PURION®
THE BEST SOLUTION

UV: DISINFECTION WITHOUT CHEMICALS

WATER
SOLUTIONS FOR TREATMENT OF WATER

AIR
SOLUTIONS FOR TREATMENT OF AIR

SURFACES
SOLUTIONS FOR TREATMENT OF SURFACES

PURION®
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COMPANY

... ahead of others thanks to innovation and technology

PURION is more than 30 years an expert in UV technology and combination of ozone and UV.

All PURION systems are developed and produced in Germany.

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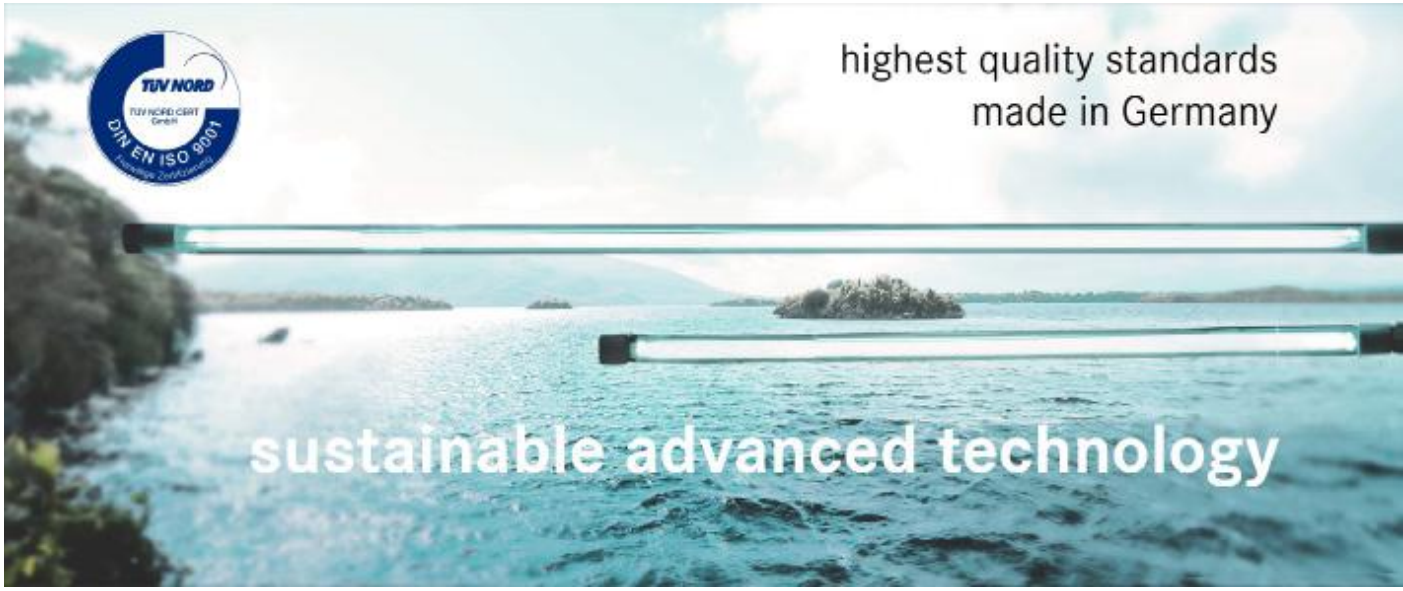
PURION Development Department cooperates with reputable companies and universities in Europe and the USA to develope new equipments and technologies. We guarantee our clients professional and state-of-the-art products.



