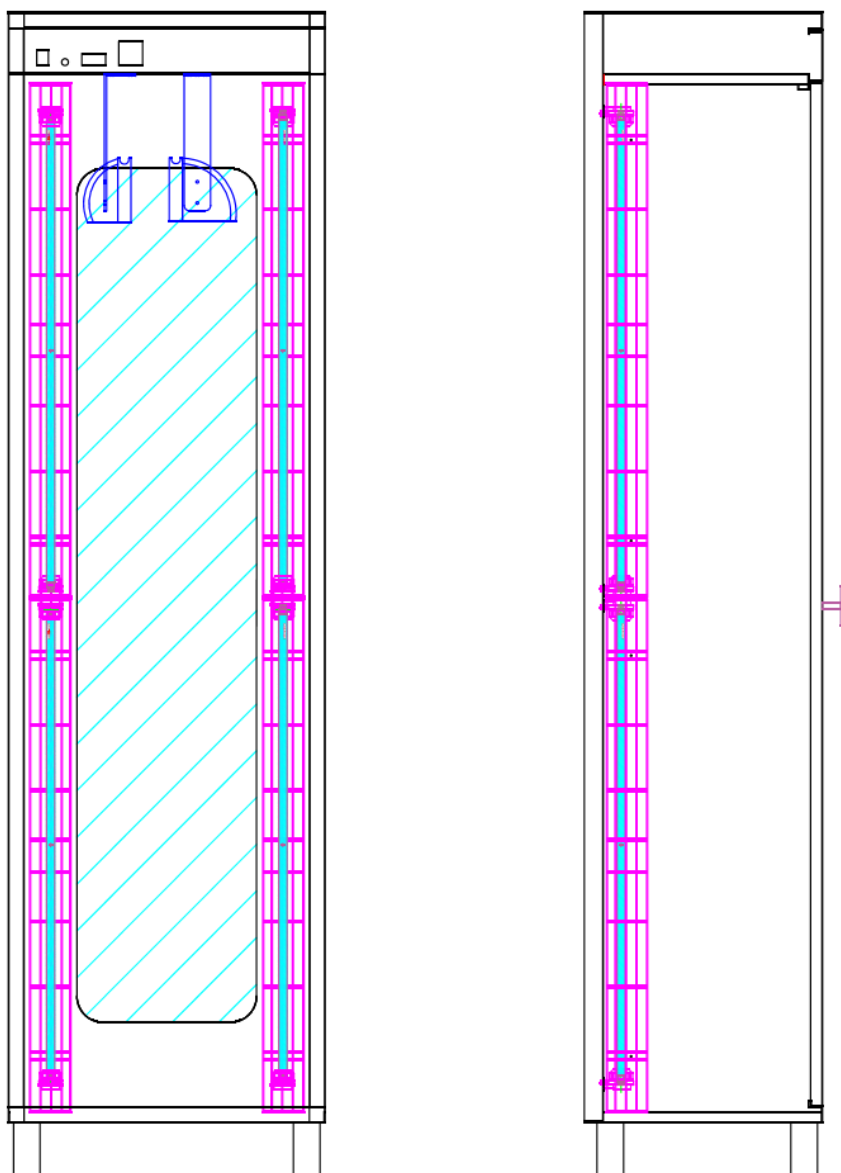


UV-CABINET-H-NX-E

***AISI 304 Stainless Steel Germicidal UV Cabinet
for Disinfection and Maintenance of Sterility
of ENDOSCOPIC PROBES***

MODEL :

UV-CABINET-H-NX-1/4E



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 disinfection, any other use is improper and dangerous**
- **The lamp, as supplied, cannot 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



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. It's possible to contact Light Progress' technical office to ask for updated instruction manuals and information.

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 series **UV-CABINET-H-NX 1/4E** includes cabinets equipped with germicidal UV-C lamps for disinfection and maintaining sterility of medical surgical equipment, medical and dental equipment cabinets and biological laboratory, and specifically for ENDOSCOPIC PROBES.

