C-Line
GEN4

KEY BENEFITS

- Tool-free access from the top.
- Durability and sturdiness: IP66 + IK10.
- Reinforced polyamide cover inside.
- Polycarbonate difusser prepared for saline environments .
- Up to 7 optical distributions.
- Energy Efficient:
  GEN1: 131 lm/W
  GENA: 155 lm/W
- Smart Ready: Designed to house both indoor and outdoor communication nodes.
- Future Proof: Zhaga-compliant.
- Lifetime L90B10 100.000h (Ta) 25ºC.
- 5 years warranty

IP66 IK10 CI CII

RAL 7015
Textured

Amber CRI>60 | 2,200 K CRI>70 | 2,700 K CRI>70 | 3,000 K CRI>70 | 4,000 K CRI>70

CRI>80 upon request

DESCRIPTION

The C-Line series is a luminaire designed and manufactured by Carandini for urban settings such as squares, parks, walkways or residential areas.

It uses latest generation high-performance, efficient LEDs to offer a solution that meets the important requirements of optical performance and energy efficiency.

GEN1:
904 lm - 9043 lm
GENA:
1.204 lm - 10.205 lm

7.9 Kg

GEN1: 131 lm/W
GENA: 155 lm/W
Luminaire

0.19 m²

Tool-free access to

-40 ºC - +50 ºC

Connection system without opening the luminaire

1%

220 - 240 V / 100V - 277 V
50-60 Hz
L90B10 100,000 h
Ta 25 ºC

STANDARDS / CERTIFICATES

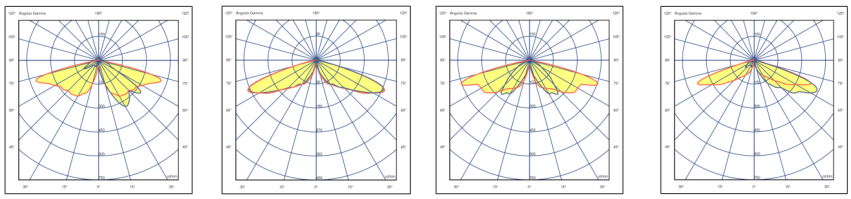
- CE
- RoHS
- UNE-EN 60598-1
- UNE-EN 60598-2-3 or 60598-2-5
- UNE-EN 62471:2009
- UNE-EN 60598
- UNE-EN 61000-3-2
- UNE-EN 61000-3-3
- UNE-EN 55015
- UNE-EN 61547
- UNE-EN 62031
- UNE-EN 61347-2-13
- UNE-EN 62384
- UNE-EN 13032-4
- UNE-EN ISO 9227 NSS: 2017 (1000h)

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

PHOTOMETRIC DISTRIBUTIONS

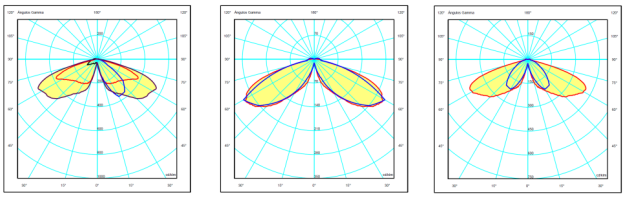
It has the 7 photometric distributions used for the environments in which this type of luminaire is installed, allows it to adapt to all needs:

GEN1



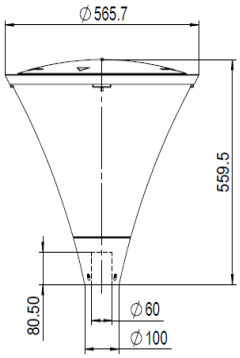
AMM1 SMA1 SME1 AMA1

GENA



AMM1 SMA1 SME1

DIMENSIONS (mm)



CLI (Ø60 x 80 mm)

LOGISTICAL INFORMATION*

- Box size: 600 x 600 x 600 mm
- Individual weight: 8.4 kg.
- Number of boxes: 6 units
- American base: 1200 x 800 x 1950 mm
- Stack height: 3 levels
- Area occupied: 75%
- Volume used: 67.5%
- Total weight: 70 kg.

APPLICATIONS

Shopping areas, parks, squares and gardens, greenways and cycle paths, residential and pedestrian areas, streets and avenues.

