
UVGERMI®

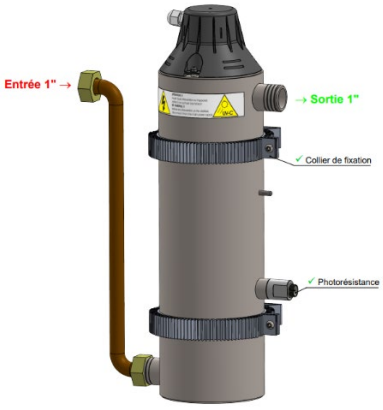
ULTRAVIOLETS DE HAUTE TECHNOLOGIE

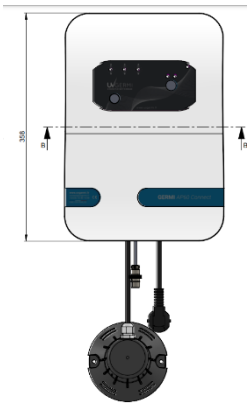
*The specialist in microbiological water treatment using ultraviolet reactors.*

MADE IN France

# UVPLUS W36 / W60 / W95

## COMMISSIONING INSTRUCTIONS AND USE



**MANUFACTURER:** UVGERMI Z.A.C de la Nau 19240 Saint-Viance -- France
**Tel.** 05.55.88.18.88; **Fax:** 05.55.88.18.16; **E-mail:** contact@uvgermi.fr
**www.uvgermi.fr**

# SUMMARY

# I. ULTRAVIOLET TREATMENT

**To guarantee the purification of water, it must be chemically before UV treatment.**

Ultraviolet water treatment is a 100% physical process that mimics the disinfectant effect of sunlight by UV lamps.

Feed water can contain a large quantity of harmless but also pathogenic microorganisms (faecal streptococci, fecal coliforms, legionella, etc.).
For the water to be drinkable, it is necessary to completely remove these bacteria.

The French standard for drinking water at the bacteriological level is as follows:

Escherichia coli: 0 CFU / 100 ml
Enterococcus: 0 CFU / 100 ml
Revivable aerobic bacteria at 22°C < 300 CFU/mL (recommendation)
Revivable aerobic bacteria at 37°C < 100 CFU/mL (recommendation)
Thermotolerant coliforms: 0 CFU / 100 ml
Fecal streptococci: 0 CFU / 100 ml
Anaerobic sulphito-reducing bacteria: 0 CFU / 100 ml

The UV lamp emits light rays with maximum intensity at 253.7 nanometers. At this very precise wavelength, pathogenic and non-pathogenic microorganisms are completely eliminated, thus guaranteeing bacteriologically drinkable water.

UVPLUS can be used to treat borehole water, conveyance water or well water that is contaminated with bacteria.

# II. CONCEPTION

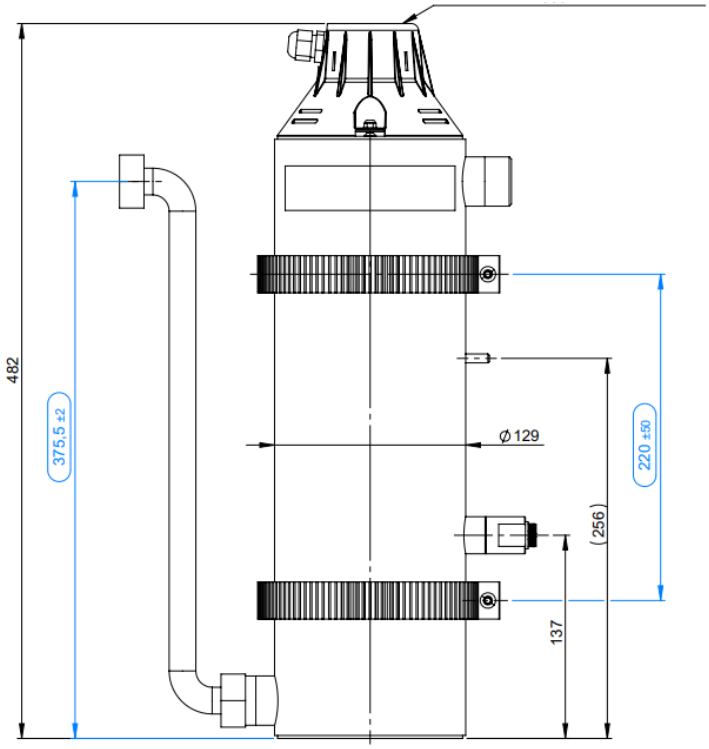
The UVPLUS is a closed cylindrical reactor made of food-grade stainless steel. It is equipped with a low-pressure mercury vapor lamp emitting in the germicidal wavelength of 253.7 nanometers and electrical power from 36 watts to 95 watts.

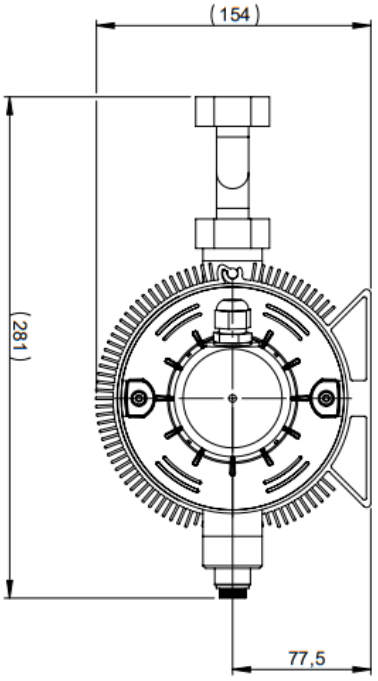
The UV lamp is powered by an electronic ballast box.

It has ACS materials certification under N° 24 ACC LY 232.

