



# WOLTRON 02

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

# Woltron 02 Sport

## Technical data

### INSTALL

Suitable for the lighting of sport facilities of any level, even for television broadcasts [Flicker <2%]

### ACCESSIBILITY



#### Openable

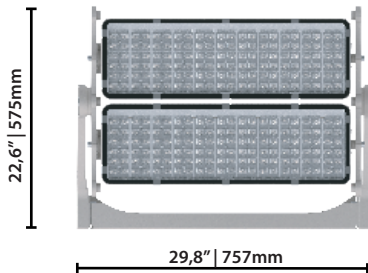
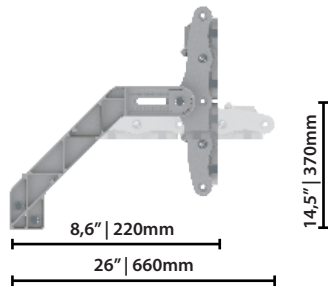
Openable fixture with basic tools  
Replaceable internal components using basic tools.

### 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.



Scale: 1:15

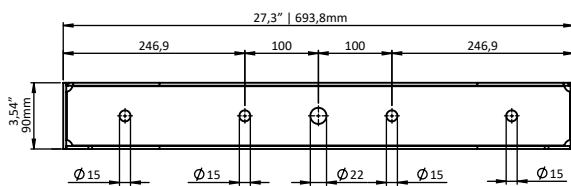
#### Max. weight

25 Kg (bracket+ floodlights)  
Power supply (driver+driver plate): 8 Kg

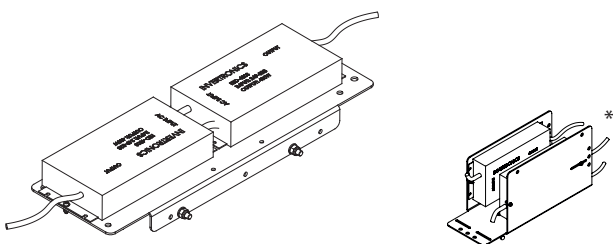
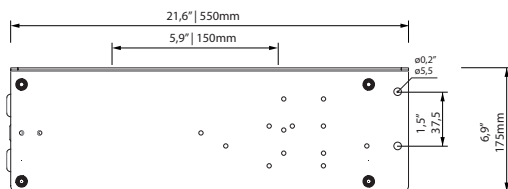
#### CXS

Front: 0,36 m<sup>2</sup>

### FLOODLIGHTS FIXING



### DRIVER PLATE



\*Driver plate for DALI available, also on request

### 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



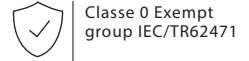
#### Insulation classes



#### Protection classes



#### Photobiological safety



### PLUS



### LIGHTING FIXTURE FEATURES

#### General features

Power source:	90-305V   tolerance +/-10%   249-528V on request
Current supply:	700 mA   1050 mA   1200 mA (P <sub>max</sub> = 963W)
Power:	*Pmax CLASS 1 841W   Pmax CLASS 2 660W
Power Factor   THD:	≥0.95   <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h   L90B10   @ LED 1200mA
Operational temperature (Ta):	T <sub>min</sub> = -40°C   T <sub>max</sub> = +40°C   LED @963W
Storage temperature:	-40°C/+80°C
Overcharge protection:	Main surge immunity up to 10kV
Standard functions:	1-10V   Current fixed   Virtual midnight   CLO
Standard equipment:	Dislocable up to 50 meters, supplied with fixing plate wall mounted in galvanized steel and wire

#### Materials

Lighting fixture:	Die cast aluminium   EN1706
Bracket:	Made up: 2 die-cast aluminum arms 1 hot galvanized steel base
Optical system:	Optics in PMMA Aluminium reflector, 99.7% oxidised and polished purity
Frame:	Die cast aluminium   EN1706   3 adjustments
Screen:	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

### LED FEATURES

LED data 4.000 K - 700mA:	340 lm/LED   180 lm/W   25°C [Tj]   ≤ 3 step MacAdam
Color temperature:	3.000K   4.000 K   5.700 K   CRI ≥ 70

