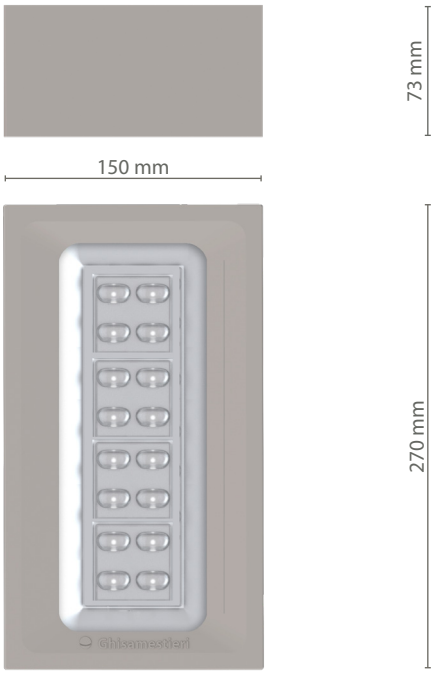
Hulla

Product code: HMC

Ghisamestieri
the green way of light

Available versions

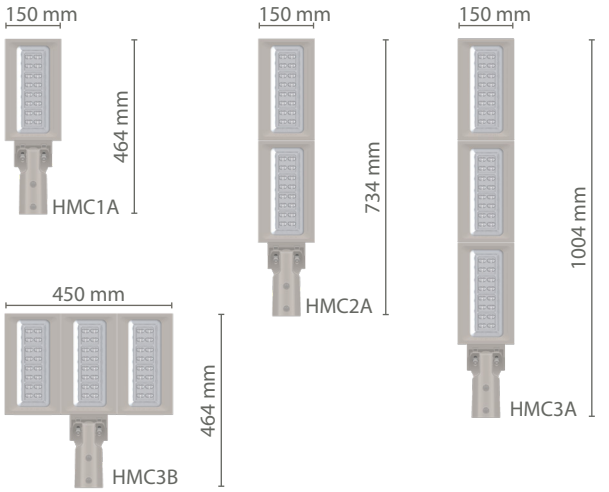
Compact
No openable fixture: equipped with outgoing cable and fast connector IP68.



Scale: 1:5

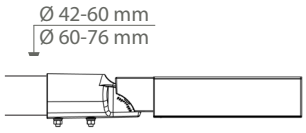
Max. weight	CXS
4,0 Kg	Lateral: 0,02 m² |Pian: 0,04 m²

Module combining

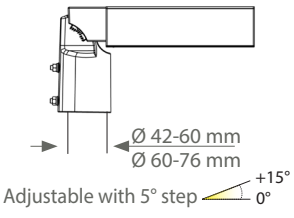


Fixing type

Side



Pole-top



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
8000 hr

Vibration test passed
IEC 60068-2-6

Insulation classes

Protection classes
IP 66 IK 08

Photobiological safety
Classe 0
Exempt group
IEC/TR62471

Plus

CUTOFF | OPTICAL FLEXIBILITY | LOW GLARE | IPEA MIN A++

Lighting fixture features

General features

Power source:	220-240V | 50/60Hz | tolerance +/-10% | other voltages on request
Current supply:	525mA | 700 mA (P_{max}[3 modules]= 105 W)
Power Factor | THD:	≥0.95 | <10 % (At full load)
Expected life (Ta=25°):	> 100.000 h | L90B10 | @700mA
Operational temperature (Ta):	T_{min}= -40°C T_{max}= +55°C | 700 mA
Storage temperature:	-40°C/+80°C
Overcharge protection:	Impulse whitstand up to 10kV CM/DM
Standard functions: (Details pag.4)	Current fixed | Virtual midnight | 1-10V | CLO

Materials

Lighting fixture:	Die cast aluminium | EN1706
	Extruded aluminium | EN573-3
Optical system:	Nano-optics in PMMA
	Plastic reflecor metallic painted
Screen:	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

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:	Hight performance and hight quality LED equipped with gold electrode; hight protection against corrosion and color shifting.

