GMR ENLIGHTS


# VIRGO A500

*For product specifications, materials and colours, please refer to the details inside*

# Virgo A 500

## Technical data

GMR ENLIGHTS

rev. 2025.03

### Accessibility

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

### Optical technology

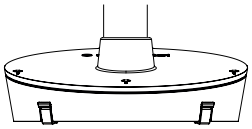
**Glassed**
Refracting optical system consist of singlechip LED, PMMA lenses with 30 years of warranty against UV and yellowing by aging, aluminium reflector having a purity of 99,7% and extra clear tempered glass.



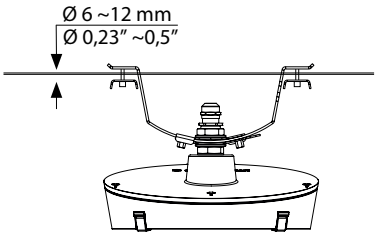
| Max. weight | CXS |
|---|---|
| 7,0 Kg<br>fixing device excluded | Lateral: 0,04 m² \|Plan: 0,19 m² |

### Fixing type

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



**Wire system**




DarkSky Approved with 3000K CCT and maximum of 10degree tilt for leveling only. (*) To limit upward tilt to max +10°,an integrated stopper is included for DarkSky approved configurations.

### 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

**Vibration test**
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 · Compliant · Ipea min · A++

### Lighting fixture features

**General features**

| | |
|---|---|
| Power source: | 220-240V \| 50/60Hz \| tolerance +/-10% |
| Current supply: | 350 mA \| 525 mA \|700 mA \| 1050 mA ($P_{max}$ = 115W) |
| Power Factor \| THD: | ≥0.95 \| <10 % (At full load) |
| Expected life (Ta=25°): | > 100.000 h \| L90B10 |
| Operational temperature (Ta): | $T_{min}$ = -40°C $T_{max}$ = +55°C \|700 mA +50°C \|1050 mA |
| Storage temperature: | -40°C/+80°C |
| Overcharge protection: | Main surge immunity up to 10kV |
| Disconnector: | Optional |
| Standard functions: | Current fixed \|Virtual midnight \|CLO |

**Materials**

| | |
|---|---|
| Lighting fixture: | Die cast aluminium \| EN1706 |
| Optical system: | Optics in PMMA |
| 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 dark |
| Silkscreen color: | RAL 7047 |

### Led features

| | |
|---|---|
| LED data 4.000 K - 640mA: | 700 lm/LED \| 181 lm/W \| 25°C [Tj] \| ≤ 3 step MacAdam |
| Color temperature: | 2.200K \| 2.700K \|3.000 K \| 4.000 K |

### Optional

| | |
|---|---|
| Additional surge protector device: | 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 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: | DALI2 \| D4i |
| Connectors and sockets: | NM (Nema Socket ) \| ZS (Zhaga Socket) |