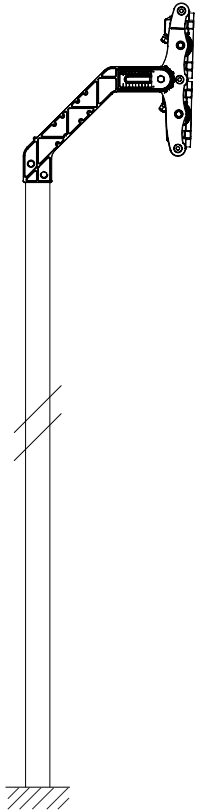
### OPTIONAL

Surge protection:	SPD with LED   12kV
Electrical equipment:	- Junction box - 380V driver - additional IP connectors
Mechanical equipment:	- Aiming device for precise pointing - Pole-top adapter Ø60-76 - Protection grille - Light shield
Optional functions:	DALI   DMX

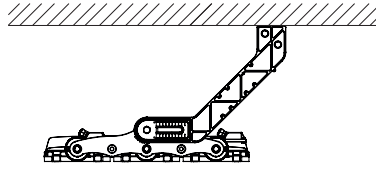
# Woltron 02 Sport

**FIXING TYPE**  
**Fixing**

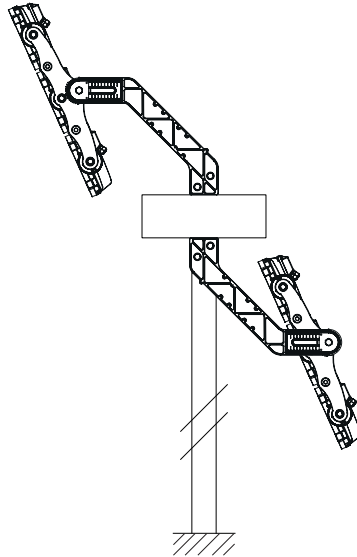
Pole-top fixing



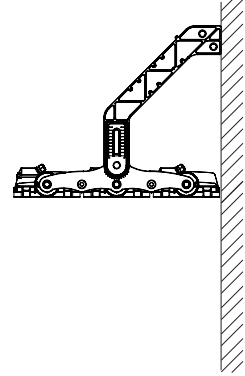
Surface mounting



Multiple installation

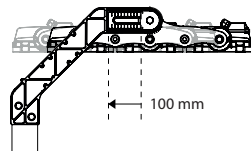


Wall mounting

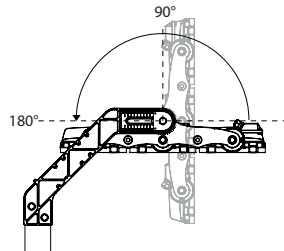


## ADJUSTEMENT DIAGRAMS

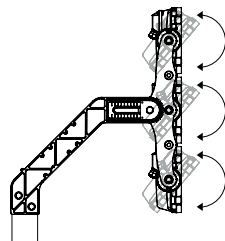
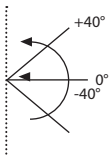
Longitudinal adjustment



Complete floodlight adjustment

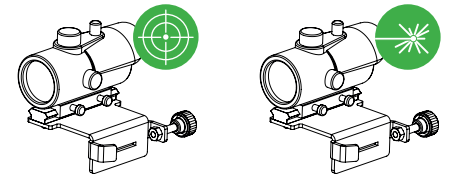


Module adjustment



## MECHANICAL OPTIONAL

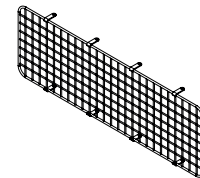
Easily installable aiming device for precise pointing of the light.



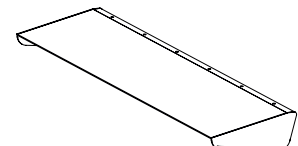
Optic

Laser

Protection grille to safeguard the floodlight's screen. It can be easily removed for cleaning.



Light shield: Vizor to minimise upward light.

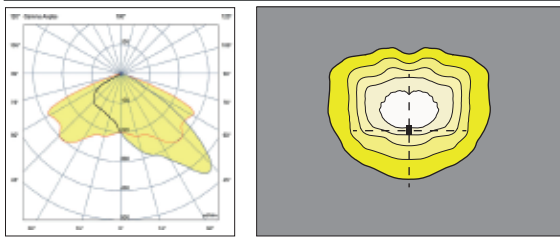


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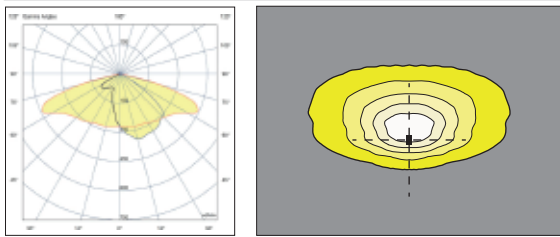
## Available optical system