## Dimensions UVPLUS W36 and UVPLUS W60

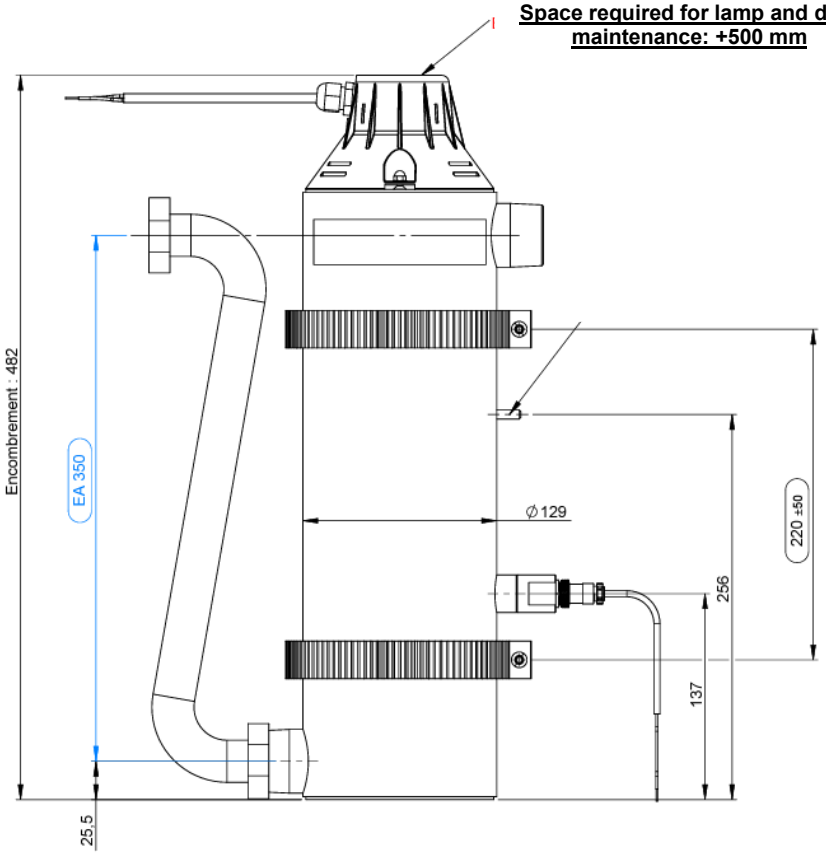
**Space required for lamp and duct maintenance: +500 mm**

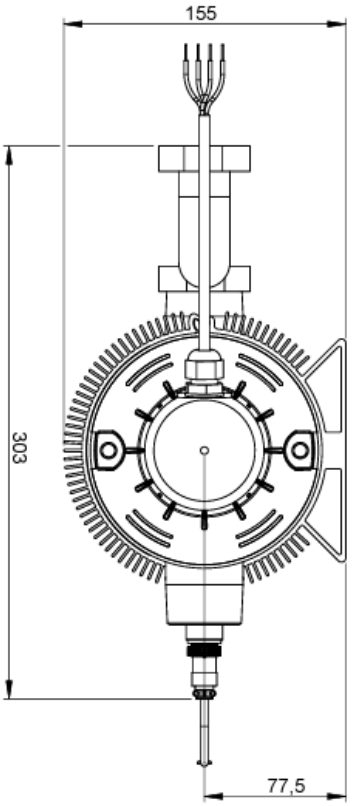



## Dimensions UVPLUS W95

**Space required for lamp and duct maintenance: +500 mm**



In the treatment chamber, the UV lamp is placed in a quartz sheath. This achievement prevents the lamp from cooling down by the passage of water, as its maximum efficiency is at 40°C. The layer of air between the duct and the lamp is sufficient to maintain this temperature: the quartz duct serves as a separation between the lamp and the liquid as electrical and thermal insulation.

The whole system is controlled by an electrical box that ensures the lighting of the lamp, its operation and the counting of operating hours.

This model is equipped as standard with a photoelectric sensor that continuously monitors the intensity of the UV lamp. It triggers an alarm if the UV power is insufficient to ensure water disinfection or if the lamp is defective.

The user is immediately notified that the water is no longer properly disinfected.

It also has two heat sinks that serve as wall mounts for the stainless steel body of the reactor

## III. TECHNICAL DATA

| **Characteristics** | **UVPLUS W36** | **UVPLUS W60** | **UVPLUS W95** |
|---|---|---|---|
| **Maximum flow rate** ($m^3/h$) | 3,2 | 5,9 | 8,8 |
| **Power supply (V) – frequency (Hz)** | 230 / 50-60 | | |
| **Electrical Power (W)** | 36 | 60 | 95 |
| **Germicidal power UVc at 254 nm (W)** | 12 | 18 | 27 |
| **Working pressure (bar)** | 6 | | |
| **Water inlet – outlet connection** | 1" Male Gas | | 1"1/4 gas male |
| **Input – output connection if copper rod option** | 1" gas - Female inlet / Male outlet | | 1.1/4" gas - Female inlet / Male outlet |
| **Lamp Type** | 1 x 36 W lamp | 1 x 60 W lamp | 1 x 95 W lamp |
| **UV emitter** | Low-pressure mercury vapor | | |
| **Lamp life (hours)** | 9 000 | | |
| **Vessel Material** | Food-grade stainless steel 316 L | | |
| **Reactor dimensions (H x W x D in mm)** | 482 x 281 x 154 | | |
| **Enclosure dimensions (H x W x D in mm)** | 358 x 248 x 120 | | |
| **IP rating** | IP31 | | |

## IV. DOSE UV

The recommended dose for the treatment of drinking water is at least 40 mJ/cm2 at any point in the treatment chamber.

