INSTALLATION MANUAL FOR GOCCIA ILLUMINAZIONE FIXTURES WITH RGBW LEDS

INDEX

FOREWORD

This manual is intended for lighting equipment installers and system designers.

It contains the general descriptions of the devices and system elements shown in the general catalog and on the website www.goccia.it
It also contains a series of wiring and plant diagrams to follow, depending on the type of fixtures as well as the distances and number of fixtures that can be installed, without adding other elements.

GENERAL FEATURES

RGBW products emit colored light depending on the switching of 4 types of LEDs integrated in a single source. Each emits an elementary color (Red, Green, Blue) and, by combining them, it is possible to obtain any shade. The fourth LED emits native white light (6500° K).

TERMS AND DEFINITIONS

V⎓	Direct current
V~	Alternate current
V~/V⎓	Direct or Alternating current
DMX or DMX2	Digital MultipleX Multiple digital data transmission system.
Zone	Group of Fixtures responding to a same command.
Address	Digital code for routing signals.
GND	Ground or Shield: conductor or shield intended to shield signal conductors (it must never be connected with the earth cable)

DMX

The DMX2 system or protocol is a digital communication system that allows driving one or more fixtures or groups of fixtures by a control unit.
Each fixture is powered either in V~ or in V⎓ depending on the type, but the DMX control is common.
The control cable has to be a 3 poles cable: 2 wires for the DMX A and the DMX B signals. A third wire is for the 0(zero) signal (shield).

CONTROL UNIT: TOUCH SCREEN CONTROL UNIT 1181

By means of the 1181 control unit it is possible to control various parameters as 4 operating zones, color mixing, predefined color games, choice of basic colors and transition to pure white.

It is possible to assign different groups of luminaries to different zones so that each group operates autonomously. See section “Using the Touch Screen Control Unit”.

At the end of the DMX line, a “Terminator” consisting of a 120 Ω (1W) resistor should be inserted between the DMX + and DMX– conductors to prevent the transmitted signal from returning to the cables.

CONTROL UNIT: REMOTE RT9 AND XC CONVERTER

The RT9 Remote in combination with the XC Converter replaces the use of the Touch Screen Control Unit, releasing the management of the devices from a predetermined place.

It is necessary to use an XC converter for each zone managed by the remote control.
(See later in the section "REMOTE CONTROL AND CONVERTER")

Each XC converter needs a separate 5-24V⎓ constant voltage power supply.

NOTE: The Touch Screen Control Unit and Remote Control cannot coexist in the same system.
If such a configuration is required, it is necessary to separate the DMX signal lines managed by the Touch Screen Control Unit and those managed by the Remote control.

IMPORTANT! In both cases it is necessary that each device receives an **address** which is recognized by the Control Unit.

ADDRESSING

Addressing is carried out in the factory **according to customer specifications**.
Therefore, when ordering, you have to specify which and how many devices must receive a specific address.

Example of addressing for 15 fixtures divided in 4 zones.

A1	A2	A3	A4	A5	A6	A7	A8	A9	A10	A11	A12	A13	A14	A15
Address 1				Address 5		Address 9			Address 13					
Zone 1				Zone 2		Zone 3			Zone 4					

Legend A1, A2,... Fixtures 1 through 15.
Address 1, Address 2,... Address of each fixture.
Zone 1, Zone 2,... Zones of operation of the control unit.

NOTE: The fixtures' addresses of each zone have to be separated 4 by 4.

CONNECTABLE LIGHTING FIXTURES

The number of connectable devices depends on the control method.

In case of using of the Touch Screen Control Unit: 32 on the same dmx line.
In the case of using the Remote Control: 32 for each zone, as each zone is managed by an XC Converter.
Maximum distance from the control unit: 250m for both cases, where "distance" means the development of the DMX cable up to the last fixture, including inputs and outputs in the fixtures and / or shunts.

If longer distances need to be covered, a (available on the market) signal amplifier must be installed.

WIRING DIAGRAMS – Lighting Fixtures

The following diagrams show the fixtures as symbols only and their shape has nothing to do with their actual appearance. For this, please refer to the catalog.