Optional

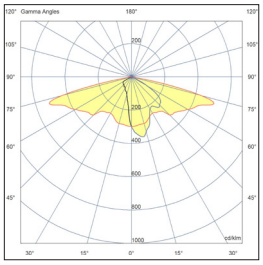
Overcharge protection:	*optional - SPD with warning LED*
	CLASS 1 | CLASS 2
	10kV / 10kA CM/DM
Optional functions: (Details pag.4)	DALI-DALI2

Hulla

Available optical system

PEDESTRIAN PATHS\\
OPTIC TYPES 2

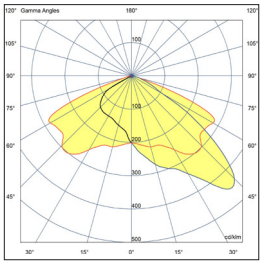
TYPE 2A



Asymmetrical light, designed to suit streets and pedestrian or cycle paths.

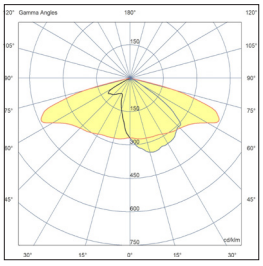
URBAN AND SUBURBAN STREETS, SQUARES, PARKING LOTS AND ROUNDABOUTS\\
OPTIC TYPES 3

TYPE 3A



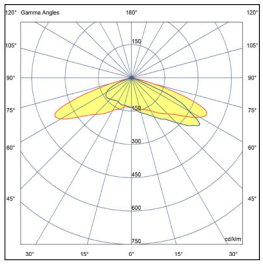
Asymmetrical light, designed to suit streets and road wet surface.

TYPE 3B



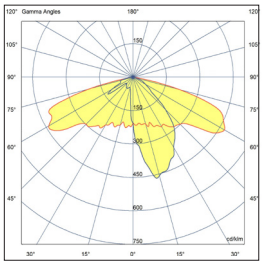
Asymmetrical light, designed to suit suburban and urban streets.

TYPE 3C



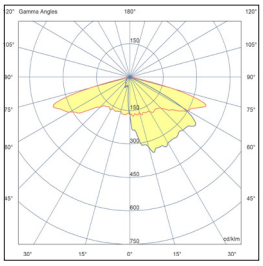
Asymmetrical light, designed to suit very large streets, parking lots and roundabouts.

TYPE 3D



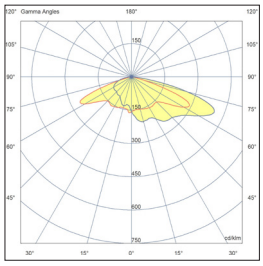
Asymmetrical light, designed to suit streets and pedestrian paths.

TYPE 3E



Asymmetrical light, designed to suit very large streets, parking lots and roundabouts.

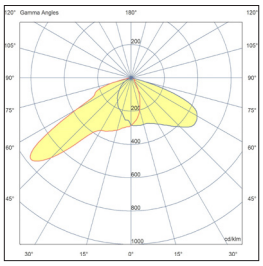
TYPE 3F



Asymmetrical light, designed to suit very large streets and road with a low installation of the lighting fixture, parking lots and roundabouts.

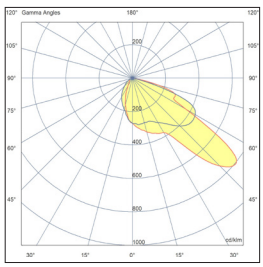
PEDESTRIAN CROSSINGS\\
OPTIC TYPES 4

TYPE 4A



Asymmetrical light, designed to suite installation to pedestrian crossings.

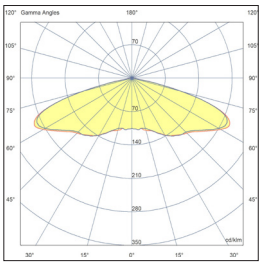
TYPE 4B



Asymmetrical light, designed to suite installation to pedestrian crossings.

