VESTA△large

Vesta A large
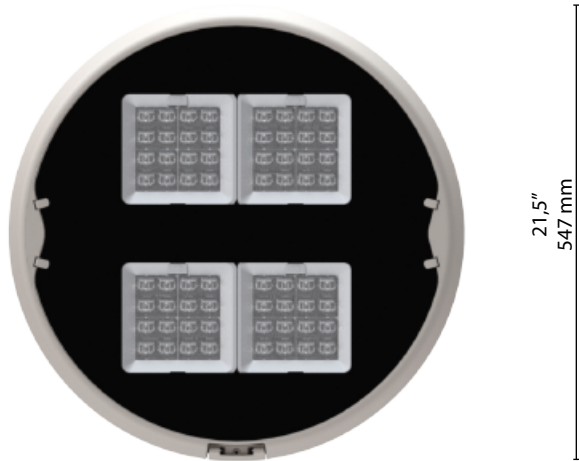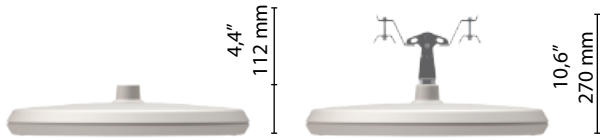## Technical data

ACCESSIBILITY

Timeless
Tool-free openable fixture.
Replaceable internal components
without the need of tools.

OPTICAL TECHNOLOGY

GL **Glassed**
Refracting optical system consist of
singlechip LED, PMMA lenses with
30 years of warranty against UV
and yellowing by aging, aluminium
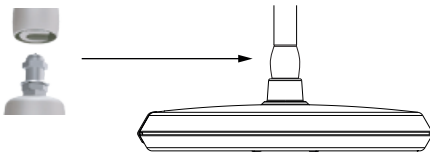reflector having a purity of 99,7% and
extra clear tempered glass.

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

ENEC 05   CE

Salt spray test
ISO 9227

8000 hr

Vibration test passed
IEC 60068-2-6

Insulation classes

Protection classes
IP 66   IK 09

Photobiological safety
Classe 0 Exempt
group IEC/TR62471

PLUS

CUT OFF | **OPTICAL FLEXIBILITY** | **LOW GLARE** | **CAM 2017 COMPLIANT** | **A++ 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} = 175W)
Power Factor | THD:	≥0.95 | <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h | L90B10 | @ LED 350mA
Operational temperature (Ta):	T_{min} = -40°C T_{max} = +55°C |700 mA +50°C |1050 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Main surge immunity up to 10kV
Disconnector:	Disconnector and cable clamp | cross section 1.5mm² ÷ 4mm²
Standard functions:	Current fixed |Virtual midnight |CLO

Materials

Lighting fixture:	Die cast aluminium | EN1706
Optical system:	Optics in PMMA 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:	GMR light Others on request
Silkscreen color:	RAL 9005

LED FEATURES

LED data 4.000 K - 640mA:	700 lm/LED | 181 lm/W | 25°C [Tj] | ≤ 3 step MacAdam
Color temperature:	3.000 K | 4.000 K | 5.700 K| CRI ≥ 70

4,4" / 112 mm

10,6" / 270 mm

21,5" / 547 mm

Scale: 1:10

Max. weight	**CXS**
10 Kg	Lateral: 0,05 m² |Plan: 0,23 m²

FIXING TYPE

Suspended
Standard: fast connection\|On request: ø3/4" Gas

Wire system

Ø 6 ~12 mm
Ø 0,23" ~0,5"

## OPTIONAL

Additional surge protector device:	SPD with warning LED CLASS 1 | CLASS 2 12kV/kA
Electrical equipment:	0,5 m power cable with 2-3 or 4-5 core connector Disconnector and cable clamp | cross section 1.5mm² ÷ 4mm²
Optional functions:	DALI-DALI2 | DALI SENSOR
Connectors and sockets:	NM (Nema Socket) | LM (Lumawise Zhaga Socket) Zhaga STD remote control | Zhaga GPS remote control

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Vesta A large
Available optical system