Diagram 1

Fixtures group	Codes	Supplied cable yes/no length (mm)	Wires functions	Colors
PASSUM	1462 – 1464	Yes 500	24V⎓ + 24V⎓ – DMX + IN DMX + OUT DMX – IN DMX – OUT GND IN GND OUT	The colors of the conductors referred to in this table are shown on the instruction sheets of each fixture.
CLOCK	1186 – 1187	Yes 500		

PASSUM 1462 - 1464, CLOCK 1186, 1187
These fixtures are supplied with a 500mm long 8 wires cable, 2 of them are for the 24V DC power supply, 6 for DMX signal.
The DMX wires are doubled because this allows to come from the RGBW control unit (code 1181) and proceed to the next fixtures by simply connecting the cables in a junction box.

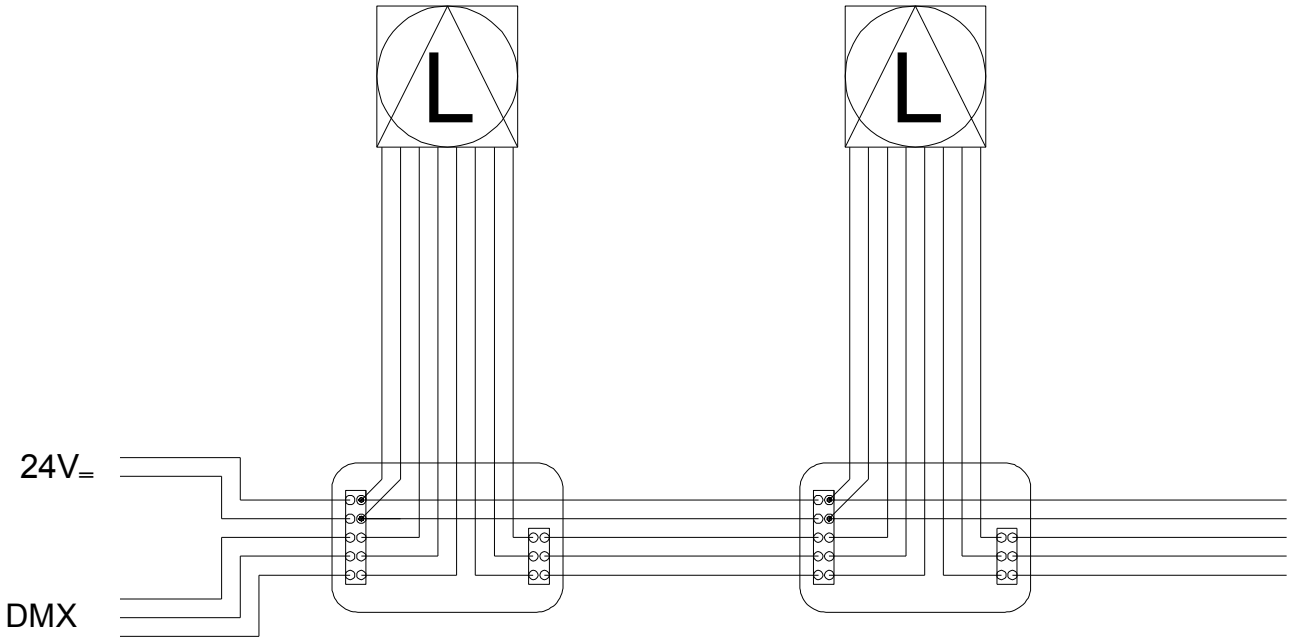


Diagram 2

Fixtures group	Codes	Supplied cable yes/no length (mm)	Notes	Colors
PASSUM	1482	YES 500 POWER	AC LIVE AC NEUTRAL ⏚ GROUND	The colors of the conductors referred to in this table are shown on the instruction sheets of each fixture.
		SÌ 500 SIGNAL	DMX+ DMX – GND	

PASSUM 1482
This fixture is supplied with two 500 mm long cables:
-3-pole cable for mains voltage power supply (L, ⏚, N)
-3 wires cable for the DMX signal.
The connection to next fixtures and to the control unit will be performed by means of a junction box.

