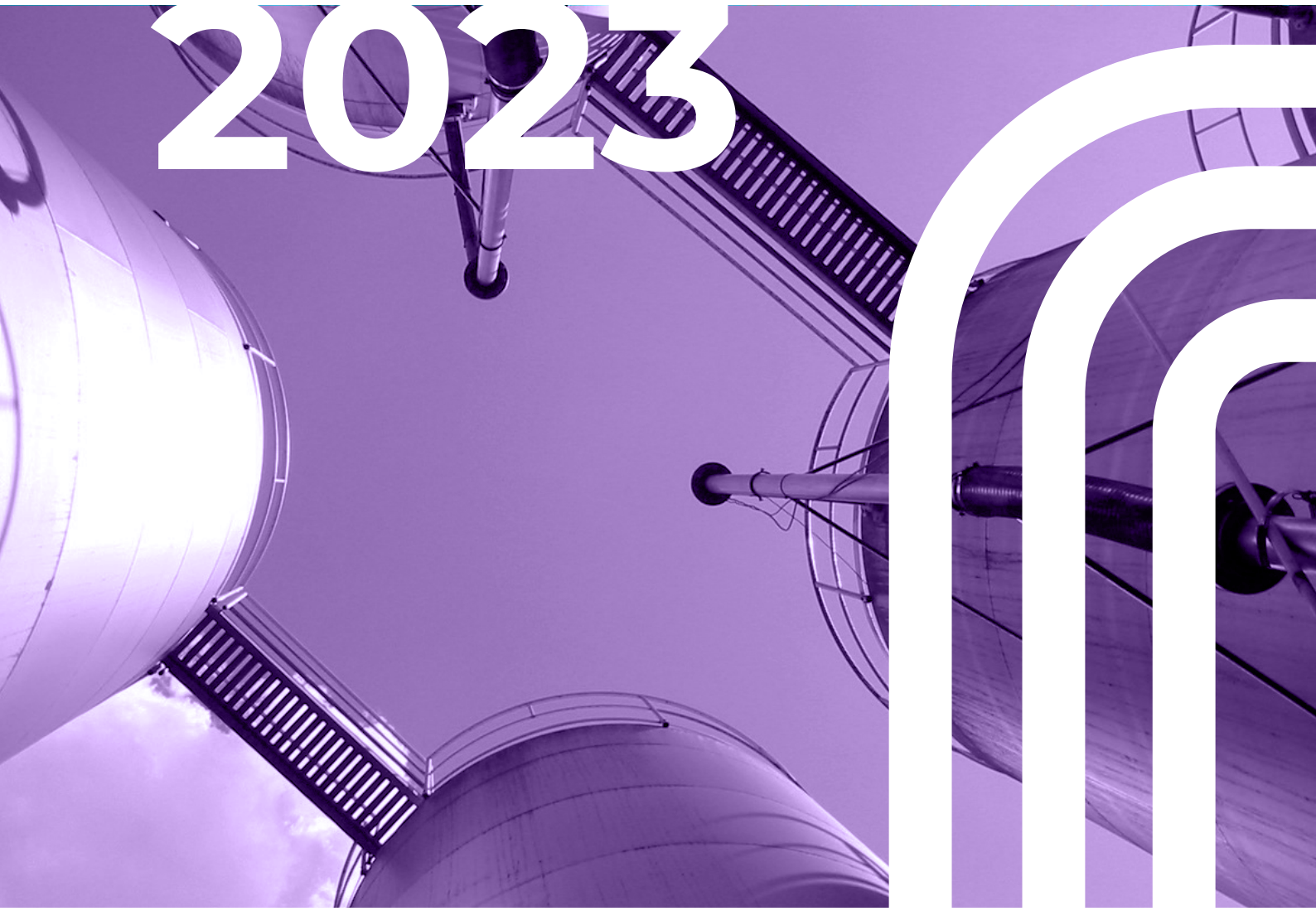
BIO-UV Group

industrial
water treatment
solutions

industry catalogue 2023



triogen®

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group overview

Water treatment is widely used in industrial environments to optimise water-based processes, such as intake, heating, cooling, processing, cleaning, rinsing, and discharging into the environment. This is critical to protecting downstream processes, people, and the environment. Balancing global pressures for a smaller environmental footprint and sustainable operations, as well as managing rising operating costs and evolving regulatory requirements are ongoing concerns for industries. Industrial water treatment processes are specific to each application and include a wide variety of treatment steps to ensure the required water quality, at any stage.

BIO-UV Group was founded with the goal to elevate water quality by providing cutting-edge chemical-free technologies to professionals. A specialist in designing and distributing UV water treatment disinfection systems for over 20 years, BIO-UV Group has developed a complete offer for the industrial market, to ensure water disinfection and sanitation.

In 2019 and 2021, the group made two acquisitions to enhance its product portfolio: the UK-based triogen®, a water treatment specialist with more than 35 years' experience in ozone, UV, and advanced oxidation processes (AOP), as well as the AKERON brand, a French leader in salt electrolysis in the French residential pool market.

BIO-UV Group in a nutshell

€51.3m
turnover (2022)

160+
employees

+55%
as international sales

Our other areas of expertise

- ballast water for ships
- residential pools
- commercial & semi commercial pools
- aquaculture
- domestic and municipal drinking water
- aquariums
- water features

Our brands

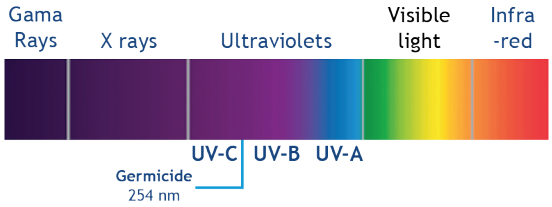
AKERON · triogen® · ICCElectrodes · BIOSEA

technologies
overview

UV is extensively used in the industry for water disinfection, dechlorination, or deozonation. Using the same germicidal rays as the sun, except it is much stronger, UV-C offers a reliable, cost effective, eco-friendly alternative to chemicals. This natural phenomenon is reproduced inside the BIO-UV Group reactors using powerful UV lamps.

At 254 nanometres, the optimum wavelength to inactivate microorganisms (viruses, bacteria, algae, yeasts, moulds, etc.), UV-C penetrates the core of the DNA and disrupts cellular metabolism until the cells are completely inactivated (including Legionella, E.coli, etc.). Even some chlorine-resistant microorganisms are eradicated and can no longer reproduce.

