GMR SMARTWAY



CYL Smart

Lighting fixture modules

Cyl Smart Lighting fixture modules

GMR SMARTWAY

Technical data

rev. 2025.04

Product code: **CYS**



Single lighting fixture module

CYS_3_A



Double lighting fixture module

CYS_3_B

Conformity

CE EN40-5

Dimension

Diameter:	219 mm
Height:	1.500 mm

Materials | Colour

Pole:	Hot-dip galvanized S235 steel - UNI EN 10219 - EN1461
Junctions	Aluminum die-casting | EN1706
Lighting body	Aluminum die-casting | EN1706
Outer frames:	Plastic
Screws and bolts:	AISI 304 stainless steel
Gasket:	EPDM
Colour*:	GMR Dark, Dark green, Red, blue, GMR light, light green, orange

* based on the chosen configuration (Sky, City, Sunset e Geko)

Optional

Hotspot Wi-Fi:

- Wireless : Wi-Fi 6 - 2.4 GHz 802.11b/g/n/ax dual-chain, 5 GHz 802.11a/n/ac/ax dual-chain
- Network connection: RJ45 10/100/1000 Ethernet ports, 1 SFP port
- Operating temperature: -40°C to +70°C
- Power consumption: 15 W
- Antenna connector: RP-SMA female
- Antenna integrated in top of pole

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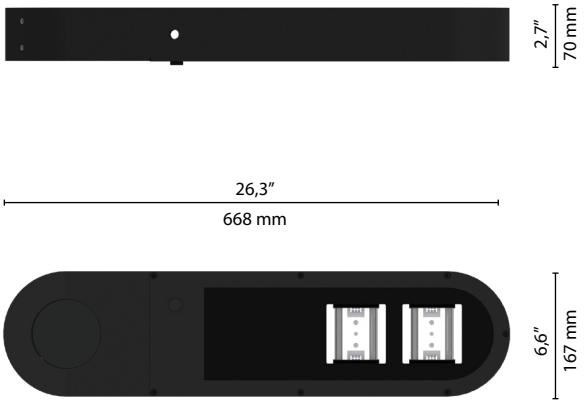
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Accessibility

Openable
Openable fixture with basic tools
Replaceable internal components using basic tools.

Optical technology

Reflexa
Refracting optical system consist of single-chip LED, aluminium reflector extra-pure with silver PDV treatment and extra clear tempered glass.



Scale: 1:10

Max. weight	CXS
6 Kg	Lateral: 0,01 m² |Plan: 0,11 m²

Standard

EN 60598-1, EN 60598-2-3, EN 62471, EN 55015, EN 61547, EN 61000-3-2, EN 61000-3-3

Conformity | protection

Conformity

Salt spray test
ISO 9227
8000 hr

Vibration test passed
IEC 60068-2-6

Insulation classes

Protection classes
IP 66 IK 08

Photobiological safety
Classe 0 Exempt group IEC/TR62471

Plus

Cut Off | optical flexibility | low glare | Compliant | Separate Units (electrical and optical) | Ipea min

Lighting fixture features

General features

Power source:	220-240V | 50/60Hz | tolerance +/-10%
Current supply:	350 mA | 525 mA |700 mA | 1050 mA (P_{max} = 83W)
Power Factor | THD:	≥0.95 | <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h | L90B10
Operational temperature (Ta):	T_{min} = -40°C T_{max} = +50°C |700 mA +40°C |1050 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Main surge immunity up to 10kV
Standard functions:	Current fixed |Virtual midnight |CLO

Materials

Lighting fixture:	Powder coated Die cast aluminium | EN1706
Optical system:	Aluminium reflector, 99.7% oxidised and polished purity
Screen:	Screen-printed ultraclear tempered glass | Th. 4mm
Gaskets:	Removable silicon
Cable gland:	Polyamide PA66 | PG16 | Ø 14mm MAX | IP 66
Screws and bolts:	AISI 304 stainless steel
Fixture color:	Based on the chosen configuration
Silkscreen color:	RAL 9005