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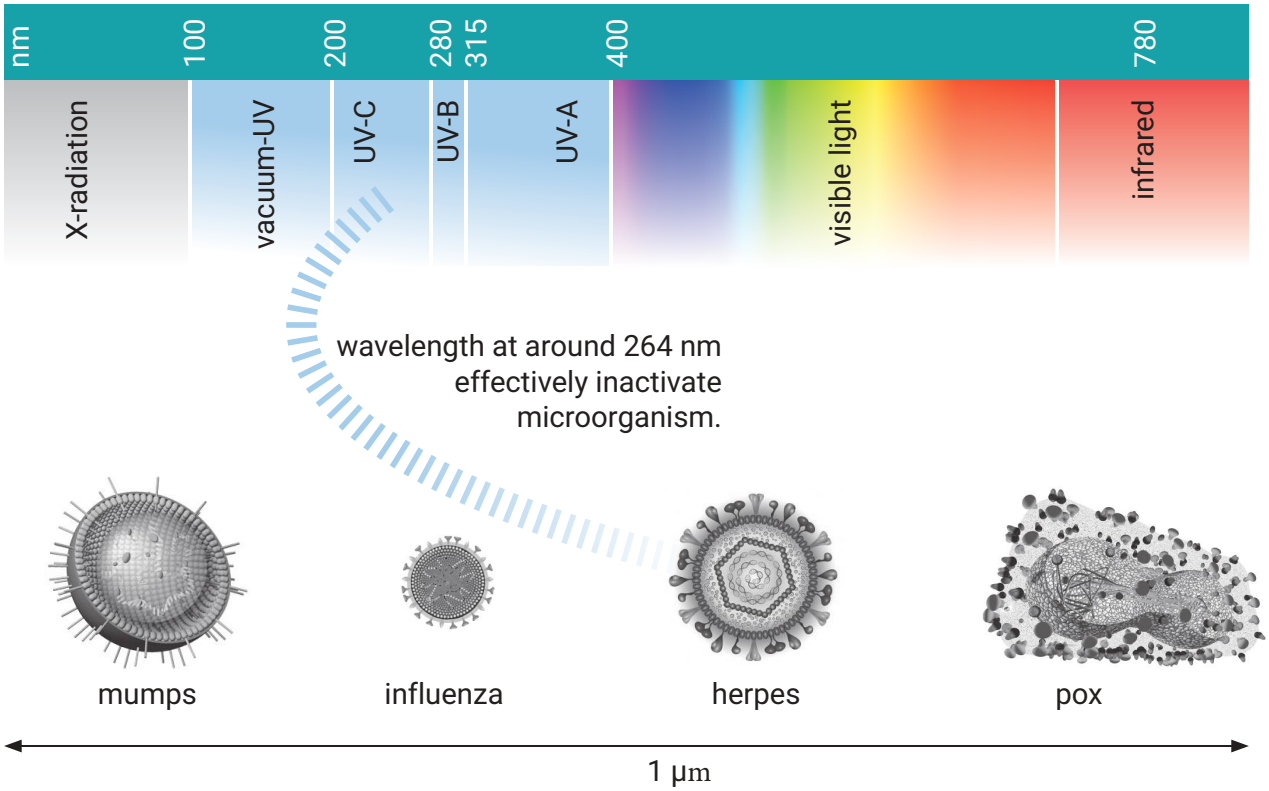
OPERATING PRINCIPLE
DISINFECTION WITH UV-LIGHT

Microorganisms such as bacteria, moulds, yeasts and protozoa can be destroyed or removed by physical, biological and chemical methods. UVC works using a photolytic effect whereby the radiation destroys or inactivates the microorganism so that it can no longer multiply.
The phenomenon whereby microorganisms can be disfigured or destroyed is independent of host state (fluid or solid) and indeed pH or temperature. The important feature of the action is that radiation can reach the organism.
Unlike other techniques, UVC photolysis does not produce potentially dangerous byproducts.



Ultraviolet is that part of electro-magnetic radiation bounded by the lower wavelength extreme of the visible spectrum and the upper end of the X-ray radiation band. The spectral range of ultraviolet radiation is, by definition between 100 and 400 nm (1nm=10-9m) and is invisible to human eyes.

A strong germicidal effect is provided by the radiation in the short wave UVC band. The UV radiation emitted by a source is expressed in watts (W) and the irradiation density is expressed in watts per square meter (W/m²). For germicidal action dose is important. The dose is the irradiation density multiplied by the time (t) in seconds and expressed in joules per square meter (J/m²). 1 joule is 1 watt-second.

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WATER

SOLUTIONS FOR TREATMENT OF WATER

UVC radiation is an effective method to disinfect water without the release of toxic byproducts (valid also for special plants for warm water / preventing against Legionella).
It's important to avoid chlorination as method for disinfection since chlorination is related to the release of toxic chloroform.

advantages:

- additional chemicals are not required for disinfection
- not affecting smell or taste
- low-maintenance operation
- low operational costs

product line is used at:

drinking water	•
water of air conditioning	•
disinfection of permeate	•
air humidifier	•
aquariums	•
fish ponds	•
sewage water	•
pharmacies	•
greenhouses	•
water for domestic use	•

product line: PURION 400-2501

flow rate	300 l/h – 14 m^3/h
UVC-transmission	90% T_1 cm
reactor	stainless steel 1.4571
flanges	R 1/2" – 1 1/2"
life time of lamps	8.000 h / 10.000 h
number of lamps	1
dose	400 J/m^2
temperature max	2°C up to 65°C
max. working pressure	10 bar
grade of protection	IP 65
electrical connection	230 V/50 Hz or 110-240 V 50/60 Hz 12 V DC or 24 V DC
total power	10 W – 106 W

In addition to the standard range of PURION products it is of course possible to customize solutions for UV disinfection.
We would like to determine the optimal solution for your application together with you.