### ASYMMETRICAL DISTRIBUTION\\ TYPE 3

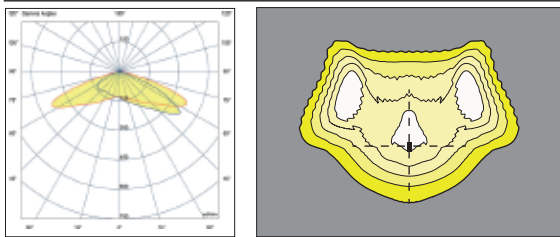
3A



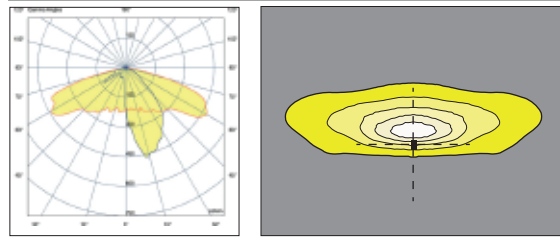
3B



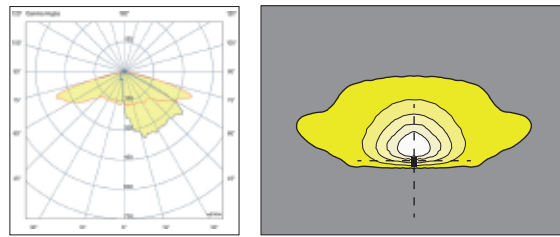
3C



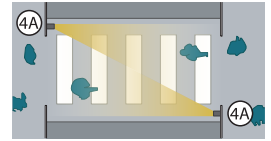
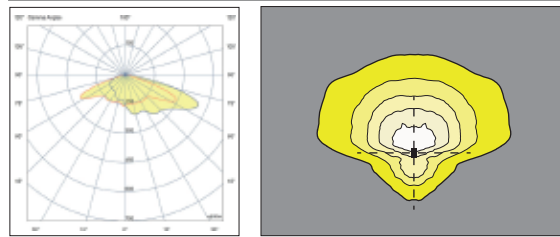
3D



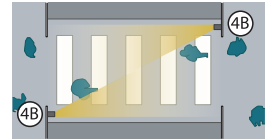
3E



3F



TYPE 4A



TYPE 4B

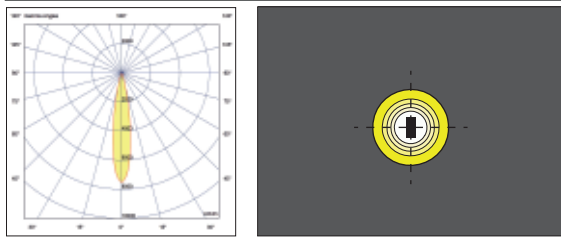


TYPE 4A + TYPE 4B

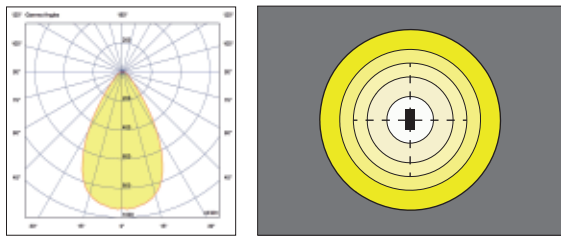
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## Available optical system

