

- EN **UV TREATMENT SYSTEM**
- FR **SYSTÈME DE TRAITEMENT UV**
- ES **SISTEMA DE TRATAMIENTO UV**
- IT **SISTEMA DI TRATTAMENTO UV**
- DE **UV-BEHANDLUNG-SYSTEM**
- PT **SISTEMA DE TRATAMENTO UV**

EN

Heliox UV

PE

Model. 63138 Heliox LP 20EX
 60139 Heliox LP 25EX
 60140 Heliox LP 30EX



- EN **INSTALLATION AND MAINTENANCE MANUAL**
- FR **MANUEL D'INSTALLATION ET D'ENTRETIEN**
- ES **MANUAL DE INSTALACION Y MANTENIMIENTO**
- IT **MANUALE DI INSTALLAZIONE E MANUTENZIONE**
- DE **EINBAU-UND BETRIEBSANLEITUNG**
- PT **MANUAL DE INSTRUÇÕES E MANUTENÇÃO**

ASTRALPOOL



IMPORTANT: The instruction manual you are holding includes essential information on the safety measures to be implemented for installation and start-up. Therefore, the installer as well as the user must read the instructions before beginning installation and start-up. Keep this manual for future reference.



Disposal of waste electrical and electronic domestic systems in the European Union.

All the products marked with this symbol indicates that the product shall not be mixed or disposed with your household waste at their end of use. It is responsibility of the user to eliminate this kind of wastes depositing them in a recycling point adapted for the selective disposal of electrical and electronic wastes. The suitable recycling and treatment of these wastes contributes in essential way to the preservation of the Environment and the health of the users. For further information regarding the points of collection of this type of wastes, please contact to the dealer where you acquired the product or to your municipal authority.

For optimum performance of the HELIOX UV LP Treatment System, we recommend you to follow the instructions given below:

1. CHECK THE CONTENTS OF THE PACK:

You should find the following elements inside the box:

UV reactor.
Flow switch FS-1+ cable (3 m. / 9.8 ft.) ⁽¹⁾.
Control panel.
Lamp power cables LP-045 x *n* (5 m. /16.4 ft.). ⁽¹⁾ (*n*, depending on the number of lamps).
UV control power cable LP-025/M x1 (5 m. /16.4 ft.). ⁽¹⁾
Operation Manual.

⁽¹⁾ Custom cable lengths may be supplied on demand.

2. GENERAL FEATURES:

The germicidal effects of ultraviolet light (UV) with wavelengths around 260 nm are well known for over 100 years. Its use has been increasing in recent years as it presents a number of advantages over chemical disinfection systems, since virtually UV light no alters the physical and chemical composition of water, it is very effective against any type of microorganism (algae , bacteria, viruses, fungi, yeasts, etc.) further minimizing the risks of handling and dosing of potentially hazardous chemicals. Moreover, UV treatment reduces the levels of combined chlorine in water, thereby producing significant water savings by reducing the volume and frequency of renewal of pool water.

The HELIOX UV LP treatment system in addition to maintaining a certain level of chlorine in water, ensure the sanitary quality of pool water. The HELIOX UV LP treatment system will operate when the pool recirculation (pump and filter) is operational.

The HELIOX UV LP treatment systems are designed and manufactured with the latest technology in UV treatment of water, thus ensuring continuous operation and minimal maintenance.

- o Polyethylene UV chamber.
- o Electronic ballast with integrated control (high efficiency + 98%).
- o Operation hour counter.
- o Input for external flow switch.
- o HO low-pressure UV lamps.
- o Lamp lifetime: 13.000 hours (depending on the number of ignitions).

3. CERTIFICATIONS: _____

Certified products:

PE versions:

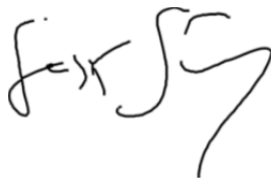
63138 Heliox UV LP 20EX
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- **EC Declaration of Conformity**

The products listed above are in compliance with:

- Low Voltage Directive 2006/95/EC.
- Electromagnetic Compatibility Directive 2004/108/EC.
- ROHS Directive 2011/65/EC.

I.D. ELECTROQUIMICA, S.L.
Pol. Ind. Atalayas, c./ Dracma R-19
E-03114 Alicante
Spain



Gaspar Sánchez
General Manager

IMPORTANT SAFETY INSTRUCTIONS

WARNING: when installing and using electrical equipment, basic safety precautions should always be followed, including the following:

READ AND FOLLOW ALL THE INSTRUCTIONS

A yellow-green wire connector marked \oplus (*) is provided on this unit to connect a minimum No. 8 AWG for US (UL) and a No. 6 AWG for Canada (CSA) solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipe or conduit within 5 feet (1.5 m.) of the unit.

This product must be connected to a circuit protected by a ground fault circuit interrupter.

Do not use this system to a different application for which it was designed.

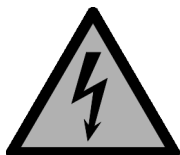
The equipment should be installed and handled by truly qualified people.

Current electrical and accident prevention regulations should be followed.

Under no circumstances will the manufacturer be held responsible for the assembly, installation or start-up, nor any handling or fitting of components unless they are carried out on its premises.



For indoor use only. This unit is not intended for outdoor use.



Prior to the installation or replacement of any system component make sure it has been previously disconnected from the mains, and there is no water flow through it. Use only spare parts supplied by AstralPool.



Never remove the lock nut of the quartz sleeve when the water is recirculating through the UV reactor as it could be expelled and causing damage.



The UV light generated by this equipment can cause serious damage if the eyes or skin are exposed directly to the lamp. Never connect the system when the lamp is out of the reactor.



Do not handle the UV lamp until completely cold.



Always handle the UV lamp with gloves, as fat and other impurities deposited on the surface may reduce its performance and durability. In case you have to clean the lamp surface use a soft cloth soaked with alcohol.