SYMMETRICAL DISTRIBUTION

1 A
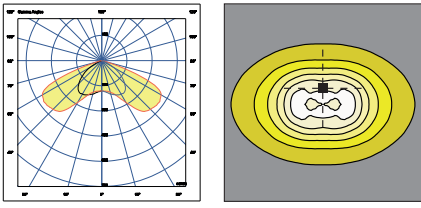
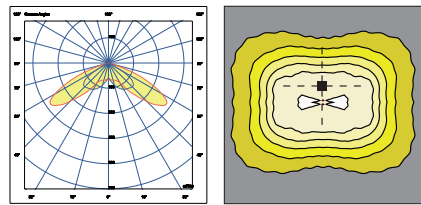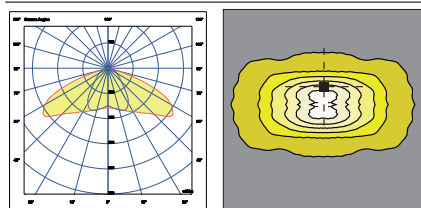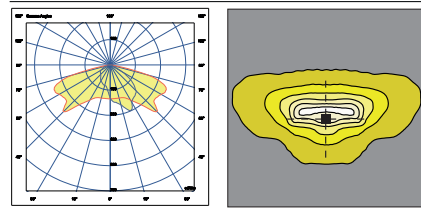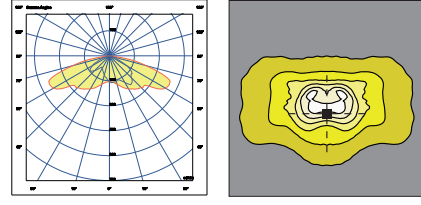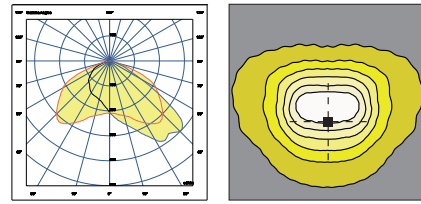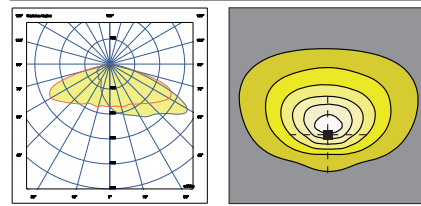

1 B
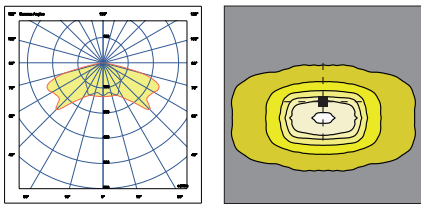
1 C

1 D

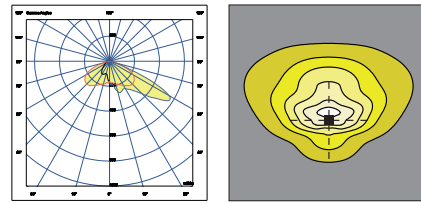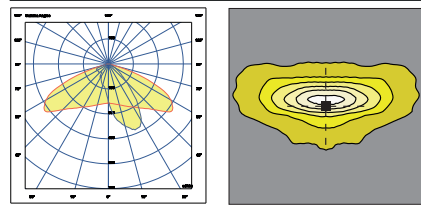**ASYMMETRICAL DISTRIBUTION**

