

UV-DIRECT

Germicidal UV-C Device for Disinfection by Direct Irradiation

MODELS:

UV-DIRECT E40H-K-NX
UV-DIRECT E75H-K-NX



SECURITY WARNING

◆ The 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 mains 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, switch off the UV-C devices in order to avoid exposures to UV-C light. They may cause severe conjunctivitis and erythema.**
- **Remove the protection film from the device before switching on the UV-C lamps.**
- **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



DOESN'T DISPOSE THIS PRODUCT ON THE UNDIFFERENTIATED WASTE DISPOSING OF THE 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 be ever at disposal to consultation; it must follow the device in case of passage of property, and accompany the device until its demolition

To request the instruction manual updated and to ask all other information needed, it's possible to contact the 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

The **UV-DIRECT** series includes germicidal devices using UV-C ultraviolet rays with **direct radiation** that sterilize the air and surfaces. The UV-C lamps, with emission peak at 235.7 nm. (nanometers), have strong germicidal power against all micro-organisms (mold, bacteria and viruses).

The **UV-DIRECT ...K** line is destined to be recessed in the false-ceiling (or recessed in the wall) allowing finishing on the same level, with minimal protrusions.

The shaped case consists of a box of stainless steel AISI 304 with a screen in mirror-shined aluminium that increases yield, by reflecting the part of UV-C rays that would otherwise be dispersed away from the useful direction.

The device consists of a case inside of which is enclosed a waterproof channel in aluminium containing all the electronic power parts, with IP 55 degree of protection.

The UV-C lamps protected by a STAINLESS-STEEL grid. The device is supplied complete with a 3x1 mmq of 2.5 m. cable without power plug.

OPERATION

The devices of the UV-DIRECT series can be installed in any type of environment to obtain deep disinfection of air and surfaces, even those that are difficult to reach with traditional cleaning systems. When the lamps ON there is a strong reduction of microbes present in the ambient air and on the surfaces reached by UV rays. For example, in 8 minutes at a distance of 3 m. from the device, there is a 99% reduction of bacteria Bacillus, Coli, Clostridium, Legionella, Vibrio, Salmonella, Pseudomonas, Staphylococcus, Streptococcus, etc.

Thanks to the natural circulation of the air, even the microbes located in hidden areas are continuously pulled toward the area of the U.V. rays so that their overall level decreases progressively.

Use is allowed only with no personnel present or if contained within adequately screened areas. The device must be switched on for 2 ± 3 hours during the hours of work breaks; for example, by means of a programming clock, night operation can be managed in the hours immediately prior to the entry of the operators, to allow entry in a freshly disinfected site. Operation can also be managed by means of appropriate power units that, especially in case of installation of various devices, can manage other operations, such as:

Power timing; it is possible to regulate the duration of treatment by means of a regulatable timer.

Managing entries; a security system turns out the lights in case of entry of staff.

Remote and local alarms in case one or more lamps switch off, due to wear, a spy light will light up on the front panel and it will be possible to use a contact to signal the failure remotely.

Counter to manage the proper replacement of lamps.

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 the air, the 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 with UV rays in the air. 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 of maintenance.