The physio-chemical characteristics of the water are unaltered (taste, smell, pH, etc.). No disinfection by-products are generated by UV treatment. It is safe to human or animal health. It can treat a wide range of water qualities from 50 to 100% UV transmittance, be it in fresh water, brackish water, or sea water. BIO-UV Group reactors are designed to meet the most specific needs according to temperature and water quality as well as bacteriological loads.



UV certification

ACS / WRAS: In order to help business and consumers choose compliant products and materials that keep water safe, our UV systems comply with ACS UV or WRAS water regulations schemes.
These certifications assess this ability for a product to come into contact with water intended for human consumption and are delivered by independant testing bodies.

ÖNORM: The “ÖNORM tested” certification scheme regulates the procedure of the UV certification process and validates the efficiency of our UV systems.

ozone

(O_3) is extensively used in the industry for water disinfection, pathogen control, and oxidation of contaminants. It's a highly active form of oxygen (O_2), more effective than many commercially available chemical treatments for both disinfection and water quality improvement. Ozone is a very powerful, yet natural gas with virucidal, germicidal, bactericidal, and fungicidal properties, able to oxidise all organic and inorganic compounds. It has the unique property of breaking down naturally and safely into its original oxygen form. Ozone is also able to improve the efficiency of up and downstream technologies, contributing to water reuse and energy saving potential in the wider water treatment system.

As nature's most powerful oxidant, ozone is a simple and effective way to break down contaminants in a number of industrial applications, including clean-in-place, cooling and process, and water recycling, as well as in the treatment of intake and effluent waters.

ozone regulation

If ozone is used for biocidal purposes, i.e., for disinfection, it is subject to the Biocide Regulation. The Biocidal Products Regulation (EU) 528/2012 (the BPR) came into force on 1 September 2013, repealing the Biocidal Product Directive (Directive 98/8/EC). Since 1 September 2013, ozone is regulated as an "Active Substance" under the BPR. Following Active Substance approval under the BPR, any Company that wishes to place a biocidal product on the market which contains ozone generated in situ within the EU or EFTA must have its product authorised in accordance with the BPR.

BIO-UV Group, with its triogen® subsidiary is a full member of the European Ozone Trade Association (EuOTA) and is a certificated member of the Ozone Task Force (OTF) and co-owner of the EuOTA Ozone Active Substance biocide dossier. As such, triogen® ozone products intended to be used as biocide in Europe, including PPO_3, are fully compliant with the requirements of the BPR.

The REACH Regulation (EC) No.1907/2006 (Registration, Evaluation, Authorisation and Restriction of Chemicals) is also applicable for your company if you produce more than 1 ton of ozone annually.

applications
overview

Process and cooling waters

Meeting process water requirements is crucial to maintain optimal production in various industries and plants. The goal for all industries is to ensure high standards in production while optimising energy costs and minimising waste. The complex nature of challenges facing industries means that, more than ever, plant operators require simple to use, established technologies with proven performances.

For example, food and beverage professionals use large quantities of water to transform raw ingredients into marketable products. Large volumes of water are used on a daily basis in products and processes, and this water needs to be responsibly sourced and managed. UV or ozone make it possible to meet the most stringent requirements regarding bacteria and virus protection and key water quality parameters. Working in close collaboration with its partners' network, BIO-UV Group focuses on contributing to global food security, while protecting the natural environment for generations to come!

Effluent and water recycling

To protect the natural environment, such as rivers, lakes, beaches, and coastal areas, increasingly stringent regulations are implemented to limit the release of contaminants originating from industrial discharge. Water contamination may be caused by the discharge of untreated wastewater from industries, which can include a range of diverse compounds and pathogens. **Wastewater treatment** is a process that removes and eliminates pollutants, making the water safe to return to the environment. Therefore, the environmental impact of discharged water is lowered, and in many cases can be reused or reclaimed for various applications such as **agriculture, irrigation, and cleaning**.

Ozone and UV can target both the microorganisms and a range of other unwanted pollutants, and are adaptable, scalable, and flexible to site specific requirements.

Legionella prevention

Legionella bacteria is commonly found everywhere in the environment, particularly in **cooling towers and domestic hot water systems**, where it thrives. The germ multiplies most efficiently when temperatures in freshwater are between 20°C and 45°C. The disease it causes, Legionnaires disease, is a potentially fatal type of pneumonia, contracted by inhaling airborne water droplets. Because it can multiply and spread throughout the water system, it is particularly important to prevent the proliferation in large, open, and distributed water networks such as open-air cooling towers.

BIO-UV Group has a wide range of UV solutions for cooling towers and domestic hot water circuits, to establish a microbiological barrier whenever a risk factor is identified, limit the risk of Legionella proliferation, and ensure safe hot and cold water quality.

Clean-in-place (CIP)

CIP is defined as the cleaning of existing equipment in production plants or pipeline circuits, filters, fittings, containers, and surfaces without dismantling or opening the equipment and with little or no manual involvement from the operator. An improper cleaning regime can have various negative consequences for health, economics, the environment, and regulatory approvals. UV and ozone CIP systems are commonly used in the **food and beverage or pharmaceutical industries** to ensure the sanitation of hygiene critical processes. BIO-UV Group provides solutions to remove, or prevent the build-up of organic and inorganic compounds, without the use of harmful chemicals that are detrimental to the environment.

applications
overview

Dechlorination and deozonation

Most drinking water supplies are disinfected with chlorine or chlorine analogues, and many are also treated with ozone. The residual chlorine or ozone are oxidising agents, and in many applications can be damaging to **industrial processes**. For instance, they must be neutralised prior to the use of the water in **brewing operations or pharmaceutical manufacturing**. UV dechlorination or deozonation is highly effective at reducing the chlorine or ozone concentration to the required level, while simultaneously acting as a multi-barrier approach to disinfection.

Ultra-pure water

Ultra-pure is commonly used to describe water that has been purified to meet very stringent specifications and limits on biological micro-organisms, organic and inorganic compounds, dissolved and suspended solids, minerals, and dissolved gases. Ultra-pure water is typically required in **microelectronics, power, optical, cosmetics, and pharmaceutical manufacturing processes**. Ozone and/or UV can be used to maintain sterility or periodically sanitise water networks.

