

UV-PENTALIGHT 5/120 Rc

Germicidal UV-C Device for Disinfection by Direct Irradiation
Portable on wheels

MODELS:

UV-PENTALIGHT 5/120 Rc



SECURITY WARNING

◆ Our Company has ensured that every care is taken in the design and production of its machinery. In order to guarantee, as far as possible, that it is safe when used correctly. However, the laws on accident prevention require all users of the machinery to ensure that whoever is responsible for installation, maintenance, use and sale of these products is shown the instruction provided by our company and is made aware of the precautions to be taken.

According to the circumstances, the appropriate recommendations made in these instructions must be made available, together with any other relative information, to any company or person involved in the installation of LIGHT PROGRESS products.

◆ Only use this appliance for its intended purpose as described in this booklet.

◆ If the appliance is wrongly operated for a purpose other than that for which it is intended, no liability can be accepted for any possible damage. The manufacturer cannot be responsible for any damage to people, animals and objects caused by use or operation of the appliance contrary to these instructions.

◆ As with all electrical appliances the safety information and precautions contained in this booklet must be carefully observed, including following:

◆ Before maintenance or cleaning ensure that the appliance is switched off and unplugged from the main supply.

◆ Should the appliance become faulty please contact our authorized Service Centre direct and in case of repairs ask for genuine parts.

Improper repairs may damage the appliance and place the user at serious risk.

WARNING

- ◆ **Avoid exposition to UV-C rays emitted by germicidal lamps, even for few seconds, it may cause severe conjunctivitis and erythema**
- ◆ **Plastic or painted surfaces exposed to direct UV-C rays may progressively yellow, as after a long exposure to sunlight.**
- ◆ **The intended use is as a germicidal lamp for sterilization, any other use is improper and dangerous**
- ◆ **The lamp, as supplied, can not be modified or designed for use with accessories or tools**
- ◆ **We disclaim all responsibilities and void the warranty in case of tampering or lack of maintenance**

- **Read carefully the following instruction before use**
- **In case of opening of the UV section, must be provided a shut-off of the UVC devices in order to avoid exposure to UVC light emitted by the germicidal lamp; It may cause severe conjunctivitis and erythema.**
- **Remove the protection film from the device before light-on the UV-C lamp.**
- **This device can be used by children with no less than 8 years and by persons with reduced physical, sensory or mental capacities or with no experience or knowledge, as long as under supervision or often they have received the related instructions about the safe use of the device and the related risks. Kids do not have to play with this device.**

CONVENTIONAL SYMBOLS NOTICED ON DEVICES



SUBSTITUTED ITEMS MUST BE PERFORMED RESPECTING THE LOCAL LAWS.



RECYCLE THE STUFFS THAT COMPOSES THIS PRODUCT.



OBLIGATION TO CONSULT THESE INSTRUCTIONS BEFORE USE THIS PRODUCT



DANGER OF ELECTRICAL SHOCK; REMOVE TENSION TO THE SYSTEM BEFORE PERFORMING ANY OPERATION.



GENERIC DANGER.



DANGER OF EXPOSITION TO ULTRAVIOLET UV-C RAYS.



THIS DEVICE RESPECTS THE ROHS NORMS.



USE PROTECTIVE GLOVES



WEAR PROTECTIVE GLASSES

STORAGE OF THIS MANUAL



ATTENTION!

This instruction manual must be preserved and must always be kept available for consultation; it must follow the device in case of transfer of ownership, and accompany the device until its demolition.

To request the updated instruction manual and to ask for all other information needed, it's possible to contact Light Progress' technical office.

DEMOLITION AND DISPOSAL



Do not dispose of these products as unsorted municipal waste, but collect them separately as a special waste and entrust them to specialized waste disposal companies. Disposal should be in accordance with Legislative Decree No. 151/2005 (WEEE - Italy), or the law of the country where disposal will occur (WEEE - EC). In case of failure to comply with laws or illegal disposal heavy penalties are provided. The apparatus consists of plastic parts, electronic components, metal, UV lamps containing mercury (substances dangerous for the environment and human health). The dealer is available to the withdrawal of the apparatus used.

DEVICE DESCRIPTION

UV-PENTALIGHT 5/120 Rc is a five lamps germicidal device, placed on a stand, with five wheels for easy mobility. It works on direct radiation at 360 degrees and disinfects irradiated air and surfaces. The UV-C lamps, with emission peak at 253.7 nm. (nanometers), have a strong germicidal power against all micro-organisms (molds, bacteria and viruses).