d) IMMEDIATE EFFECT

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

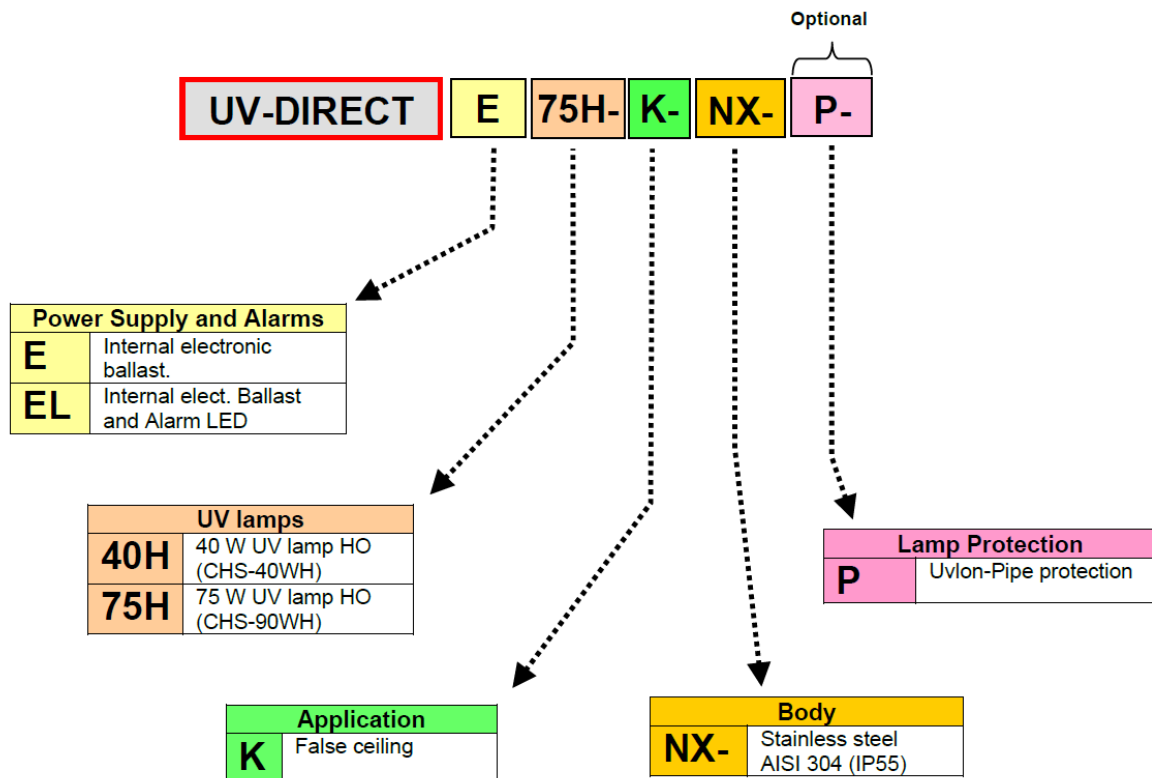
e) NO CHEMICAL/PHYSICAL CHANGES

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

f) NO DANGER OF DISPERSION OF GLASS

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

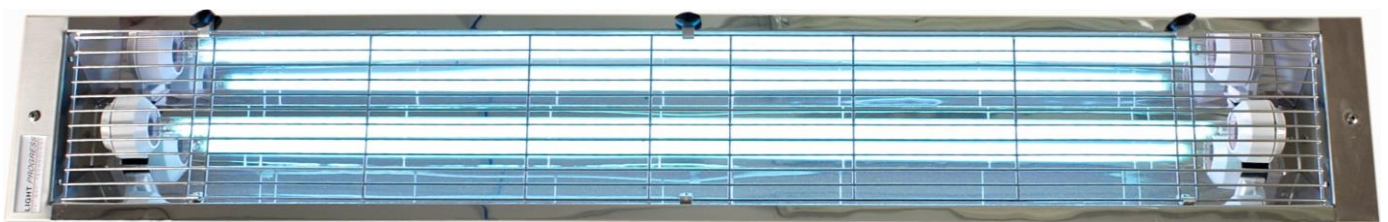
DEVICE CODES



RECEPTION

Handle with care as fragile material. Verify the integrity of the packaging, and please be careful not to damage the contents when using sharp blades or cutters to open the box.