While ozone decomposes rapidly into pure oxygen, ozonated water may still contain small quantities of residual ozone that may be intolerable to downstream processes or end-uses such as biological filtration or precision manufacturing, respectively. To ensure the destruction of residual ozone, UV light can be used.

Agriculture and horticulture

Water in the **agriculture and horticulture industry** is mainly consumed in the **irrigation process**, or in production of speciality foodstuffs such as **algae**. With global agricultural intensity increasing rapidly, and the consequent rise in water demand, there is a need to identify water recycling options to optimise the water consumption, without adversely affecting yields.

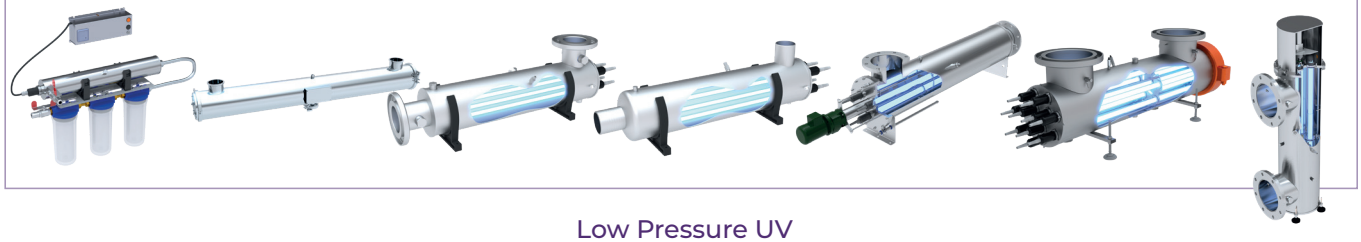
In large agricultural facilities, due to the high water consumption and regulations concerning food production, there is a significant demand for both high quality and safe water. BIO-UV Group will analyse and propose the relevant technology to meet the most demanding needs.

applications

product overview

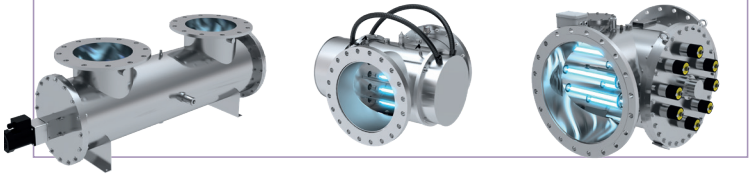
industrial water

UV Home 12 m³/h | **LPTS** 33 m³/h | **IBP AM+** 115 m³/h | **FW** 133 m³/h | **DW** 695 m³/h | **RW** 900 m³/h | **IAM** 1,573 m³/h



Low Pressure UV

SMP 748 m³/h | **BMP** 1,660 m³/h | **Integra** 8,000 m³/h



Medium Pressure UV

LAB2B 10 g/h | **TOGC2** 10 g/h | **TOGC range** 55 g/h | **PPO_3** 1.2 kg/h

triogen® Ozone

integrated solutions
overview

Our engineering team can combine different technologies and equipment to offer integrated solutions. Fully equipped and ready-to-go in-operation systems can include a pre-filtration unit together with a high UV dose treatment carefully regulated by a single control panel to operate the overall system. Our team will specify, customize, and integrate as required, with turn-key capacities in designing, adapting, developing, and planning installation, integration, and commissioning in collaboration with our worldwide network of service partners.
Mobile options and containerized systems can also be discussed on a project basis and a water treatment solution as a service can be offered.

services & aftermarket
overview

To ensure that BIO-UV Group water treatment systems always deliver optimal performance, we have fully trained service partners around the world. In addition, our in-house technology experts, located in our centres of excellence, provide 360° technical support to our global sales team to ensure customer satisfaction.

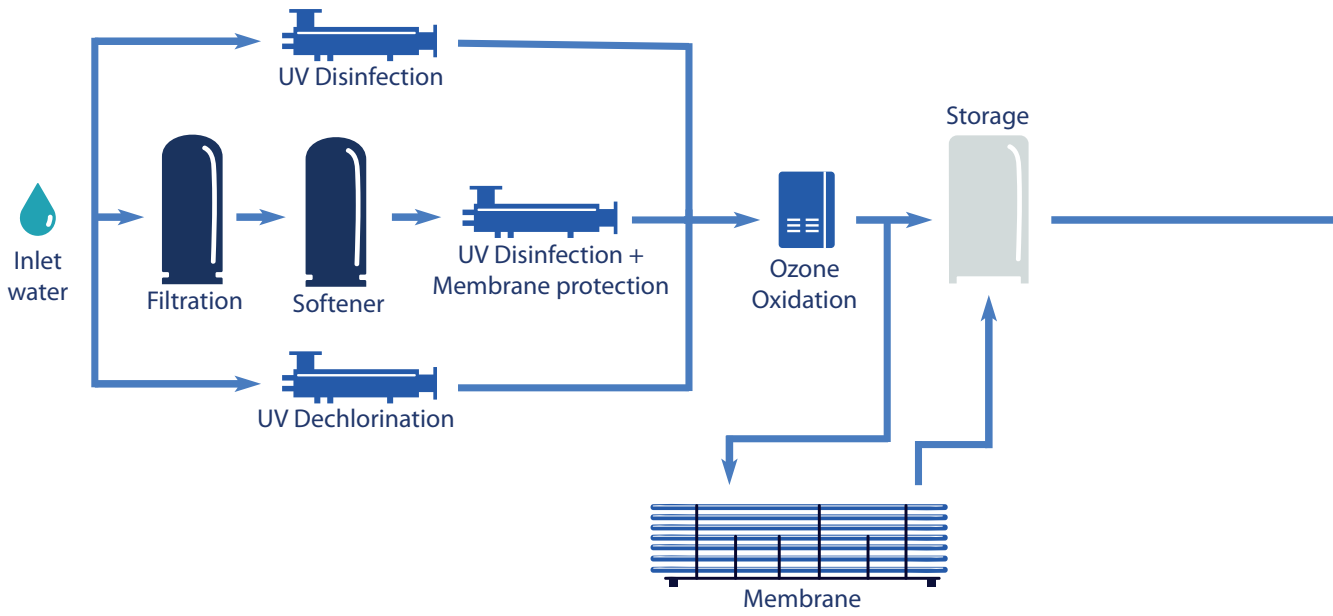
After purchase, our network of qualified and experienced professionals are trained and equipped to address any needs that may arise, either on-site or remotely, to help our clients get the best possible performance from their BIO-UV Group system.