LED features

LED data 4.000 K - 700mA:	340 lm/LED | 180 lm/W | 25°C [Tj] | ≤ 3 step MacAdam
Color temperature:	3.000 K | 4.000 K |CRI ≥ 70

Optional

Additional surge protector device standard:	SPD with warning LED CLASS 1 | CLASS 2 12kV
Additional surge protector device SPD 400:	SPD with warning LED CLASS 1 | CLASS 2 12kV+ permanent overvoltage protection higher than 270Vac
Electrical optional:	0,5 m power cable with 2-3 or 4-5 core connector
Optional functions:	DALI2 | D4i| Presence sensor
Connectors and sockets:	NM (Nema Socket) |ZS (Lumawise Zhaga Socket)

GMR ENLIGHTS s.r.l. • Quality system certificate ISO 9001:2015-ISO 14001:2015 • phone:+39 0543 462611 • fax:+39 0543 449111 • sales@gmrenlights.com • www.gmrenlights.com
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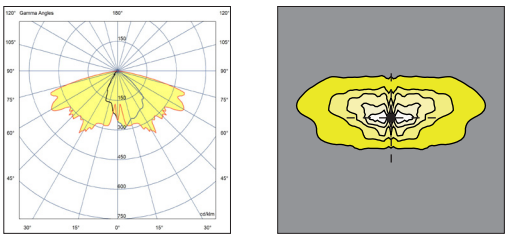
Available optical system

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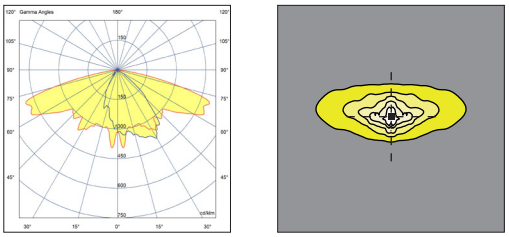
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ASYMMETRICAL DISTRIBUTION \\

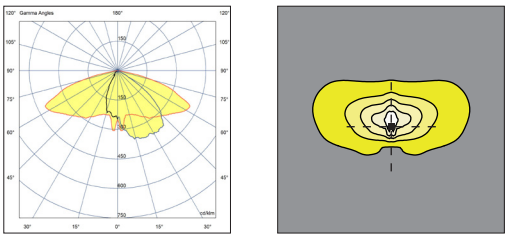
R2A



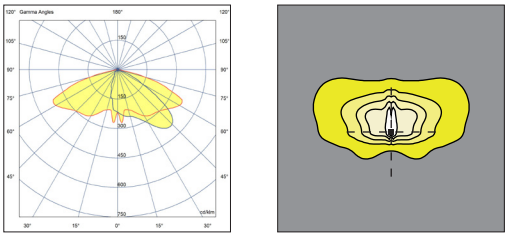
R2B



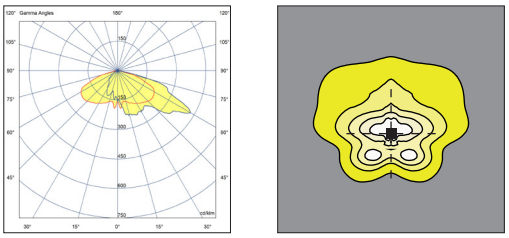
R3A



R3B



R3C







R2B



R3A

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Cyl Smart Lighting fixture modules

Photometric data | LED modules nominal data

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rev. 2025.04

The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, color rendering index CRI 70 min. and a junction temperature tj of 25°C. The LED nominal data are extrapolated from the manufacturer documentations.