The cabinet is equipped with U.V. 75 W lamps protected by a steel grid to prevent shock and damage.

Such UV-C lamps, with emission peak at 253.7 nm. (nanometers), have a strong germicidal power against all organisms (moulds, bacteria and viruses). Moreover, since the process is not chemical but rather physical, there is no danger either to create forms of resistance with time, or contaminate the products or the environment.

The steel doors have a window in anti UV transparent polycarbonate and a position switch for turning off the UV lamps when the doors are opened. The cabinet is also equipped with a control panel which has an on/off switch and a timer. The irradiation time can be adjusted from 1 second to 500 hours.

APPLICATIONS AND RESULTS

The use of the cabinet is perfect when is needed constantly access to sterile equipment and instruments.

This specific model has been designed for use with Endoscopic Probes.

The cabinet operates to direct irradiation of UV-C rays towards probes attached to four supports with no shaded surfaces. This produces a very short time of exposure to get a 99.9% sterilization. For example, in 4 minutes, a **99% reduction of microbial load** is obtained for bacteria such as **Bacillus, Coli, Clostridium, Legionella, Vibrio, Salmonella, Pseudomonas, Staphylococcus, Streptococcus**, etc.

The use of this equipment creates no contraindications for the personnel since the window of the STAINLESS STEEL door is made of specific anti-UV material (LEXAN®).

OPERATION

The power supply by electronic ballasts is essential when you need a quick steady-state lamps operation and frequent ignitions.

After placing the probe on the appropriate hooks and closing the cabinet door, the UV irradiation can start.

The switching on / off of the UV-C lamps is controlled by a programmable cycle of pause / working time intervals.

You can decide for the duration of the irradiation and of the pause interval between two subsequent working periods.

Whenever the door is closed, UV lamps turn on and begin the disinfection of the inside space and surfaces. This will last for the whole programmed working time; the possible opening of the door, during the disinfection action, immediately will turn off the lamps, in order to ensure the personnel safety; if you will close the door again, a new disinfection action will begin from the start. At the end of the working period, automatically lamps will switch off. At the end of the pause period, automatically lamps will switch on. This sequence allows to maintain aseptic conditions even at distance in time.

The duration of the working time and of the pause time is manually adjustable before the beginning of the treatment.