**UVPLUS W36**

| Permeability (%) of a 10 mm water sheet | Flow rate (m3/h) to 25 mJ/cm² | Flow rate (m3/h) to 30 mJ/cm² | Flow rate (m3/h) to 40 mJ/cm² |
|---|---|---|---|
| 98 | 4.1 | 3.2 | 2.5 |
| 95 | 3.4 | 2.8 | 2.1 |
| 90 | 2.9 | 2.4 | 1.7 |

**UVPLUS W60**

| Permeability (%) of a 10 mm water sheet | Flow rate (m3/h) to 25 mJ/cm² | Flow rate (m3/h) to 30 mJ/cm² | Flow rate (m3/h) to 40 mJ/cm² |
|---|---|---|---|
| 98 | 7.1 | 5.9 | 4.3 |
| 95 | 6.6 | 5.3 | 4.0 |
| 90 | 5.8 | 4.8 | 3.6 |

**UVPLUS W95**

| Permeability (%) of a 10 mm water sheet | Flow rate (m3/h) to 25 mJ/cm² | Flow rate (m3/h) to 30 mJ/cm² | Flow rate (m3/h) to 40 mJ/cm² |
|---|---|---|---|
| 98 | 12.1 | 10.1 | 7.6 |
| 95 | 11.2 | 9.3 | 7 |
| 90 | 9.7 | 6.2 | 6.1 |

## V. INSTALLATION

The UVPLUS is installed on the main water supply pipe. It comes with two fixing clamps to hang it on the wall. These collars, made of anodized aluminum, also help to dissipate the heat generated by the UV lamp.

The UVPLUS can be positioned horizontally or vertically. The water inlet must be from the lower part of the reactor (with or without the copper rod). The UVPLUS can be installed with both the left and right inlets. The inlet and outlet connections are in 1" (26/34). The use of the copper rod (optional) on the reactor inlet allows the Inlet/Outlet to be aligned.

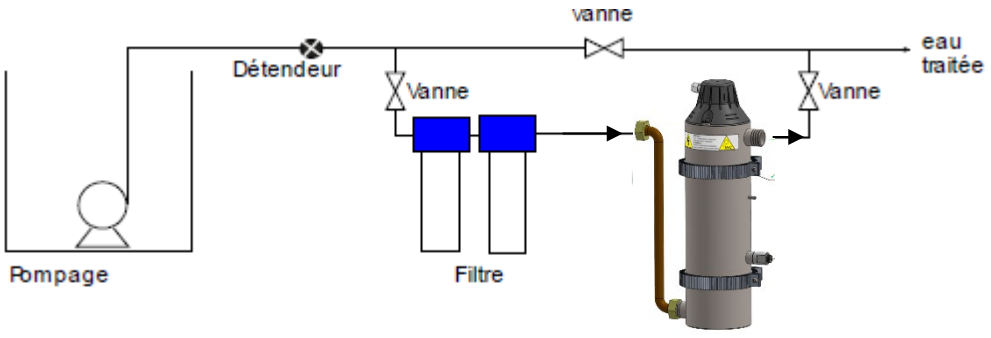
It is necessary to leave space above (or to the side) of the UVPLUS (550 mm minimum) or to provide for the easy dismantling of the device, in order to change the UV lamp and clean the quartz sheath.

The operating pressure is 6 bar. It is recommended to install a regulator upstream of the device if the pressure of the network is higher.

It must be protected from frost, excessive heat and humidity. It should not be installed outdoors, in a damp room, or near splashing water.

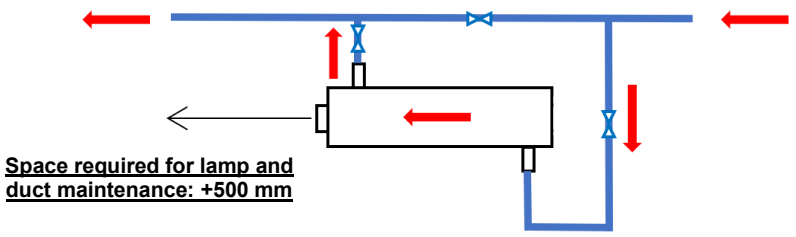
Installation diagram:

*Vertical Installation (Recommended):*

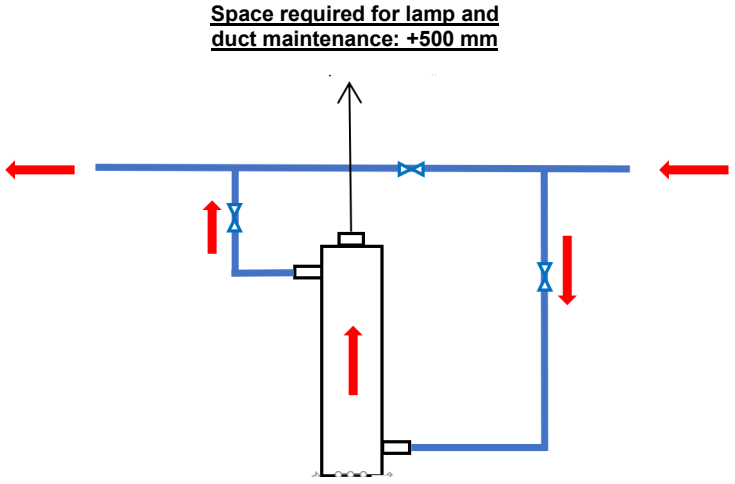



**It is imperative to always position the water inlet on the lowest tap of the reactor => filling by low point, outlet by high point, to evacuate air accumulations**

*Horizontal installation:*



*Vertical installation without copper rod:*




**It is imperative to always position the water inlet on the lowest tap of the reactor => filling by low point, outlet by high point, to evacuate air accumulations**

Shock disinfection:

To ensure maximum effectiveness of the ultraviolet treatment, we recommend that you perform a shock disinfection of your pipes after the installation of the device.

**During this operation, the UVPLUS must be switched off.**

Depending on the configuration of your installation, perform one or the other of these shock disinfections.

- Disinfection directly in the well or borehole:
  - Pour between 250 ml and 500 ml of bleach (9.6%) per m3 of water into the well or borehole.
  - Leave to remain in this way for 8 to 12 hours.
  - Circulate the water in all the pipes of the house until the smell of bleach disappears completely.
  - Do not consume water
  - Commissioning UVPLUS

- Disinfection of pipes, if a filter is present before the UV reactor
  - Remove the cartridge from the filter.
  - Fill the bowl 2 to 3 times with a bleach solution (9.6%) diluted by half.
  - Circulate the water through the pipes until the smell of bleach disappears completely.
  - Do not consume water
  - Reassemble the filter cartridge
  - Commissioning UVPLUS

We recommend that you renew the shock disinfection of the pipes about once a year.