LED code	(•) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
RF03	350	2377	11,9	199
	525	3374	18,2	193
	700	4282	24,7	184
	1050	5850	38,0	163
RF06	350	4667	23,6	205
	525	6622	36,2	194
	700	8402	49,1	181
	1050	11473	75,6	162

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Cyl Smart Lighting fixture modules

Photometric data | Lighting fixture measured data

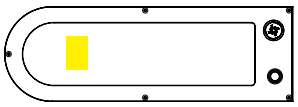
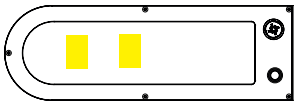
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rev. 2025.04

The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K color temperature, optica type R3A and an ambient temperature ta of 25 °C.

GMR ENLIGHTS offers the possibility of driving the device with custom currents (•).

Feature availability is subject to configurations. To obtain luminous fluxes and efficiencies of the lighting fixture in case of optic type and/or color temperature and/or color rendering index different from the standard use the conversion factors shown in the tables.

Order code: CSTCST_RFxx		(•) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
RF03		350	2234	15,0	149
		525	3171	21,5	147
		700	4024	28,5	141
		1050	5497	42,5	129
RF06		350	4385	28,0	157
		525	6223	40,5	154
		700	7896	55,0	144
		1050	10781	83,0	130

OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
R2A	0,99
R2B	0,98
R3B | R3C	1,00

Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
3.000	0,94
5.700	1,01

CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,93

(*) See pag: Available optical system, to check the optic type availability.
(**) See pag: Technical data, to check the colour temperatureb availability.

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rev. 2025.04

Functions

Standard functionality

Fixed current
During production, the light fixture is pre-set with a fixed current amongst the standard settings that appear in the tables on page 3. Upon customer's request, it is also possible to set a specific current (custom setting).

Virtual Midnight | Automatic dimming
The driver is programmed to automatically dim the light output according to the time. As required by regulations, the maximum output is set during initial hours and towards the end of the light fixture's operating time interval. During these hours there is statistically more traffic. The light output is then dimmed during the central hours of the operating time interval. This management is achievable through a self-learning process of the device, that establishes the centre point of the time interval. This moment is called "virtual midnight" and it is the point that the dimming profile refers to in order to know when to reduce the light output. We can manage up to 8hrs of programming that evolve around the virtual midnight and up to 5 steps of dimming. This way the light output will adjust automatically, adapting throughout the year to the duration of the nighttime, by referring to the pre-set parameters based on the centre point of the operating time interval.

CLO Constant Lumen Output
LEDs over time are inevitably subject to performance depreciation. This light reduction may be compensated by gradually increasing the LED's current during its lifespan, this corresponds to a gradual increase of lumen output proportional to the amount that is naturally depreciated.

On request functionality

DALI2 Control and monitoring system
On request, the fixture can be fitted with a DALI2 communication interface. This protocol allows it to be monitored and controlled remotely through use of Dali control buses.

D4i
On request, the fixture can be equipped with a D4i certified power supply. This is the ideal solution for wireless sensors and/or controls. This system was developed to integrate various systems to address smart city requirements. Included is DALI2 protocol + auxiliary power (AUX) to supply power to devices and sensors. This system is usually required when using a Zhaga socket.

LINESWITCH
This functionality by using an extra wire within the streetlight's power line, allows to dimmer to a pre-set level. For example, a centralised timer can change this value from 100% to 50%, and vice versa.

AMPDIM
This feature allows dimming using the power line controlled by an upstream flow regulator. For this feature, the flow controller must use amplitude modulation (AM).

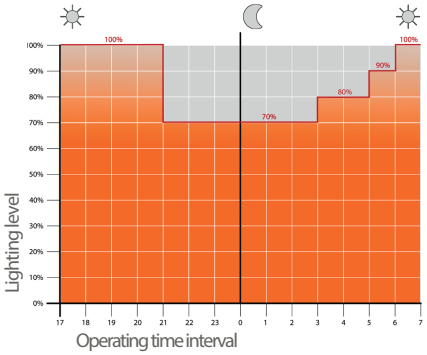
NEMA | Nema Socket (7 PIN)
The Nema Socket is a 7 PIN connector/socket with IP66 rating, that is fitted on the fixture to make it interfaceable with various ANSI C136 compliant devices and remote-control gear.
These devices can be installed during or after installation of the light fixtures. The NEMA socket can provide power interruption and is interfaceable with DALI buses and/or 1-10V dimming. It is compatible with point-to-point node connection, and twilight sensors ect.