BENEFITS AND ADVANTAGES

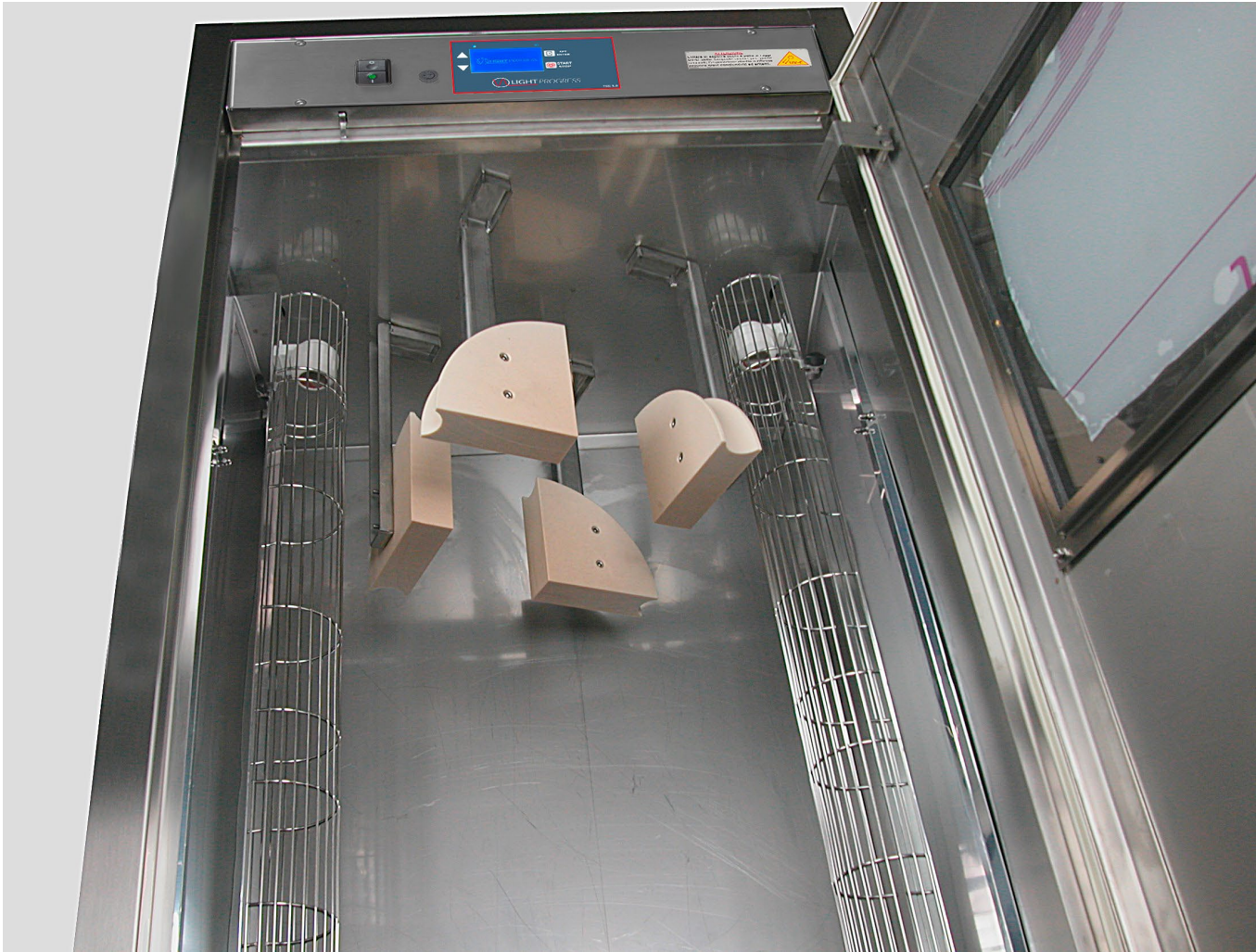
a) **PHYSICAL ACTION AND ENVIRONMENTAL PROTECTION.** Treatment by UV-C rays is purely physical, and achieves always the same effect; also, there are no problems of overdose and rooms are always safe and practicable (when devices are off). Rather, many methods of chemical treatment involve the use of dangerous products for the environment, and difficult to biodegrade, as well as the risk of contamination of foodstuffs. Also, by the use of chemicals it is likely to develop resistant microbial forms with consequent danger to human health.

b) **IMMEDIATE EFFECT.** It takes just a very short time to obtain effective results (99% killing of the bacteria).