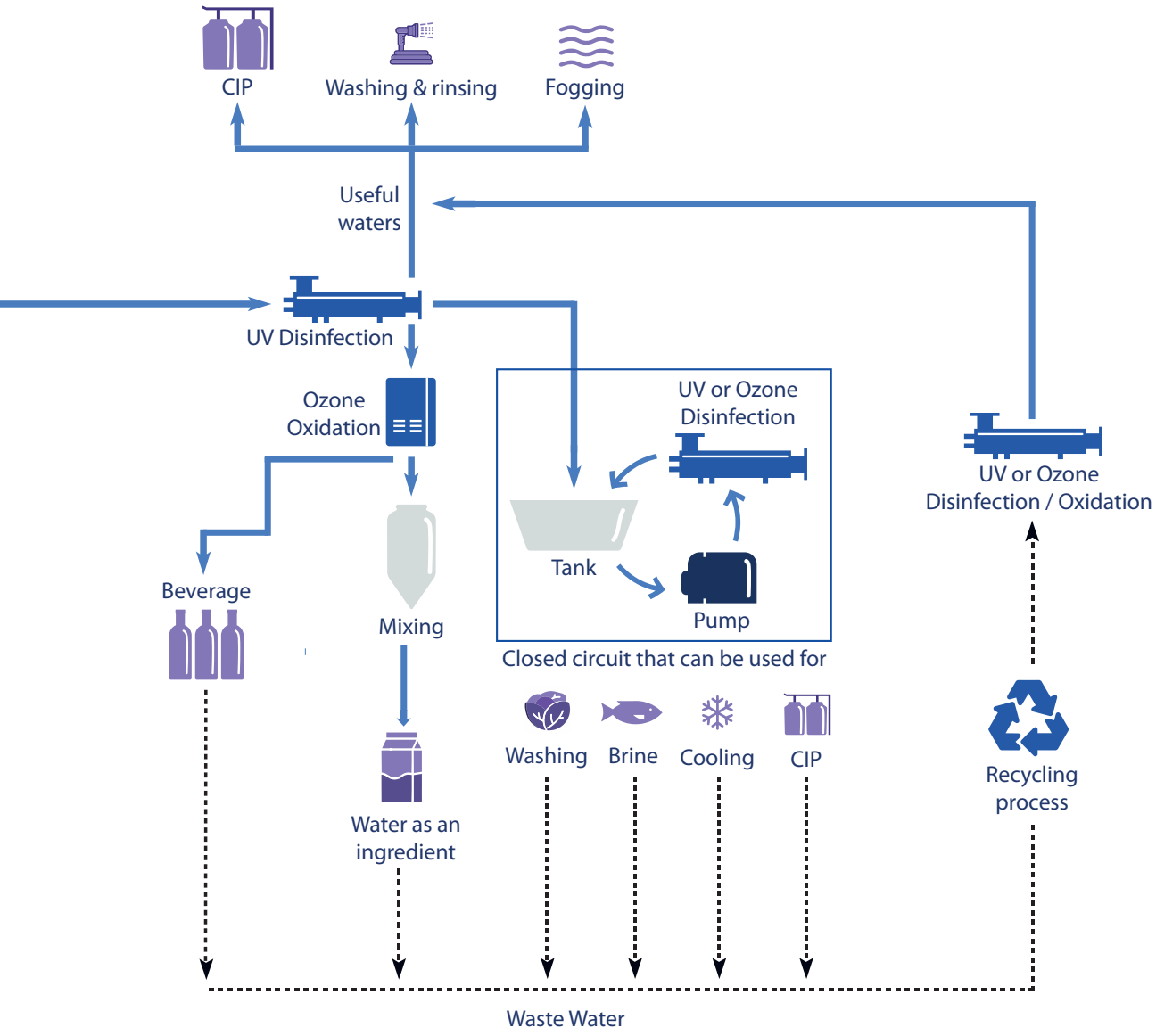
With our global hub of skilled experts, we can provide commissioning services anywhere in the world. We can also provide spare parts, bespoke support, and maintenance. Detailed training, whether formal or ad-hoc, can also be performed as part of our commissioning or aftersales services. As our systems are simple in design and straightforward in operation, installation and commissioning can be completed, in many cases within a day, with proper planning and preparation with our support team.

industrial water treatment

examples

UV & Ozone water treatment processes for the food industry




CIP
Washing & rinsing
Fogging
Useful waters
UV Disinfection
Ozone Oxidation
UV or Ozone Disinfection
Tank
Pump
Closed circuit that can be used for
UV or Ozone Disinfection / Oxidation
Beverage
Mixing
Water as an ingredient
Washing
Brine
Cooling
CIP
Recycling process
Waste Water

UV product ranges

+

UV Home
IBP AM+
FW
IAM
DW
BMP
LPTS
SMP
Integra
RW

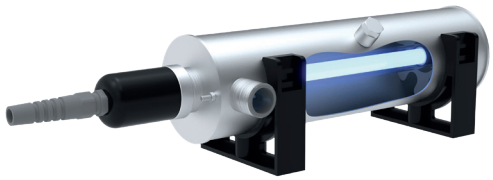
01

UV Home

BIO-UV

The BIO-UV UV Home range has been designed to treat a high quality fresh water (85-98 % UVT). Its stainless steel reactor and low pressure high output lamps allow it to operate in cold or temperate water.

benefits +



- Teflon sensor limits fouling of the sensor, thus maintenance operations
- Independent box delivered with 1.5 m of cable:
    1. Facilitates installation
    2. No risk of heating
- Simple maintenance operation: annual calibration with a front accessible potentiometer
- Compact reactor for easy installation
- Independent wall-mounted electrical cabinet
- Simple and cost-effective technology in both CAPEX and OPEX