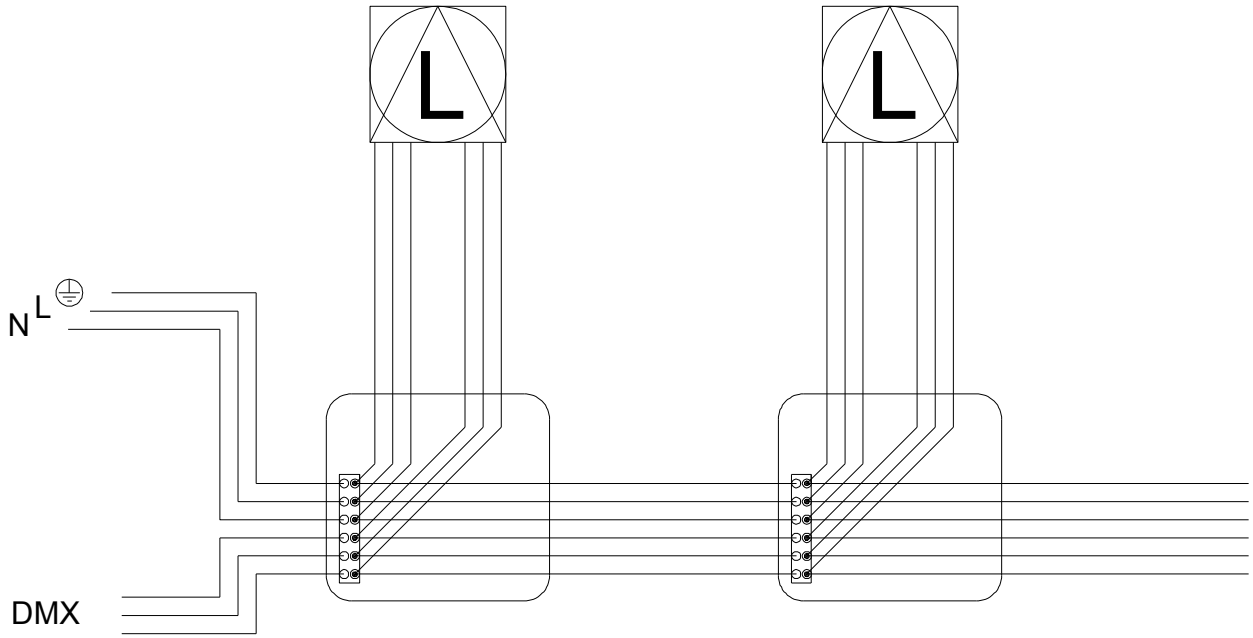


Diagram 3

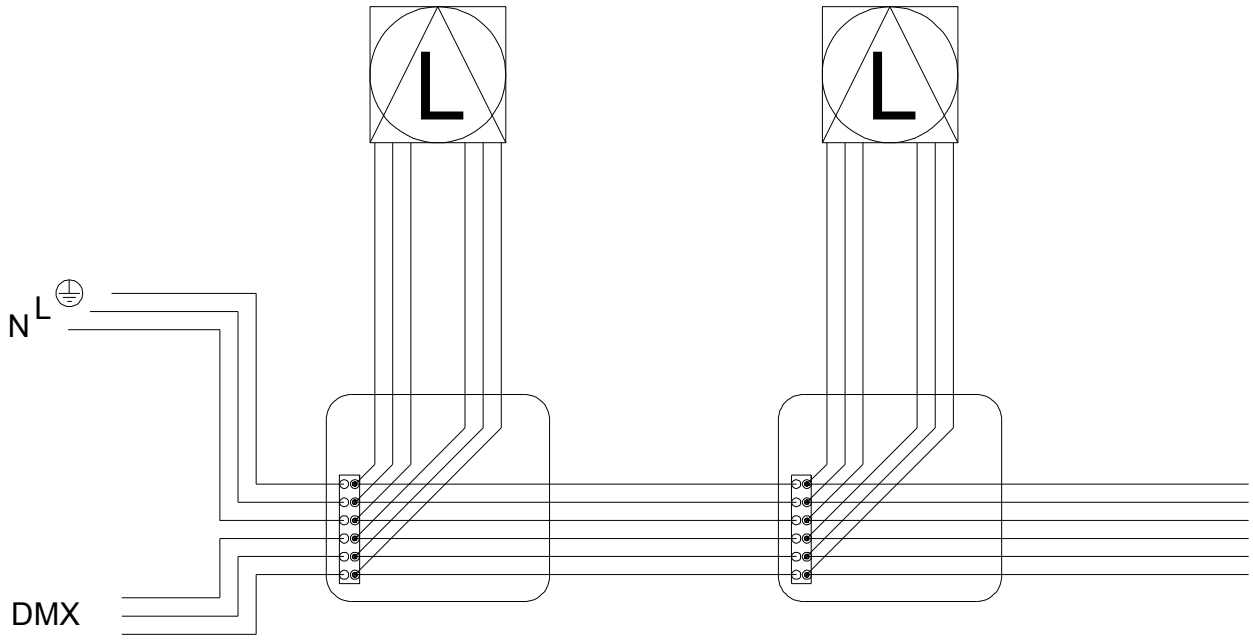
Fixtures group	Codes	Supplied cable yes/no	Notes
K3	1184 - 1185	NO	