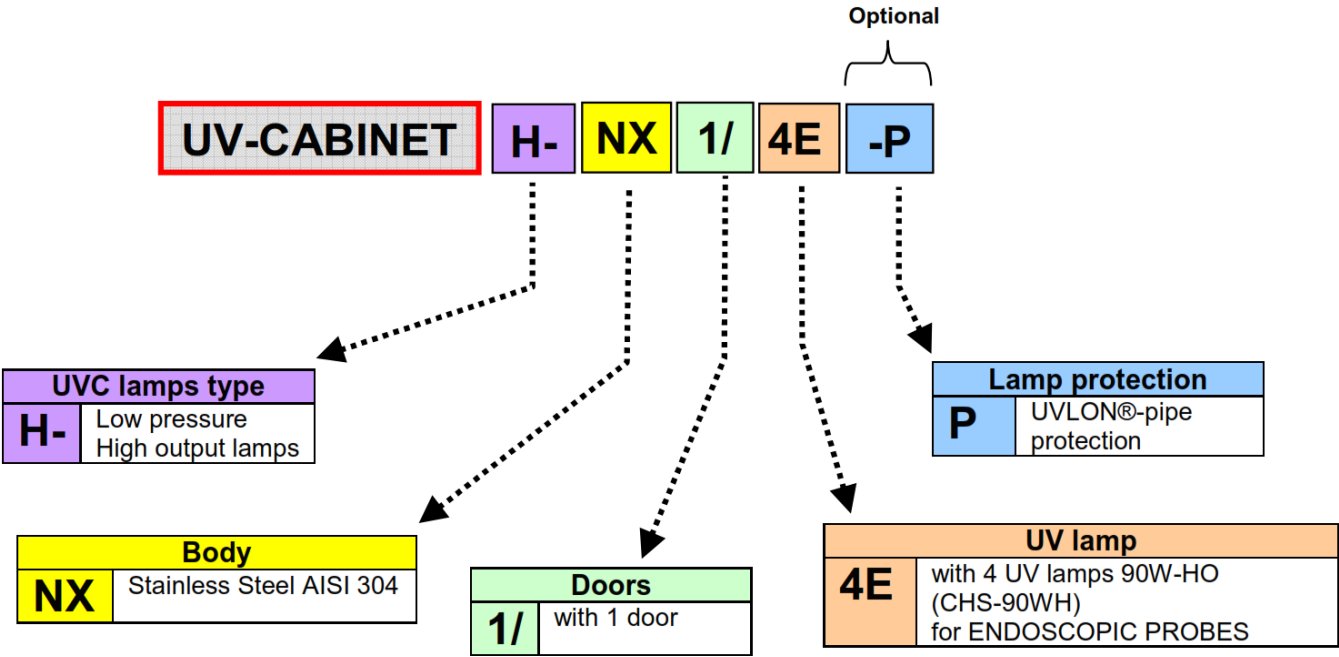
c) **PRACTICABILITY AND SAVINGS.** The treatment is immediate and ready for use. The maintenance is minimal with low costs of both energy consumption and repairs.

d) **NO CONTRAINDICATION FOR EQUIPMENT TO BE TREATED.** This device provides the ability to maintain a sterile equipment, without the slightest contraindication. Equipment to be disinfected, or previously sterilized, can be preserved for a long time and are ready at any time, since the treatment is dry and without heat generation.

e) **TOTAL SAFETY.** Ultraviolet rays are confined inside the enclosure and cannot exit for the presence of UV rays resistant polycarbonate (LEXAN®) and for the presence of micro-switches that prevent UV irradiation when the door is open. Therefore, it may treat the instruments in the presence of the operators.



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

UV-CABINET-H-NX-1/4E is a cabinet to be positioned on the floor.

Be careful that the chosen location will not impact the surrounding environment; Light Progress has designed a unit with no sharp edges, burrs, etc., so to limit personnel injuries caused by accidental strokes.

For a correct opening of the doors, make sure that the cabinet is perfectly level, if it is not, proceed with the blistering. Always place the cabinet against a wall.

ELECTRICAL CONNECTIONS

Entrust to a qualified electrician for the device installation, following these instructions and electrical scheme, and following the CEI norms.

- ⇒We suggest you to let a qualified electrician to install this device, following these instructions and electrical scheme, and following the CEI norms.
- ⇒Be sure that the device will be installed where it will fit with the existing environmental conditions
- ⇒Before connecting the device to the electrical line, be sure that the label data are the same as the one on the supply line; we remind you that the electrical supply of this device is 220-240V, 50/60Hz.
- ⇒Be sure that the electrical system fits the supply required by the device (please see the label).
- ⇒The connection required an interruption through a multipolar switch
- ⇒The use of screws, nuts or other means is necessary to joint it to the line.
- ⇒We suggest the use of hour-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.
- ⇒The connection to the electrical line must be carried out connecting it by the supplied cable 3 x 1 mm². Length 5 m., equipped with a Schuko IEC Socket.



Control panel to select the duration of irradiation

SCHEDULING

ON/OFF SWITCH

MAIN POWER (with green warning light ON/OFF).

FUSE

4A protection Fuse (inside control panel).