PARKS AND SQUARES\\
OPTIC TYPES 5

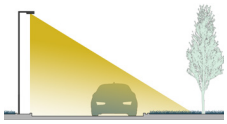
TYPE 5A



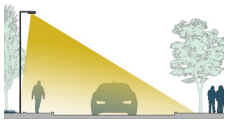
Symmetrical light, designed to be installed in parks, squares,parking lots and other large surfaces.

APPLICATION EXAMPLES\\

TYPE 2A | TYPE 3D

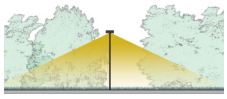


TYPE 2A | TYPE 3D

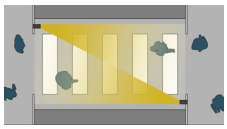


TYPE 3A | TYPE 3B

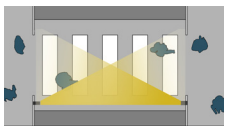
TYPE 3C | TYPE 3E | TYPE 3F



TYPE 5A



TYPE 4A | TYPE 4B



TYPE 4A + TYPE 4B

Hulla

Photometric 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 lighting fixture measured data refers to GHISAMESTIERI products in a standard version, with 4000 K color temperature, optica type <<Ottica>> and an ambient temperature ta of 25 °C.
Ghisamestieri offers the possibility of driving the device with custom currents (•).
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.

LED modules nominal data (4000 K | CRI 70 min.| tj=25°)

LED code	I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
GL04	525	4255	23,0	185
	700	5394	31,0	174
GL08	525	8510	46,0	185
	700	10788	62,0	174
GL12	525	12765	69,0	185
	700	16008	92,0	174

Lighting fixture measured data (4000 K | OTTICA 3B | ta=25°)

Order code:	(•) I [mA]	Luminous flux [lm]	Power [W]	Efficiency [lm/W]
HMC1A_GL04	525	3652	27,0	135
	700 (max)	4723	36,0	131
HMC2A_GL08	525	7354	52,5	140
	700 (max)	9511	70,0	136
HMC3A_GL12 / HMC3B_GL12	525	11031	77,0	143
	700 (max)	14267	103,0	139

OPTIC CONVERSION FACTOR LUMINOUS FLUX

Optic type	Flux multiplier
1A (*)	1,00
2A (*)	0,99
3A | 3C | 3D | 3E | 3F	0,99
4A | 4B	0,98
5A (*)	1,01

Tk CONVERSION FACTOR LUMINOUS FLUX

Tk [K]	Flux multiplier
2.200 (**)	0,70
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.2 to check the optic type availability.
(**) See pag.1 to check the colour temperatureb availability.

Functions

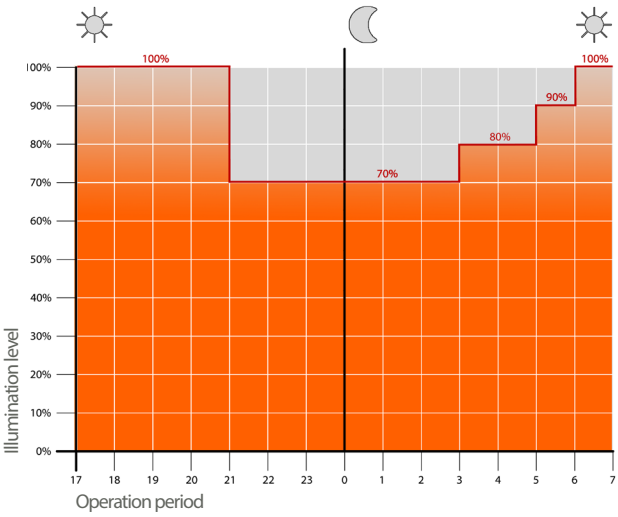
Standard functions

Fixed Output
The lighting fixture is set to use a fixed current among the standard ones indicated in the tables on page 3. It is possible to set other currents on customer request (custom).

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.

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.

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.