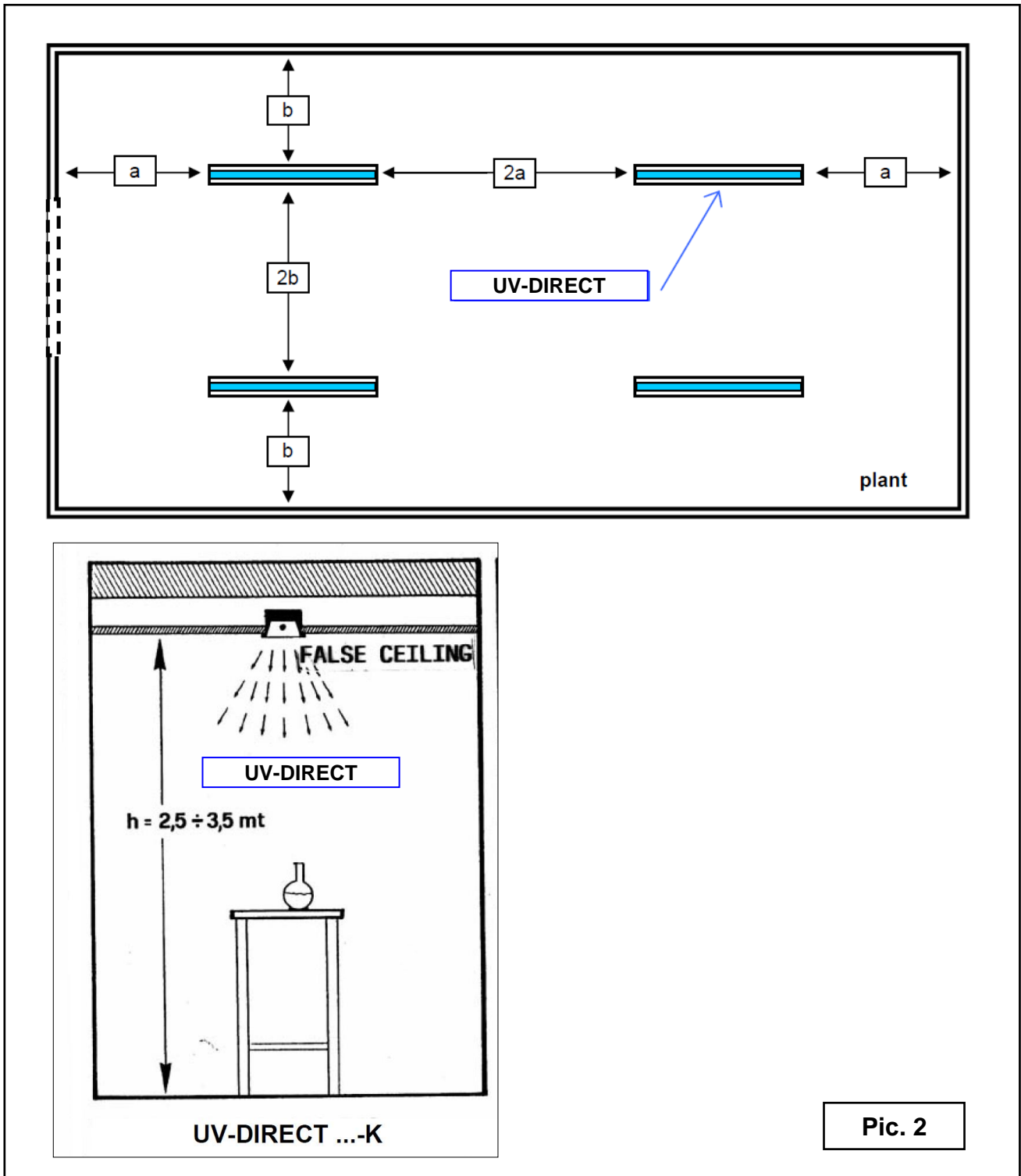
Remove the unit from the box, then inspect it immediately to ensure that no damage has occurred during transport. Before installation and using the device please READ CAREFULLY THE SECURITY WARNINGS and all others instructions that follows.