All equipment is composed of (picture 1 and picture 3):

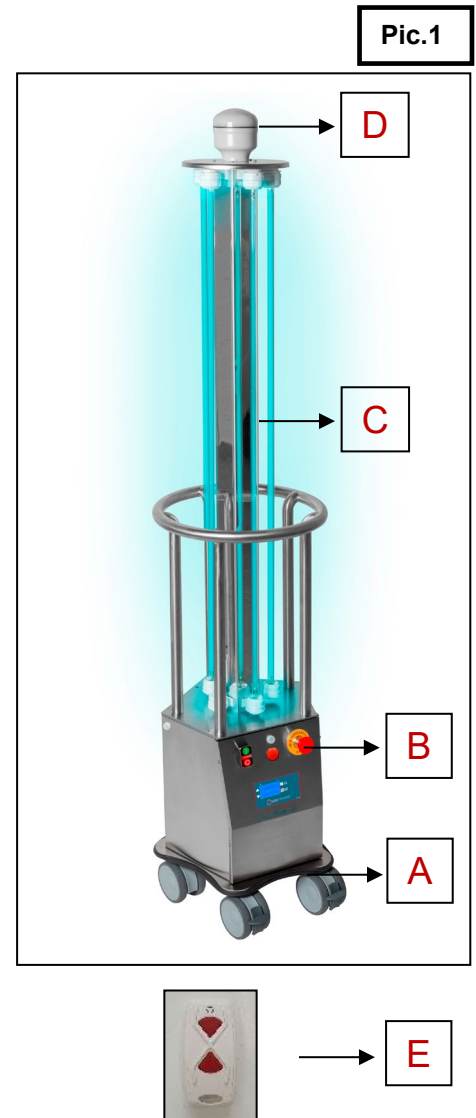
A) **Metal stand:** painted steel base plate, with 5 high quality swiveling wheels typically used in the hospital sector.

B) **Control Unit:** stainless steel (AISI 304), equipped with a digital display to control the unit, bipolar magneto-thermal switch, start/stop button, internal hour me-ter for UV lamps replacement. Voltage is provided to control unit by pressing the green (start) button at the top left and interrupted by pressing the red (stop) button next to it. Alternatively, voltage can be interrupted by pressing the emergency push button at the top right of the control unit.

C) **UV unit:** with 5 UV-lamps, protected by stainless steel structure with cylindrical shape (AISI 304). The body is made of stainless steel with mirror polished aluminium reflector, which increases performance reflecting a higher percentage of UV-C rays.

D) **Signaling equipment:** to indicate the status of the device

E) **Radio control:** for remote control of the device



APPLICATIONS AND RESULTS

Each UV-PENTALIGHT series can be installed in any type of environment to achieve a deep disinfection of air and surfaces, even those difficult to be reached by traditional systems.

When turned on, it gets a strong reduction of microbes in the air and on surfaces. For example, in 4 minutes at a distance of 3.5 meters, it achieves a 99.99% reduction of bacteria such as: Escherichia c., Salmonella t., Pseudomonas a., Staphylococco a., Klebsiella pn, Clostridium, Legionella, Vibrio, Bacillus s., Streptococco, ecc. Increasing up to 10 minutes will reach 99.9999%. On request, a third-party certification is attached.

The use is permitted only in absence of staff or if radiation is adequately shielded.

The device can operate during personnel break from work.

PENTALIGHT is equipped with 4 motion sensors (PIR) connected to the signaling device at the top of the device (Pic.2); this system emit 3 different lights to indicate: presence (any kind of motion) detected with violet light; treatment area free of people (no motion detected), so the possibility to start the treatment with green light emission; the flashing of the red light indicate the starting of irradiation and persist for the duration of the entire treatment. These status are briefly reported in the following table (Tab. 1)

Tab.1

Sensor Light	Explanation
Violet (flashing)	Intruder presence detected
Green (flashing)	Start allowed
Red (flashing)	Treatment in progress

Pic.2



USE OF DIGITAL DISPLAY

The device must be turned on during the hours of absence of the people in the room that we want to disinfect.

The device is equipped with a control panel as shown in the picture 3.



Pic. 3

When the device is switched on, after the **Light Progress** logo, the display shows the remaining lamp life in percentage form. From 6% lamp life onwards the display shows the message **REPLACEMENT OF LAMPS**, this corresponds to approximately 550 hours remaining from which 1 hour should also be subtracted for each ignition. When this message appears, to go further, press **STAR/STOP**.

It is recommended that you immediately activate the system when the message to REPLACE BULBS appears when ordering a replacement. The system when it reaches 0% remaining life will continue to operate but disinfection will no longer be guaranteed. Once the lamps have been replaced, it is necessary to proceed with the RESET procedure which is carried out by entering the menu and scrolling to RESIDUE LAMPS . A prolonged press (approx. 8 s.) of the START/STOP button until the word 100% appears in the display; this function is not active until the 6% lamp life is reached, to avoid unwanted resetting.