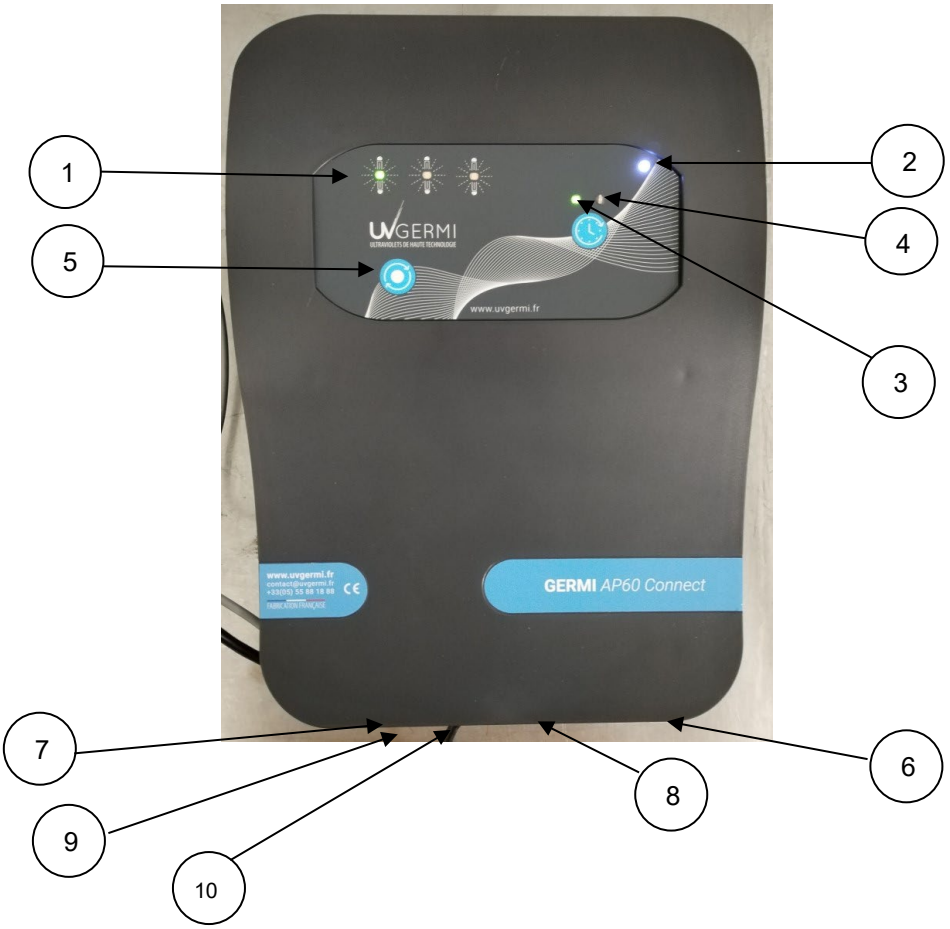
## VI. ELECTRICAL CONNECTION

First, the ground wire of the box must be connected to the earth stud of the reactor.

The electrical connection of the box is via a 3-pin socket with a ground. Before plugging in the appliance, make sure that the current matches the voltage of the appliance, 230 volts, 50 Hz or 60 Hz. Your electrical installation must be protected according to the NF C 15 -100 standard.

## VII. OPERATION

***The Electrical Box:***




① UV lamp operating light (Green/Red)
② Power on LED (White)
③ Sensor Runtime/Fault LED (Green/Red)
④ Sensor Runtime/Fault LED (Orange)
⑤ Run Time Reset Button
⑥ Physical Device On/Off Switch
⑦ Lamp Cable
⑧ Power Cable
⑨ Ground wire
⑩ Luminosity sensor cable

***Usage:***

Before turning on the device, make sure that it is perfectly installed (no leaks in the pipes) and that the UV lamp and light sensor are properly connected.

The lamp is delivered unassembled in the reactor. At the first use, remember to put it in the stainless steel body. Cf: IX. UV lamp maintenance.

Allow the water to circulate in the reactor for 5 minutes before inserting the lamp into the stainless steel body. Check that there is no water in the quartz sheath before putting the lamp in the body. Check that the light sensor is connected correctly.

Plug in the device. The power indicator light illuminates (2).
Activate the "On/Off" switch (6) to "On". The lamp operating light (1) flashes green. After a few seconds, it stays on green.

The run time light (3) will stay on green as long as the unit has an run time of less than 8,000 hours. The LED (4) remains off.
After 8,000 hours and up to 9,000 hours, the light (3) will turn off and the light (4) will illuminate orange.
After 9,000 hours, the light (4) will turn off, the light (3) will illuminate red, and the audible alarm will be triggered.

The LEDs (3) and (4) are flashing red and orange respectively and the audible alarm goes off when there is a UV sensor fault.

It is necessary to leave the UVPLUS always on, even if there is no water consumption. It is normal for your water to be hot when you have not drawn water for several hours.

It is the responsibility of the installer to make the necessary arrangements to avoid any risk of burns to users.

Frequent "Off/On" (>5/24 H) or operation without water inside the treatment chamber is prohibited as it decreases the life of the UV lamp.

UVPLUS must operate with water temperatures between 5 °C and beyond, there is a risk of damage to the equipment.60 °C

***Using the Connectivity App***.

The operation of the UVPLUS W60 reactor can be monitored via the "UvGermi" app, available in the Apple Store and Google Play Store.

To link your device to your account, please follow the instructions in the app.

To be able to use the application, you must first connect your reactor to your box via wifi.

Please note: the wifi connection is only open for metropolitan France. If your installation is located elsewhere, please inform us, we will do what is necessary to open the rights to you.

