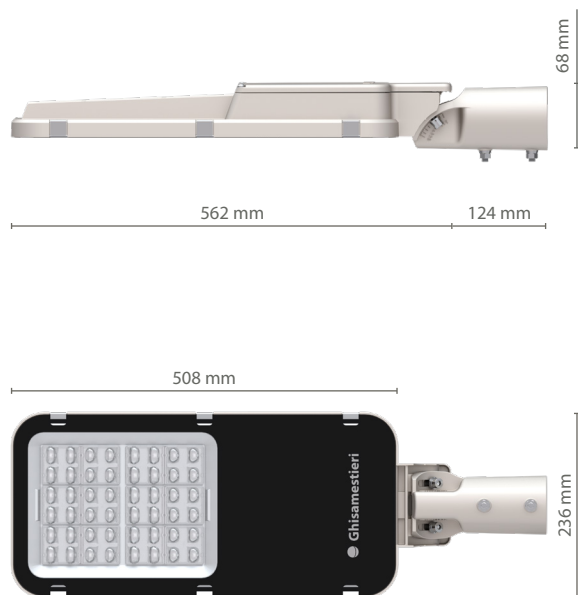


# Orn 500

Product code: OR5\_GLxx

**Ghisamestieri**  
the green way of light

lightecture: Orn | rev. 2019.07.26



Scale: 1:5

Max. weight

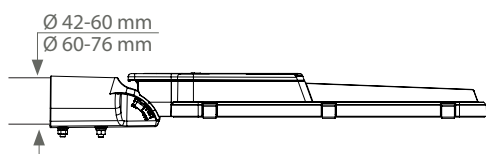
5,2 Kg

CXS

Lateral: 0,03 m<sup>2</sup> | Plan: 0,12 m<sup>2</sup>

## FIXING TYPE

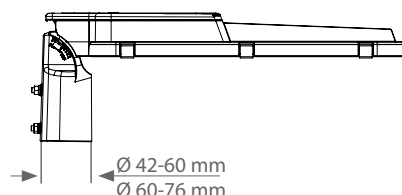
Side



Adjustable with 5° step



Pole-top



Adjustable with 5° step



## 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 passed

IEC 60068-2-6



### Insulation classes



### Protection classes



### Photobiological safety



Classe 0  
Exempt group  
IEC/TR62778

## PLUS



CUTOFF



OPTICAL  
FLEXIBILITY



LOW GLARE



A++  
IPEA  
MIN



SEPARATE UNITS  
(ELECTRICAL AND OPTICAL)

## LIGHTING FIXTURE FEATURES

### General features

Power source:	220-240V   50/60Hz   tolerance +/-10%   other voltages on request
Current supply:	525 mA   700 mA   any more up to 1000 mA (P <sub>max</sub> = 110W)
Power Factor   THD:	≥0.95   <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h   L90B10   @700mA
Operational temperature (Ta):	T <sub>min</sub> = -40°C T <sub>max</sub> = +55°C   700 mA +50°C   1000 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Impulse withstand up to 10kV CM/DM

Standard functions:  
(Details pag.4)

Current fixed | Virtual midnight | CLO

### Materials

Lighting fixture:	Die cast aluminium   EN1706
Optical system:	Nano-optics in PMMA Aluminum reflector, 99.7% oxidised and polished purity
Screen:	Screen-printed ultraclear tempered glass   Th. 4mm
Gaskets:	Silicon
Cable gland:	Polyamide PA66   PG16   Ø 14mm MAX   IP 68
Screws and bolts:	AISI 304 stainless steel
Fixture color:	Light grey Ghisamestieri®

## LED FEATURES

Model:	NICHIA NSVL219F
LED data 4.000 K - 700mA:	340 lm/LED   180 lm/W   25°C [Tj]   ≤ 3 step macadam
Colour temperature:	3.000 K   4.000 K   5.700 K   CRI ≥ 70
"Flip chip LED" technology:	High performance and high quality LED equipped with gold electrode; high protection against corrosion and color shifting.

## OPTIONAL

Overcharge protection:	optional - SPD with warning LED CLASS 1   CLASS 2 10kV / 10kA CM/DM
Electrical equipment:	0,5 m power cable with 2-3 or 4-5 core connector Disconnecter and cable clamp   cross section 1.5mm <sup>2</sup> ÷ 4mm <sup>2</sup>
Optional functions:	1-10 V   DALI-DALI2   DALI SENSOR (Details pag.4)
Connectos and external sockets:	NM (Nema Socket )   LM (Lumawise Zhaga Socket) (Details pag.4)

# Orn 500





## Available optical system

All photometric data below were determined in accordance with UNI EN 13032-1 and IES LM 79-08.