The control panel consists of 4 buttons and 1 LED in the top left-hand corner:

SET/ENTER	Allows access to the various device setting menus
▲	Allows you to navigate within a menu upwards
▼	Allows you to navigate within a menu downwards
START/STOP	Allows you to start or stop operating cycles.
LED	Depending on its colour, it signals the various states of the control system Green: System ready awaiting commands Red: System in operation Blue: System performing a DISINFECTION cycle

The following menus are available in the device by pressing SET/ENTER:

Menu	Description
LANGUAGE	The following languages are available: Italian - English - Spanish - German
WAITING TIME	This sets the switch-on delay time required to evacuate the room of people; it is in the format HH:MM (Hours:Minutes). The setting is made using the ▲ and ▼ arrows with an increment or decrement of 1 minute.
WORK TIME	Allows you to set the disinfection time in the format HH:MM (Hours:Minutes). The setting is done using the ▲ and ▼ arrows with an increment or decrement of 1 minute.
RESIDUAL LAMPS	Shows the remaining life time of the lamps in percentage value.
CICALINO	Enables the sound signals to be ENABLED or DISABLED. Setting is done using the ▲ and ▼ arrows.
MODEL	The device settings made by the company are shown. Cannot be modified by the user
EXIT	At the end of the various menus, the display asks to SAVE THE CHANGES? which have been made in the previous menus. With ▼ you decide not to proceed with saving (NO) while with the START/STOP button you proceed with saving (YES).

The control unit is equipped with a power-saving system; therefore, after a certain period of inactivity the display switches off. The display can be reactivated by pressing any button on the unit.

OPERATION:

Once the settings described in the table above have been made, the display will show the READY message and the WAITING TIME at first start-up.

At this point, the START/STOP button can be pressed to start disinfection. Optionally it can be equipped with a **remote control**, which does the same function as the STAR/STOP button for starting.

After pressing it starts SWITCH ON IN and the countdown begins; the LED in the top left-hand corner will turn red.

If the BUZZER function is ENABLED, the system will emit an intermittent beep (BIP) with increasing frequency the closer you get to the end of the countdown.

During this waiting time for ignition, it is necessary to evacuate the room of people.

At the end of the countdown, the DISINFECTION will begin with duration defined by the **WORK TIME**.

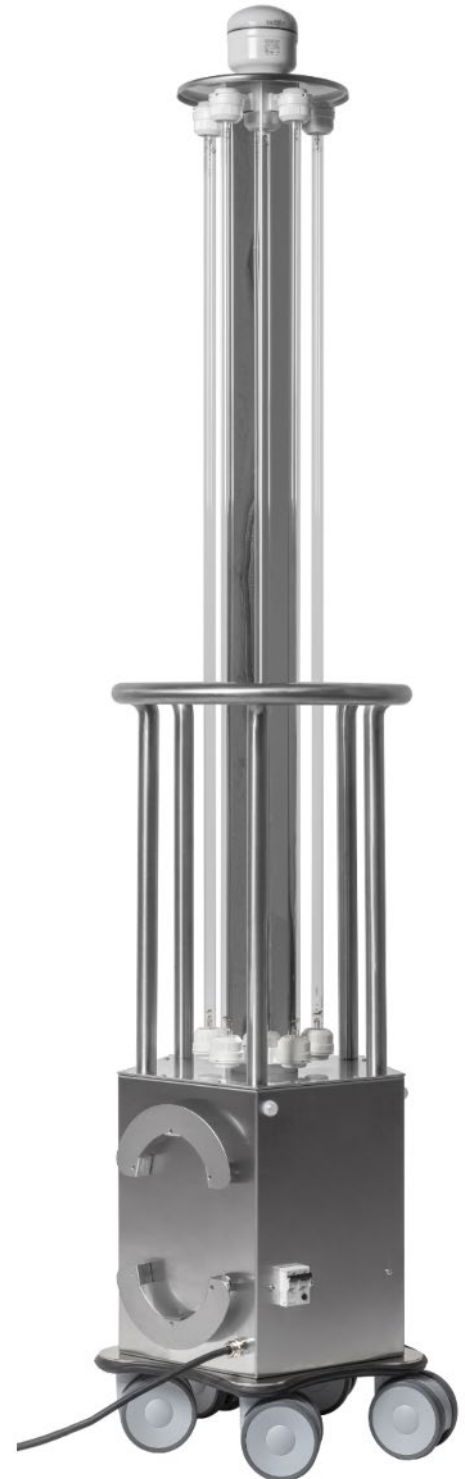
The LED in the top left-hand corner will flash blue. If the BUZZER function is ENABLED, the system will emit an intermittent beep (BIP) for the duration of the cycle, ending with a sequence of final BIPs.

At the end of the cycle, the display will show the message READY - DISINFECTION COMPLETED.

If persons are detected, the display will show the word PEOPLE PRESENT together with the WAITING TIME. The WAITING TIME cycle will still be activated by pressing the START/STOP button or via the remote control.