ZHAGA Zhaga Socket (4 PIN)
The Zhaga socket is a small and compact 4 Pin connector/socket, that is fits ideally with the design of GMR ENLIGHTS fixtures. With ZHAGA sockets it is possible install the devices, sensors, ZHAGA remote controls during or after installation of the light fixtures. This socket is usually required in conjunction with the DALI Sensor feature, which involves a DALI2/D4i communication protocol in addition to 12/24V auxiliary port to supply power to the sensors. It is compatible with point-to-point wireless control solutions and SMART CITY applications to control and monitor the public lighting infrastructure.

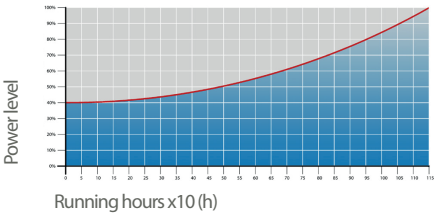
PRESENCE SENSOR
The product can be equipped with a presence sensor type zhaga book 18 in the lower part of the luminaire. In this case the lighting body is provided with Zhaga socket and Driver D4I. It is very important to carefully evaluate the installation context (height and underlying area) according to the sensing diagram of the device.

Third-party remote control
GMR ENLIGHTS fixtures are compatible with most third-party remote controls, powerline communication systems, wired systems (buses) and wireless systems.

Example of 4-step adjustment with virtual midnight



CLO Light Flow Compensation



7 Pin Nema Socket 7 (A) and IP66 shorting cap (B)

A

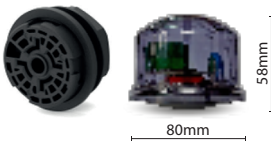


B

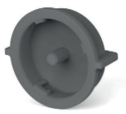


4 Pin Zhaga Socket (C) and IP66 cap (D)

C



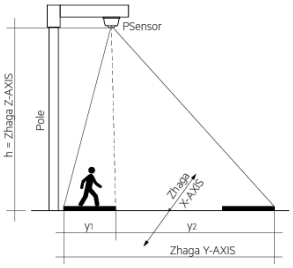
D



Installation example of Zhaga



Installation example of presence sensor



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GMR ENLIGHTS works with selected and processed materials to maximize performance and quality.

GALVANIZED STEEL

Protection of galvanized steel surfaces

The protection of the galvanized steel elements is achieved thanks to:

- Micro sandblasting;
- Phosphoric pickling bath at a ph level ranging from 1.5 to 3;
- Rinsing with demineralised water;
- First powder layer application;
- Kiln firing;
- Application of a final powder layer;
- Kiln roasting of the final powder layer at 180°C (356°F);
- Cooling.

DIE-CAST ALUMINIUM

Protection of die-cast aluminium surfaces

Lighting fixtures, brackets, pastoral, and die-cast accessories undergo a cycle of powder painting which creates a barrier against the corrosion of metal parts. Moreover this barrier makes the finished product comply with design specifications in terms of surface roughness, color and reflectance.

The cycle consists of the following steps:

- Micro sandblasting;
- Hot pickling bath in a zinc-based phosphodegreasing solution;
- Specific process for the preparation of surfaces before painting;
- Washing with water;
- Rinsing with demineralised water and subsequent drying;
- First bowder layer application followed by kiln baking at 180°;
- Final powder layer application using a High Durability product and final kiln roasting at 180°C (356°F).



Salt spray test

The top quality of such treatments is confirmed by salt spray tests performed in accordance with standard ISO 9227:2017 Neutral Salt Spray test (NSS).
The test was carried out for 8.000 hours at 35°C (95°F) and demostrated through the report test released.



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