INSTALLATION

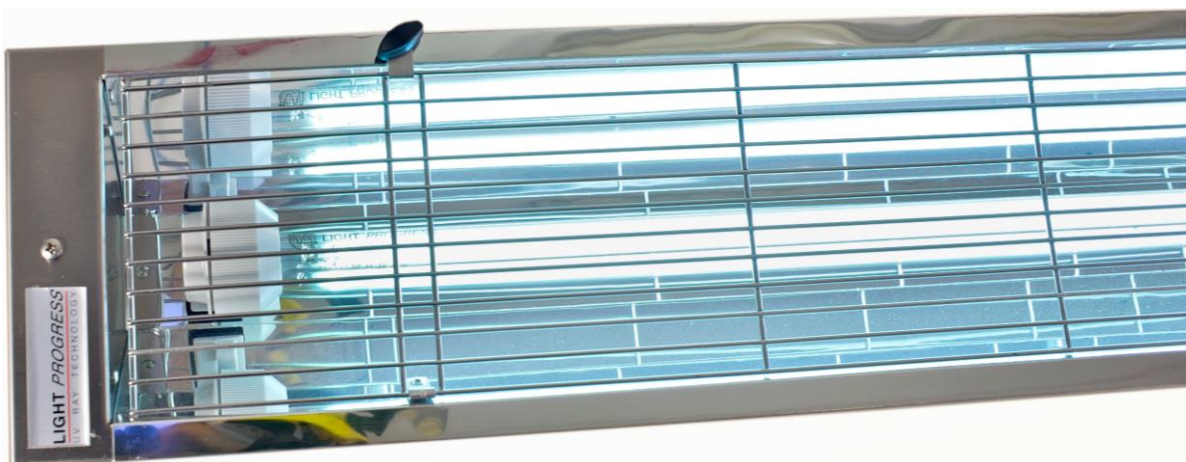
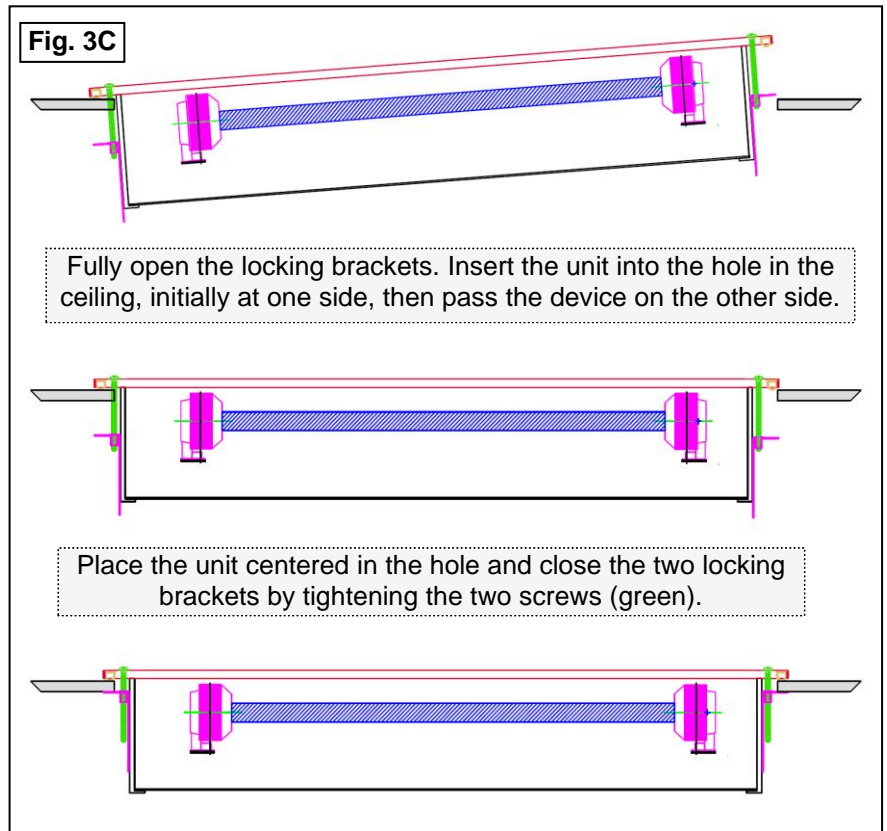
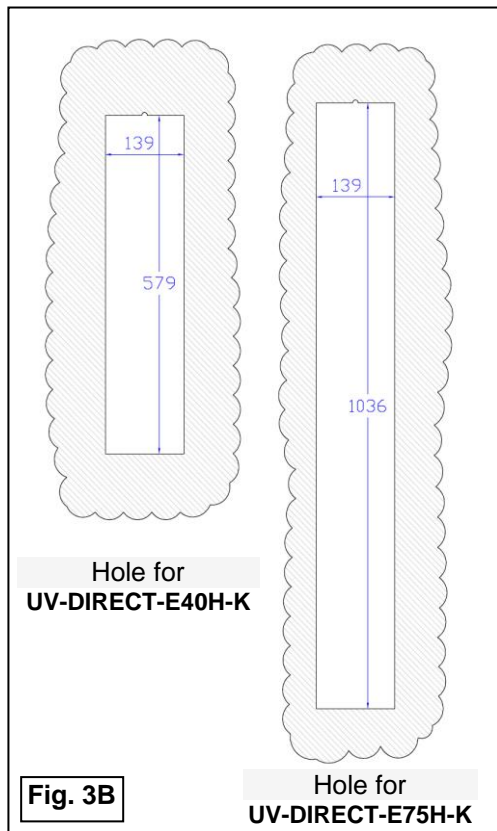
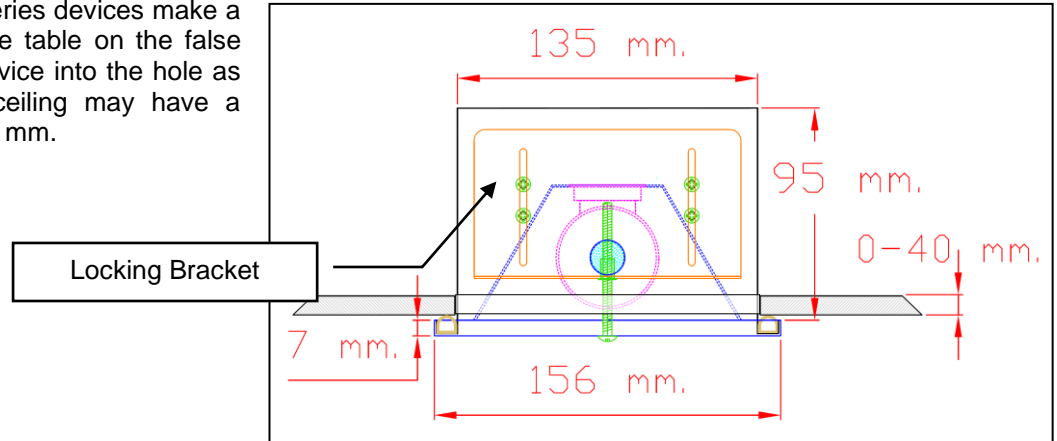
The device should be positioned on false ceiling almost in central position. The installation of several units should be carried out so as to distribute them uniformly in the environment (to avoid the hidden areas, such as the corners; it should allow all the air to be treated). These models can be mounted on the wall and still comply with the regular distribution (pic. 2).