SAVE THE INSTRUCTIONS

4. SYSTEM DESCRIPTION

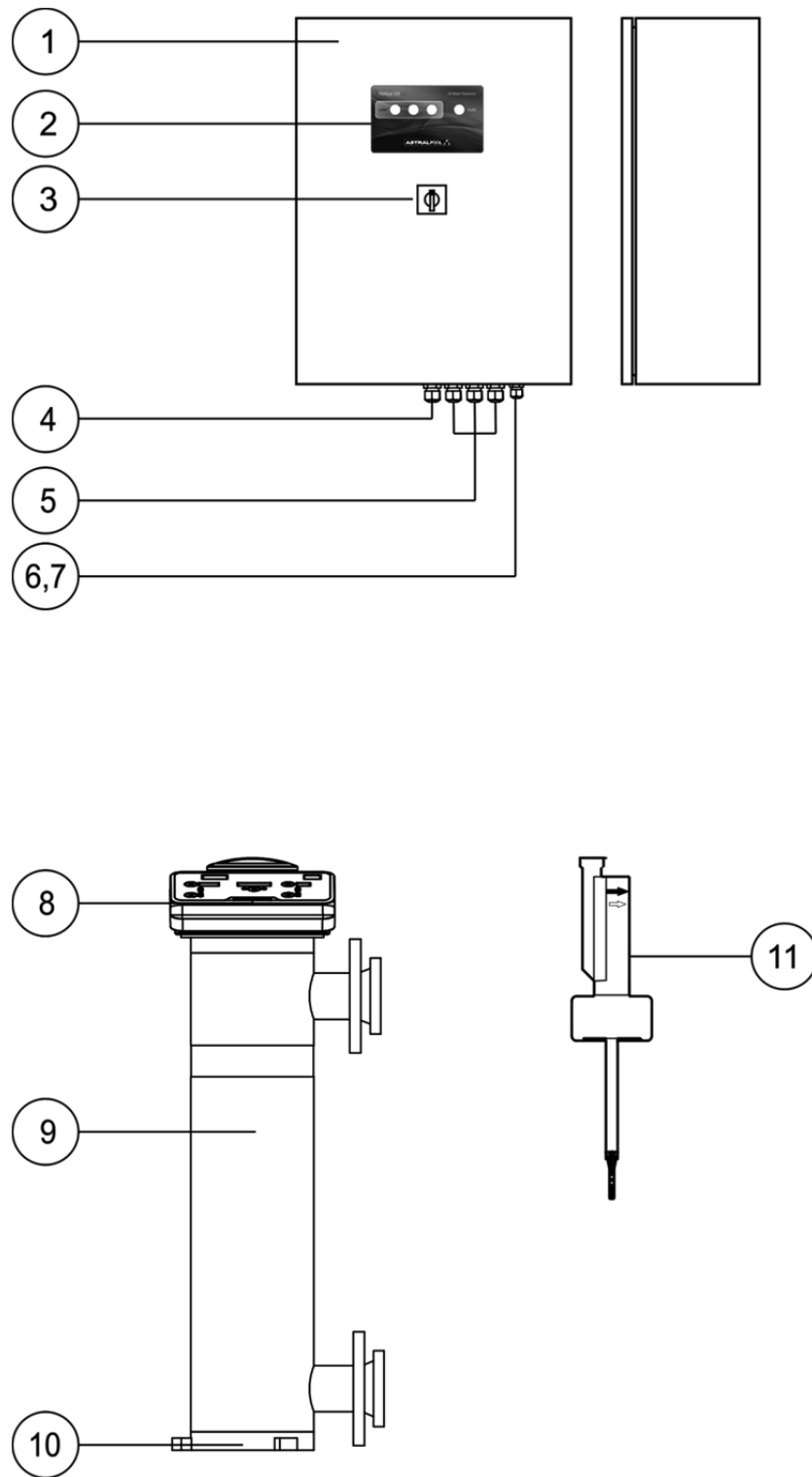


Fig. 1

- | | |
|------------------------------------|-----------------------------|
| 1.- Control panel. | 7.- UV control power cable. |
| 2.- Indicators. | 8.- UV control panel. |
| 3.- Main switch. | 9.- UV chamber. |
| 4.- Power cable input. | 10.- Stand |
| 5.- Outputs for lamp power cables. | 11.- Flow-switch (FS-1). |
| 6.- Flow switch input. | |

5. INSTALLATION:

5.1. General considerations

- In order to guarantee a good state of conservation, the HELIOX UV LP system must be installed in a dry and well ventilated place at the technical room. The protection degree of HELIOX UV LP systems does not allow outdoor installation.
- The temperature at the installation area must be within 36°F (2°C) and 104°F (40°C) and the relative humidity must not exceed 80%.
- Install the unit as far away as possible from any storage of chemical products and sources of moisture.

Warning



Beware of corrosive atmosphere formation due to pH decreasing solutions (specially, those ones based on hydrochloric acid "HCl"). Do not install the HELIOX UV LP system near to any stores of these chemicals. We strongly recommend the use of chemicals based on sodium bisulphate or diluted sulphuric acid.

5.2. Installation of the UV reactor

The reactor of HELIOX UV LP systems must be installed VERTICALLY, as shown in the recommended installation diagram (Fig. 2).

Warning



Observe flow direction indications located on the UV chamber.

The reactor of the HELIOX UV LP systems are made of polyethylene within which are housed the UV lamp(s). The HELIOX UV LP system should always be installed after the filtration system, and before any other device in the installation such as heat pumps, control systems, dosage systems, salt electrolysis systems, etc.

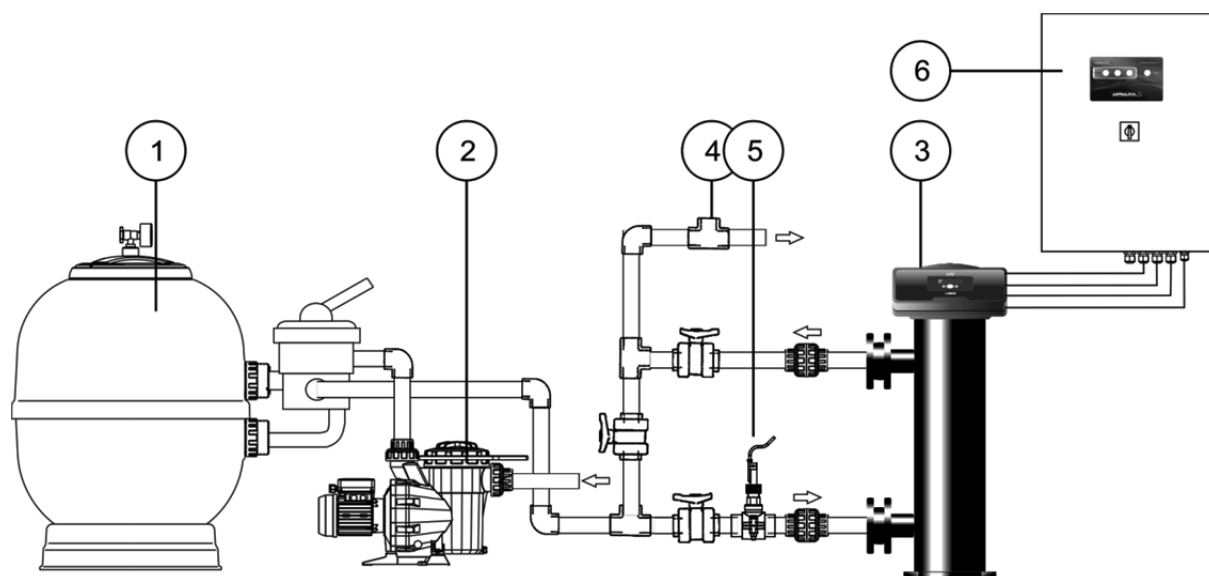
The installation of the UV system should allow easy access to the UV lamp by the user. The location of the HELIOX UV LP system must have an effective dimensions that allow the complete removal of the UV lamp from the sleeve (approximately 1 m above the reactor cover).