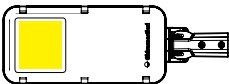
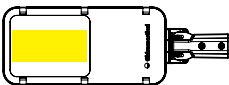
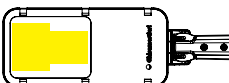
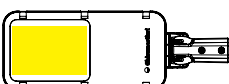
	TYPE 2A	TYPE 4A	TYPE 4B		
OPTIC  POLAR  DESCRIPTION					
	Asymmetric optic. Asymmetric luminous distribution for installation in cycle-pedestrian paths.	Asymmetric optic. Asymmetric luminous distribution for installation on pedestrian crossings.	Asymmetric optic. Asymmetric luminous distribution for installation on pedestrian crossings.		
	TYPE 3A	TYPE 3B	TYPE 3C	TYPE 3D	TYPE 3E
OPTIC  POLAR  DESCRIPTION					
	Asymmetric optic. Asymmetric luminous distribution for installation: - street and highway - road wet surface.	Asymmetric optic. Asymmetric luminous distribution for installation in urban and suburban roads.	Asymmetric optic. Asymmetric luminous distribution suitable for installation on roads of very high width, squares, roundabouts.	Asymmetric optic. Asymmetric luminous distribution suitable for installation on narrow roads with high poles.	Asymmetric optic. Asymmetric luminous distribution for installation in urban and suburban roads.

The photometric data refers to GHISAMESTIERI products in the standard version, with 4000K color temperature, optical reference type 3A and ambient temperature of 25 ° C. In the case of lighting calculations with the driving current and / or different color temperature from the standard, using the conversion factors for the luminous flux reported in the tables.

(Data extrapolated from the Manufacturer documentations.)

LED code		I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL06		525	6475	35	185
		700	8004	46	174
		1000	10626	66	161
GL08		525	8510	46	185
		700	10788	62	174
		1000	14168	88	161
GL10		525	10730	58	185
		700	13398	77	174
		1000	17710	110	161
GL12		525	12765	69	185
		700	16008	92	174

The photometric data refers to GHISAMESTIERI products in the standard version, with 4000K color temperature, optical reference type 3A and ambient temperature of 25 ° C. Ghisamestieri offers the possibility of driving the device with custom currents (\*). In the case of lighting calculations with the driving current and / or different color temperature from the standard, using the conversion factors for the luminous flux reported in the tables.

Order code: OR5_GLxx		(*) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL06		525	5554	39	142
		700	7100	52	137
		1000 (max)	9340	77	121
GL08		525	7452	52	143
		700	9390	69	136
		1000 (max)	11779	99	119
GL10		525	9451	66	143
		700	11936	87	137
		1000 (max)	13200	110	120
GL12		525	11099	78	142
		700	13852	102	136
		750 (max)	14740	110	134

### OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1A <sup>(*)</sup>	1,05
2A <sup>(*)</sup>   3D <sup>(*)</sup>	0,94
3B	1,00
3C	0,90
3E	1,00
4A <sup>(*)</sup>   4B <sup>(*)</sup>	1,06
5A <sup>(*)</sup>	1,00

### Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
2.200 <sup>(**)</sup>	0,79
3.000	0,94
5.700	1,01

### CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,90

<sup>(\*)</sup> See pag.2 to check the optic type availability.

<sup>(\*\*)</sup> See pag.1 to check the colour temperature availability.

## Standard functions

### Fixed Output

The lighting fixture is set to use a fixed current in order to maintain the same power consumption over time.

### Virtual midnight | Automatic lighting control

The driver is programmed to automatically switch the light On or Off based on the time of the day ensuring high energy saving. The maximum output is usually set during the first and last hours of operation that statistically are proven to have higher traffic, it will then decrease during the middle hours when there is less traffic.

The system is able to automatically regulate itself, identifying the average between the instant it turns on and turns off. This is called "virtual midnight" and is the reference point for reducing the light emission based on the desired profile.

The output will automatically adapt to the length of the night throughout the year.

### CLO | Costant lumen output

Considering LED performance deteriorates with use and time, it may be compensated by using a lower than maximum flux output and maintaining it constant in time by progressively increasing the current.

In this case maintenance and management costs of the systems are considerably lower.

## Optional functions

### 1-10V | Flux control by analogic control

It is possible to adjust the amount of luminous output by means of an analog input signal that has a minimum level of 1V and maximum of 10V. The device is fitted with L-N-1 / 10V cable connection.

### DALI - DALI2 | Controllo e programmazione digitale

The standard DALI protocol allows the use of a flexible lighting system using digital technology. The DALI system allows unlimited control of light control, as well as interrogation of the power supply on the status of the device, ensuring maximum energy savings and optimization of management costs. The appliance is designed for connection of L-N-DALI cables. A signal via cable is required in addition to the +/- cables.