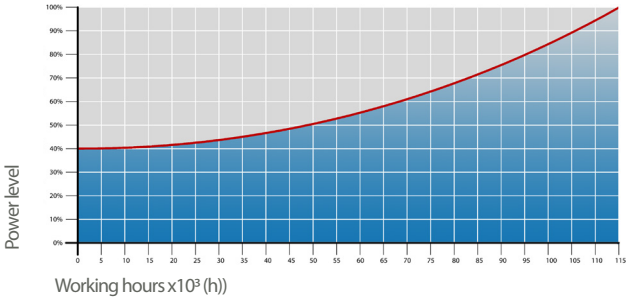


Example of 4-step adjustment with virtual midnight

Optional functions

DALI - DALI2 | Controllo e programmazione digitale
On request, the lighting body can be supplied with a DALI interface. The DALI system allows a lighting system to be controlled by providing control and diagnostic functions.

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.



CLO | Costant lumen output

Protection cycles

Ghisamestieri 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°;
- 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 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.

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 8.000 hours at 35 °C and demostrated through the report test released.

Ghisamestieri the green way of light 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

info@ghisamestieri.it
www.ghisamestieri.it

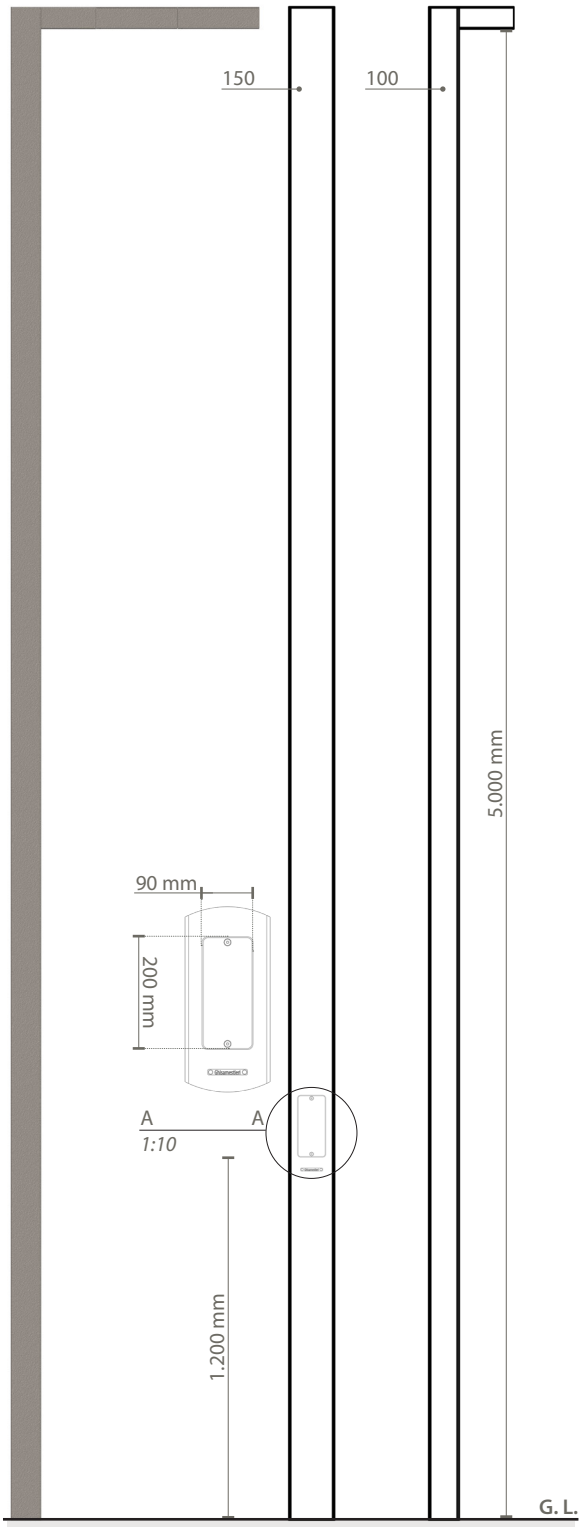
Hulla Regolo pole 050

Product code: HRP050

Flange
HRP050_F

Foundation
HRP050_M

S235 cast iron pole hot galvanized and powder coated,
prepared for lighting fixture Hulla installation.
The pole is equipped with an M12 screw, steel inox AISI 304 (grounding).
Pole-top bracket: for 1 to 3 Hulla modules