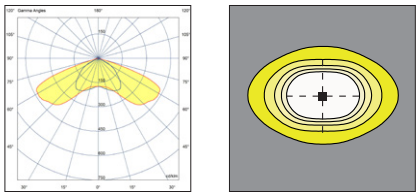
# Virgo A 500

## Available optical system

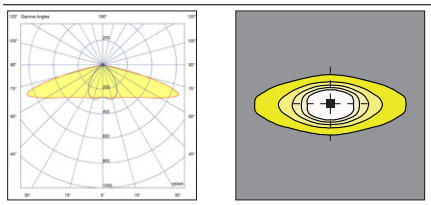
rev. 2025.03

### SYMMETRICAL DISTRIBUTION\

1A

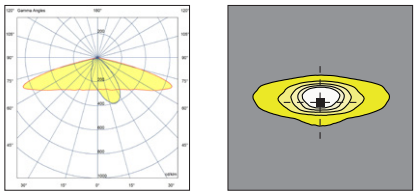


1B

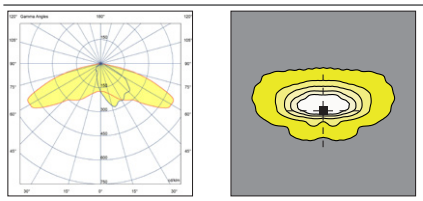


### ASYMMETRICAL DISTRIBUTION\\

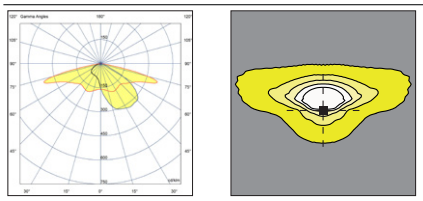
2A



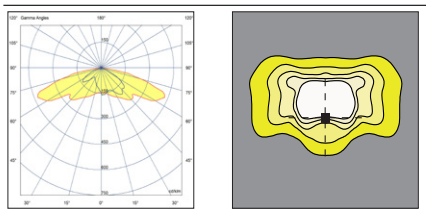
2B



2C

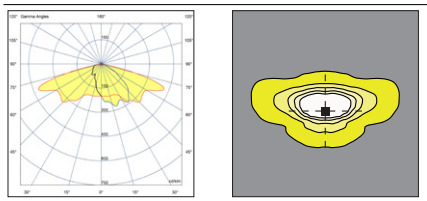


2D

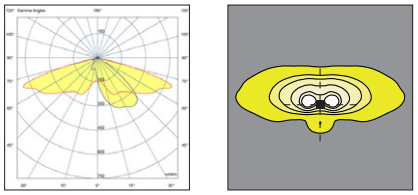


### ASYMMETRICAL DISTRIBUTION\\

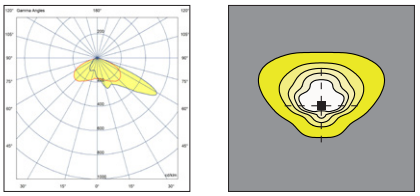
3A



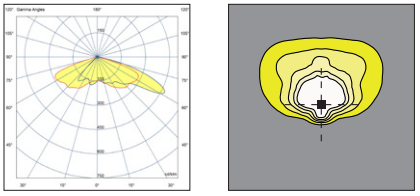
3B



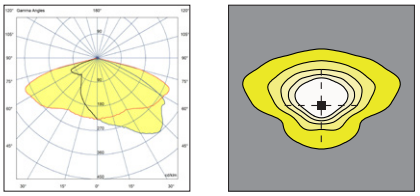
3C



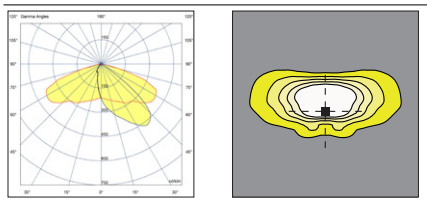
3D



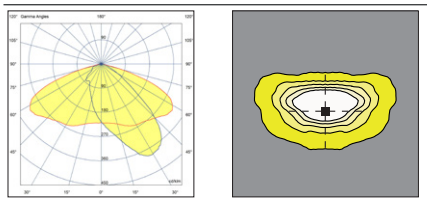
3E



3F

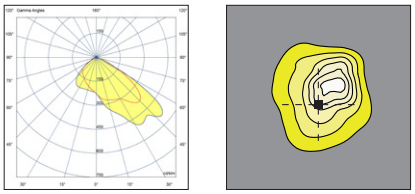


3G

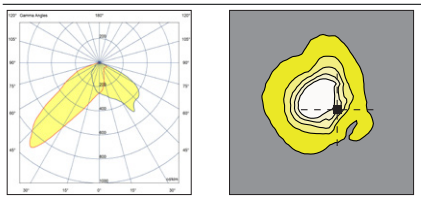


### PEDESTRIAN PATHS\\

4A

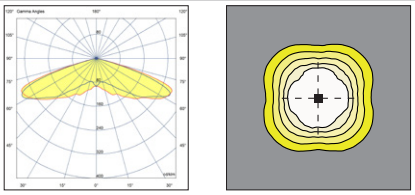


4B



### SYMMETRICAL DISTRIBUTION\\

5A



# Virgo A 500

## **Photometric data** | LED modules nominal data

GMR ENLIGHTS

**rev. 2025.03**

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 LED [mA] | I lighting fixture [mA] | Luminous flux [lm] | Power [W] | Efficiency [lm/W] |
|---|---|---|---|---|---|
| GL02  | 175 | 350 | 1629 | 7,7 | 212 |
| | 265 | 525 | 2421 | 11,7 | 207 |
| | 350 | 700 | 3174 | 15,9 | 200 |
| | 525 | 1050 | 4636 | 24,5 | 189 |
| GL04  | 175 | 350 | 3136 | 15,3 | 205 |
| | 265 | 525 | 4684 | 23,4 | 200 |
| | 350 | 700 | 6132 | 31,8 | 193 |
| | 525 | 1050 | 8668 | 48,9 | 177 |
| GL06  | 175 | 350 | 4659 | 22,9 | 203 |
| | 265 | 525 | 6854 | 35,0 | 196 |
| | 350 | 700 | 8824 | 47,4 | 186 |
| | 525 | 1050 | 11975 | 72,9 | 164 |
| GL08  | 175 | 350 | 6129 | 30,5 | 201 |
| | 265 | 525 | 8880 | 46,6 | 191 |
| | 350 | 700 | 11149 | 63,1 | 177 |
| | 525 | 1050 | 14458 | 96,7 | 150 |
| GL10  | 175 | 350 | 7505 | 38,0 | 197 |
| | 265 | 525 | 10696 | 58,1 | 184 |
| | 350 | 700 | 12836 | 78,5 | 164 |
| | 475 | 950 | 15079 | 108,1 | 139 |