The area/space covered by the UV DIRECT devices is shown in Table 1. The final result of the disinfection will still be made dependent on the amount of germs coming in from the external environment.



Pic. 2

To install **UV-DIRECTK** series devices make a hole with dimension as in the table on the false ceiling (fig. 3B). Insert the device into the hole as shown in Figure 3C. The ceiling may have a thickness from 1 mm up to 40 mm.





WARNING!!!

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

To shield the devices you can use materials with opaque surfaces such as stainless steel or aluminium, 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.

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

SCHEDULING

Provide electric power to the device. The UV lamp will turn on. Remember not to expose people to UV-C rays irradiation.

ELECTRICAL CONNECTIONS

- ⇒ We suggest you to let a qualified electrician to install this device, following these instructions and the electrical scheme, and following the CEI norms.
- ⇒ Make sure that the device will be installed where it will fit with the existing environmental conditions. 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 220-240V, 50/60Hz.
- ⇒ Make sure that the electrical system is suitable to provide 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 3 x 1 mm².
- ⇒ The use of screws, nuts, or other means, is necessary to connect the device to the electrical line.
- ⇒ We suggest the use of counters to know exactly the life of UV lamps and to remember when replace them.
- ⇒ Protect the power supply cable from high temperature, sharp corners, water, oils.