MADE IN FRANCE

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Maximum flow rate* (m^3/hr)	UV lamps: quantity x power consumption	Inlet/Outlet Diameter (inches)	Reactor length (mm)	Item code
	30 mJ/cm^2	40 mJ/cm^2				
HOME2	2.9	2.2	1 x 33 W	3/4"	458	UVH004272
HOME3	4.3	3.2	1 x 55 W	3/4"	727	UVH004273
HOME6	8.8	6.6	1 x 87 W	1" 1/2	1019	UVH010714
HOME9	12.4	9.3	1 x 105 W	1" 1/2	1273	UVH010753

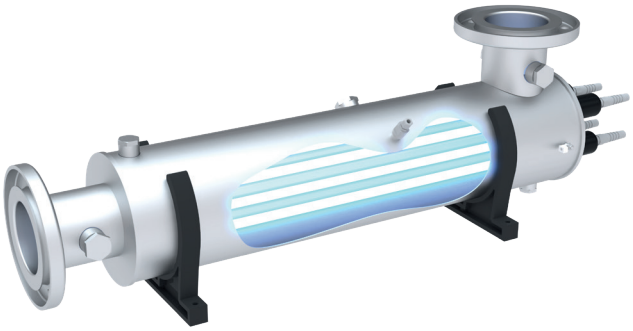
* Please contact us for different flow rates or UV doses
The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV IBP AM+

BIO-UV

The BIO-UV IBP AM+ range has been designed to treat a high quality fresh water (70-98 % UVT). Its stainless steel reactor and low pressure amalgam lamps allow it to operate in cold, temperate or hot application up to 60 °C.

benefits +



- Compact reactors for easy installation
- Use of single bulb lamps, sealing system and vertical or horizontal design for easy maintenance
- UV sensor and monitor offering LED alarm and dry contacts for reporting
- Customization of the connection possible: DN flanges, clamp
- Low energy consumption

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr) 30 mJ/cm^2	Maximum flow rate* (m^3/hr) 40 mJ/cm^2	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
IBP1150 AM+	20	15	1 x 120 W	2" 1/2	1141	PIBP018854U-001
IBP2150 AM+	51	38	2 x 120 W	DN100	1157	PIBP018927U-001
IBP4205 AM+	113	85	4 x 120 W	DN100	1157	PIBP018929U-001

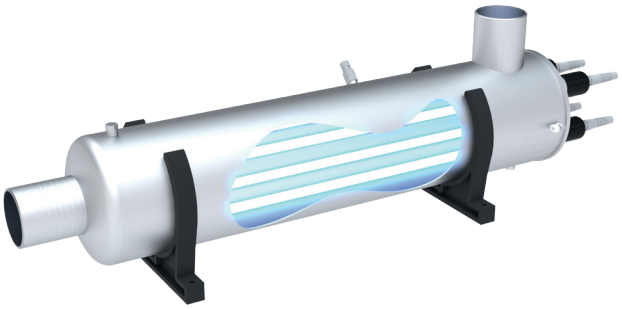
* Please contact us for different flow rates or UV doses
The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV FW

BIO-UV

The BIO-UV FW range has been designed to treat a high quality fresh water (70-98 % UVT). Its stainless steel reactor and low pressure high output lamps allow it to operate in cold and temperate water up to 35 °C.

benefits +



- Compact reactors for easy installation
- Use of single bulb lamps, sealing system and vertical or horizontal design for easy maintenance
- UV sensor and monitor offering LED alarm and dry contacts for reporting
- Customization of the connection possible: DN flanges, clamp
- Low energy consumption

new

2 years guarantee

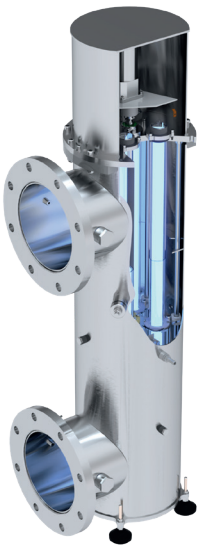
MODEL	Maximum flow rate* (m^3/hr) 30 mJ/cm^2	Maximum flow rate* (m^3/hr) 40 mJ/cm^2	UV lamps: quantity x power consumption	Inlet/Outlet Diameter (inches)	Reactor length (mm)	Item code
FW30 HO	8.8	6.6	1 x 87 W	1" 1/2	1131	FW018793U-001
FW40 HO	12.4	9.3	1 x 105 W	1" 1/2	1388	FW018794U-001
FW2150 HO	17	13	2 x 87 W	2" 1/2	1143	FW018795U-001
FW3150 HO	29	22	3 x 87 W	2" 1/2	1143	FW018796U-001
FW3205 HO	44	33	3 x 87 W	3"	1150	FW018797U-001
FW4205 HO	60	45	4 x 87 W	3"	1150	FW018798U-001
FW5205 HO	72	54	5 x 87 W	3"	1150	FW018799U-001
FW6205 HO	87	65	6 x 87 W	4"	1149	FW018800U-001
FW6273 HO	133	100	6 x 87 W	4"	1162	FW018801U-001

* Please contact us for different flow rates or UV doses
The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV IAM TS

BIO UV

The BIO-UV IAM TS range has been designed to treat a high quality fresh water (70-98 % UVT). Its stainless steel reactor and low pressure amalgam lamps allow it to operate in cold, temperate or hot application up to 60 °C.



benefits +

- Touchscreen display of the UV intensity, remote management by 4-20 mA output and modbus communication
- Customization of reactors according to installation, operation and maintenance constraints (flange diameter, inlet/outlet positioning, vertical/horizontal reactor,...)
- Single-bulb lamps and sealing system for easy maintenance
- Low energy consumption
- Long lamp life: 13,000 to 16,000 hours
- Optional automatic cleaning

MADE IN FRANCE

2 years guarantee

MODEL	Maximum flow rate* (m³/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
IAM2273 300W	95	40	2 x 270 W	DN150	1241	PIAM015060UT-001
IAM4273 300W	200		4 x 270 W	DN200	1241	PIAM015061UT-001
IAM6273 300W	276		6 x 270 W	DN200	1241	PIAM015062UT-001
IAM4273 400W	370		4 x 400 W	DN250	1755	PIAM015063UT-001
IAM6273 400W	552		6 x 400 W	DN250	1755	PIAM015064UT-001
IAM8323 400W	809		8 x 400 W	DN300	1764	PIAM015065UT-001
IAM6355 800W	1106		6 x 800 W	DN350	1764	PIAM015066UT-001
IAM8406 800W	1573		8 x 800 W	DN400	1769	PIAM015067UT-001