Scale: 1:25

Conformity

CE EN40-5

Geometry and mechanical features

Total height:	5.000 mm
Total weight:	flange: 72 kg
	foundation: 72 Kg

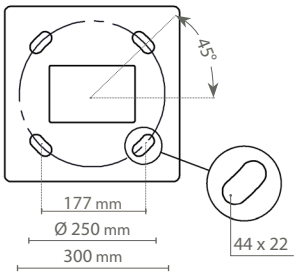
Materials and color

Body:	Steel S235 - hot galvanized | EN 10027 - EN1461
Color:	Light grey Ghisamestieri®

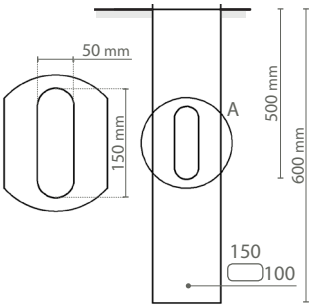
Terminal block M5 4x16mm²

Fixing type

Flange



Foundation

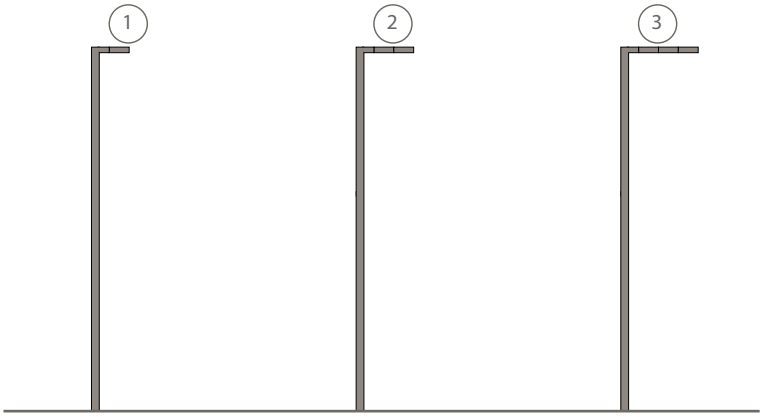


Supplied:
Heat-shrink sheat

Composition code

Single pole

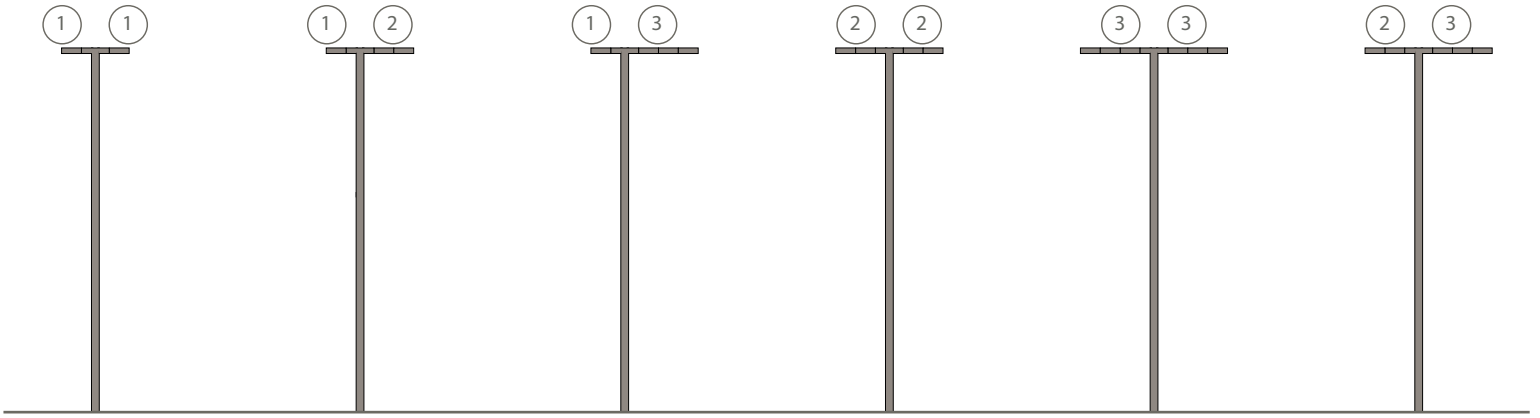
HRP050_F_01 HRP050_M_01



HRP050_F_01_01 HRP050_F_01_02 HRP050_F_01_03
HRP050_M_01_01 HRP050_M_01_02 HRP050_M_01_03

Double pole

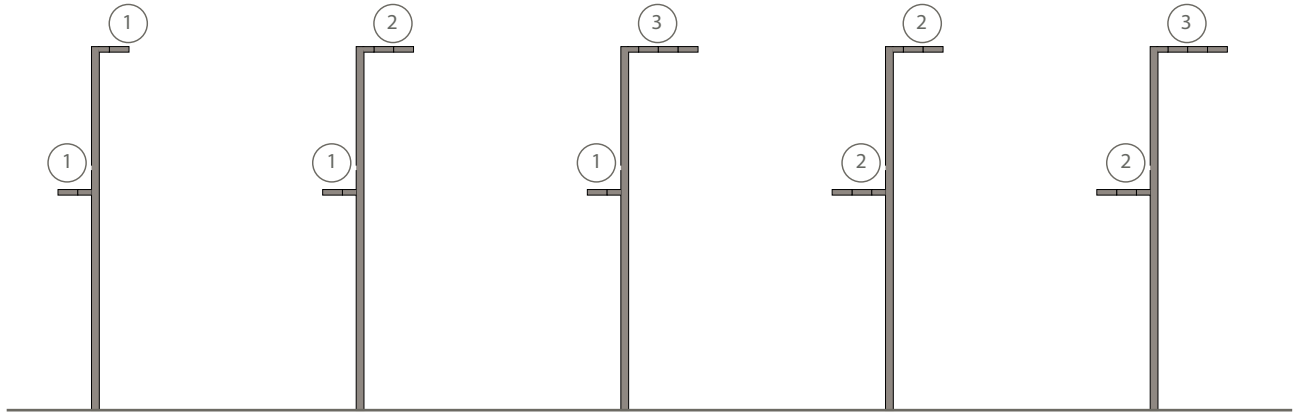
HRP050_F_02 HRP050_M_02



HRP050_F_02_01_01 HRP050_F_02_02_01 HRP050_F_02_03_01 HRP050_F_02_02_02 HRP050_F_02_03_03 HRP050_F_02_03_02
HRP050_M_02_01_01 HRP050_M_02_02_01 HRP050_M_02_03_01 HRP050_M_02_02_02 HRP050_M_02_03_03 HRP050_M_02_03_02

Split-level pole

HRP050_F_07 HRP050_M_07



HRP050_F_07_01_01 HRP050_F_07_02_01 HRP050_F_07_03_01 HRP050_F_07_02_02 HRP050_F_07_03_02
HRP050_M_07_01_01 HRP050_M_07_02_01 HRP050_M_07_03_01 HRP050_M_07_02_02 HRP050_M_07_03_02

Protection cycles

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
- Phospho-chromatation for surfeces clearing
- 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.

Salt spray test | FLORIDA TEST

The top quality of such treatments is confirmed by the succesfull results of specific salt spray test (all products exceed widely 2.500 hours) and the strictest international tests, among which FLORIDA TEST.
The salt spray test is made in accordance with standard UNI EN ISO 9227.

Ghisamestieri the green way of light 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

info@ghisamestieri.it
www.ghisamestieri.it