These operations are doable from a laptop/tablet or smartphone.
If your Wifi is secured with a firewall, refer to page 13 before connecting to the wifi.

On some smartphones, it is necessary to disable mobile data for the following operations:

***Connected reactor connection:***

1) Select the wifi of the electronic board
The password will be: uVgermi#abcd - (abcd: 4-character code that appears on the rating label, see example below)

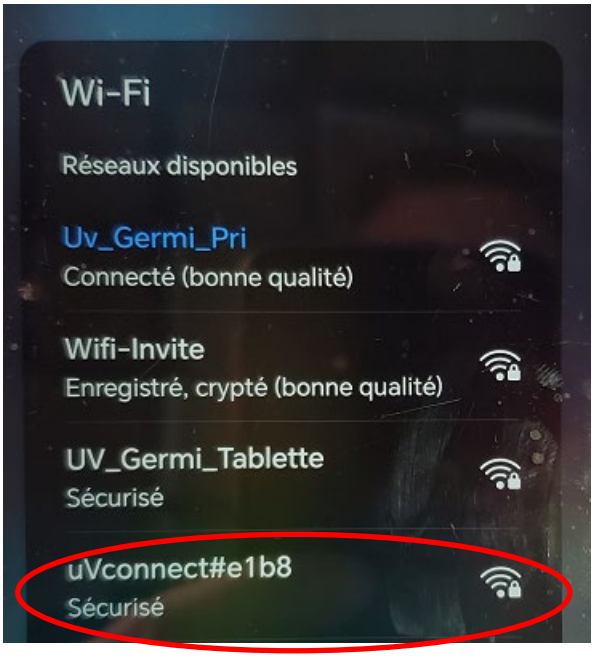
UVGERMI
- ZAC de la NAU -
19240 SAINT VIANCE
FRANCE

technical documentation

| | | |
|---|---|---|
| MODEL (modèle) | : | 23000261FULL |
| SERIAL NUMBER (numéro de série) | : | 6126480901317 |
| ELECTRICAL DIAGRAM (n° schéma électrique) | : | proto |
| HYDRAULIC DRAWING (n° de plan hydraulique) | : | 23000261_Aa |
| MANUFAC. DATE (date de fabrication) | : | 2024-09-03 |
| CODE | : | e108 |

| | | | |
|---|---|---|---|
| POWER (kW) (puissance) | 0.06 | SERVICE PRESSURE (Bar) (pression de service) | 6 |
| VOLTAGE (VAC) (tension) | 230 | FREQUENCY (Hz) (fréquence) | 50-60 |
| CURRENT (A) (courant) | 0.3 | FLOW (m3/h) (débit) | 3.9-7.3 |

READ THE INSTRUCTIONS CAREFULLY BEFORE USE
(veuillez lire la notice d'utilisation avant la mise en service)
MADE IN FRANCE
(fabriqué en france



2) Automatic opening of the http://www.msftconnecttest.com/ or http://192.168.4.1 web page (depending on the search engine, this may take 30 seconds).


3) Click on Wifi


Enter the SSID (in the drop-down list or in manual entry) and password of your box and click on "Submit". It's over!!

If your WiFi is not present in the drop-down list, it is because this network was not present at startup, you must turn off and turn the power back on to your device in order to redo the WiFi scan. This can take about thirty seconds.

**Installation on systems with a firewall that filters the network in and out.**

On the input stream: Not known to date.

On the output stream: Allow these streams:

| | |
|---|---|
| DNS : | Port TCP 53 |
| HTTP : | Port TCP 80 |
| HTTPS : | Port TCP 443 |
| Specific to your equipment: | Port TCP 8883 |

## VIII. SAFETY INSTRUCTIONS

**Do not expose your eyes or skin directly to the UV lamp from UVPLUS**

Always turn off the lamp during various maintenance operations. If you must check it, wear a visor, gloves and covering clothing.

UVPLUS should only be used for the purpose for which it is intended. It must not be used to treat flows higher than the maximum recommended flow rates.

Safety and operation are only guaranteed when installed in accordance with the recommendations described in this manual.

The treated water must not be coloured or loaded with suspended solids, filtration may be necessary. It is advisable to perform a UV transmittance measurement at 254 nm to ensure that it is greater than 90%.
The water must be chemically and physically drinkable prior to UV treatment.

## IX. MAINTENANCE

Maintenance is limited to changing the UV lamp, cleaning the quartz sheath and the UV photosensor window.

**In order to facilitate maintenance, tutorials are available at the following link www.youtube.com/@uvgermitutoriels4003 or by scanning the QR code below.**

**The "On/Off" switch must be set to "Off" before performing maintenance work.**
**We recommend unplugging the UV device**

### UV lamp

The UV lamp has a limited lifespan of 9,000 hours, beyond which water treatment is no longer provided.

Lamp change:

- Mandatory every 9,000 hours: the light (3) lights up red and the audible alarm goes off.
- When it no longer works: switch in the "On" position and light (1) in red.
- The quartz sheath protecting the lamp makes it much easier to change the lamp: the UVPLUS does not have to be drained or dismantled.
- Turn the switch on, only the light (2) stays on.
- Unplug the UVPLUS.
- Unscrew the 2 Acorn Nuts N°5 (see diagram on the next page).
- Pull the black cover N°7 upwards, paying particular attention to the UV lamp coming out of the treatment chamber.
- Disconnect the No. 15 lamp from the No. 20 connector that is fixed in the black cover N° 7.
- Connect the new lamp.
- Reposition the black cover No. 7 and lamp No. 15 in the treatment chamber.
- Screw back on the two Acorn Nuts No. 5.
- Plug the device back in, the white light (2) will illuminate.
- Turn the switch (6) on, the green light (1) will flash before remaining solid green. The audible alarm and the red light (3) remain in operation.
- Press and hold the Reset button for 5 seconds, the buzzer sounds 2 times briefly.
- The light (3) will turn green.

When replacing the lamp, be careful not to put your fingers on the glass. Cleaning the lamp with alcohol will remove any fingerprints.