C-LINE CHARACTERISTICS

GENERAL INFORMATION

Sustainability	Valorisation: 96,05% Maximum carbon footprint per use: 0.0176kg kW/h de CO2
CE mark	Yes
RoHS-compliant	Yes
Testing standards	LM 79-80 (all measurements at ISO17025 certified laboratory)

GENERAL CHARACTERISTICS

Cover	Reinforced polyamide (UNE-EN ISO 4892-3:2014) Suitable for saline environments.
Diffuser	Stabilized UV polycarbonate. (UNE-EN ISO 4892-3:2014). Suitable for saline environments.
Coupling	Die-cast aluminium EN AC-44100 (LM6) with low copper content <0.1%.Suitable for saline environments.
Nuts outer and bolts	Stainless steel (AISI304).
Watertightness	IP66 (EN 60598-1 and EN 60529).
Impact protection grade	IK10 (EN 62262).
Operating temperature	Ta -40 ºC a +50 ºC According to luminaire configuration.
Lifetime	L90B10 100,000 h at 25 °C. Light maintenance values at 25 ºC are calculated by TM-21 based on LM-80 data.
Cables	Clase I/II Longitud del cable de 4 a 8 metros Sección transversal: 2x1,5; 3x1,5; 4x1,5; 5x1,5

ELECTRICAL CHARACTERISTICS

Electrical class	Class I or Class II
Voltage / Frequency	220 V - 240 V / 50 Hz - 60 HzOptional 100-277 V
Power factor	> 0.9
Harmonic distortion	< 10% Other voltages, upon request.Other voltages upon request.
Surge protector	Surge protection (1.2 / 50) 10 kV. Maximum current (8/20) 10kA. Maximum voltage (L-N) 320 V. Maximum voltage (L / N-GND) 400 V. Optional overvoltage protection: 20kA, 20kV

MAINTENANCE AND ASSEMBLY

Installation and maintenance	Toolless assembly.
Installation	Installation to pole of Ø60 mm.
Equipped weight	7.9 Kg

LIGHTING CHARACTERISTICS

Real light package	GEN1: 904 lm - 9,043 lm (9 - 68W) GENA: 1,204 lm - 10,205 lm 9 - 68W)
LED colour temperature	4,000 K (Neutral White, nw). 3,000 K (Warm White, nw). 2,700 K (Warm White, nw). 2,200 K (Warm White, nw). Amber colour temperature, upon request.
Index of reproduction chromatic (CRI)	CRI>70. CRI80 upon request.
LEDs	12, 16 and 32 LEDs.
ULR	1%
Optics	PMMA polymethylmethacrylate.
Photometric distributions	**AMM1:** Throw 70º Spread 30º/50º (Type III) **SMA1:** Throw 70º Spread 70º (Type IV) **SME1:** Throw 70º Spread 40º (Type II) **AMA1:** Throw 70º Spread 60º (Type IV)
LED thermal control	Heat dissipation via conduction, radiation and convection based on a design for LED technology.

MANAGEMENT AND CONTROL

Equipment	1N: 1 Level RC: Controller dimmed RD: DALI AF: 1 - 10 V RL: Pulse adjustable LED 2N: 2 Level SR: Smart Ready (D4i)
Autonomous regulation	Regulations programmed from the factory: **56**: 50% of the 24: 00h at 6: 00h. **66**: 60% of the 24: 00h at 6: 00h. **76**: 70% of the 24: 00h at 6: 00h. **SC**: Programming according to client.
CLO regulation	Flow rate during the life of the product: **7**: 70% luminous flux throughout the life of the luminaire. **8**: 80% luminous flux throughout the life of the luminaire. **9**: 90% luminous flux throughout the life of the luminaire.
Socket connection	**3-U**: NEMA 3 pin socket with/without IP66 cover **5-V:** NEMA 5 pin socket with/without IP66 cover **7-W:** NEMA 7 pin socket with/without IP66 cover **4-X:** Zhaga socket with/without IP66 cover
Sensor	1: Photocell for NEMA 3, 5 and 7 pin socket (20 lux) 2: Photocell for larger Zhaga socket (20 lux)
Node	**BS**: Controlux Basic IMCU

FINISHES

Predefined luminaire colour

RAL 7015	RAL-7015 Slate grey textured

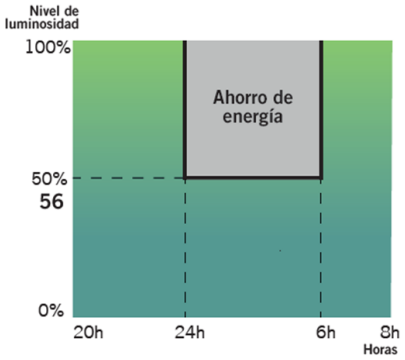
LUMINAIRE DIMMING

By programming the driver

Smart luminaires drivers can be programmed in the fac-tory 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%.