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WATER
SOLUTIONS FOR TREATMENT OF WATER

product line: PURION DUAL

flow rate	2 – 42 m^3/h
UVC-transmission	90% T_1 cm
reactor	stainless steel 1.4571
flanges	R 1“ - 1 1/2“
life time of lamps	8.000 h / 10.000 h
number of lamps	2
dose	400 J/m²
temperature max	2°C up to 65°C
max. working pressure	10 bar
grade of protection	IP 65
electrical connection	230 V/50 Hz or 110-240 V 50/60 Hz 12 V DC or 24 V DC
total power	2x 17 W – 2x 106 W

product line: PURION Multi Plant

flow rate	10 – 42 m^3/h (drinking water) up to 168 m^3/h water for domestic use
UVC-transmission	90% T_1 cm
reactor	stainless steel 1.4571
flanges	R 1/2“ – 1 1/2“
life time of lamps	8.000 h / 10.000 h
number of lamps	up to 8
dose	400 J/m²
temperature max	2°C up to 65°C
max. working pressure	10 bar
grade of protection	IP 65
electrical connection	3 ~/N/PE 50 Hz 400/230 V, L/N/PE 50 Hz 230 V
total power	up to 8x 106 W (depending on configuration)

product line: PURION Compact system

flow rate	400 l/h (drinking water)
UVC-transmission	90% T_1 cm
UV plant	PURION 500
monitoring UV plant	operating time counter (OTC)
life time of lamp	10.000 h
number of filters	3
delivery rate pump	400 l/h
temperature of water	2°C up to 40°C
max. working pressure	10 bar
grade of protection	IP 65
electrical connection	230 V/50 Hz or 12 V DC or 24 V DC
total power	1x 10 W (UV plant), 1x 48 W (pump)

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AIR
SOLUTIONS FOR TREATMENT OF AIR

UV-radiation is suitable to disinfect air contaminated with free floating microorganisms. Natural convection of air ensures that all air films are treated with UV-C. Air disinfection therefore leads to a considerable reduction of the level of germs. In consequence the danger of infection from air as a major reason for diseases is eliminated. The source of illness and bad odour is removed .

advantages:

- continuous operation, even if people are staying in the room
- not affecting smell or taste
- low-maintenance operation
- low operational costs
- splinter protection

product line is used at:

food production / packaging	•
pharmacies / laboratories	•
direct ambient air disinfection	•
indirect ambient air disinfection	•
preparation rooms in kitchen industries	•
animal farms	•

product line: AIRPURION® active

turnover of ambient air	24 - 36 m^3/h
weight	4 - 6 kg
life time of lamps	10.000 h
number of lamps	1
temperature max.	40°C
electrical connection	110-240 V 50/60 Hz
total power	48 or 90 W
over current protection	10 A

product line: AIRPURION®

radiation lenght	130 - 750 mm
weight	2 - 3 kg
life time of lamps	10.000 h
number of lamps	1
temperature max.	40°C
electrical connection	230 V / 50 Hz or 110-240 V / 50/60 Hz
total power	10 - 90 W
over current protection	10 A

We are able to determine to best solution for our clients situation taking into consideration given spatial conditions and the targeted level of disinfection. Highly reputable German research institutions are using PURION technology to disinfect laboratories.