**Note**: Just like fluorescent tubes, a defective UV lamp must be disposed of in accordance with national regulations (return to the manufacturer or waste disposal centre). It should not be disposed of at the same time as domestic or industrial waste (the lamp contains mercury particles).

### Quartz sheath

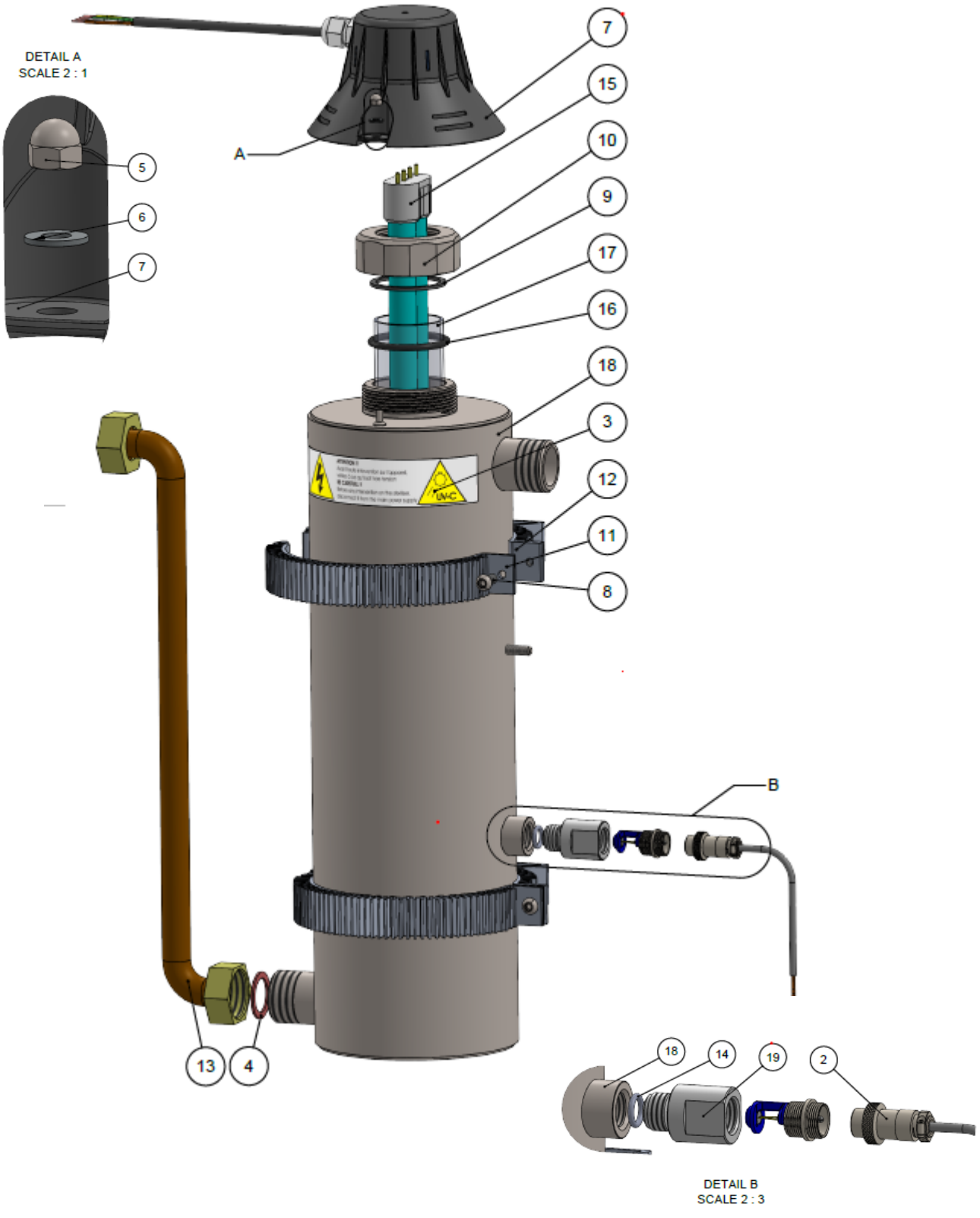
When the quartz sheath protecting the lamp is dirty, water treatment is reduced.
It is necessary to disassemble and clean the quartz sheath at least once a year.

This cleaning is carried out using a dilute acid solution (hydrochloric acid, phosphoric acid, vinegar, etc.).

It is necessary to cut off the water supply and depressurize the pipes to clean the quartz cladding.

- Turn the switch on, only the light (2) stays on.
- Unplug the UVPLUS.
- Close the valve upstream of the UVPLUS.
- Depressurize the pipe by opening a tap.
- Close the downstream valve of the UVPLUS.
- Unscrew the 2 Acorn Nuts N°5 (see diagram on the next page).
- Pull the black cover N°7 upwards, paying particular attention to the UV lamp coming out of the treatment chamber. To secure the lamp.
- Unscrew sealing piece No. 10.
- Remove the No. 16 gasket and replace it with a new one.
- Take out the N°17 quartz sheath.
- Clean the outside of the quartz sheath with a dilute acid solution.
- Reassemble the quartz sheath in the treatment chamber, checking that there is no moisture inside.
- Reposition the new O-ring No. 16 on the top of the duct.
- Reposition sealing piece No. 10 and screw it back on.
- Refill the appliance with water by opening the two isolation valves.
- Check that there is no leak in the duct.
- Reposition lamp No. 15 and black cover No. 7 in the treatment chamber.
- Screw back on the two Acorn Nuts No. 5.
- Turn the switch (6) on, the green light (1) will flash before remaining solid green.
- The LED (3) is lit green.