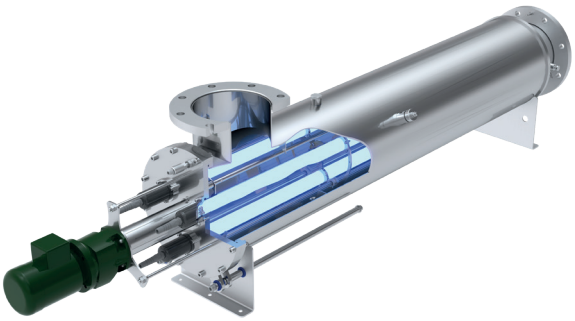
* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV DW

BIO UV

The BIO-UV DW range has been designed to treat a high quality fresh water (80-98 % UVT). Its stainless steel reactor and low pressure high output lamps allow it to operate in cold or temperate water.

benefits +



- High quality manufacturing and high disinfection performance
- Sterilizable sampling valves, upstream and downstream
- Dedicated electronic ballasts guaranteeing maximum UV output from the lamps and integrated control
- UV control sensor meeting the Austrian ÖNORM standard ensuring continuous proper operation of the reactor
- LCD display of UV intensity
- Single-bulb lamps and sealing system for easy maintenance.
- Devices that comply with government requirements
- Optional automatic cleaning

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Inlet/Outlet Diameter (mm)	Reactor length (mm)	Item code
DW1114 55W	2	40	1 x 55 W	1"	891	PDW013275U-001
DW1150 120W	12.8		1 x 120 W	2" 1/2	1108	PDW013638U-001
DW2150 120W	32		2 x 120 W	DN100	1149	PDW009636
DW4205 120W	70.5		4 x 120 W	DN100	1149	PDW008911
DW3323 400W	186		3 x 400 W	DN200	1908	PDW007255
DW5355 500W	437		5 x 500 W	DN250	1941	PDW007256
DW10508 500W	695		10 x 500 W	DN350	1961	PDW007257

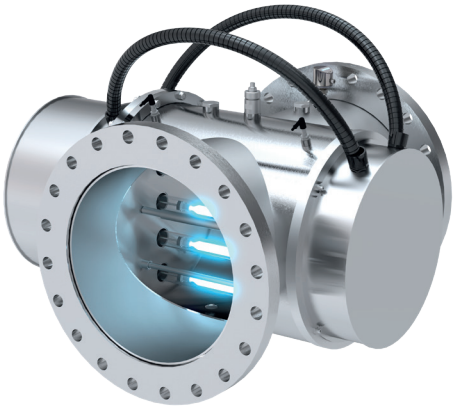
* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV BMP

BIO-UV

The BIO-UV BMP range has been designed to treat a high quality fresh water (85-98 % UVT). Its passivated and bead blasted stainless steel reactor and medium pressure lamps allow it to operate in cold, temperate or hot application.

benefits +



- Compact reactor for high flowrate treatment
- Sterilizable sampling valves, upstream and downstream
- Dedicated electronic ballasts guarantee maximum UV efficiency of the lamps and integrated control
- UV control sensor in accordance with the Austrian ÖNORM standard to ensure continuous operation of the reactor
- Customization of the reactors according to the installation, operation and maintenance constraints
- Lamp life of between 9,000 and 12,000 hours

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
BMP 118	56.2	40	1 x 1.8 kW	DN125	456	PMPX013323UNA-001
BMP 440	564		4 x 3.72 kW	DN300	906	PMPX002170UNA-001
BMP 560	1655		5 x 5.60 kW	DN450	991	PMPX016167UNA-001

* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

UV LPTS

triogen®

The triogen® LPTS range has been designed to treat a high quality fresh water (80-98 % UVT). Its stainless steel reactor and low pressure amalgam lamps allow it to operate in cold, temperate or hot application up to 60 °C.

benefits +

- Protects ozone sensitive systems from oxidation damage
- Allows use of higher ozone concentrations in oxidation processes
- Simple lamp replacement reduces system downtime
- Simple to install and operate
- Exceptional lamp life of 16,000 hours
- Option: UV sensor

MADE IN BRITAIN

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
LPTS 150-50-1	10	120	1 x 200 W	DN 50	1344	2510000413
LPTS 150-50-2	18		1 x 400 W	DN 50	1344	2510000659
LPTS 150-75-3	25		1 x 600 W	DN 80	1344	2510000589
LPTS 150-75-4	33		1 x 800 W	DN 80	1344	2510000662

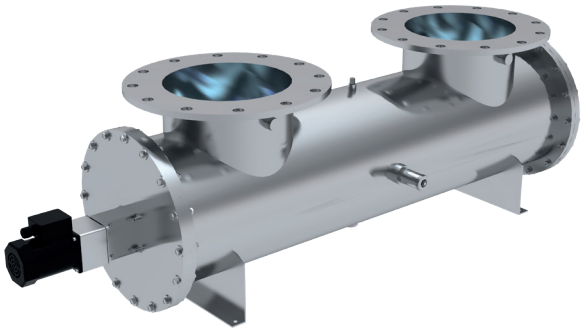
* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 98% transmittance.

triogen® SMP

triogen®

The triogen® SMP range has been designed to treat a medium quality sea water (50-98 % UVT). Its electropolished stainless steel reactor and medium pressure lamps allow it to operate in cold, temperate or hot application.

benefits +



- Safely control background levels of general bacteria
- Significant improvement in water clarity and air quality
- Simple control logic / easy to operate
- Helps to inhibit the growth of algae
- Savings in water, energy and chemical consumption
- Low capital and installation costs, with minimal service and plant room space required
- Low service requirements
- UV sensor

MADE IN BRITAIN

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
SMP100-75-1/1,5	20.6	40	1 x 1.5 kW	DN65	1330	2510000423
SMP150-100-1/1,5	34.5		1 x 1.5 kW	DN100	1330	2510000620
SMP150-100-1/3	69.1		1 x 3 kW	DN100	1330	2510000621
SMP250-150-1/3	107		1 x 3 kW	DN150	1330	2510000626
SMP200-150-2/3	160		2 x 3 kW	DN150	1330	2510000630
SMP250-200-1/6	214		1 x 6 kW	DN200	1680	2510000627
SMP250-200-3/3	286		3 x 3 kW	DN200	1330	2510000640
SMP300-250-2/6	430		2 x 6 kW	DN250	1680	2510000636
SMP400-350-3/6	748		3 x 6 kW	DN350	1680	2510000643

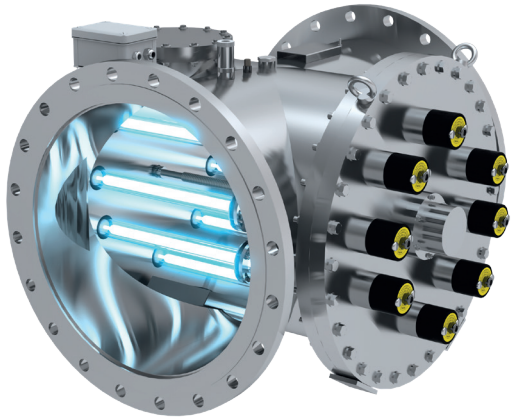
* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 90% transmittance.