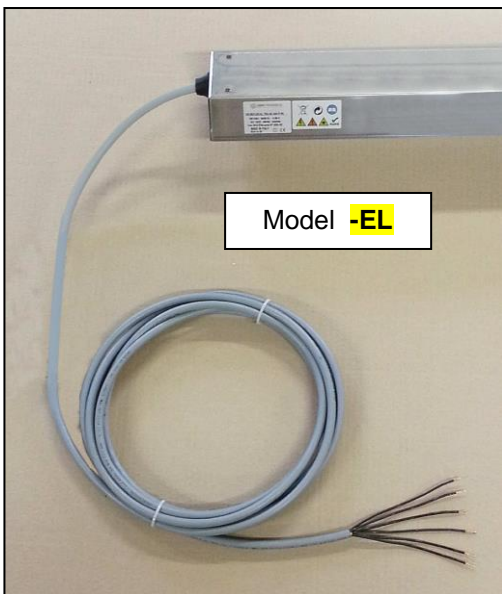
► **UV-DIRECT-EL**

In model **-EL** you get the possibility to remote control the functionality of UV tube.

Connected to the device there is a cable with 7 poles: a couple of poles carrying output signal to turn on LED indicating the UV lamp(when it's lighting); another couple of poles triggers a voltage-free contact to be activated when a lamp-stops working (alarm function: open contact if at least one lamp UV is not working); in addition, there are two input wires to power the device (phase and neutral).

The faulty lamp alarm contact can be powered by max. 500mA of current and 24V of tension, and can be connected to an electronic panel as "MASTER-ST" control unit.

For this models see the numbering of the wires on the table below.



In the device <i>UV-DIRECT-EL ...</i>	Multi-pole plug and socket	Wire	Meaning
Black wire for LED	terminal n° 1	Wire n°1	1- anode LED } for synoptic 2- cathode LED } MASTER-ST.....
Red wire for LED	terminal n° 2	Wire n°2	
Power line 230V-50Hz - phase	terminal n° 3	Wire n°3	3- Line 230V-50Hz (Phase)
Power line 230V-50Hz - Neutral	terminal n° 4	Wire n°4	4- Line 230V-50Hz (Neutral)
Electrical ground	terminal n° 9	Wire Y/G	Y/G- Ground terminal
Alarm board faulty tube	terminal n° 5	Wire n°5	5-6- open contact = faulty tube (free contact without tension, max 500 mA-24V)
	terminal n° 6	Wire n°6	

MAINTENANCE

UV LAMP

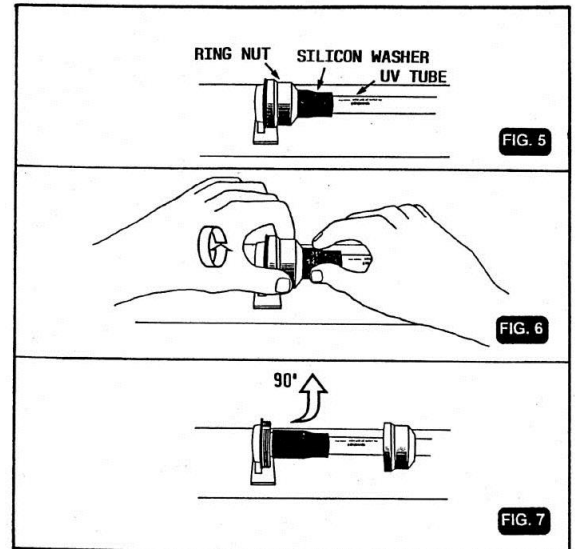


Lamp maintenance is very important because UV-C light emitted by the source is not visible to the eye, so, although you see the lamp ON, its germicidal effect may not be sufficient to performs disinfection treatment.

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 tube.
- Repeat the steps in reverse to insert the new lamp.



TROUBLESHOOTING

UV LAMP

See MAINTENANCE.

BALLAST

All UV-DIRECT 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 goes until -20°C. Finally, the switching on is immediate, with no starter, and for this reason lamps last longer.

To preserve the original features of original IP protection and isolation class, and to maintain all the characteristics that guarantee a long lasting life 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.

If this is not possible you can order the entire supply channel for replacement (for code see Table 1).