With the cycle activated, the display will show the word PEOPLE PRESENT but if people are still present, the DIS-INFECTION cycle will not switch on, showing the word PEOPLE PRESENT on the display (at the end of the waiting time).

The same thing happens if a person is accidentally detected during the DIS-INFECTION phase; the cycle is interrupt-ed, with the display showing the word PEOPLE PRESENT again. In this case, disinfection must be reactivated.



BENEFITS AND ADVANTAGES

a) DEEP AND CONTINUOUS DISINFECTION

This device can be switched on continuously without people being present (i.e. during the night for 2-3 hours). The disinfection of air, machinery, and everything that is contained inside the room allows beginning the work day in ideal hygienic conditions. In this way, the level of microbial load in one site is maintained constantly low.

b) PHYSICAL ACTION AND ECOLOGICAL PROTECTION

Treatment with UV-C rays is purely physical, always allowing treatment with the same efficiency; there is no danger of overdosing. In contrast, many chemical treatment methods involve the use of products that are risky and difficult to biodegrade, with consequent hazards to human health; besides, the use of chemical products, in contrast to UV-C rays, could develop resistant microbial forms.

c) PRACTICALITY AND ECONOMY

Treatment is immediate and ready to use. Maintenance is minimal with low costs of both energy consumption and maintenance.

d) IMMEDIATE EFFECT

Effective treatment (99.9% bacteria reduction) takes just a few minutes.

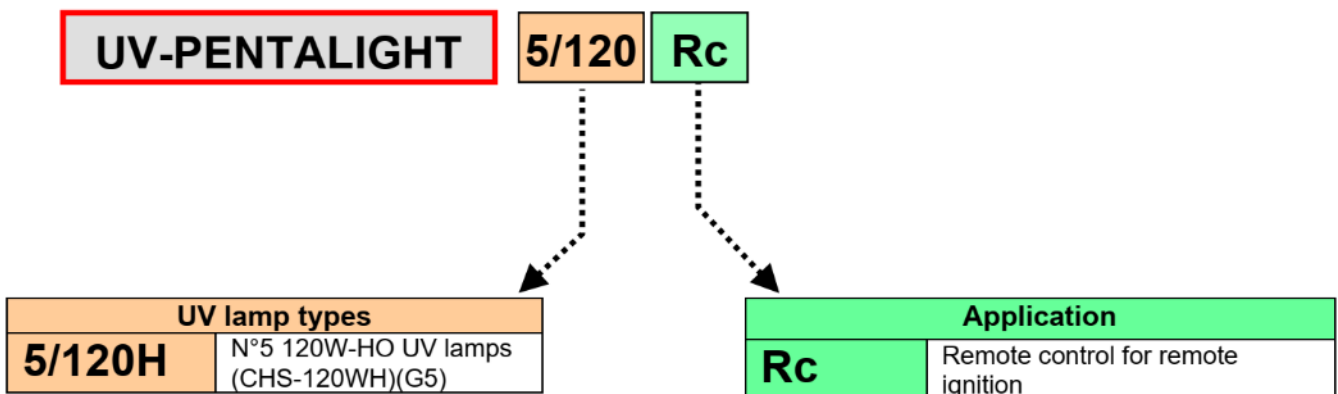
e) NO CHEMICAL/PHYSICAL CHANGES

Treatment is cold and dry; it causes no organoleptic or qualitative changes in the food.

f) NO DANGER OF GLASS DISPERSION

With special UVLON® protection, there is no danger of glass fragments dispersion resulting from any breakage of UV-C lamps.

DEVICE CODES

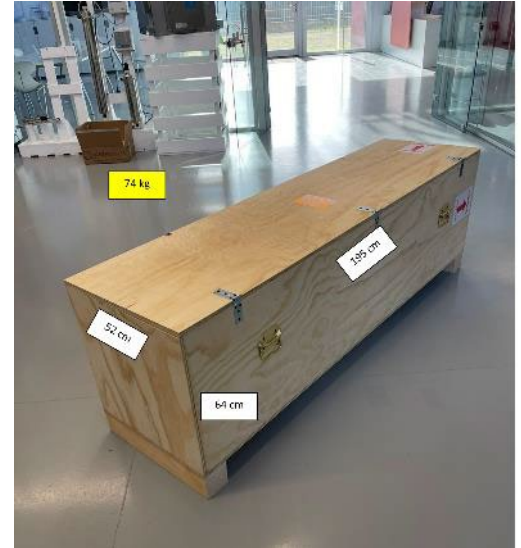


RECEPTION AND ASSEMBLY

Handle with care as fragile material. Verify the integrity of the packaging, and please be careful not to damage the contents during the opening of the box.