K3 1184 - 1185
These devices have no cables supplied. They have two cable entries with cable glands.
The installer uses 2 three-pole cables for each fixture: one for the DMX signals and one for the mains power supply.

Inside there are:

- three-pole plug terminal for DMX signal identified by a label with the writing DMX – , GND, DMX +
- three-pole terminal for power mains supply (L, ⏚ , N)

The connection to next fixtures and to the control unit will be performed by means of a junction box.



SIGNAL CABLES

The DMX signal cables should have following characteristics.

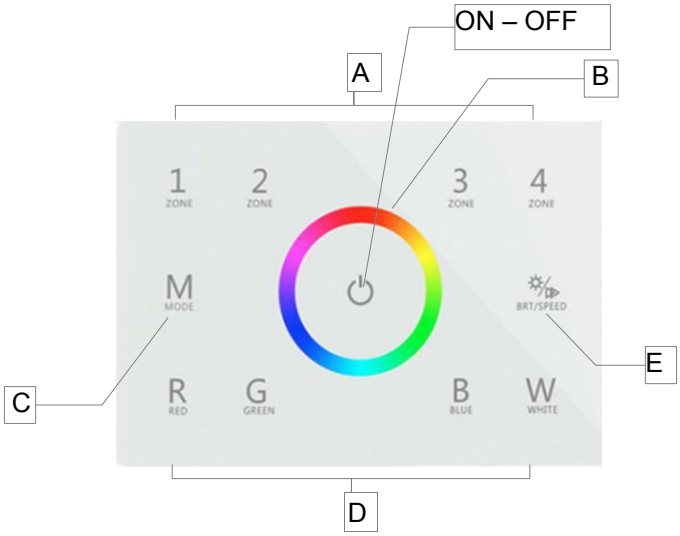
- Twisted wires
- Low capacity (less than 50 pF/meter)
- Impedance value between 120 and 150 Ω
- Shielded
- Minimal wire section 24AWG - approx Ø 0,5 mm (section 0,2 mm^2)

2-conductor cables, generally defined as “pairs”, have an outer insulation diameter of approximately 6 mm. This allows for good flexibility, but on the other hand, they are small compared to the size of common cable glands. For this reason it is recommended, where necessary, to provide for an increase in the diameter of the cable, even with heat-shrink sheaths, at the lamp inlet.

Keep in mind that these data are valid for signal cables that cover distances of meters, but common three-pole cables from the junction box can be used to connect each device.

USING THE TOUCH SCREEN CONTROL UNIT (code 1181)

Functions



The control unit is the *touch screen* display in the front part of the device.

ON – OFF
A. Zone of operation
B. Color wheel
C. Working mode
D. Colors change
E. Dimming

A – 4 zones are available to address independent commands.
Selects a Zone and makes a command.
Short press switches on the Zone, 2 seconds press switches it off.
B – mixes the colors till the wished one.
C – Short press chooses among 10 factory preset color games.
(2 seconds press activates the chosen one – see list note)
D – Short press activates the corresponding color. For white color, deactivate the last used color.
(See advise below)
Long press dims each color.
E – Sets the speed of the color games or dims the static color. (10 levels)

Note: Color games
1 – 2: RGB cycle 3 – 4: 6 colors cycle 5: Yellow-Blue-Violet 6 RGB fade in and out
7 – 8 – 9 – 10: fade in and out in sequence Red, Green, Blue, White.

ADVISE – Solid White management

Solid white light output.
If any color or mix of colors other than white is active:
- select any color
- select W and deactivate the previous color, holding down the corresponding letter (R, G or B) until the white becomes solid.

Emission of another color.
If the output is solid white: - select another color and briefly touch white W to deactivate it.

REMOTE AND CONVERTER

The RT9 Remote works in combination with the XC Converter

REMOTE RT9

XC CONVERTER

Mixes colors until the desired color is obtained.