It is highly recommended to install the HELIOX UV LP system in a place of the pipe that can be easily isolated from the rest of the installation by two valves, so that the tasks of maintenance can be carried out with no need of partial or total draining of the swimming pool. Where the system is installed on a by-pass (recommended option), a valve to regulate the flow must be introduced.

Warning



Prior to the installation or replacement of any system component make sure it has been previously disconnected from the mains, and there is no water flow through it. Use only spare parts supplied by AstralPool.



Legend

1. Filter.
2. Pump.
3. UV reactor.
4. Other equipment (dosage pumps, controllers, heat exchangers, etc.).
5. Flow-switch.
6. Control panel.

Fig. 2. HELIOX UV LP systems. Recommended installation diagram.

5.3. Installation of the control panel

- Always install the CONTROL PANEL of the HELIOX UV LP system vertically and on a rigid surface (wall), so that the touchscreen located on the front panel is at the level of the eyes.
- Cooling fan and grids (if exist) must not be blocked.

Warning



The equipment should be assembled and handled by truly qualified people.

Current electrical and accident prevention regulations should be followed.

Do not attempt to alter the system to operate at a different voltage.

Both the power of the HELIOX UV LP system control panel and the interconnection of the UV lamps and the sensors must be made at the terminal block at the base inside the control panel. The control panel base has a series of cable glands for the correct fixation of the power cables and sensors. In any case the length or section thereof should be amended, without first consulting an AstralPool authorized technician.

Warning



Use copper conductors only.

Permanently connected.

CONTROL PANEL: FIELD WIRING DIAGRAM

LP 20EX model (63138)

T. block	Control panel input		Cable	Wire description
1	POWER 230 VAC / 50-60 Hz. / 1-phase		(1)	LINE
2				NEUTRAL
PE				GROUND
3	LAMP 1	UV LAMP-1/1	LP-045/1	BLACK "1"
4		UV LAMP-1/2		BLACK "2"
5		UV LAMP-1/3		BLACK "3"
6		UV LAMP-1/4		BLACK "4"
15	FLOW SWITCH INPUT			POTENTIAL-FREE CONTACT
16				
17	UV CONTROL	LINE	LP-025-M	BLACK "1"
18		NEUTRAL		BLACK "2"

LP 25EX model (63139)

T. block	Control panel input		Cable	Wire description
PE	POWER 230 VAC / 50-60 Hz. / 1-phase		(1)	GROUND
1				PHASE
2				NEUTRAL
PE	GROUND			GROUND
3	LAMP 1	UV LAMP-1/1	LP-045/1	BLACK "1"
4		UV LAMP-1/2		BLACK "2"
5		UV LAMP-1/3		BLACK "3"
6		UV LAMP-1/4		BLACK "4"
7	LAMP 2	UV LAMP-2/1	LP-045/2	BLACK "1"
8		UV LAMP-2/2		BLACK "2"
9		UV LAMP-2/3		BLACK "3"
10		UV LAMP-2/4		BLACK "4"
15	FLOW SWITCH INPUT			POTENTIAL-FREE CONTACT
16				
17	UV CONTROL	LINE	LP-025-M	BLACK "1"
18		NEUTRAL		BLACK "2"

LP 30EX model (63140)

T. block	Control panel input		Cable	Wire description
PE	POWER 230 VAC / 50-60 Hz. / 1-phase		(1)	GROUND
1				PHASE
2				NEUTRAL
PE	GROUND			GROUND
3	LAMP 1	UV LAMP-1/1	LP-045/1	BLACK "1"
4		UV LAMP-1/2		BLACK "2"
5		UV LAMP-1/3		BLACK "3"
6		UV LAMP-1/4		BLACK "4"
7	LAMP 2	UV LAMP-2/1	LP-045/2	BLACK "1"
8		UV LAMP-2/2		BLACK "2"
9		UV LAMP-2/3		BLACK "3"
10		UV LAMP-2/4		BLACK "4"
11	LAMP 3	UV LAMP-3/1	LP-045/3	BLACK "1"
12		UV LAMP-3/2		BLACK "2"
13		UV LAMP-3/3		BLACK "3"
14		UV LAMP-3/4		BLACK "4"
15	FLOW SWITCH INPUT			POTENTIAL-FREE CONTACT
16				
17	UV CONTROL	LINE	LP-025-M	BLACK "1"
18		NEUTRAL		BLACK "2"

⁽¹⁾ Minimum recommended wire size

Model	230 VAC / 1-phase
LP 20EX	3 x AWG 18 (3 x 1.0 mm ²)
LP 25EX	
LP 30EX	

5.4. UV lamps connection

Connect the UV lamp(s) installed within the UV reactor to the corresponding terminals on the control panel using the cables supplied with the unit (LP-0XX/n) (**see page 8**). To do this, remove the cover on the top of the UV reactor, and connect the wires to the corresponding terminals:

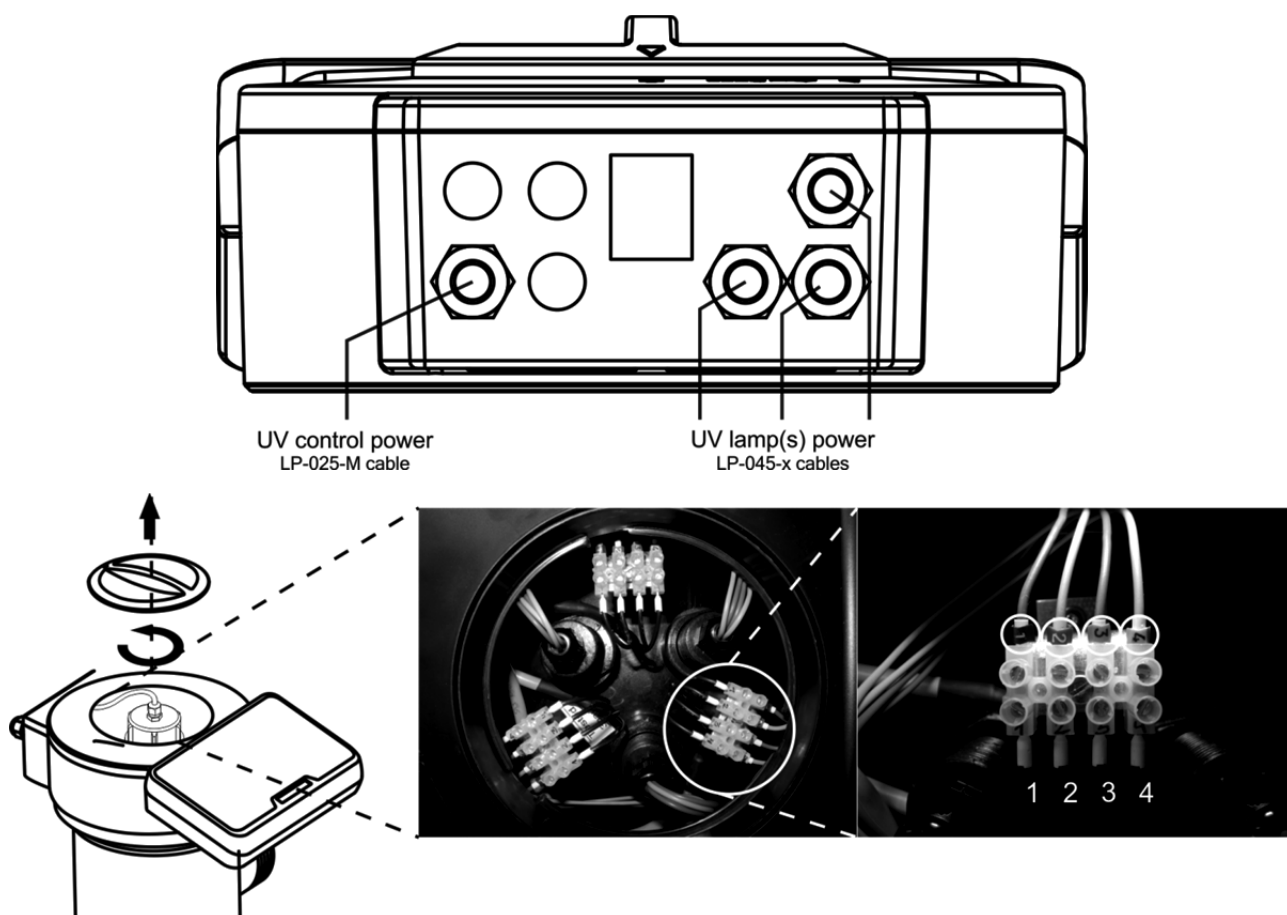


Fig. 3

On LP-045 lamp power cables (black wires labelled "1" to "4", wire number must exactly match the number of the terminal block.

Once the connection is made, close the UV reactor head.

Warning



Prior to the installation or replacement of any system component make sure it has been previously disconnected from the mains, and there is no water flow through it.



Check all the electrical connectors are well tightened to avoid false contacts and their consequent overheating.

5.5. Installation of the external flow detector

1. Vertically install the FS-1 flow detector (flow switch) supplied with the unit using a $\frac{3}{4}$ " male threaded saddle (Fig.4a).
2. There is an arrow on the head of the flow detector. Make sure that this arrow is parallel to the pipe shaft and pointing in the direction that the water flows (Fig. 4b).
3. Do not install the flow detector near magnetic objects. They could affect the operation of the magnetic device it contains and reduce its reliability.