Pic.10

To maximize the security and the entirety of the device during transportation, it is shipped inside a specially designed and manufactured rigid wooden box (Pic. 10)



It is recommended to follow the next instructions to take the device out of the box:

Pic.11

1. Place the box vertically as in picture 11, taking care to maintain the correct upward direction
2. Open the closing hooks to allow the opening of the front door of the box



Pic.12

- Once opened the frontal door, the product appears as in picture 12 with 3 protective support (A, B, C) inserted to hold the device firmly to the box. To extract the device these inserts must be removed starting from the upper one (A)

Protective support A

Protective support B

Protective support C



Pic.13

- After removing these three protective supports, the device is ready (Pic. 13) to be easily extracted from the box thanks to the fact that the device is already assembled, including the stand with swivel wheels that will allow easy handling
- Remove the unit from the box, then inspect it immediately to ensure that no damage has occurred during transportation. Before installation and use of the device please **READ CAREFULLY THE SECURITY WARNINGS** and all others instructions that follows.
- Lamps are supplied in their packaging and anchored for transport inside the cylindrical structure. Extract the lamps from the packaging and mount them following the instructions given in "maintenance" chapter on page 11.



INSTALLATION

Take the device to the room to be disinfected, and place it almost at central position. In case of more than one device, you should place them so that UV irradiation is uniformly distributed, avoid creating shaded areas.

The area/space covered by the UV-PENTALIGHT devices is shown in Table 3. Final disinfection results are in any case dependent on the amount of germs coming in from the external environment.



WARNING !!!

Remember to switch on the device ONLY IF there is a concrete shield and no accidental exposition to the rays by the personnel.

To avoid exposition to UV-C rays, in case of failure of the motion sensors, please provide a total shielding of the modules, or automatic turning OFF devices at the entry doors in the environment treated. There must be no direct irradiation of the personnel.

To shield the devices, materials with opaque surfaces such as stainless steel or aluminium can be used, but also transparent materials such as glass or Lexan®; to have further information please contact us.

To improve safety we suggest you to add light signs or signboards to report the potential danger.

SCHEDULING

UV-PENTALIGHT 5/120 Rc Start and treatment duration setting.

1. Insert the plug into the wall socket and turn the device on using the switch on the back of the control unit (Pic. 14).

Switch ON/OFF



2. Press the green button located at the top left of the control unit to supply voltage to the device (Pic. 15).
3. Using the digital display, it is possible to set the waiting time as well as the duration and start of the disinfection by leaving the device isolated in the room intended for treatment. When the sensor system does not detect any motion, the device will start the treatment after the waiting timer and according to the set of disinfection time.
 - Treatment duration can be set from a minimum of 1 minutes to a maximum of 99 h and 59 minutes.
4. The treatment in progress can be interrupted prematurely by pressing the remote-control button once.
5. The device is equipped with a red light on the central panel to indicate lamp malfunctions. If a malfunction occurs during a disinfection cycle, the light remains on. If the anomaly is temporary, the light will switch off when the cycle is restarted; if it stays on, action must be taken.

The most common causes for the red light to switch on are two: either the lamps need to be replaced as they are no longer working, or they have been incorrectly positioned in their housing. If in spite of these checks the warning light remains on during the disinfection cycle, it is necessary to contact the technical assistance service.



ELECTRICAL CONNECTIONS

- ⇒ We suggest you to let a qualified electrician install this device, following these instructions and the electrical scheme, as well as CEI norms.
- ⇒ Before connecting the device to the electrical line, make sure that the labelled data on the device are the same as the ones of the electrical line; we remind you that the electrical supply power of this device is 110V or 220-240V, 50/60Hz.
- ⇒ Make sure that the electrical system is capable of providing the supply current required by the device (please read the label).
- ⇒ The connection to the electrical line needs a multipolar switch.
- ⇒ The connection to the electrical line must be made by the supplied cable.
- ⇒ Protect the power supply cable from high temperature, sharp corners, water, oils.

MAINTENANCE

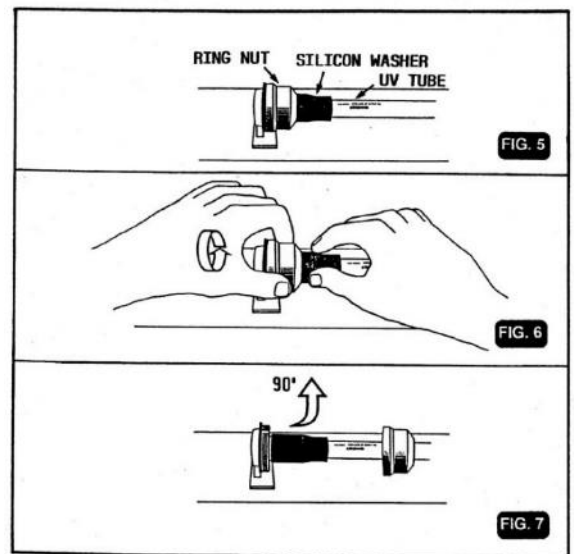
UV LAMP



Lamp maintenance is very important because UV-C light emitted by the source is not visible to the eye, so, although you see the lamp ON, its germicidal effect may not be sufficient to perform disinfection treatment.