UV Integra

BIO UV

The BIO-UV Integra range has been designed to treat a high quality fresh or sea water (85-98 % UVT). Its electropolished stainless steel reactor and medium pressure lamps allow it to operate in cold, temperate or hot application.

benefits +



- Suitable for land and sea-based facilities
- Improves algae control
- Savings in water, energy and chemical consumption
- Marine approved electrical cabinet
- Low capital expenditure (CAPEX) and installation costs with minimal service and plant room space required
- Suitable for indoor and outdoor applications
- Highly resistant to corrosion attack
- UV sensor

MADE IN FRANCE

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
Integra 125	38	40	1 x 1.8 kW	DN125	510	PINT016878UTNA-001
Integra 150	275		2 x 2.5 kW	DN250	645	PINT017291UTNA-001
Integra 250	460		4 x 2.5 kW	DN300	734	PINT017293UTNA-001
Integra 300	635		4 x 3.7 kW	DN300	800	PINT016879UTNA-001
Integra 500	1730		6 x 3.0 kW	DN500	870	PINT016880UTNA-001
Integra 1000	2000		6 x 6.0 kW	DN500	870	PINT017294UTNA-001
Integra 1500	3000		8 x 6.0 kW	DN600	1031	PINT016881UTNA-001
Integra 2000	4000		8 x 7.0 kW	DN700	1151	PINT016882UTNA-001
Integra 3000	7500		8 x 8.8 kW	DN900	1371	PINT016883UTNA-001
Integra 4000	8000		12 x 8.8 kW	DN700	1361	PINT016884UTNA-001

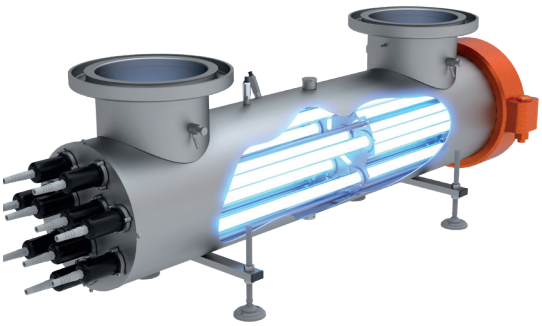
* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 95% transmittance.

UV RW

BIO UV

The BIO-UV RW range has been designed to treat a low quality fresh water (50-85 % UVT). Its stainless steel reactor and low pressure amalgam lamps allow it to operate in cold, temperate or hot application.

benefits +



- Touchscreen display of the UV intensity, remote management by 4-20 mA output
- Customization of reactors according to installation, operation and maintenance constraints (flange diameter, inlet/outlet positioning)
- Horizontal reactor installation
- Single-bulb lamps and patented sealing system for easy maintenance
- Automatic quartz sleeve cleaning without disassembly (standard)
- Possibility of power regulation of UV lamps
- Lamp life: 16,000 hours.

MADE IN FRANCE

2 years guarantee

MODEL	Maximum flow rate* (m^3/hr)	Delivered UV doses at indicated UVT / Flow rate#	UV lamps: quantity x power consumption	Connection	Reactor length (mm)	Item code
RW4168 87W	7.3	40	4 x 87 W	DN100	1269	RW018853UNA-001
RW4168 120W	10		4 x 120 W	DN100	1342	RW013971UNA-001
RW4168 170W	20		4 x 170 W	DN100	1339	RW013244UNA-001
RW4219 300W	40		4 x 270 W	DN150	1562	RW013970UNA-001
RW4273 400W	60		4 x 400 W	DN200	2000	RW008705
RW6273 400W	90		6 x 400 W	DN200	2000	RW008687
RW8273 400W	150		8 x 400 W	DN200	2000	RW008706
RW10355 400W	190		10 x 400 W	DN250	2000	RW008707
RW12355 400W	231		12 x 400 W	DN250	2000	RW008708
RW14355 400W	260		14 x 400 W	DN250	2000	RW008709
RW16406 400W	315		16 x 400 W	DN300	2005	RW008710
RW24508 400W	455		24 x 400 W	DN300	2016	RW008711
RW30609 400W	670		30 x 400 W	DN350	2043	RW013647UTNA-001
RW48711 400W	900		48 x 400 W	DN400	2020	RW010024

* Please contact us for different flow rates or UV doses
# The performance of these devices was calculated at the lamp end-of-life and with 60% transmittance.

Ozone product ranges

+

PPO_3
TOGC range
LAB2B

02

triogen® PPO_3

triogen®

The triogen® PPO_3 range is the newest generation of positive pressure ozone generators from BIO-UV Group, capable of up to 1.2 kg/h ozone production per generator. The generators incorporate the triogen® PPO_3 ozone production modules, state-of-the-art communications and connectivity, together with advanced safety and operational features. The ozone generators are available in two different control configurations, alongside a range of sized and specified ancillaries as well as a complete turn-key system including feedgas and ozone injection.

benefits +

- Energy efficient production of ozone at high concentration
- Simple to install, operate and maintain
- Highly modular system with advanced safety features
- Cutting edge ozone yield and concentration matrix
- Power trending and OPEX calculator
- HMI touchscreen and remote control
- Cost effective, reliable and robust