CONTROL PANEL

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

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 **RE-PLACEMENT 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 RE-PLACE LAMPS 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 LAMP RESIDUE . 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 activity 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
WORK TIME	Allows the working time to be set in the format HH:MM (Hours:Minutes). The setting is done using the ▲ and ▼ arrows with an increment or decrement of 1 minute.
CONTINUOUS CYCLE	The continuous cycle can be ENABLED or DISABLED. Only in the case of continuous cycle ENABLED does the WAITING TIME (time between two consecutive working times) appear in the menu.
WAITING TIME	Allows the time between two consecutive work cycles to be set 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. In this case 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:

The device is designed to perform the START/STOP function by opening and closing the door.

Or without opening or closing the door, it can be started by pressing the START/STOP button.

Once the settings described in the previous paragraph have been made, the display will show the set **WORK TIME**.

At this point it is possible to start the work cycle by opening and closing the door or alternatively by pressing the START/STOP button.

When the DISINFECTION cycle starts, the time counter will begin its countdown.

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 final BIP.

At the end of the cycle, if the **CONTINUOUS CYCLE** is **DISABLED**:

⇒ the display will show the message READY - DISINFECTION ACCEPTED; the LED in the top left-hand corner will be green.

Whereas if the **CONTINUOUS CYCLE** is **ENABLED**:

⇒ the display will show the word ON WITHIN with the WAITING TIME counter starting its countdown.

During this period, if the BUZZER function is ENABLED, the system will emit a sound signal (BIP) with increasing frequency the closer you get to the DISINFECTION cycle; the LED in the top left-hand corner will be red.

The lamps will be visible through the door window (UV shielding, safe to use). Every time the door is opened and closed, the chronometer will count the time again starting the "countdown" from 0. The device can remain ON 24 hours a day without any contraindications.

For an approximate idea of the times see the table below concerning the most common bacteria and viruses considering that for mould (fungi) times must generally be multiplied by 2 ÷ 3 times.

2 Log reduction (99%)	2 + 2 min.
3 Log reduction (99,9%)	4 + 4 min.
4 Log reduction (99,99%)	8 + 8 min.

UV DOSE in (µW/cm2 SEC) necessary to get 99% disinfection			
BACTERIA		Virus (generic, DNA and RNA)	
Mycobacterium Tuberculosis (TBC)	4300	Flu Virus A	4558
Escherichia coli ATCC 11229	4800	Hepatitis A HM175	8000
Legionella pneumophila ATCC 33152	3200	Corona Virus (SARS-CoV1 – MERS-Cov)	1200-1500
Pseudomonas aeruginosa ATCC 9027	6500	Rotavirus	15000
Salmonella ATCC 6539	4500	MOLDS	
Staphylococcus aureus	3200	Aspergillus Amstelodami	66700
Streptococcus hemolyticus	4400	Aspergillus Brasiliensis (Niger)	226000
Vibrio cholerae	4100	YEASTS	
MRSA	6550	Common bakery yeasts	12000
Clostridium Difficile	10000	Brewer's yeasts	20000

! Disinfection times for bacteria, viruses and yeasts (we suggest a treatment of both sides of the object)

MAINTENANCE

UV LAMP



USE
PROTECTIVE
GLOVES



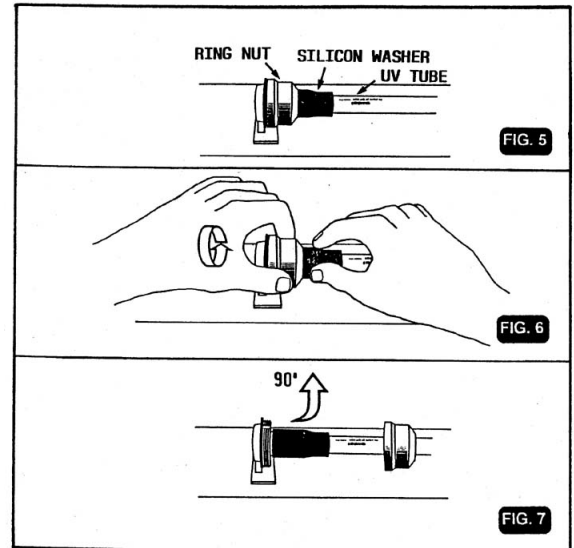
WEAR
PROTECTIVE
GLASSES

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



TROUBLESHOOTING

UV LAMPS

See maintenance section

POWER SUPPLIER

All UV models are supplied with electronic ballasts which guarantee 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 replace the ballast in the event of failure, **ALWAYS** remove power to the unit:

- 1) Unscrew the screws from the control panel then extract it.
- 2) Disconnect the wires placed on the power supply by pressing the blade of a screwdriver on the slot corresponding to each wire, setting them free. Pay attention to the succession of links because each wire will have to be positioned on the same position at the end.
- 3) Unstick the circuit board levering by a screwdriver.
- 4) Replace the ballast with a new one like the original (for exact code see Table 1) and reconnect the wires paying attention to the right succession.
- 5) Mount the cover again, repeating in reverse.

TIMER

If the TIMER fails, it must be replaced. To replace it, **ALWAYS** remove power to the unit:

- 1) Unscrew the screws from the control panel then extract it.
- 2) By a screwdriver, disconnect the wires screwed to the timer. Pay attention to the succession of links because each wire will have to be positioned on the same position at the end.
- 3) Uncouple the timer from the door.
- 4) Replace the timer with a new one like the original (for exact code see Table 1) and reconnect the wires paying attention to the right succession.
- 5) Mount the cover again, repeating in reverse.

TECHNICAL FEATURES

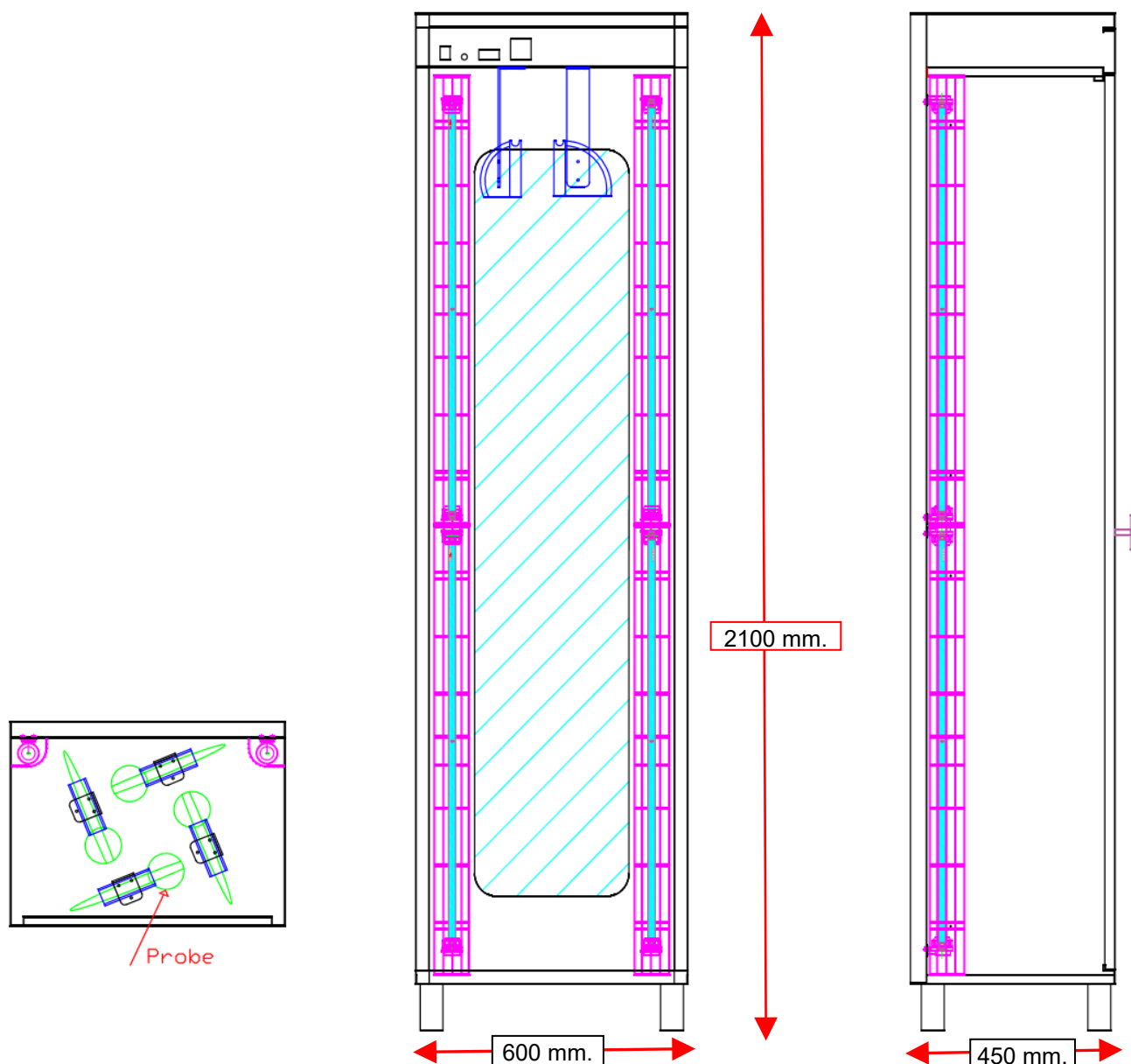


TABLE n.1

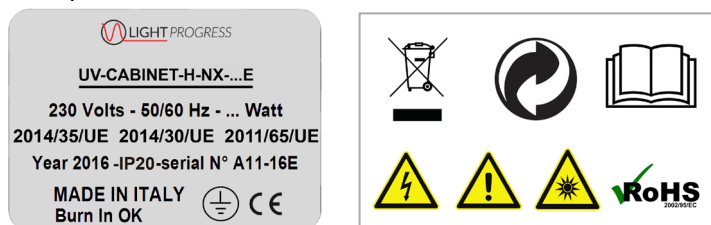
UV-CABINET-H	NX-1/4E