Before reaching the lamp, **ALWAYS** switch off power supply. If UV-C lamp gets dirty (or gets dusty) clean it with a clean cloth and alcohol, and avoid touching the glass part with hands. To check UVC lamp life number of hours, correct product code of the spare UV lamp please refer to [table 1](#). The lamp, once reached the timing for replacement, **must be replaced**, this operation is carried out as follows:

- Loosen the nuts on the lamp housing and let them slide along the lamp; grab the lamp at the 2 ends and pull it in a direction parallel to the lamp.
- Repeat the steps in reverse to insert the new lamp.



TROUBLESHOOTING

UV LAMP

See MAINTENANCE.

BALLAST

UV-PENTALIGHT models are supplied with electronic ballasts which guarantees an emission of 15% more if compared with traditional ballasts. Furthermore, lamps are not influenced by environment temperature that can go up to -20°C. Finally, the switching on is immediate, with no starter, and for this reason lamps last longer.

To maintain all the characteristics that guarantee the quality of this product, the ballast replacement must be done by qualified technicians verified by Light Progress. In case of necessity, please, send the device back to our facility for any kind of repairs.

TECHNICAL FEATURES

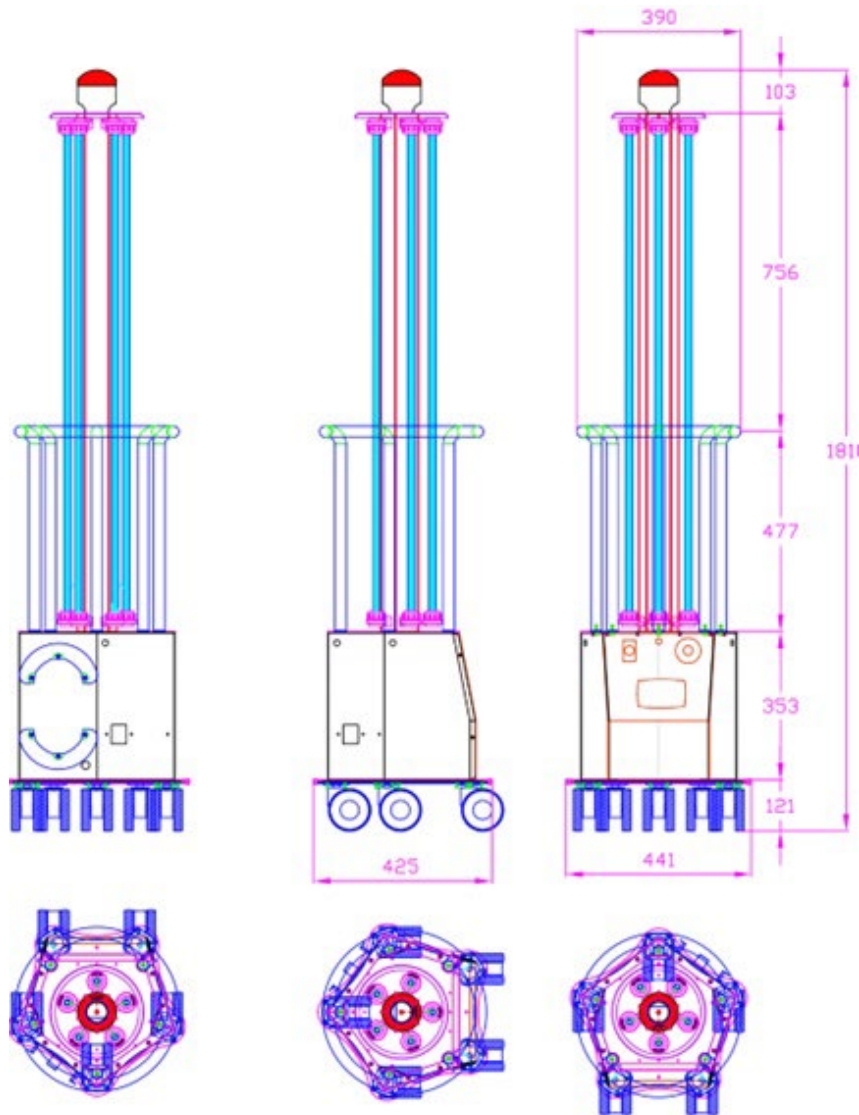


TABLE n°3	
UV-PENTALIGHT	5/120 Rc
AVERAGE LAMP LIFETIME (h)*	≤ 18.000
POWER (W)	5x120
DIMENSIONS LxSxH (mm.)	1810 x 441 x 425
WEIGHT (Kg.)	27
TREATED VOLUME (m3)	150 to 400
TREATED SURFACE (m2)	50 to 100
SPARE PARTS	
UV LAMP Code	n°5 CHS-120WH
POWER SUPPLY CONDUIT Code (complete)	n° 5 EB 120H-BE or n° 5 NLT275-800-PH-UNV