1 2 3 4 — Short press to select and turn on a zone.
Long press, 2s, to turn off the light of the selected zone.
Press briefly and quickly the keys of several zones to select them and control them simultaneously.

R G B — Short press to directly recall Red (R), Green (G) or Blue (B) light.
Long press, 1–6 s, to continuously adjust the intensity of each channel (R / G / B) and obtain millions of colors.

W — For RGB lights, a short press turns on / off the white light (generated by the mix of the three RGB colors), while a long press from 1 to 6s adjusts the saturation, i.e. slowly changes the color of the light into white light (generated by the mix of the three RGB colors).

For RGBW lights, a short press turns the White (W) channel on / off, while a long press from 1 to 6s slowly adjusts the light intensity of the White. This changes the color saturation, adding white gradually.

Dynamic mode setting for the selected zone.
Short press to switch to the next dynamic mode.
Long press, 2s, to cycle through all the dynamic modes.

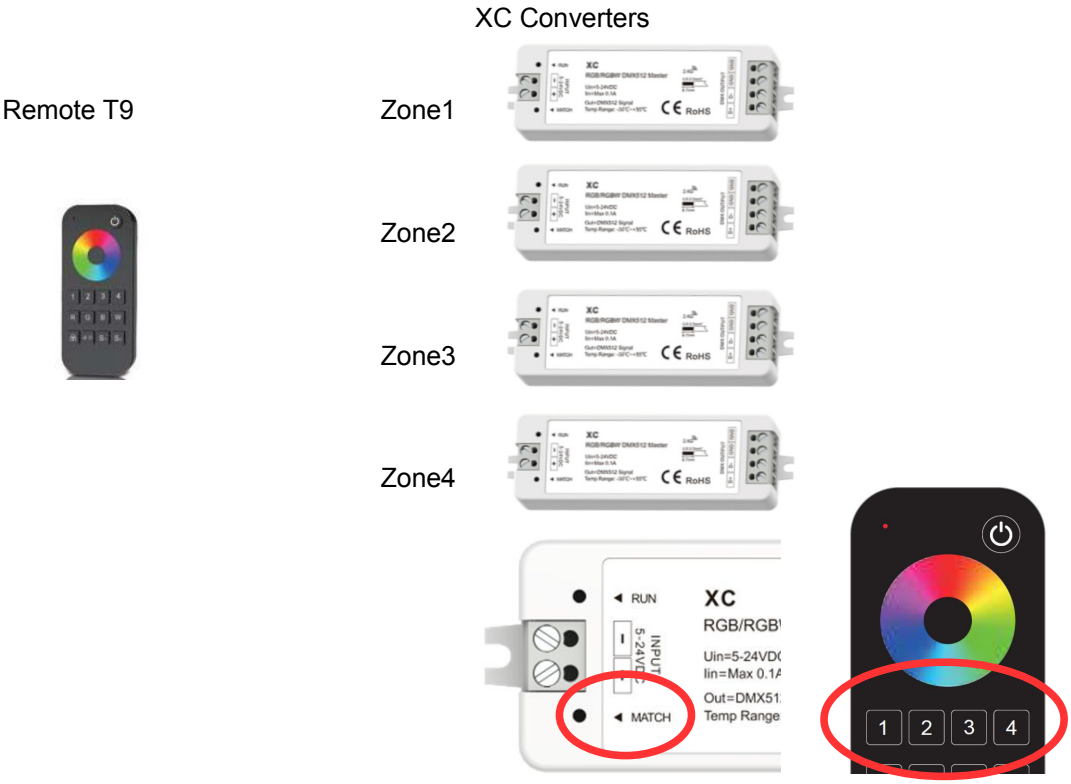
In dynamic mode it adjusts the speed.
Short press to select one of the 10 preset speed levels
Long press, 2s, to go to the default speed.
In static mode it adjusts the light intensity.
Short press to select one of the 10 preset intensity levels.

S1 S2 — Short press to recall the scene. Long press, 2s, saves the current state in the selected scene (S1 / S2).
When the saving is successful, the LED indicator turns green.
The 4 zones can be recalled or saved simultaneously.

The XC Converter converts the wireless signal from the Remote T9 into a DMX signal.

Each of the 4 zones managed by the Remote must be controlled by an XC Converter.
For this reason it is necessary to match each key of the Remote with the corresponding converter.

This procedure is called “Match”.