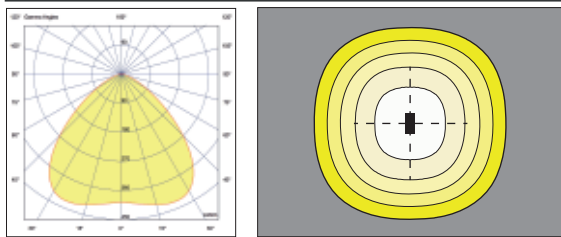
### ROTO-SYMMETRICAL DISTRIBUTION\\ TYPE 9



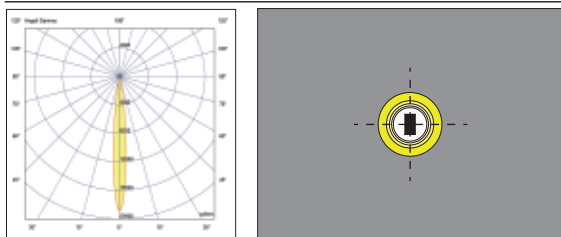
**9B**



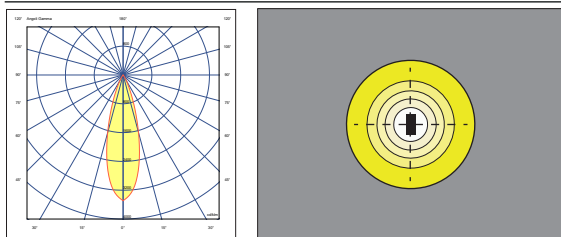
**9C**



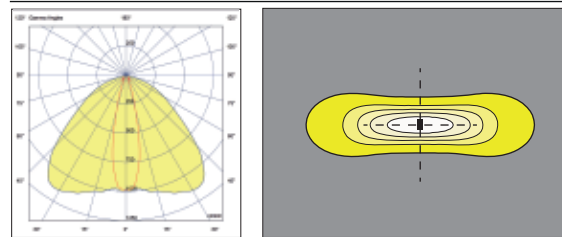
**9D**



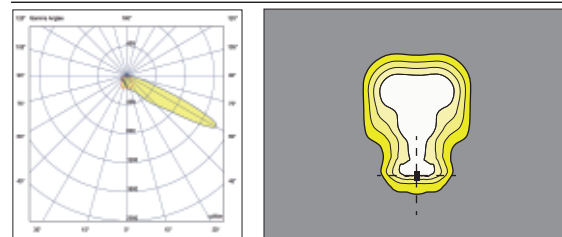
**9E**



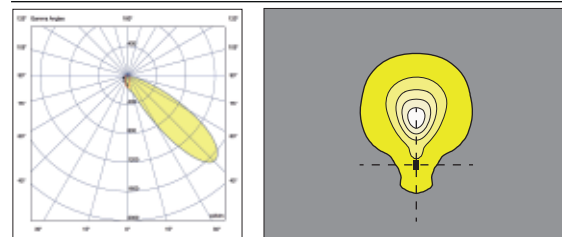
### SYMMETRICAL DISTRIBUTION\\ TYPE 10



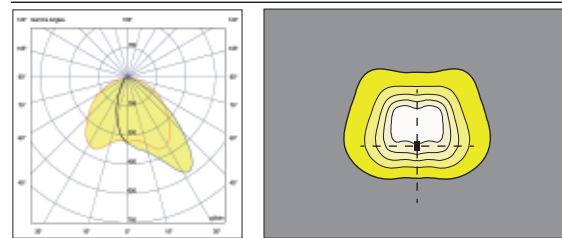
### FLOODLIGHT DISTRIBUTION\\ TYPE 11



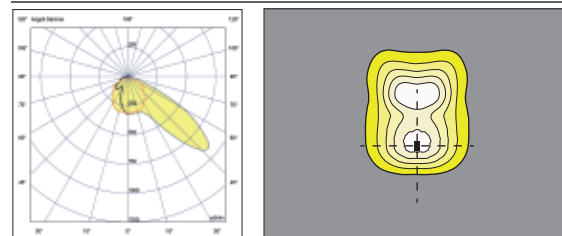
**11B**












**11C**



**11D**



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  $t_j$  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]
9B  GL42		700	59198	341	174
		1050	84952	527	161
		1200	82212	527	156
GL48		700	67704	390	174
		1050	97042	602	161
		1200	93912	602	156
GL54		700	76210	439	174
		1050	109132	677	161
		1200	105612	677	156
GL60		700	84543	487	174
		1050	121384	753	161
		1200	117468	753	156
GL66		700	93050	536	174
		1050	133474	828	161
		1200	129168	828	156

The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K color temperature and an ambient temperature  $t_a$  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: WS2_GLxx	(*) I [mA]	Flusso luminoso [lm]	Potenza [W]	Efficienza [lm/W]	
9B  GL42		700	49205	357,5	138
		1050	68412	539,5	127
		1200	74669	617,5	121
GL48		700	55520	402,5	138
		1050	77873	615,0	127
		1200	84990	704,0	121
GL54		700	62460	453,0	138
		1050	87335	690,5	126
		1200	95311	791,0	120
GL60		700	69134	502,0	138
		1050	96657	766,0	126
		1200	105477	877,0	120
GL66		700	75809	551,0	138
		1050	105980	841,0	126
		1200	115645	963,0	120

### OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
3A   3C   3D   3E   3F	0,99
09A   09E	1,01
09B   09C	1,00
10A	1,00
11A   11B	0,99
11C	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 temperature availability.