* continuous operation

- Selective UV-C lamp (at 253.7 nm.) with high efficiency lighting.
- Stainless steel body AISI 304 .
- All materials used are tested for resistance to intense UV-C rays.
- Waterproof and dust-proof lighting body (IP 55).
- Control Console (IP 20) grounded.
- Powered with electronic ballasts specific for UV-C rays lamps
- Reflector in extremely pure mirror bright aluminum.
- Circular steel handle AISI 304 for easy handling and direct protection of the lamp.
- CE mark (LVD - EMC - MD - RoHS).

- Complies with the noise standards of Directive 2006/42/EC
- Values measured according to UNI EN ISO 3746
- Non-detectable and non-transmissible vibration values
- Suitable for class 1 installations - protected areas

LABEL AND SYMBOLS



SYMBOL			
MEANING	Warning! Check the attached documentation	GROUND TERMINAL (The unit must always be connected to the ground)	Device with CE certification.

WARRANTY

All products made by LIGHT PROGRESS are manufactured with the highest quality materials only, they are subjected to rigorous testing, and are guaranteed to be free of factory faults according to current law and regulations.

⇒Minimum requirements for warranty validity:

Warranty will be considered valid only in case of possession of the purchase document.

⇒Warranty limits:

Warranty excludes:

- ⇒Damages caused by not following the instructions that accompany the product at purchase.
- ⇒Periodical controls, maintenance, repairs or replacements of parts due to normal wear.
- ⇒Consumable parts.
- ⇒Use of incompatible spare parts or consumables; Compatibility is ensured only by use of products purchased from or recommended by **Light Progress**.
- ⇒Damages caused by modification of device / system without **Light Progress**' previous consent.
- ⇒Improper use of the product, falling or crashes.
- ⇒Modifications or repairs made by unauthorized personnel.

For defective materials return, you must request the return merchandise authorization (RMA) sending an email to info@lightprogress.it or calling the number +39.0575.749255.

Once you receive the module, it has to be filled up in every part and sent via email to info@lightprogress.it or via fax to +39.0575 789929 to obtain the RMA number that will authorize the shipments of the goods to Light Progress warehouse. Only authorized goods will be accepted, otherwise it will be refused and sent back to the sender on ex-works conditions. The packages must be sent on DDP (Delivery Duty Paid) with packaging suitable for transport. RMA number is valid up to 10 working days from release date.

MANUFACTURER RESPONSABILITY AND COMMITMENTS

◆**Light Progress** do not take any responsibility for any damage to persons or property, due to failure to follow these instructions. We recommend you to carefully read all the given instructions.

◆The manufacturer agrees with the buyer to provide, upon request, schemes of circuits, component parts lists, instructions for calibration of lamps and other information, which are useful to repair those parts that the manufacturer considers repairable.

◆The company reserves itself the right to make changes without prior notification or public notice.



DECLARATION OF COMPLIANCE

We, LIGHT PROGRESS s.r.l., hereby declare under our own responsibility that the following units of own production:

UV PENTALIGHT 5/120 Rc

- ◆ are in accordance with EEC directive 2014/30/EU (Electromagnetic Compatibility)
- ◆ are in accordance with EEC Machinery Directive dispositions 2006/42/EU
- ◆ are in accordance with EEC Low Voltage Directive 2014/35/EU
- ◆ are in accordance with EEC (RoHS) 2011/65/EU (D.Lgs 4 Marzo 2014, n.27)

TECHNICAL STANDARDS APPLIED

UNI EN ISO 12100:2010	Safety of Machinery - Basic Concepts, General Principles for Design - Risk assessment and risk reduction
UNI EN ISO 13857:2008	Safety of Machinery - Safety Distances to prevent danger zones being reached by the upper and lower limbs (2008)
ISO 14120:2015	Safety of Machinery - Guards - General Requirements for the Design and construction of fixed and movable guards
UNI EN ISO 13849-1:2016	Safety of Machinery - Parts of the Control System related to the Safety – Part 1: General Design Principles
UNI EN ISO 14119:2013	Safety of Machinery - Interlocking devices associated with guards - Principles for design and selection
CEI EN 60204-1/2016	Safety of Machinery - Electrical Equipment of Machines. Part 1: General Rules (2010)
EN 61439-1:2011	Low-voltage Switchgear and Control Gear Assemblies. Part 1: General rules

