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**Las Fuentes
International**

Technische Projekte für christliche Hilfseinrichtungen in aller Welt

PLANT DESCRIPTION

Water Purification Plant Type: "LFI 400 Solar"



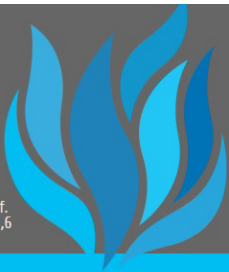
The plant is completed in electro-polished stainless steel and approved for potable water. It will be delivered ready for connection.

At first, one filter will catch coarse particles such as sand and plant remains, then a fine filter will remove smaller suspended particles and fecal matters. An active carbon filter will then remove chemicals, pesticides, heavy metal particles, chlorine as well as odorants and tasting agents. The UV reactor kills germs as well as bacteria and viruses by means of radiation using ultraviolet C light, including E. coli bacteria which are responsible for diarrheal and intestinal diseases amongst others.

The plant is designed for a radiation dose of 400 J/m² which meets the requirements of the German market on water purification plants and guarantees the sterilization ratio of 99.99 % given that the restricted flowrate is not exceeded.

The plant is available in 12V DC with a car battery and solar module.

The UV installation is turned on via a switch. 30 seconds later, the pump will be released.



The pump is pressure-controlled which means it turns itself off when the water pipe is closed during the operation of the plant while the UV installation is still in operation.

This procedure always guarantees sterilization. An integrated operating hours meter monitors the operational lifetime of the UV lamp.

The nylon (60 micron), plastic (20 micron) and active carbon filters are readily insertable and replaceable.

The change of filters has to be checked and implemented annually.

pre filter

height	335 mm
diameter	135 mm
filtration	50 ym
connection	1" inside thread

fine filter

height	335 mm
diameter	135 mm
filtration	10 ym
connection	1" inside thread

activated carbon filter

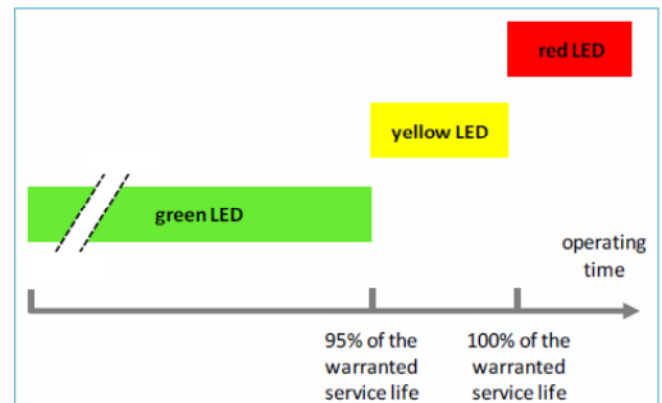
height	335 mm
diameter	135 mm
connection	1" inside thread



Inside the UV reactor, sterilization is implemented without chemicals.

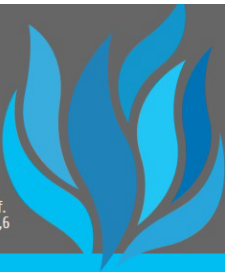
PURION guarantees disinfection up to a time of operation of the PURION UV lamps of max. 10.000 h.¹ Afterwards the PURION UV lamp has to be replaced. The Operating Time Counter (OTC) option monitors the life of the UV lamp via summation of the operating time. The current status is displayed via LED.

manufacturer	PURION® GmbH
type	PURION 1000 PRO
flow rate	1 m³/h process water 700 l/h emulsion
UVC-transmission	> 20%
temperature of water	2°C to 40°C
reaktor	stl. steel 1.4571
flanges external thread	R 1"
seal	FPM
dimensions (L x Ø in mm)	420 x 42
distance flanges	340 mm
weight	2,8 Kg
life time of lamps	10.000 h
number of lamps	1
dose	400 J/m²
temperature max	40°C
max. working pressure	10 bar
protective system	IP 65
electrical connection	230 V/50 Hz or
(optionally)	110-240 V 50/60 Hz 12 V DC or 24 V DC
total power	17 W
over current protection	10 A



Advantages

- automatic recording of the exact operating time of the PURION UV lamps
- automatic (pre-)alarm when lamp replacement is necessary
- safe reset-procedure
- maintenance free operation



PURION 1000 FOR DESINFECTION OF WATER

...is characterized by compact construction and a high degree of efficiency respecting to disinfection and energy consumption. The construction design follows laws, standards and regulations.