The regulation of the luminous flux can be totally customized by the user. It is possible to set up to 4 time adjustment levels in 5 steps. The versatility of this system makes it possible to rationalize consumption in specific use functions.

Thanks to DALI2, instead, new features are now available. Especially for the connection of a point-to-point remote control node with radio waves technology.

Additional functions

#### FR | Full range

The lighting fixture can be powered by wide voltage range (120-280V) to ensure operation in variable power situations.

#### NTC | Negative Temperature Coefficient

It is a temperature sensor that adjusts the current powering the LEDs. In case the transistor junction (Tj) reaches critical high temperatures, the current is decreased in order to preserve the longevity of the LEDs.

### DALI SENSOR

With the DALI SENSOR interface it is possible to manage the functions of the DALI - DALI2 protocol. In addition, there is a low voltage AUX switch to manage remote control systems and external sensors in a Smart City perspective.

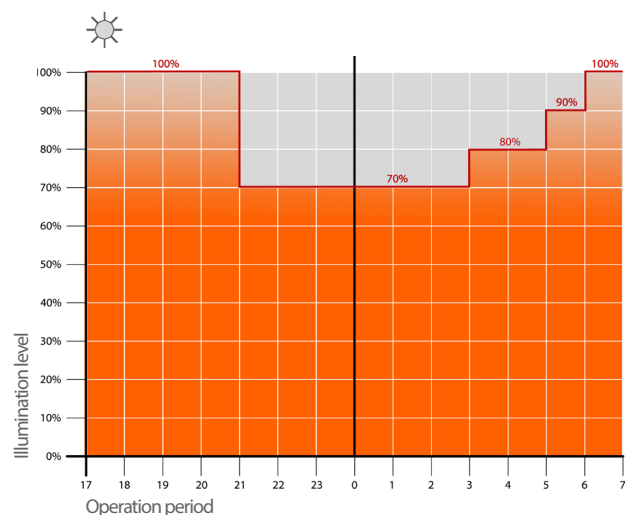
## External connectors and sockets on request

### NM | Nema Socket (7 PIN)

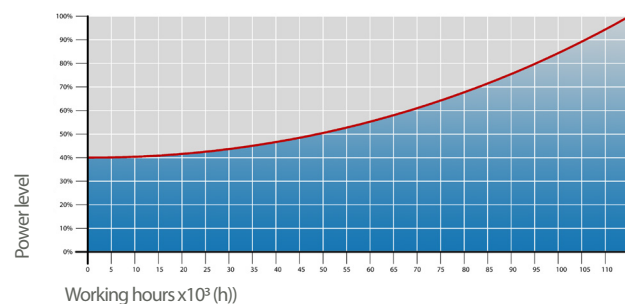
The Nema Socket 7 PIN is a connector / socket that is mounted in the lighting body and allows access to the driver programming functions from the outside. The remote control system, which can be installed via this external connector, can also be implemented in a phase subsequent to commissioning the system. If the system is not used immediately, the socket is equipped with an IP66 closing cap and a short-circuit system for the power supply by-pass. Various telecontrol technologies can be used, both radio wave and conveyed wave, which can interface both to the 1-10V and DALI ports.

### LM | Lumawise Zhaga Socket (4 PIN)

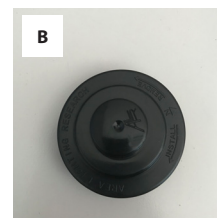
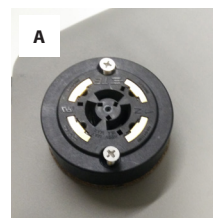
The Lumawise Zhaga Socket 4 PIN is a connector / socket equivalent to the Nema Socket 7 PIN but smaller and more compact and uses the Zhaga standard. Through this connector it is possible from the outside of the device to integrate driver management and programming systems and other "smart" functions such as various sensors. Also this device can only be prepared and not used immediately, therefore it is provided with its IP66 protection cap. (In conjunction with DALI SENSOR).



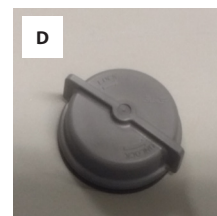
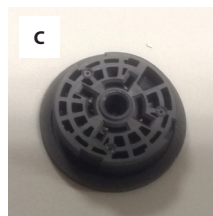
Example of 4-step adjustment with virtual midnight



CLO | Costant lumen output



Nema Socket 4 PIN (A) and IP66 closing cup (B)



Lumawise Zhaga Socket 7 PIN (C) and IP66 closing cup (D)

### 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°;
- 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

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 powder layer application followed by kiln baking at 180°;
- Final powder layer application using a High Durability product and final kiln roasting at 180°C.



#### Salt spray test | FLORIDA 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 6.000 hours at 35 °C and demonstrated through the report test released.



**Ghisamestieri the green way of light s.r.l**

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