# Virgo A 500

## **Photometric data |** Lighting fixture measured data

GMR ENLIGHTS

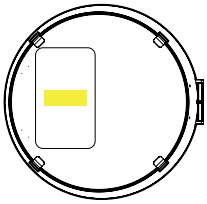
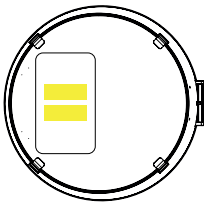
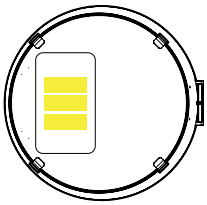
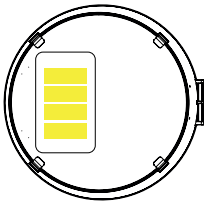
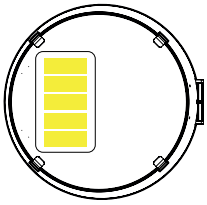
**rev. 2025.03**

The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K color temperature, optica type 3G 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: VA5_GLxx**

| | | I LED [mA] | I lighting fixture [mA] | Luminous flux [lm] | Power [W] | Efficiency [lm/W] |
|---|---|---|---|---|---|---|
| GL02 |  | 175 | 350 | 1603 | 9,0 | 178 |
| | | 265 | 525 | 2382 | 13,5 | 176 |
| | | 350 | 700 | 3123 | 18,5 | 169 |
| | | 525 | 1050 | 4561 | 28,0 | 163 |
| GL04 |  | 175 | 350 | 3085 | 17,5 | 176 |
| | | 265 | 525 | 4609 | 26,5 | 174 |
| | | 350 | 700 | 6034 | 35,0 | 172 |
| | | 525 | 1050 | 8529 | 53,0 | 161 |
| GL06 |  | 175 | 350 | 4585 | 26,0 | 176 |
| | | 265 | 525 | 6745 | 39,0 | 173 |
| | | 350 | 700 | 8683 | 51,5 | 169 |
| | | 525 | 1050 | 11784 | 78,5 | 150 |
| GL08 |  | 175 | 350 | 6031 | 34,0 | 177 |
| | | 265 | 525 | 8738 | 50,5 | 173 |
| | | 350 | 700 | 10971 | 68,0 | 161 |
| | | 525 | 1050 | 14226 | 103,5 | 137 |
| GL10 |  | 175 | 350 | 7385 | 42,0 | 176 |
| | | 265 | 525 | 10525 | 63,0 | 167 |
| | | 350 | 700 | 12631 | 85,0 | 149 |
| | | 475 | 950 | 14838 | 115,5 | 128 |

**OPTIC CONVERSION FACTOR LUMINOUS FLUX**

| Optic type | Flux multiplier |
|---|---|
| 1A \| 2B \| 3G | 1,00 |
| 2C \| 4B | 0,99 |
| 1B \| 2A \| 3C \| 3D \| 4A \| 5A | 0,98 |
| 2D \| 3E \| 3F | 0,97 |
| 3A \|3B | 0,96 |

**Tk CONVERSION FACTOR LUMINOUS FLUX**

| Tk [K] | Flux multiplier |
|---|---|
| 2.200 | 0,86 |
| 2.700 | 0,94 |
| 3.000 | 0,95 |

**CRI CONVERSION FACTOR LUMINOUS FLUX**

| CRI (color render index) | Flux multiplier |
|---|---|
| 70 | 1,00 |
| 80 | 0,91 |

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

# Functions

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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 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).

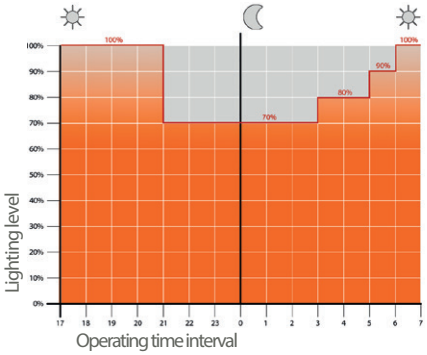
**NEMA | Nema Socket (7 PIN)**
The Nema Socket is a 7 PIN connector/socket with IP66 rating, that is fitted on the fixture to make it interfaceable with various ANSI C136 compliant devices and remote-control gear.
These devices can be installed during or after installation of the light fixtures. The 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.

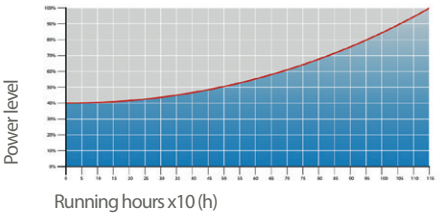
**PRESENCE SENSOR**
The product can be equipped with a presence sensor type zhaga book 18 in the lower part of the luminaire. In this case the lighting body is provided with Zhaga socket and Driver D4I. It is very important to carefully evaluate the installation context (height and underlying area) according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

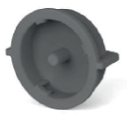
A

B

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

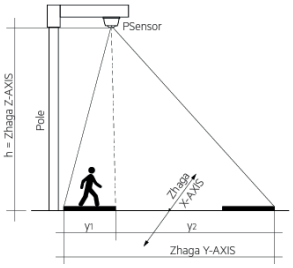
C


D



**Installation example of Zhaga**

**Installation example of presence sensor**



# Protection cycles

rev. 2025.03

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

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°;
- 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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