2 A

2 B

ASYMMETRICAL DISTRIBUTION

3 A

3 B

3 C

3 D
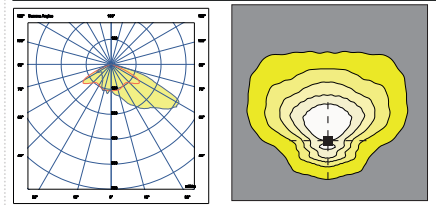

3 E
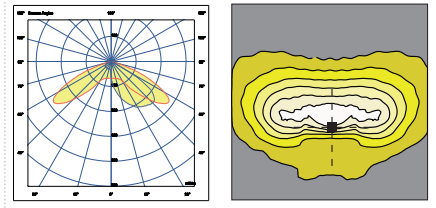
3 F

3 G
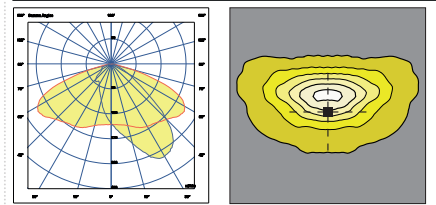
PEDESTRIAN PATHS

4 A

4 B

SYMMETRICAL DISTRIBUTION

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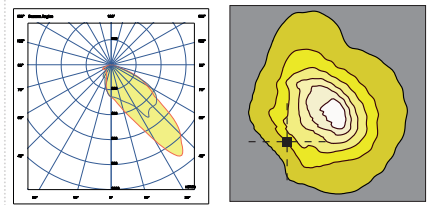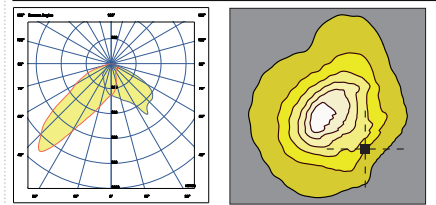
Photometric data | LED modules nominal data
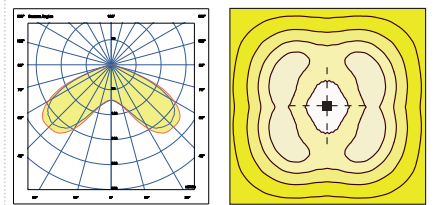
The LED modules nominal data refers only to the LED light sources in a standard version, with 4000 K color temperature, color rendering index CRI 70 min. and a junction temperature tj of 25°C. The LED nominal data are extrapolated from the manufacturer documentations.

The information in the data sheet may be subject to variations and implementations; please check the latest news on www.gmrenlights.com • The pictures used are purely for information.
Luminous flux tolerance +/- 7% | Power tolerance +/- 5% | Power tolerance in zhaga versions or with D4i / SR power supply +/- 10%

LED code		(•) I [mA]	Luminous flux [lm]	Power LED [W]	Efficiency [lm/W]
GL10		350	8383	38,7	217
		525	12252	58,7	209
		700	15757	77,8	203
		1050	22520	119,6	188
GL12		350	9973	45,5	219
		525	14573	68,7	212
		700	18655	92,5	202
		1000	24797	134,8	184
GL14		350	11636	56,0	208
		525	17002	81,0	210
		700	21765	109,9	198
		1000	29273	157,3	186
GL16		350	13240	61,4	216
		525	19217	93,4	206
		700	24761	123,3	201
		900	30402	160,5	189

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Luminous flux tolerance +/- 7% | Power tolerance +/- 5% | Power tolerance in zhaga versions or with D4i / SR power supply +/- 10%

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Photometric data | Lighting fixture measured data

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The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K color temperature, optica type 3C 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: VAL_GLxx		(•) I [mA]	Luminous flux [lm]	Power LED [W]	Efficiency [lm/W]
GL10		350	7377	43,0	172
		525	10782	64,5	167
		700	13866	85,5	162
		1050	19818	130,0	152
GL12		350	8777	50,5	174
		525	12825	75,5	170
		700	16417	100,5	163
		1000	21821	146,5	149
GL14		350	10239	61,5	166
		525	14962	89,0	168
		700	19153	119,5	160
		1000	25760	171,0	151
GL16		350	11651	67,5	173
		525	16911	101,5	167
		700	21790	134,0	163
		900	26754	174,5	153

OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1D	3B	3D	0,92
1A	3G	5A	0,93
1B	2A	4A	4B	0,95
1C	3E	3F	0,9
2B	3A	0,85

Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
3.000	0,96
5.700	0,99

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 temperature availability.

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Luminous flux tolerance +/- 7% | Power tolerance +/- 5% | Power tolerance in zhaga versions or with D4i / SR power supply +/- 10%

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

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).

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 Lumawise Zhaga Socket (4 PIN)
The Lumawise Zhaga socket is a small and compact 4 Pin connector/socket, that is fits ideally with the design of GMR ENLIGHTS fixtures. With ZHAGA Lumawise 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.

REMOTE CONTROL ZHAGA STD
The device is installed on the lighting body equipped with D4I driver, via a prepared zhaga socket.
The remote control works at 2.4GHz frequencies, and communicates in a secure mesh network thanks to 256bit data encryption. Thanks to the better positioning of the antenna, the node allows you to cover large distances and overcome obstacles. Equipped with lux meter and accelerometer, it can work both stand-alone and within the dedicated communication infrastructure. The device implements energy saving policies that bring the average consumption to 0.19W. In the smartcity application, the node allows you to interact with the street lighting network, dimming the lighting fixtures as needed and based on traffic and weather conditions, bringing significant economic advantages to the system in terms of energy savings. The node also allows monitoring and diagnostics of the public lighting network, from a single area, to the country up to an entire city or region.
The knot has a diameter of 80mm and a height of 59mm. IK09, IP66.

