

Hulla

Wall Street Light

Standard

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

Conformity



PLUS



CUT OFF



OPTICAL FLEXIBILITY



LOW GLARE



COMPLIANT



IPEA MIN

Salt spray test

ISO 9227



Insulation classes



Protection classes



Photobiological safety



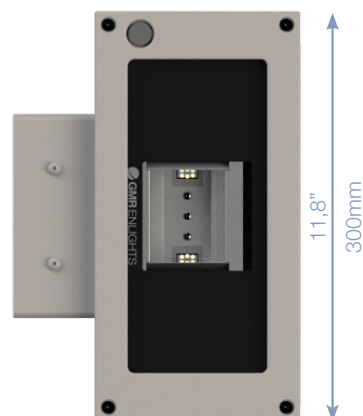
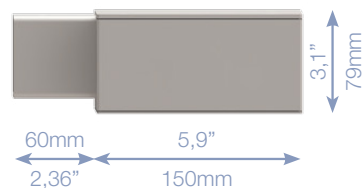
Classe 0 Rischio
esente IEC/TR62471

Accessibility



Openable

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



Features

- Power source: 220-240V | 50/60Hz | tolerance +/-10%
- Current supply: 350 mA | 525 mA | 700 mA | 1050 mA ($P_{max} = 42W$)
- Power Factor | THD: ≥ 0.95 | $< 10\%$ (At full load)
- Expected life ($T_a = 25^\circ$): > 100.000 h | L90B10 | @ LED 700mA
- Operational temperature (T_a): $T_{min} = -40^\circ C$, $T_{max} = +45^\circ C$ | 700 mA
- Storage temperature: $-40^\circ C / +80^\circ C$
- Standard functions: Current fixed | Virtual midnight | CLO
- Overcharged protections: Main surge immunity up to 10kV

Materials

- Lighting fixture: Die cast aluminium | EN1706
- Optical system: Optics in PMMA, plastic reflector metallic painted
- Screen: Screen-printed ultraclear tempered glass | Th. 4mm
- Gaskets: Removable silicon
- Cable gland: Polyamide PA66 | PG16 | $\varnothing 14mm$ MAX | IP 66
- Screws and bolts: AISI 304 stainless steel
- Fixture colours: GMR light

LED Features

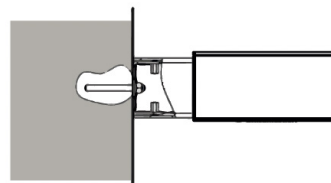
- LED data 4.000 K - 700mA: 340 lm/LED | 180 lm/W | $25^\circ C [T_j]$ | ≤ 3 step MacAdam
- Colour temperature: 3.000 K | 4.000 K | CRI ≥ 70

Optional

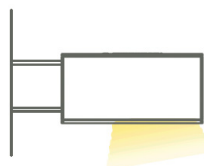
- Additional surge protector device: SPD with warning LED CLASS 1 | CLASS 2 12kV
- Optional functions: DALI-DALI2

Fixing type and light

Unidirectional
Side



Side



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The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, colour rendering index CRI 70 min. and a junction temperature t_j of 25°C. The LED nominal data are extrapolated from the manufacturer documentations. The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K colour temperature, optica type R3B and an ambient temperature t_a of 25 °C.

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

To obtain luminous fluxes and efficiencies of the lighting fixture in case of colour temperature and/or colour rendering index different from the standard use the conversion factors shown in the tables.

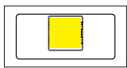
LED modules nominal data

(4000 K | CRI 70 min. | $t_j=25^\circ$)

LED	I (mA)	Luminous flux (lm)	LED power (W)	Efficienct (lm/W)
RF03 	350	2539	12,8	198
	525	3603	18,7	193
	700	4573	24,8	184
	1050	6247	38,3	163

Lighting fixture measured data

(4000 K | OPTIC R3A | $t_a=25^\circ$)

LED	(•) I (mA)	Luminous flux (lm)	LED power (W)	Efficienct (lm/W)
RF03 	350	2234	12,8	198
	525	3171	21,5	193
	700	4024	28,5	184
	1050	5497	42,5	163