UV Plant PURION 1000 PRO is equipped with a polished stainless steel reactor.

PURION 1000 PRO can be used to disinfect water of domestic use up to a flow rate of 1.000 l/h and a transmission of at least less than 90% per cm.

The used UV-lamps are characterized by a long durability and a high degree of efficiency respecting to disinfection and energy consumption.

The power supply can be carried out with 230 V/50 Hz or optionally 12 V DC, 24 V DC or 110 V/60 Hz.

The compact construction design enables an easy replacement of the UV lamp at the end of their useful life.

You don't need any tool. Also replacement and cleaning of the quartz pipe can be arranged easily. UV disinfection is reached by floating the water through the reactor.

Inside the reactor an UV lamp enclosed in a UV-C transparent quartz pipe is surrounded by the process water to be treated.

The small distance of 2 mm between the quartz pipe and the inner surface of the reactor ensures optimal irradiation and therefore optimal disinfection of the water.

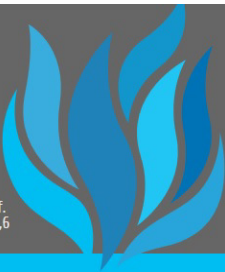
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This UV-plant is applied at:

Drinking water	
Water of air conditioning	•
Disinfection of permeate	•
Emulsion for cooling and lubrication	•
Aquariums	
Fish ponds	
Storm water of sewage plants	•
Pharmacy	
Greenhouse	•
Water of domestic use	•

Advantages

- disinfection without chemicals
- due to biological methods there is no ecological damage
- manageable maintenance
- small operation expenses



PURION UV Lamp 17W

...is characterized by compact construction and a high degree of efficiency respecting to disinfection and energy consumption. The construction design follows laws, standards and regulations.



Figure: PURION UV Lamp 17W

PURION low pressure UV Lamps are working without generating OZONE. They emit UV C radiation at a wavelength of 254 nm.

At this wavelength UV radiation is most effective against Bacteria, viruses and spores.

A special coating on the inside of the lamp tube guarantees stable UV C radiation.

The lamp's glass serves as a filter for UV radiation < 240 nm.

At the end of the guaranteed life time PURION UV Lamps emit at least 60% of the initial UV C radiation intensity.

PURION UV Lamps therefore provide disinfection of water, air and surfaces.

The guaranteed life time of 10.000 hours of operation is valid in case of not exceeded 6 switching operations of the UV Lamp per day (in average).

To keep the warranty valid the PURION UV Lamps needs to be operated with PURION electronic ballasts.

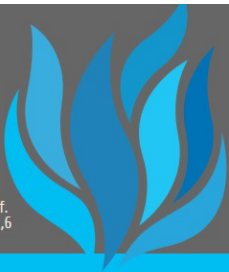
manufacturer	PURION® GmbH
type	PURION UV Lamp
lamp wattage	17 W
lamp current	425 mA
voltage at high frequency	42 V
life time	10.000 h
diameter	15 mm
length (without pin)	357 mm
length pin	8 mm

This PURION UV Lamp is applied at:

PURION 1000	•
PURION 1000 DUAL	•
AIRPURION 17	•
UV Set 17 W	•
UV Set DUAL 17 W	•

Advantages

- Germs cannot become resistant to UV C radiation
- PURION UV Lamps do not generate OZONE
- Disinfection by means of PURION UV Lamps implies lower costs compared to chemical methods



The installed pump has a liter output capacity of 400 l/h and is exactly designed for the UV reactor.

The complete system is run by a commercially available 12V car battery and a 100W solar panel.

An additional charging unit for 230 or 110 VAC is installed.

Manufacturer:	Las Fuentes International
Type:	LFI 400 Solar
Output:	80 Watts
Voltage:	12 Volt DC
Liter Output Capacity:	400 l/h
Connection:	1/2" Geka connector
Outflow:	Faucet 1/2" (13mm hose)
Size:	1100mm x 650mm x height 700mm
Weight:	ca. 100 kg

Annotations:

Housing is made of perforated metal plate

Solar panel is adjustable in inclination