ZHAGA GPS REMOTE CONTROL
In addition to the functionality expressed for the STD version, this version also includes a GPS.
Thanks to GPS, the system can count on an astronomical clock as well as all the functions related to the exact positioning of the lighting body. Especially in the installation and commissioning phase, having the information relating to the positioning available simplifies and significantly speeds up the start-up of the system.
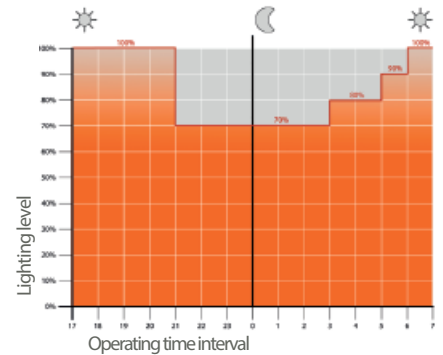
PRESENCE SENSOR
The product can be equipped with a presence sensor type zhaga book 18 in the lower part of the luminaire. In this case the lighting body is provided with Zhaga socket and Driver D4I. It is very important to carefully evaluate the installation context (height and underlying area) according to the sensing diagram of the device.
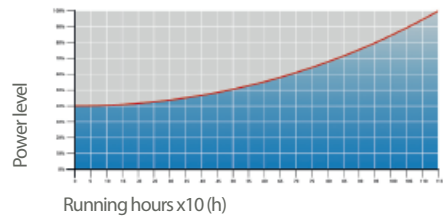
Third-party remote control
GMR ENLIGHTS fixtures are compatible with most third-party remote controls, powerline communication systems, wired systems (buses) and wireless systems.
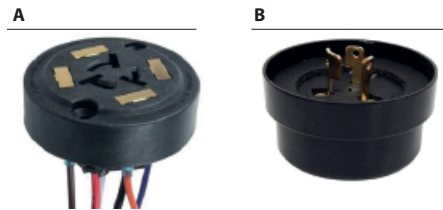
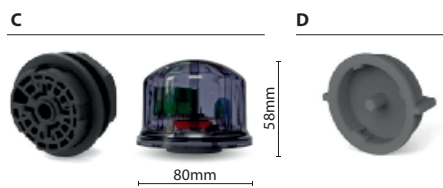**Example of 4-step adjustment with virtual midnight**

CLO Light Flow Compensation

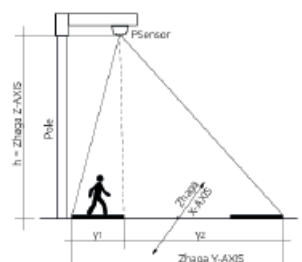**7 Pin Nema Socket 7 (A) and IP66 shorting cap (B)**

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

Installation example of Lumawise Zhaga

Installation example of presence sensor

The information in the data sheet may be subject to variations and implementations; please check the latest news on www.gmrenlights.com • The pictures used are purely for information.

Protection cycles

rev. 2022.10

GMR ENLIGHTS works with cast iron, steel and aluminum. The materials are selected and processed to maximize performance and quality.

GALVANIZED STEEL

Protection of galvanized steel surfaces for poles

The protection of galvanized steel elements is achieved by following steps:

• Micro sandblasting;
• First epoxy layer application followed by:
Wilting > Drying > Cooling;
• Acrylic glaze layer application followed by:
Wilting > Drying > Cooling;
• Packing at least after 24-hour-drying at room temperature.

Protection of galvanized steel surfaces for brackets and pastorals

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.

CAST IRON

Protection of cast iron surfaces for bases

The protection of cast iron elements is achieved by the following treatments:

• Surface micro shotblasting;
• Mono-component dip galvanizing followed by:
Wilting > Drying > Cooling;
• Epoxy micaceous primer application followed by:
Wilting > Drying > Cooling;
• Acrylic enamel application followed by:
Wilting > Drying > Cooling;
• Packing at least after 24-hour-drying at room temperature.

DIE-CAST ALUMINIUM

Protection of die-cast aluminium surfaces for lighting fixtures, tops, collars, brackets and pastorals

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°C (356°F);
• 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.

GMR ENLIGHTS s.r.l

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