TECHNICAL FEATURES

TABLE n°1		
UV-DIRECT	E40H-K-NX	E75H-K-NX
LAMP LIFETIME (h)*	≤ 18.000	≤ 18.000
POWER (W)	40	75
EXTERNAL DIMENSIONS LxSxH (mm.)	598 x 103 x 156	1055 x 103 x 156
WEIGHT (Kg.)	2	3,5
TREATED VOLUME (m³)	from 20 to 40	from 40 to 65
TREATED SURFACE (m²)	from 7 to 13	from 14 to 25
SPARE PARTS		
UV LAMP Code	n°1 CHS-40WH	n°1 CHS-90WH
ELECTRONIC BALLAST Code	n°1 EB-55P	n°1 EB-55P

*continuous operation

- Selective UV-C lamp (at 253.7 nm.) with high efficiency lighting.
- Body in stainless-steel (AISI 304).
- All the used materials are tested for resistance to intense UV-C rays.
- Waterproof and dust-proof (IP 55).
- Powered with electronic ballasts specific for UV-C rays lamps
- Reflector in extremely pure mirror bright aluminium.
- Direct protection of the lamp with a stainless-steel grid (AISI 304)
- 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

Example:



SYMBOL			CE
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 using only materials of the higher quality, and are subjected to rigorous testing, and are guaranteed to be free of factory faults according to current law and regulations.

1. Minimum requirements for warranty validity

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

2. 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 assured only by use of products purchased from or recommend 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.

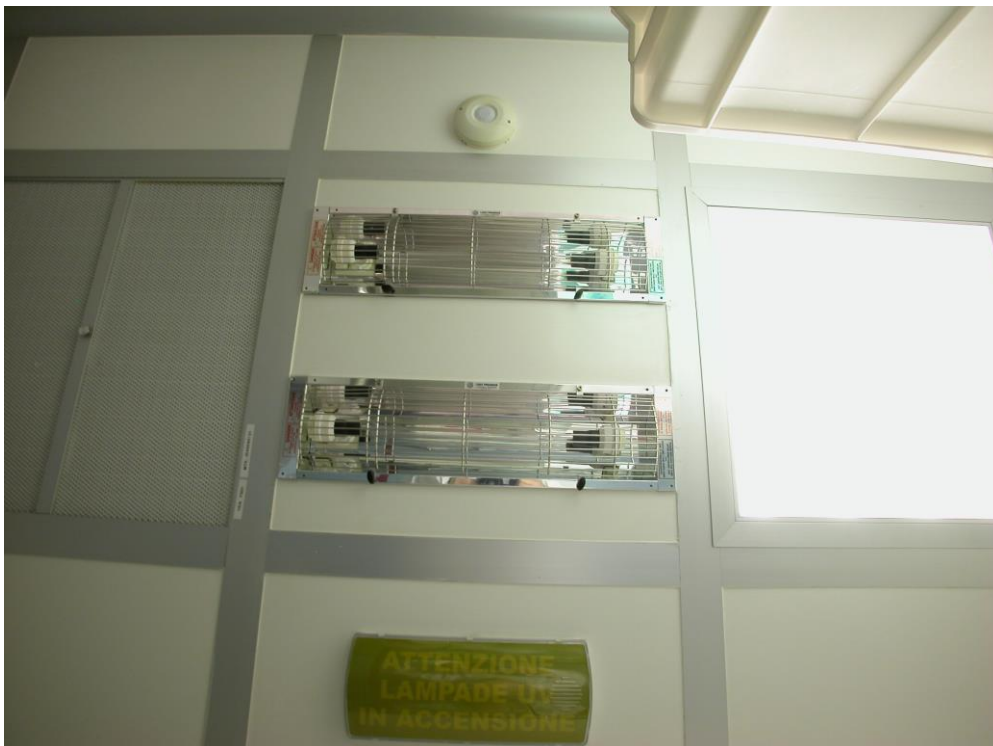
Once you receive the module, it has to be filled up in every part and sent via email to info@lightprogress.it or via fax to +39.0575 789929 to obtain the RMA number that will authorize the shipments of the goods to Light Progress warehouse. Only authorized goods will be accepted, otherwise it will be 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 assume 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 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-DIRECT...-K-NX series

- 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, 1.26.2021



UltraViolet Germicidal Irradiation



Responsible for Standards: Dr. Aldo Santi

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