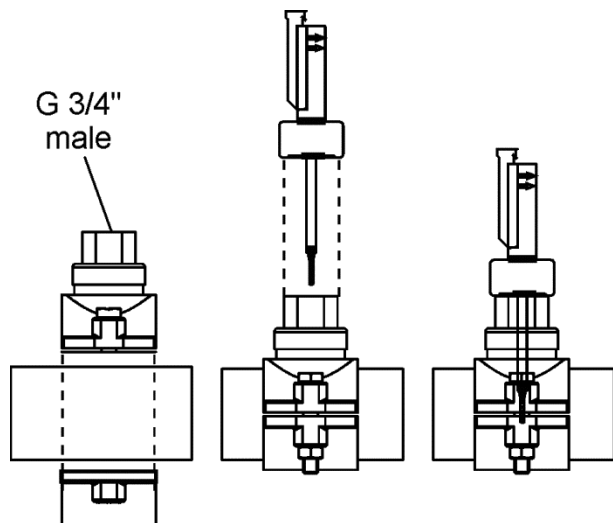


Fig. 4a

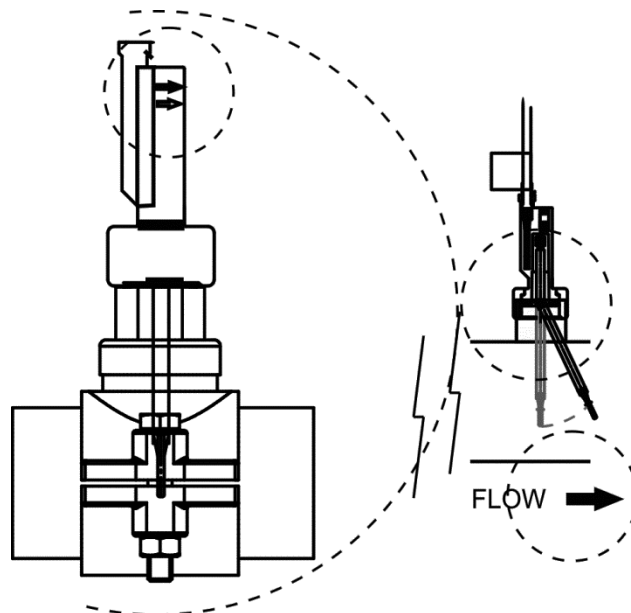


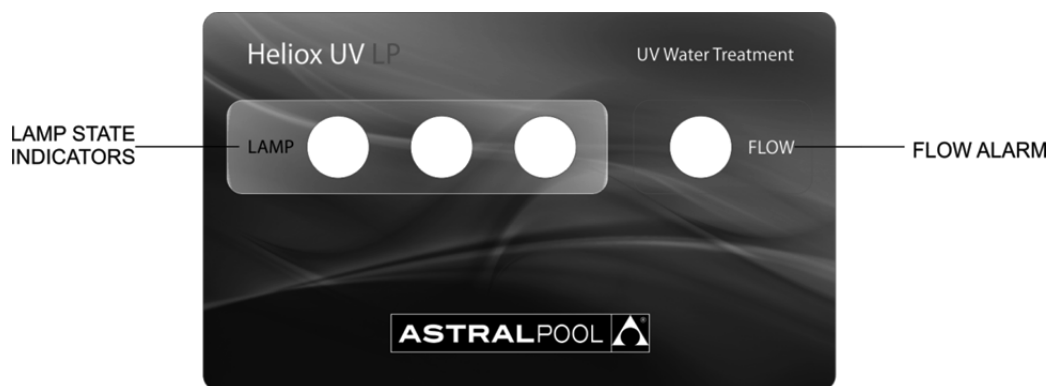
Fig. 4b

Connect the FS-1 flow-switch to the corresponding terminals at the terminal block inside the control box. (see page 8).

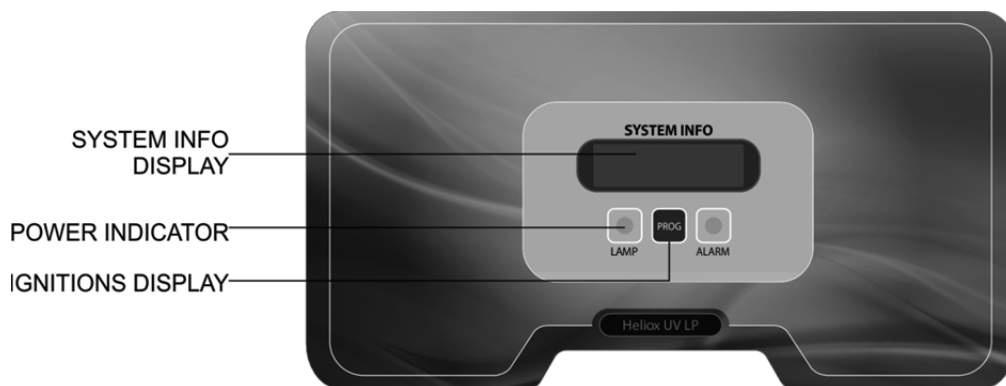
5.6. Controls and indicators

The HELIOX UV LP treatment systems are equipped with a control panel and an information screen which allow full control on the UV lamp(s). Also on the front panel it is the main switch of the system (Fig.1, [2]).

CONTROL PANEL



UV CHAMBER INFORMATION SCREEN



5.7. Start-up

1. Make sure the filter is clean to 100%, and that the pool and the installation does not contain copper, iron and algae.
2. The analytical condition of the water is very important to ensure that the HELIOX UV LP system works with the highest levels of effectiveness. Before starting the system check that the following parameters are within the recommended levels:

- Iron: less than 0.3 mg./l.
- Hardness: less than 120 mg./l.
- Turbidity: less than 1 NTU.
- Manganese: less than 0.05 mg./l.
- TSS: less than 10 mg./l.
- UV Transmittance: higher than 75%.

If the levels of any of these parameters exceed the recommended values is recommended to do a proper pre-treatment to correct them.

3. Balance the pool water. This allows us to obtain a more efficient treatment with a lower concentration of free chlorine in the water, and a longer operating of the lamps in addition to a lower calcium scaling on the quartz sleeve.

a) pH must be in the range 7.2-7.6

b) Alkalinity must be in the range 60-120 ppm.

4. Check that all hydraulic connections are properly assembled and that there are no leaks in any of them.
5. Let recirculate the water at least for a few minutes to evacuate air and any dirt that might be inside the UV reactor.
6. Connect the system using the main switch [3] on the front side of the control panel (Fig. 1).

Warning



Never connect the system when the lamp is out of the reactor.

For units with POLYETHYLENE reactor:



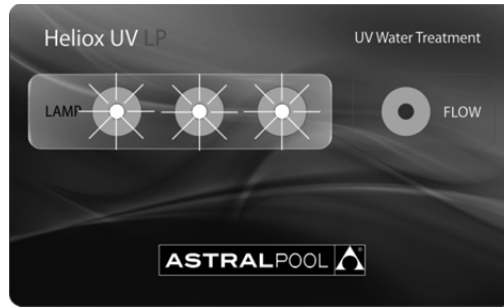
63138 Heliox UV LP P20EX
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63140 Heliox UV LP P30EX

Do not operate the system at flow lower than 7 m³/h (30 gpm).

6. OPERATION:_____

6.1. System start-up

The UV system automatically powers the lamp(s) once it is connected by the switch located on the front side [3] of the control panel of the unit (Fig. 1). After a few seconds, once the system detects that the lamp is ignited, the corresponding led "LAMP" will stay on.



The main screen at the UV chamber will show at all times the number of hours of lamp operation.



Hours of operation

By pressing the "PROG" key, the main screen will show the number of ignitions "ignitions" of the lamp.



6.2. Alarm management

- FLOW

Whenever the installed sensor detects an insufficient or null water flow inside the UV reactor, the system disconnects the UV lamps and the "FLOW" indication of the control panel will stay on.



7. MAINTENANCE:



Prior to the installation or replacement of any system component make sure it has been previously disconnected from the mains, and there is no water flow through it. Use only spare parts supplied by AstralPool.



Do not handle the UV lamp until completely cold.

7.1. Replacement of the UV lamp

Please, see Fig. 5.

FREQUENCY:

- UV lamp must be replaced each time the number of hours of operation established by the manufacturer is reached.
- When COMBINED CHLORINE levels in the pool are abnormally high.

- 1.- Remove the cover located on the top of the UV chamber [1,2].
- 2.- Release the locking nut of the corresponding cable gland and release the locking nut of the lamp [3].
- 3.- Remove the lamp by holding it from the power connector until the ceramic end is visible [4].