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AIR
SOLUTIONS FOR TREATMENT OF AIR

did you know that

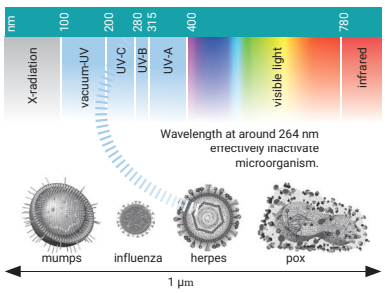
... up to 30 % of food stored in walk in refrigerators is wasted due to unsanitary environment.
... sterile environment means both: removal of bacteria and volatile organic compound (VOC) “bad odour”.
... common air purification plants in the market
- use single technologies - either efficient to remove bacteria or VOC.
- are neither ready to operate below -10 C° nor continuously.
- don’t have safety features to prevent the release of glass splinters ormercury.

product line:
AIRPURION® Sterile Fridge

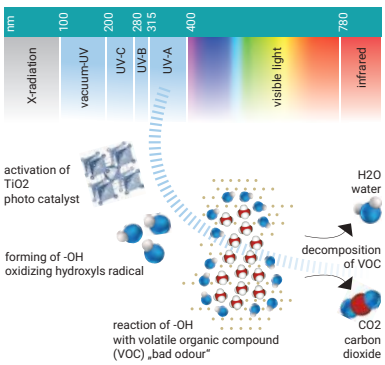
advantages:

- the only system that ensures reliable UV disinfection and the removal of bad odour
- considerably extends the shelf life of stored food
- works totally without chemicals
- is the only system with highest HACCP compliance due to splinter protection
- allows for continuous operation because it is a closed system with active air inlet via fan
- can be equipped with various options to monitor the disinfection performance
- implies easy maintenance + low operational costs.

two in one principle



1st step: reliable UVC disinfection
Air is sterilized with UV-C light, as the only reliable technology for chemical free sterilisation.



2nd step: photo catalytic oxidation
Bad odour is removed via photo catalytic oxidation (PCO) via UV-A light and a titanium dioxide (TiO2) photo catalyst.

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AIR
SOLUTIONS FOR TREATMENT OF AIR

AIRPURION® active is widely used within the kitchen industry.

product line is used at:

preparation area: fruits & vegetables	preparation area: banquet
preparation area: fish	garbage rooms
preparation area: meat	cold rooms
preparation area: poultry	...

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SURFACES
SOLUTIONS FOR TREATMENT OF SURFACES

Microorganism present on surfaces can be exposed to UV radiation. The success of surface disinfection depends largely on the surface irregularity of the material to be disinfected. In practice, solid surfaces, granular material and packaging are disinfected or maintained germ-free by means of intensive, direct irradiation.

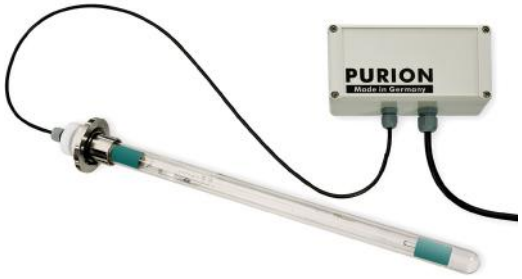
advantages:

- chemical free
- not affecting smell or taste
- low-maintenance operation
- low operational costs
- splinter protection

product line is used at:

packaging machines	•
disinfection of packaging material	•
surface disinfection	•
conveyor-band disinfection	•
disinfection of food transportation boxes	•
disinfection of cold trucks	•

product line: UV SET PURION®



radiation lenght	200 - 730 mm
weight	1 - 2,5 kg
life time of lamps	10.000 h
number of lamps	1
temperature max.	40°C
electrical connection	230 V / 50 Hz or 110-240 V / 50/60 Hz / 12/24 VDC
total power	10 - 90 W
over current protection	10 A

product line: AIRPURION®

radiation lenght	130 - 750 mm
weight	2 - 3 kg
life time of lamps	10.000 h
number of lamps	1
temperature max.	40°C
electrical connection	230 V / 50 Hz or 110-240 V / 50/60 Hz
total power	10 - 90 W
over current protection	10 A

In particular the product line PURION UV-Set enables our clients to implement customized solutions. PURION supports you to determine the optimal solution for your disinfection challenge.
For applications with very small space for installation our product line AIRPURION-midi is suitable.

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ADVANCED
UV FOR LIFE

PURION® GmbH is member of the BMBF-program „Twenty 20 - Partnership for Innovation“, „Research Regarding UV-LED-Light for Innovative Applications within Health Care, Water Treatment, Production Technology and Sensor Technology”. Highly reputable German research institutions are cooperation partners within this program.

PURION® GmbH is partner of the cooperation’s network HySic – Hygienic Safety.
The aim is to develop and to realize solutions for the improvement of the hygienic safety in different important applications.

To ensure compliance with high quality standards production and management processes of PURION GmbH are established in line with the certified standard management system DIN EN ISO 9001: 2008. The certification is renewed annually.

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