LAMP LIFETIME (hours)*	≤ 18.000
Suggested replacement (replace after max. 2 years).	Remove 1 hour from the total lifetime for every switching-on
TOTAL CONSUMPTION (W)	310
EXTERNAL DIM. AxBxC (mm.)	600 x 450 x 2100
INTERNAL DIM. DxExF (mm.)	590 x 400 x 1840
WEIGHT(Kg.)	60
KNIVES HOUSINGS Nr.	from 11 to 16 (X 3 shelves)
EQUIPMENT	1 door, 4 probes housings
SPARE PARTS	
UV LAMP CODE	n.4 CHS-90WHF
BALLAST CODE	n.4 EB-55P
TIMER SWITCH CODE	TCC-1.0

* Continuous operation

- ◆ Highly efficient selective UV-C lamp (at 253.7 nm.), pure quartz.
- ◆ Body in Stainless Steel AISI 304.
- ◆ All used materials are tested for resistance to intense UV-C rays.
- ◆ Reflector in extremely pure mirror bright aluminium.
- ◆ Doors made of stainless steel AISI 304 with UV resistant polycarbonate window (LEXAN®).
- ◆ Nr 4 UV-C rays resistant hooks to support a probe.
- ◆ Timer for treatment duration programming
- ◆ Timer for pause between two subsequent irradiations.
- ◆ Safety switch on the doors.
- ◆ Powered by specific electronic ballast for ultraviolet UV-C (220-240 V, 50-60 Hz) lamps.
- ◆ 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			
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.

- ◆ 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 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.