Remember



Always handle the UV lamp with gloves, as fat and other impurities deposited on the surface may reduce its performance and durability. In case you have to clean the lamp surface use a soft cloth soaked with alcohol.

- 4.- Holding the lamp with a hand from its ceramic end, carefully remove the power connector [5].
- 6.- Pull out the lamp from the quartz sleeve trying to maintain their verticality so that it does not suffer any torsion [5].
- 7.- Insert the new lamp, always holding it from the ceramic ends, and maintaining its verticality, to about 3/4 of its total length [6].
- 8.- Holding the lamp with a hand from its ceramic end, carefully connect again the power connector [7].
- 9.- Completely enter the lamp into the quartz sleeve [8].
- 10.- Tighten the locking nut of the lamp [8].
- 11.- Reassemble the cover in its original position so that it is properly fixed with its screws [9,10].

Remember



Whenever the lamp is replaced you must reset the hour meter of the system. To do so, connect the system with the main switch [3] keeping pressed the "PROG" key on the control panel until you see the message "RESET" on the main screen at the UV chamber.

RESET

7.2. Cleaning of the quartz sleeve

Please, see Fig. 6.

FREQUENCY:

- You should check at least ONCE A YEAR, the quartz sleeve does not contain any kind of deposit on its surface (lime, iron, manganese, organic matter, etc.).
- In any case, clean the quartz sleeve EACH TIME YOU REPLACE THE LAMP.

To do this, disconnect the system and remove the lamp as described in Section 7.1.

REMOVAL OF THE QUARTZ SLEEVE

- 1.- Follow the procedure described in paragraph 6.1 to remove the lamp from the quartz sleeve [1-5].
- 2.- During the cleaning process of the sleeve make sure that the lamp has been placed in a safe place to avoid that its surface becomes dirty or damaged.

Remember



Always handle the UV lamp with gloves, as fat and other impurities deposited on the surface may reduce its performance and durability. In case you have to clean the lamp surface use a soft cloth soaked with alcohol.

- 3.- Remove the locking nut of the quartz sleeve [6].
- 4.- Completely remove the quartz sleeve trying to maintain their verticality so that it does not suffer any torsion [7].
- 5.- Carefully remove the O-ring from the sleeve.
- 6.- If it appears that the sleeve is completely transparent, place in its housing again as described below.
- 7.- If it is necessary to clean the quartz sleeve, always do it with a soft cloth soaked with vinegar or diluted acid.

ASSEMBLY OF THE QUARTZ SLEEVE

- 8.- Fully insert the quartz sleeve trying to maintain their verticality so that it does not suffer any twisting, until the O-ring reaches its housing [8].
- 9.- Moisten the O-ring and put it back about 10 mm. from the end of the sleeve [9].
- 10.- Place the sleeve locking cap in its housing and carefully, and placing the palm over the cap, press until the sleeve is fully inserted into its housing. In this position, the sleeve will stick out a few millimetres above the O-ring [11].
- 11.- Reassemble the lamp as described in Section 7.1 (Fig.5, steps [7] to [10]).

7.3. Replacing seal in contact with the quartz sleeve

FREQUENCY:

- **Replace the seal in contact with the quartz sleeve EACH TIME YOU REPLACE THE LAMP.**

PROCEDURE:

To replace the seal of the quartz sleeve, proceed according to the procedure described in section 7.2.

7.4. Control of system isolation and connections

FREQUENCY:

- **You need to check the status of all connections, especially the lamp power and the grounding of both the control panel and the UV reactor, EACH TIME YOU REPLACE THE LAMP.**