The lighting fixture measured data refers to GMR ENLIGHTS products in a standard version, with 4000 K color temperature and an ambient temperature  $t_a$  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: WS2_GLxx		(*) I [mA]	Flusso luminoso [lm]	Potenza [W]	Efficienza [lm/W]
9D  GL42		700	44401	367,5	121
		1050	61090	565,0	108
		1200	66355	648,5	102
GL48		700	50743	420,0	121
		1050	69531	644,5	108
		1200	75519	740,0	102
GL54		700	57087	472,5	121
		1050	77972	724,0	108
		1200	84683	831,0	102
GL60		700	63179	524,0	121
		1050	86286	803,0	107
		1200	93706	921,5	102
GL66		700	69272	575,5	120
		1050	94599	882,0	107
		1200	102730	1012,0	102

### Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
5.700	1,01

### CRI CONVERSION FACTOR LUMINOUS FLUX

CRI (color render index)	Flux multiplier
70	1,00
80	0,93
90	0,81

(\*) See pag: Available optical system, to check the optic type availability.

(\*\*) See pag: Technical data, to check the colour temperature availability.



# 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.

### 1-10V Analog control system

On request, the fixture can be equipped with 1-10V dimming interface. This protocol provides the possibility of dimming a single device or a public lighting line through a 1-10V control bus.

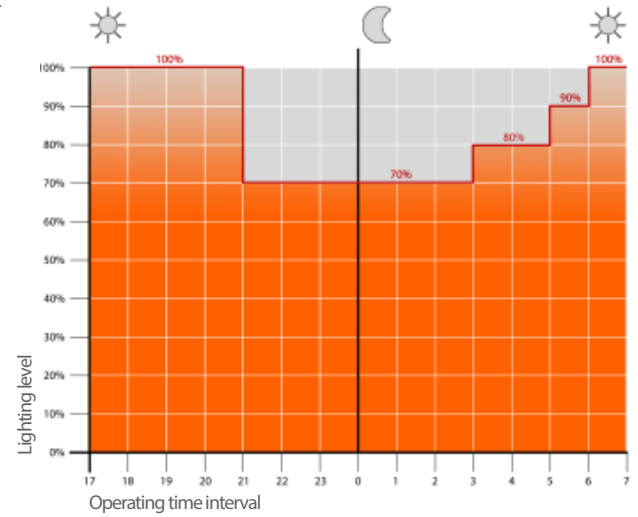
## On request functionality

### DALI SENSOR (D4i)

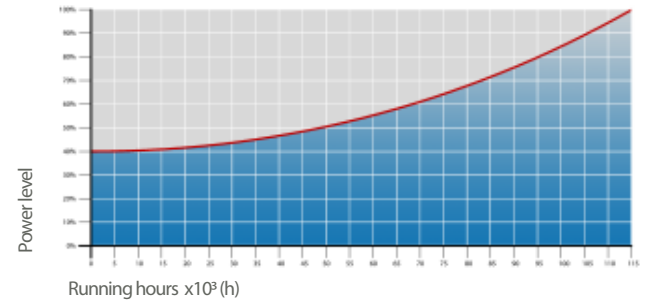
On request, the fixture can be equipped with a D4i certified power supply. This is the ideal solution for wireless sensors and/or controls. This system was developed to integrate various systems to address smart city requirements. Included is DALI2 protocol + auxiliary power (AUX) to supply power to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

### DMX

This lighting control protocol allows to manage the dimming using a master device.



Example of 4-step adjustment with virtual midnight



CLO Light Flow Compensation

## Protection cycles

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 powder 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 demonstrated through the report test released.



**GMR ENLIGHTS s.r.l.**

Legal headquarters:  
Strada Provinciale Specchia - Alessano, 68 • 73040 (LE)

Administrative and operational headquarters:  
Via Grande n°226 • 47032 Bertinoro (FC)

T +39 0543 462611  
F +39 0543 449111

[sales@gmrenlights.com](mailto:sales@gmrenlights.com)  
[www.gmrenlights.com](http://www.gmrenlights.com)