FURTHER TECHNICAL STANDARDS APPLIED:

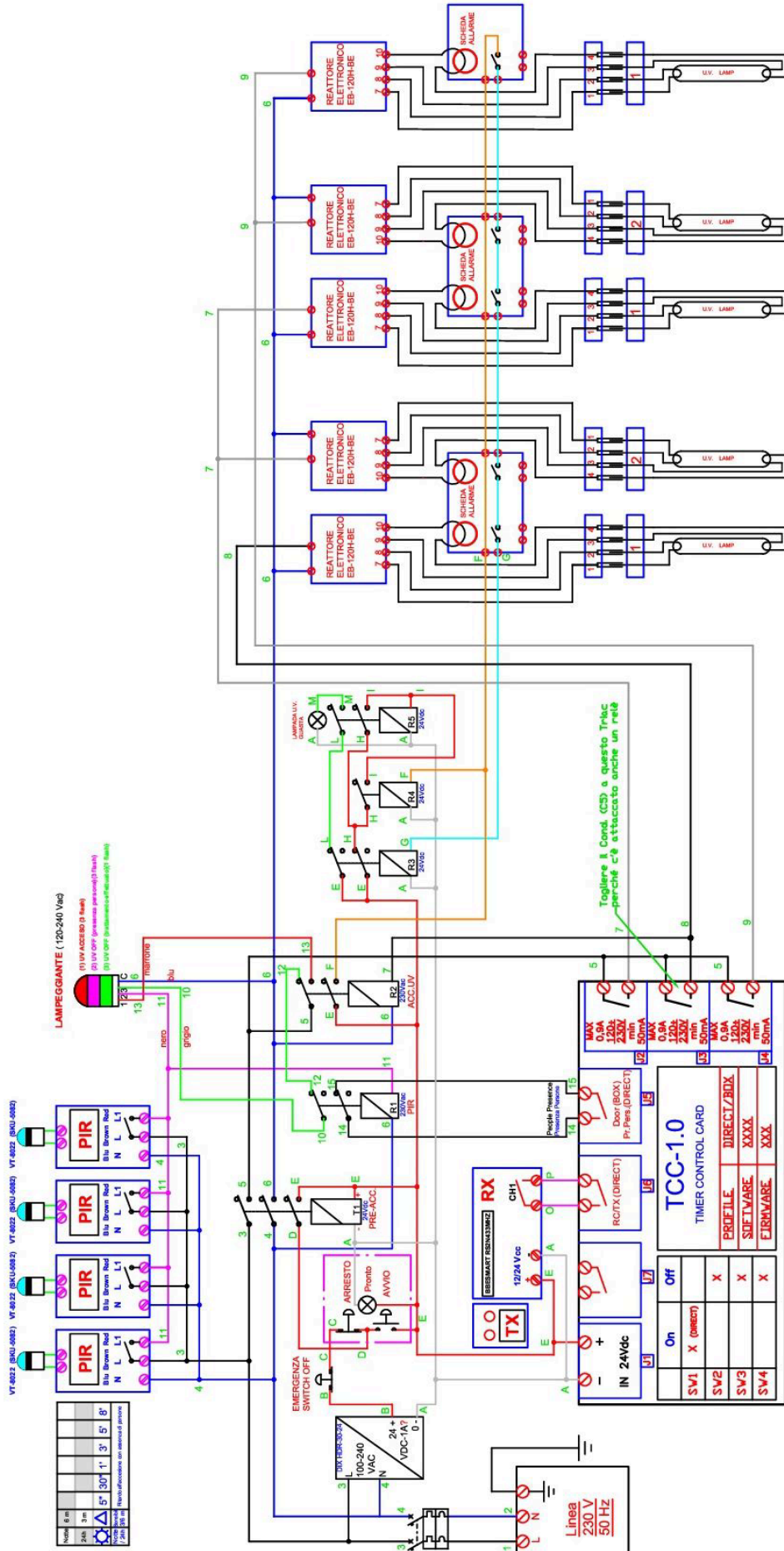
IEC EN 60335-1 "Safety of household electrical appliances and similar"
Electronic Ballasts for the control of the lamps in accordance with the standard EN 60928.
Germicidal UV-C Lamps in accordance with EN 61199.
Electrical Protective Measures in accordance with IEC 70-1, EN 60229.

Anghiari, 5.17.2023



Responsible for Standards: Dr. Aldo Santi

LIGHT PROGRESS S.r.l. Loc. San Lorenzo, 40 - 52031 ANGHIARI (AR) - ITALY - <http://www.lightprogress.com>



Progetto: **N° MATRICOLA A03.23E**

Data: **05.05.23**

Oggetto: **UV-PENTALIGHT 5/120H Rc**



LIGHT PROGRESS

UV-C Technology Solutions since 1987



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