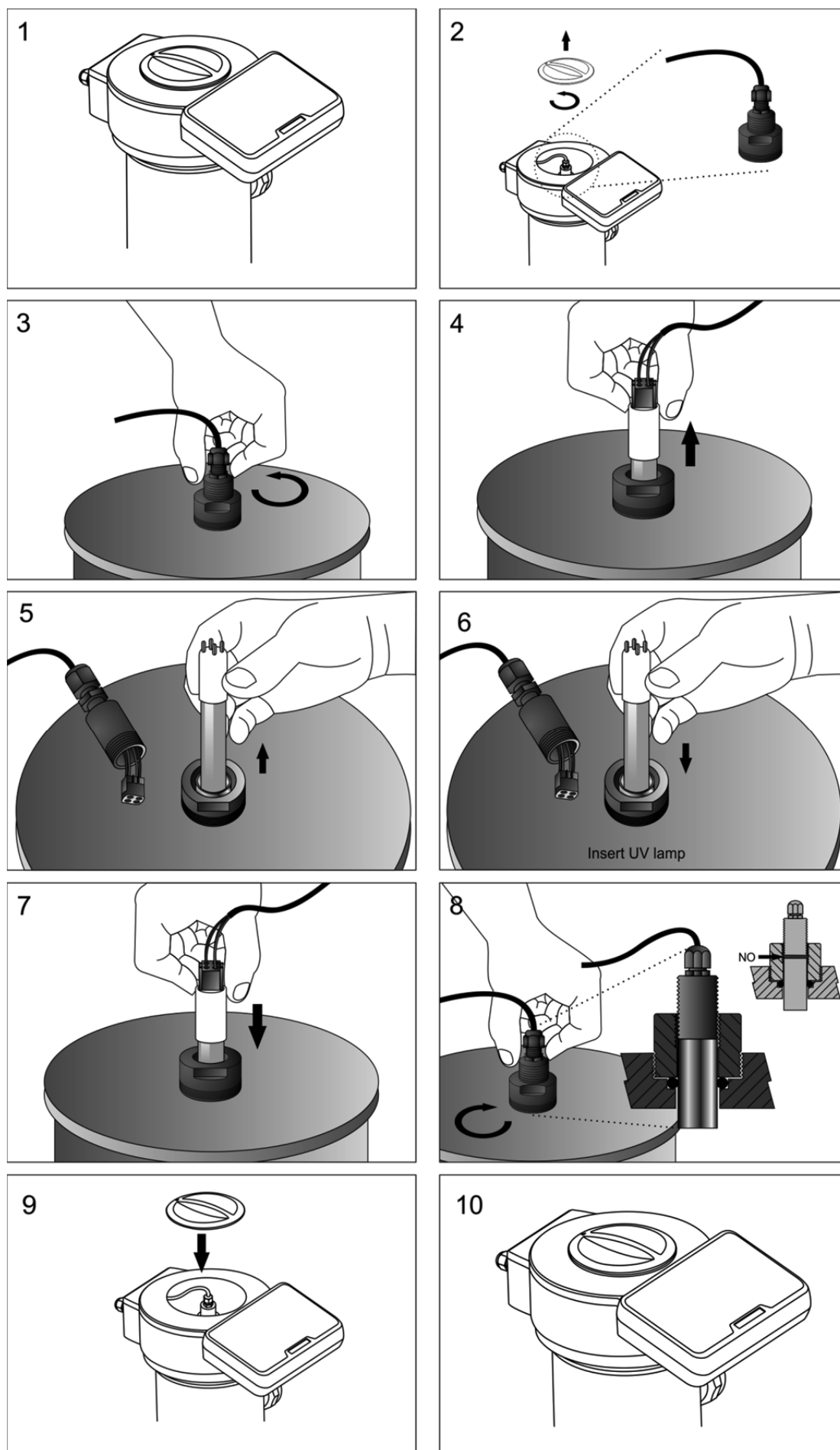


Fig. 5

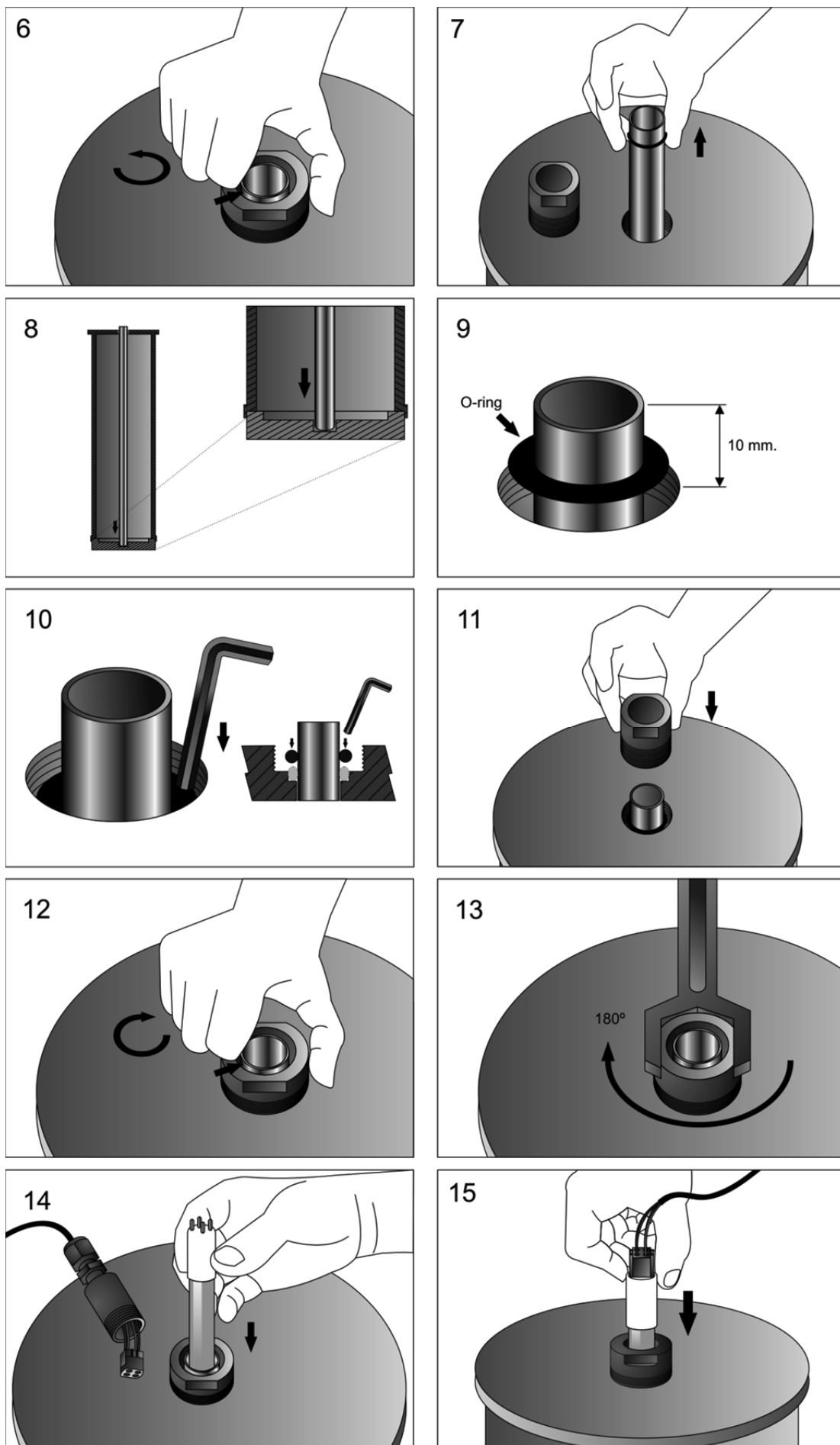
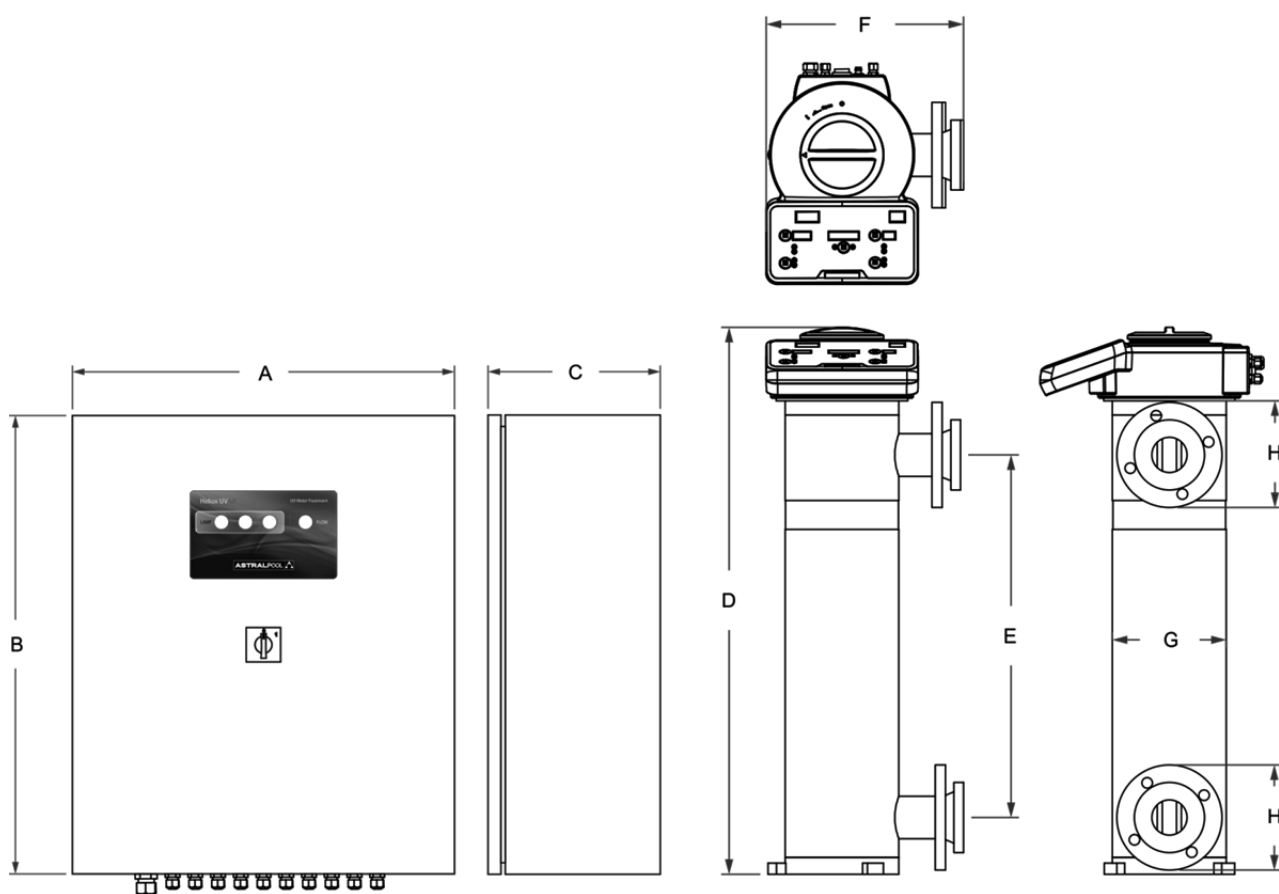