Optic conversion factor luminous flux

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

Tk conversion factor luminous flux

Tk (K)	Flux multiplier
2.200	0,70
3.000	0,94
4.000	1,00

CRI conversion factor luminous flux

CRI (Colour Render Index)	Flux multiplier
2.200	1,00
3.000	0,93
4.000	1,00

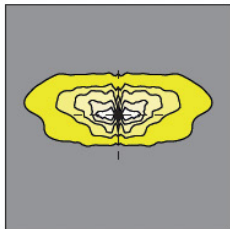
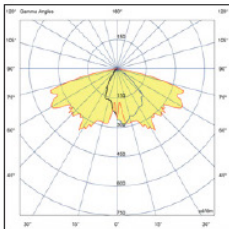
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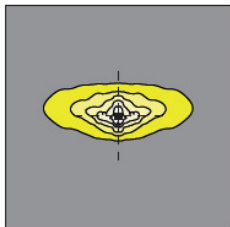
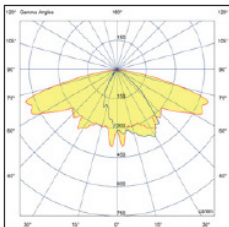
Available optical system

Asymmetrical Distribution \ R2A

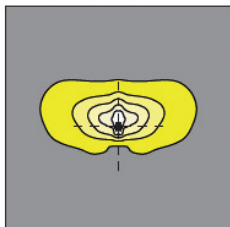
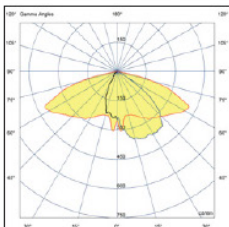
R2A



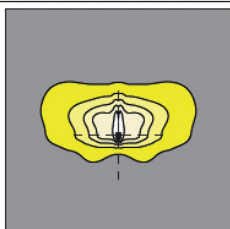
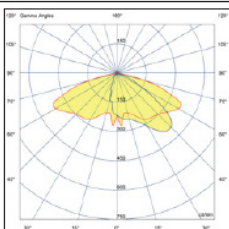
R2B



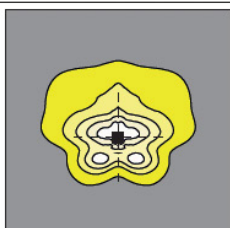
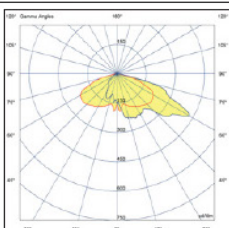
R3A



R3B



R3C



R2B



R3A

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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 2. 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 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

DALI - 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.

DALI Sensor (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 Lumawise 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).

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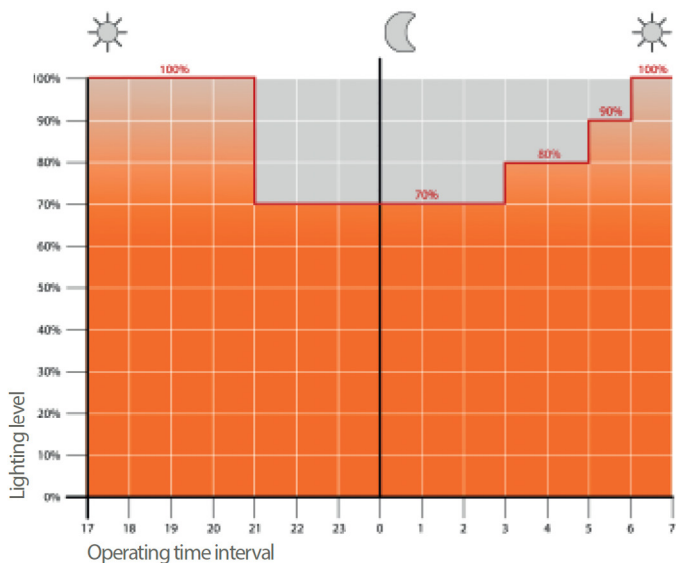
On request connectors and external sockets

ZHAGA Lumawise Zhaga Socket (4 PIN)

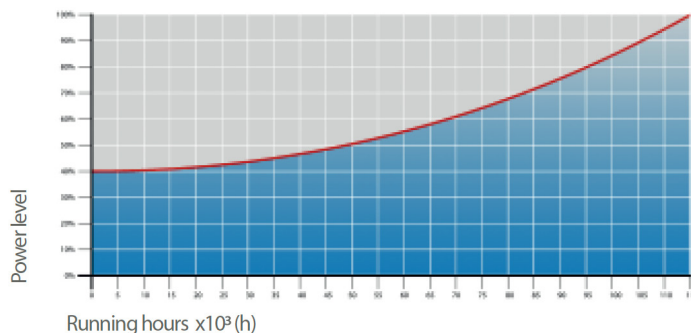
The Lumawise Zhaga socket is a small and compact 4 Pin connector/ socket, that is fit ideally with the design of GMR ENLIGHTS fixtures. With ZHAGA Lumawise sockets it is possible to install the devices, sensors, ZHAGA remote controls during or after installation of the light fixtures. This socket is 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.

Third-party remote control

MR 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



4 Pin Lumawise Zhaga Socket



IP66 cap



Installation example of Lumawise Zhaga