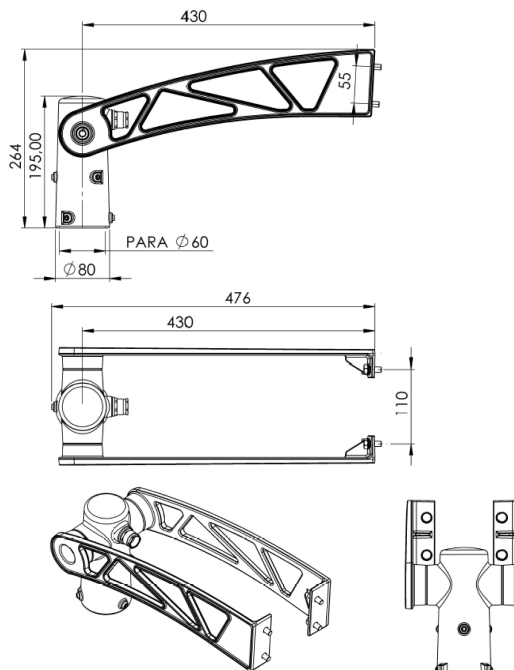
- M8 x 10 mm Allen bolt to fit to the column.

## Bracket

HBM: Wall bracket fork



HBC: Column bracket arm



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MIKOS



## LUMINAIRE CONTROL

### By programming the driver

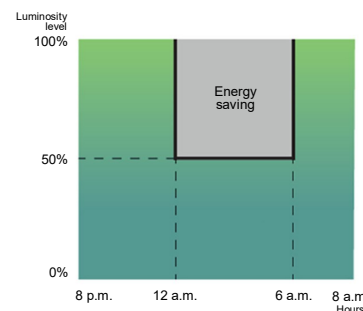
#### Programming profile

The driver can be programmed in such a way that, during less busy hours of the night, the luminaire reduces the luminous flux, while remaining in compliance with the required lighting and uniformity levels.

#### Programming profile 56

Between midnight and 6 am, the brightness of the luminaire is reduced by 50%.

Up to  
**26%**  
savings



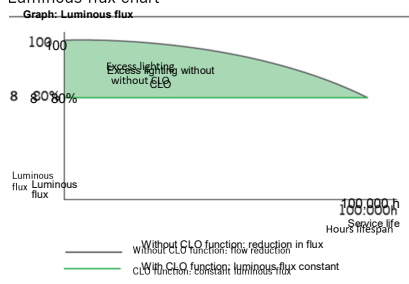
### Via CLO function

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.

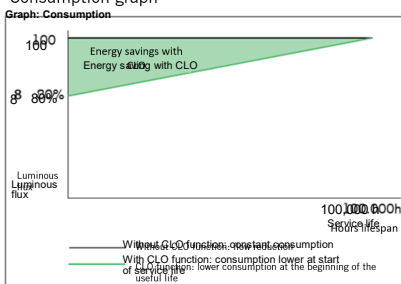
#### Constant luminous flux 8

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

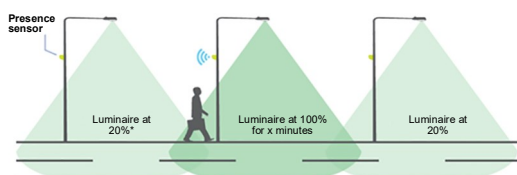
### By adding an extra element

#### 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 is increased as soon as a pedestrian or vehicle is detected in the area.



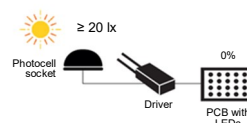
#### Photocell

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

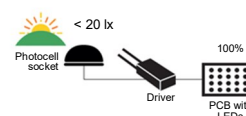
This is very useful, to avoid having luminaires on at times when there is still enough natural light.

#### Example with 20 lx photocell:

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



It is when the luminance levels begin to fall that the photocell detects 20 lx and switches on the luminaire.



## INNOVATIVE AND UPDATABLE OVER TIME (Zhaga/ ZD4i)



### 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.



### Zhaga D4i - Sensor Ready

The Zhaga consortium joined up with DiiA to create a unique Zhaga-D4i certification that combines Zhaga's Book 18 version 2 outdoor connectivity specifications with Dii4's D4i specifications for intra-luminaire DALI.

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

Z H A G A Consortium		Book 1-25 Overview by application	
	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

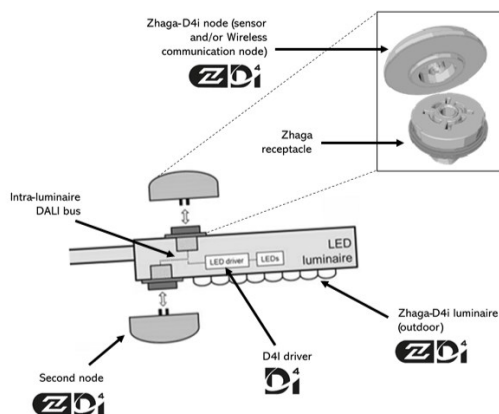
Zhaga-D4i certification covers all essential features, including automatic setting, digital communication, data reporting and power requirements within a single luminaire, ensuring plug-and-play interoperability for luminaires (drivers) and peripherals such as connectivity nodes.

## STANDARDISATION AS A MEANS TOWARDS SUSTAINABILITY

The **Mikos M** luminaire has been designed to operate with the latest tried and tested technology available on the market, in accordance with current standards, 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.

This allows us to provide a sustainable product that can be upgraded over time.



## CONNECTIVITY

The D4i specification takes the best of the 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.

## SMART CITY

Luminaires marked as **ZD4i** are a *Smart Ready design*, meaning they are designed to accommodate both interior and exterior communication nodes through docking stations which comply with Zhaga & Zhaga-D4i standard Book 18 on interoperability of sensors and communication nodes.