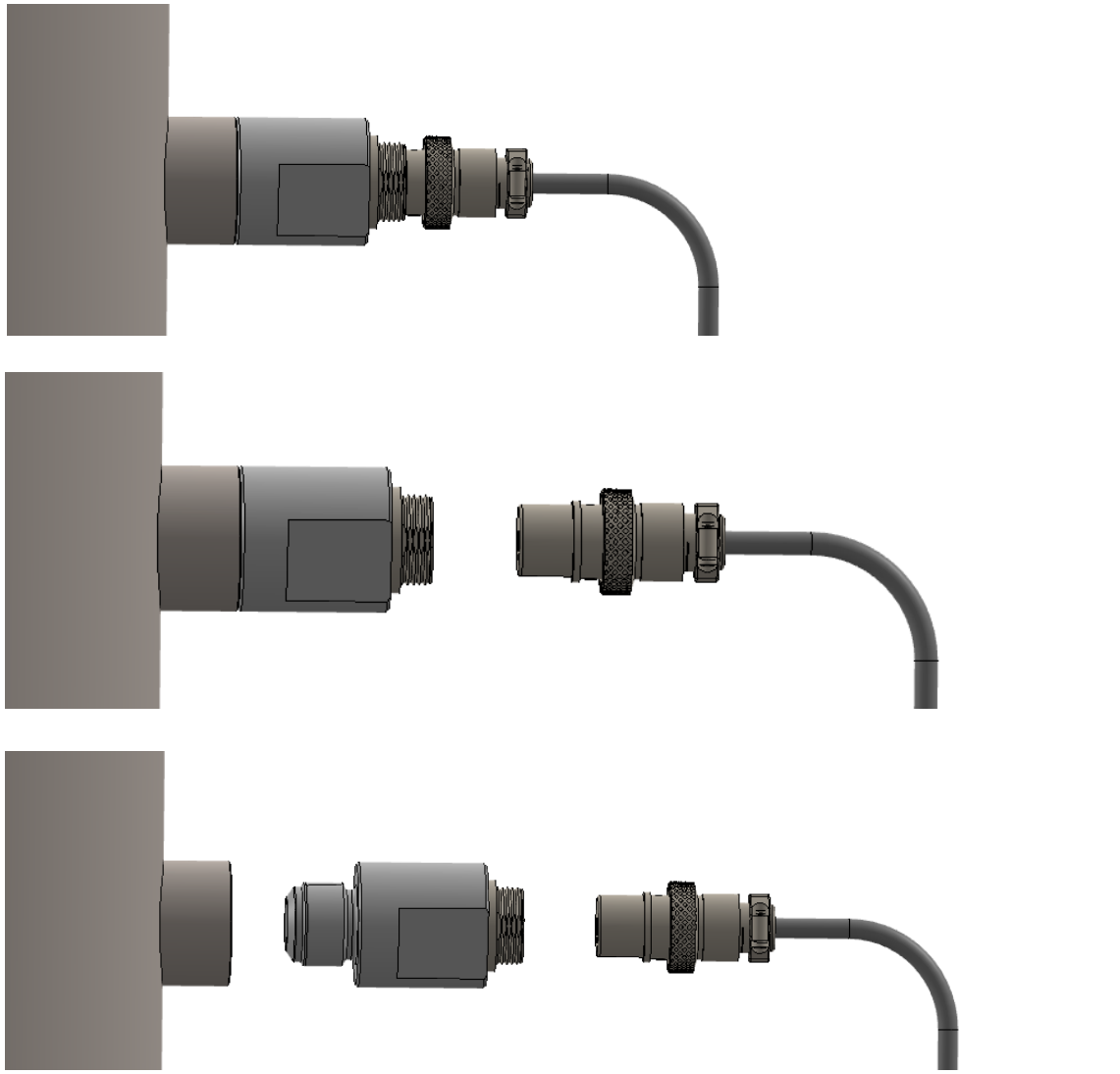
# UVPLUS exploded view

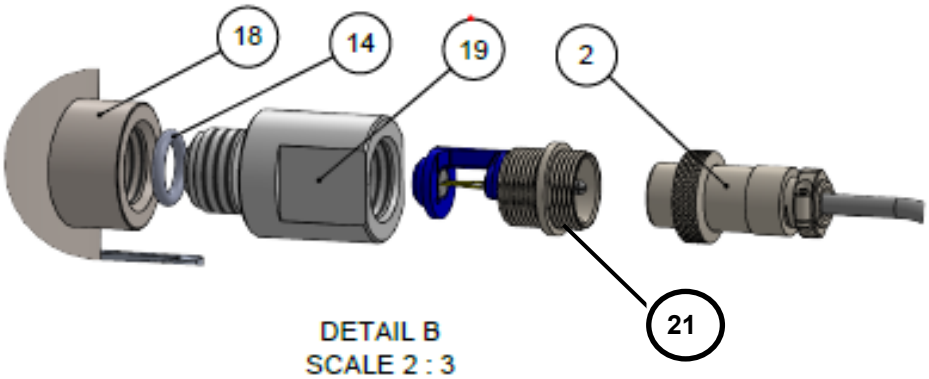


## UV Photosensor

When cleaning the quartz sheath, disassemble the PTFE body No. 19 from the UV photodiode sensor to clean the window and check the gasket No. 14. During this operation, it is necessary to put a container under the UV reactor because the stainless steel body must be emptied.