Fig. 6

8. TECHNICAL SPECIFICATIONS:

HELIOX LP - PE

	UV LP P20EX 63138	UV LP P25EX 63139	UV LP P30EX 63140
Flow (@ 35 mJ/cm ²)	52 gpm 12 m ³ /h	88 gpm 20 m ³ /h	136 gpm 30 m ³ /h
Material	Metallic, polyester-epoxy resin coating RAL 7035 / IP-65		
Control panel	POLYETHYLENE		
UV reactor	15.7" x 11.8" x 5.9" 400 x 300 x 150 mm.		
Dimensions	37.8" / 13.7" 961 / 347 mm.		
Control panel	Flange D75		
Max. rated pressure	50 psi / 3.45 bar		
Head loss	0.00 psi @ 52 gpm 0.00 psi @ 12 m ³ /h	0.01 psi @ 88 gpm 0.01 psi @ 20 m ³ /h	0.02 psi @ 136 gpm 0.02 psi @ 30 m ³ /h
Voltage	230 VAC / 50-60 Hz. / 1-phase		
Rated Power (W)	79	152	225
Electronic ballasts	1	2	3
UV-C Power (W)	30	60	90
Lamps	1	2	3
Lifetime (hours)	13,000 hours		
Cooling	Panel: self-cooled Ballast: aluminium heatsink		
Control inputs	One (1) potential-free contacts: flow switch		

Dimensions**LP 20EX ... LP 30EX models**

	A		B		C		D		E		F		G		H
inch / mm	11.8	300	15.7	400	5.9	150	37.8	961	25.1	637	13.7	347	7.9	200	D75

9. WARRANTY CONDITIONS:

9.1. GENERAL ASPECTS

- 9.1.1. According to these provisions, the seller guarantees that the guaranteed product is in perfect condition upon delivery.
- 9.1.2. The Total Warranty Period is 2 YEARS.
- 9.1.3. The Warranty period will be calculated as of delivery to the purchaser.
- 9.1.4. Should the Product be faulty and the seller is notified during the Guarantee Period, he shall repair or replace the Product at his own cost wherever he sees fit, unless this is either impossible or out of proportion.
- 9.1.5. When the Product cannot be repaired or replaced, the buyer may request a proportional price reduction or, if the fault is important enough, rescission of the sales contract.
- 9.1.6. Parts replaced or repaired pursuant to this warranty shall not extend the warranty period of the original Product, although they shall have their own warranty.
- 9.1.7. For this warranty to be effective, the buyer shall accredit the date of acquisition and delivery of the Product.
- 9.1.8. When the buyer alleges a fault in the product over six months after its delivery, he shall accredit the original and existence of the alleged fault.
- 9.1.9. This Warranty Certificate does not limit or prejudice consumer rights pursuant to national legislation.

9.2. SPECIFIC CONDITIONS

- 9.2.1. For this warranty to be effective, the buyer must closely follow the manufacturer's instructions included in the documentation supplied with the product, as applicable to each product range and model.
- 9.2.2. Whenever a schedule is defined for the replacement, maintenance or cleaning of certain product parts or components, the warranty shall only be valid when said schedule has been correctly followed.

9.3. LIMITATIONS

- 9.3.1. This warranty shall only be applicable to sales to consumers, with consumer being defined as a person who purchases the product for other than professional purposes.
- 9.3.2. No warranty is applicable to normal wear or the product, parts, components and/or fungible or consumable materials..
- 9.3.3. The warranty does not cover cases in which the product: (i) has been incorrectly treated; (ii) has been inspected, repaired, maintained or handled by an unauthorised person; (iii) has been repaired or maintained with non-original parts, or (iv) has been incorrectly installed or started up.
- 9.3.4. When a faulty product results from incorrect installation or start-up, this warranty shall only be applicable when the installation or start-up forms part of the product contract of sale and had been performed by the seller or under the seller's responsibility.
- 9.3.5. Damage or faults due to any of the following causes:
 - Lamp failure after 100 hours of verifiable normal operation.
 - Use of explicitly unauthorised chemicals.
 - Quartz sleeve breakage.
 - Operation at operating pressures higher than 50 psi (3.45 bar).
 - Improper operating voltage or element wiring.
 - Exposure to corrosive environments and/or temperatures of less than 2°C (36°F) or more than 40°C (104°F).

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