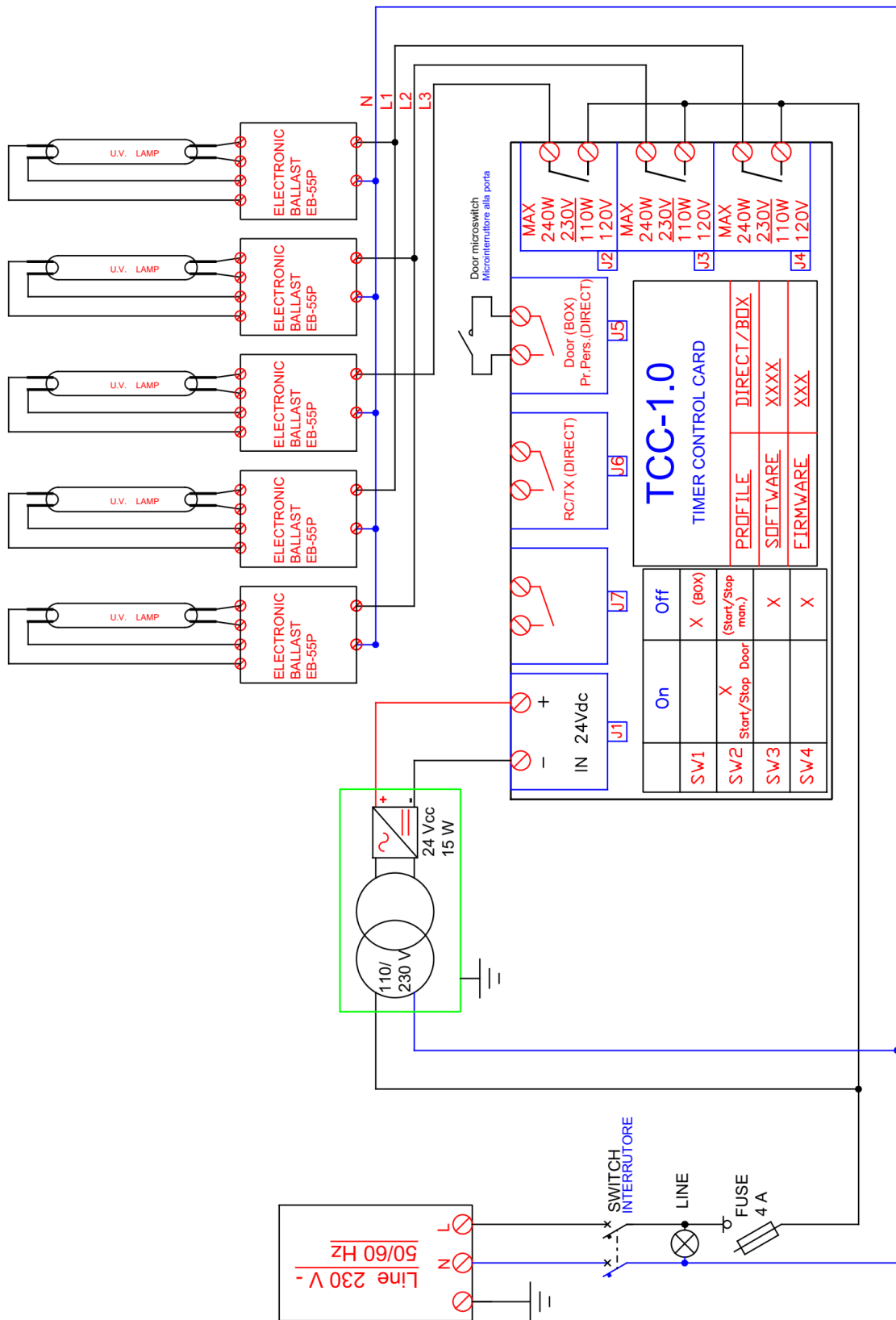
MANUFACTURER RESPONSIBILITY AND COMMITMENTS

✎ **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.

CIRCUIT SCHEME



CIRCUIT SCHEME: UV-CABINET-H-NX...



DECLARATION OF COMPLIANCE

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

UV-CABINET-H-NX-1/4E

- 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, 5.8.2023



Responsible for Standards: Dr. Aldo Santi

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

Notes:

[illegible]

[illegible]



**DISINFECTION
CONTROL SYSTEMS**

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Web: www.uvc-vtm.co.uk