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

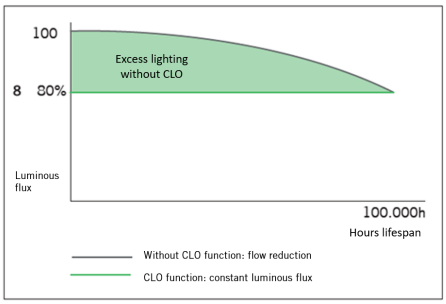
Using the CLO function

While taking lumen depreciation over the years into account, the driver is programmed so that it starts at a reduced level and gradually increases power over the lifespan of the luminaire. This saves energy and increases the lifespan of the system. Furthermore, the light level in the area where the luminaire is installed remains constant over time.

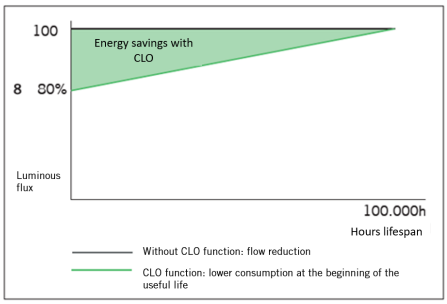
Constant luminous flux 8

luminous flux from the luminaire at 80% to maintain light levels throughout its lifespan.

Luminous flux chart



Consumption graph

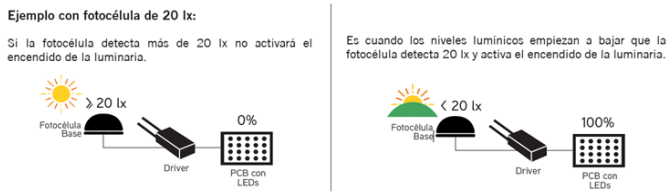


By incorporating an additional device

Photocell

A photocell enables the luminaire to be switched on or off based on the solar light intensity detected.

This is extremely useful so the luminaires are not switched on during the day when there is still sufficient natural light.



INNOVATIVE AND UPDATABLE OVER TIME (Zhaga/ ZD4i)

"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.

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.

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

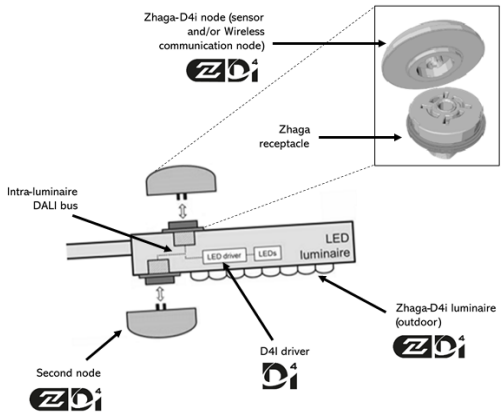
Zhaga-D4i certification covers all the essential characteristics, including automatic adjustment, digital communication, data reporting and power requirements in any single luminaire, ensuring plug-and-play interoperability for luminaires (drivers) and peripherals, such as connectivity nodes.

STANDARDISATION AS A MEANS TO ACHIEVE SUSTAINABILITY

The C-line GEN4 luminaire has been designed to function with the latest available market-proven technology based on standards. This also enables it to meet the CARANDINI sustainability requirements and become a product ready for maintenance in the future under better guarantees while respecting the environment and society.

The luminaires marked as Zhaga are a “Future Proof” design, meaning it is based on and designed around standard Zhaga components. These components are mainly the LED modules and the drivers. The electric compartment and dissipation area for LED modules has space and additional mountings to include any driver compliant with Zhaga “Book 13” based on market driver dimensions, or any LED module compliant with Zhaga “Book 15” based on LED controller interface specifications.

This makes it possible to have a sustainable product that can be updated over time.



CONNECTIVITY

D4i specifications take the best of the standard DALI2 protocol and adapt it to an interconnected lighting environment, but with certain limitations. Only the control devices installed in the luminaires can be combined with a Zhaga-D4i luminaire. According to the specifications, the control devices are respectively limited to an average power consumption of 2W and 1W.

SMART CITY

Luminaires marked ZD4i are a "Smart Ready" design, which means they are designed to house both indoor and outdoor communication nodes through connection bases compliant with the Zhaga “Book 18” & Zhaga-D4i standard on sensor and communication node interoperability.