**Disassembling the UV Photosensor**






DETAIL B
SCALE 2 : 3

## X. REPAIR OF MALFUNCTIONS

**The "On/Off" switch must be turned to "Off" before performing the repair work**

| FAILURES | CAUSE POSSIBLE | MEASURE |
|---|---|---|
| The power indicator light (2) is off. | 1- The outlet is connected to a wall outlet that is not connected to the network.<br>2- The fuse is blown. | 1- Check your power supply.<br>2- Change the fuse on the electronic board. |
| The UV lamp does not turn on, the indicator light (1) is off. | 1- Verify that the physical switch (6) is OFF.<br>2- The device was turned off remotely. | 1- Flip the physical switch.<br>2- Log in to your account and turn on the device. |
| The UV lamp does not turn on, the indicator light (1) is on red. LEDs (3) and (4) are flashing red and orange. The alarm sounds. | 1- The lamp is poorly connected<br>2- The lamp is worn or defective<br>3- The electronic ballast is defective | 1- Check the lamp connector connection (15).<br>2- Replace the lamp.<br>3- Contact the after-sales service or your installer. |
| The lamp turns on, the indicator light (1) is on green. LEDs (3) and (4) are flashing red and orange. The alarm sounds. | 1- The intensity sensor (21) is defective.<br>2- The protective window of the N°19 sensor is dirty and/or the N°17 quartz sheath is dirty. | 1- Changing the sensor (21).<br>2- Clean the window and/or quartz sheath with alcohol or dilute acid. |
| The LED (3) is off and the LED (4) is on solid orange. | The lamp life is between 8,000 and 9,000 hours. | Plan to change the lamp. |
| The LED (3) is solid red and the LED (4) is off. The alarm sounds. | The lamp life is more than 9,000 hours. | Change the lamp and reset the counter. Press and hold the Reset button for 5 seconds, the buzzer sounds 2 times briefly. The light (3) turns green See page 14. |

## XI. SPARE PARTS LIST

| CODE | DESIGNATION | No. | Quantity | | |
|---|---|---|---|---|---|
| | | | W36 | W60 | W95 |
| 24000102 | Cover for PLL lamp | 7 | 1 | 1 | 1 |
| 20000434 | M4 terminal Nut | 5 | 2 | 2 | 2 |
| 21000504 | 36W PLL Lamp | 15 | 1 | | |
| 14000453 | 60W PLL Lamp | 15 | | 1 | |
| 18000184 | 95W PLL Lamp | 15 | | | 1 |
| 14000290 | O-ring 44x4 mm black ACS | 16 | 1 | 1 | 1 |
| 21000496 | Flat gasket 48x41x2 NBR | 9 | 1 | 1 | 1 |
| 14000053 | Quartz sleeve - diameter 44 - length 425 | 17 | 1 | 1 | 1 |
| 24000101 | PTFE photosensor body | 19 | 1 | 1 | 1 |
| 22000356 | O-ring 10x2.5 mm NBR / ACS | 14 | 1 | 1 | 1 |
| 24000224 | Mounted photo sensor assembly | 21 | 1 | 1 | 1 |
| 23000263 | Stainless steel treatment chamber W36/W60 | 3 | 1 | 1 | |
| 24000391 | W95 stainless steel treatment chamber | 3 | | | 1 |
| 17000391 | Electronic Ballast 1X55-95W 800MA PH | | 1 | 1 | 1 |
| 24000511 | 2 A fuse | | 1 | 1 | 1 |
| 20000306 | Blue On/Off Switch | | 1 | 1 | 1 |
| 23000242 | Connected control board 1 ballast | | 1 | 1 | 1 |
| 23000296 | 5VDC axial fan | | 1 | 1 | 1 |
| 23000309 | Fan grille | | 1 | 1 | 1 |
| 24000384 | UVPLUS W36 Complete Electrical Box | | 1 | | |
| 24000257 | UVPLUS W60 Complete Electrical Box | | | 1 | |
| 24000355 | UVPLUS W95 Complete Electrical Box | | | | 1 |
| 23000076 | Lexan with 6 built-in LEDs and 1 button | | 1 | 1 | 1 |
| 24000364 | UVPLUS lamp cable kit W36/60/95 | | 1 | 1 | 1 |

## XII. DECLARATIONS OF CONFORMITY AND ACS

**ACS Declaration N°**: N° 24 ACC LY 232
**EC Declaration**: CEW36/W60/W95

**Representative:** UVGERMI declares that the reactors of our domestic range designated below: UVPLUS W36/W60/W95 are in compliance :

- Electromagnetic Compatibility (EMC) Directive 2014/30/EU of 26 February 2014 repealing Directive 2004/108/EC.

- To the Low Voltage Directive (DBT) - EN 60335-1 (2012) + AC (2014) + A11 (2014): General requirements for household electrical appliances.

- To the European standard: - EN 300 328 V2.2.2 (2019) dealing with 2.4 GHz broadband transmission systems: "Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques".

**Product description**: ULTRAVIOLET REACTOR

**Type**: UVPLUS W36 / W60 / W95

**Product serial number**: See the number on the packaging box and on the electrical box

## XIII. GUARANTEE

The warranty for the devices in the UVGERMI range is exercised under the following conditions:

- 5 years for the stainless steel reactor (materials and welds) except in cases of use in a very corrosive environment or environment (brackish or very saline environment, seawater, proximity to acidic and corrosive products, use of hydrochloric acid).

Disclaimer of Warranty:

Exceptional cases of corrosion, particularly electrolytic corrosion.
Damage caused by overpressure (water hammer).
Exceeding the Maximum Operating Pressure.
Failure to follow installation instructions.
Reactor that has operated without being loaded or without water.

- 2 years for all components except UV lamps and gaskets (consumables) and quartz sheaths in case of breakage.

Disclaimer of Warranty:

Consumables (gaskets, lamps and broken ducts).
Electrical components are not guaranteed against power surges, lightning strikes.
Modification and addition of components in the control cabinet.
Use of spare parts that are not of UVGERMI origin.
Failure to follow installation instructions.
Reactor that operated without being in charge.
Failure to comply with operating and maintenance instructions.

**Please note: the quartz sheath and the lamp are not guaranteed against the breakage.**

Defective parts must be returned, specifying the name of the device and the serial number (under the electrical box), to the UVGERMI company, which will proceed with an exchange after technical expertise.

- The warranty takes effect on the date of delivery to the UVGERMI customer. A duplicate of the UVGERMI invoice must be sent to UVGERMI with the return of the defective parts.
- In the event of non-compliance with the installation rules and instructions for use, UVGERMI cannot be held liable and the guarantees cannot be implemented.


# UVGERMI®

## ULTRAVIOLETS DE HAUTE TECHNOLOGIE

*The specialist in the microbiological treatment of water thanks to ultraviolet reactors.*

MADE IN France

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