To address the zone:
1 – press the MATCH key on the Converter
2 – press immediately the Remote key with the number to address to the corresponding Zone.
3 – The LED on the Remote flashes quickly.

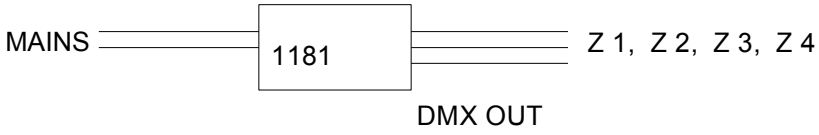
When it stays on, the operation is finished.
Repeat the operation for the desired Zones, matching the corresponding number.

Keep in mind that the DMX signal output cables of each Converter will always drive all the RGBW fixtures connected to that zone.

WIRING DIAGRAMS – DMX Signals

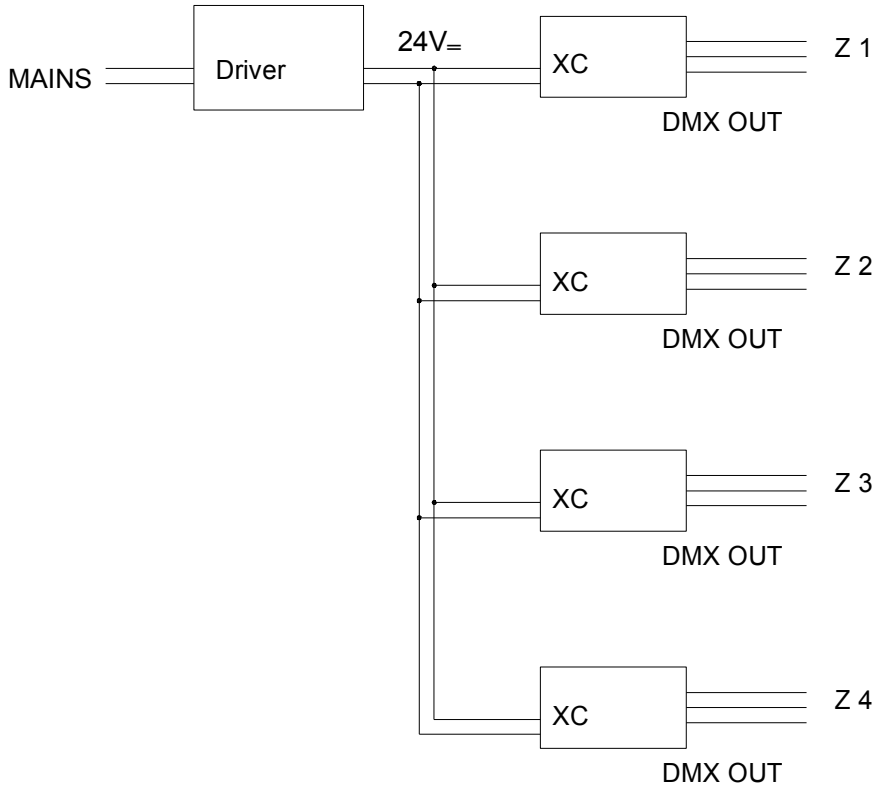
Touch Screen Control Unit 1181 wiring

The Touch Screen Control Unit is powered by mains voltage and outputs the DMX signal to control the fixtures of all 4 zones. The DMX cables marked with “DMX OUT” are also represented in the wiring diagrams relating to the fixtures on pages 4, 5 and 6.



XC Converter wiring

The XC Converter is powered at low voltage (5-24V⎓). It therefore needs a driver.
The maximum consumption of each converter is 1W.
Each XC Converter outputs the DMX signal to control the fixtures in a zone.
The DMX cables marked “DMX OUT” are also represented in the wiring diagrams relating to the fixtures on pages 4, 5 and 6.



LOW VOLTAGE FIXTURES DRIVERS

PASSUM 1462 - 1464, CLOCK 1186, 1187 fixtures need low voltage power (24V⎓).
Therefore an adequate power unit (driver) is necessary. It has to be chosen depending on:

- the total needed power
- the number of fixtures
- the wires section
- the distance from the driver to the fixtures.

Available drivers

COD.	W	INPUT	OUTPUT
1924	25	220-240V~/V⎓	24V⎓
1925	60	220-240V~/V⎓	24V⎓
1926	150	220-240V~/V⎓	24V⎓