MADE IN BRITAIN

2 years guarantee

MODEL	triogen® PPO_3 - 1	triogen® PPO_3 - 2	triogen® PPO_3 - 4	triogen® PPO_3 - 8	triogen® PPO_3 - 16	triogen® PPO_3 Flex - 2
Ozone output - Oxygen (g/hr)	60	120	240	480	960	120
Ozone output - Dry air (g/hr)	25	50	100	190	380	-
Power supply	230V (±10V) 1ph 50Hz			400-480V (±10V) 3ph 50-60Hz		230V (±10V) 1ph 50Hz
Ozone generator dimensions (L x H x W)	340 x 994 x 808 mm			626 x 1960 x 816 mm	626 x 1960 x 1616 mm	664 x 1847 x 816 mm
Ozone generator weight (kg)	80	100	150	300	600	200
Item code	2510000764	2510000765	2510000790	2510000806	2510000807	2510000789

Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

triogen® LAB2B

triogen®

The triogen® LAB2B is a corona discharge type ozone generator with variable ozone output. Producing up to 4 g/h ozone output per generator using air and 10 g/h ozone output using oxygen. It is designed specifically for laboratory research and process validation.

benefits +

- Compact dimension
- Variable, easily adjustable ozone output
- Robust and reliable performance
- Designed for bench-tops and small spaces
- Simple to set up and use

MADE IN BRITAIN

2 years guarantee

MODEL	triogen® LAB2B
Ozone output (g/hr)*	4
Ozone output (g/hr)**	10
Air flow rate (L/min)	4 - 10
Oxygen flow rate (L/min)	2 - 5
Power supply	230V (±10V) 1ph 50Hz or 115V (±10V) 1ph 60Hz
Ozone generator dimensions (L x H x W)	350 x 160 x 300
Ozone generator weight (kg)	6
Item code	2520000128

*feed gas: dry-air-60° C dewpoint
**feed gas: 90-99.7% Oxygen with minimum 0.3% Nitrogen
Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

triogen® TOGC range

triogen®

The triogen® TOGC range is suitable for applications requiring up to 55 g/h ozone output per generator. All systems include integrated Oxygen concentrators, plus a range of injectors and booster pumps suitable for a range of applications and dose rates. Also available in skid-mounted systems including ozone injection, such as O_3Flex-10 and the XIS range.

triogen® TOGC benefits +

- Ozone generators with capacities from 0.4-55 g/h
- Full flexibility for integration in a variety of applications
- A variety of cabinet materials and ancillaries available
- In-built Oxygen concentrator and compressor
- Local and remote control available

MODEL	triogen® TOGC 8X	triogen® TOGC 13X	triogen® TOGC 45X	triogen® TOGC 55X
Ozone output (g/hr)	8	13	45	55
Oxygen flow rate (L/min)	5	5	5	8
Power supply	230V (±10V) 1ph 50Hz or 115V (±10V) 1ph 50-60Hz		230V (±10V) 1ph 50-60Hz	
Ozone generator dimensions (L x H x W)	600 x 1050 x 250 mm		650 x 1060 x 310 mm	
Ozone generator weight (kg)	48	50	107	107
Item code	2520000689	2520003592	2520000684	2520003696

Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

triogen® TOGC XIS benefits +

- Ozone generators with capacities from 0.4-55 g/h
- Skid-mounted, turn-key systems including Ozone injection system (booster pump, injector, and pipework)
- Stainless steel or PVC injection system options available
- Ideally suited to bottling, drinking, process, and F&B applications

MODEL	triogen® TOGC 8XIS	triogen® TOGC 13XIS	triogen® TOGC 45XIS	triogen® TOGC 55XIS
Ozone output (g/hr)	8	13	45	55
Oxygen flow rate (L/min)	5	5	5	8
Power supply	230V (±10V) 1ph 50Hz or 115V (±10V) 1ph 50-60Hz		230V (±10V) 1ph 50-60Hz	
Ozone generator dimensions (L x H x W)	600 x 1675 x 450 mm		650 x 1675 x 500 mm	
Ozone generator weight (kg)	83	85	128	128
Item code	2510000090	2510000086	2510000161	2510000682

Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

triogen® O_3 Flex benefits +

- TOGC2 Ozone generator integrated with Oxygen concentrator, booster pump, and injector
- Stainless steel skid and booster pump, and PVC injection system
- Simple, lower-cost alternative to the TOGC8-13XIS range

MODEL	triogen® O_3 Flex - 10
Ozone output (g/hr)	10
Power supply	230V (±10V) 1ph 50Hz or 115V (±10V) 1ph 60Hz
Ozone generator dimensions (L x H x W)	630 x 1010 x 445 mm
Ozone generator weight (kg)	80
Item code	2510000736

Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

triogen® TOGC2 benefits +

- Standalone, low cost Ozone generator with capacities up to 2 g/h with ambient air, 4 g/h with dry air, and 10 g/h with Oxygen feedgas
- Ideally suited to small-scale treatment requirements and process validation

MODEL	triogen® TOGC2
Ozone output (g/hr)	10
Air flow rate (L/min)	5
Power supply	230V (±10V) 1ph 50Hz or 115V (±10V) 1ph 50-60Hz
Ozone generator dimensions (L x H x W)	330 x 280 x 150
Ozone generator weight (kg)	6
Item code	2520000030

Voltage to be confirmed at time of order. For requests outside of technical specifications, please contact us.

MADE IN BRITAIN

2 years guarantee

Terms and Conditions of Sale

These General Terms and Conditions of Sale are systematically sent or given to each buyer.
Placing an order implies full and unreserved acceptance by the buyer of these conditions.
No particular condition, in particular of purchase, can, except written and formal acceptance of the seller, prevail against the present Terms of Sales.

1. Order taking
The seller is only bound by orders taken by his sales personnel or employees after receiving written confirmation signed by the buyer.
Acceptance may also result from the shipping the goods.
The order is considered to be specific to the buyer and cannot be transferred without the seller's agreement.

2. Delivery: goods
The seller reserves the right to make any modification he judges fit to his products at any time, with no obligation to modify products in pending orders. He reserves the right to modify the models defined in his brochures and catalogues without prior warning.

3. Delivery: delivery time
- Deliveries are only made according to availability, and in the order that the orders arrive. The seller is permitted to make complete or incomplete deliveries.
- Delivery times are indicated as precisely as possible, but depend on availability of supply.
- Late deliveries cannot give rise to damages and interests, nor to suspension or cancellation of pending orders. The seller will inform the buyer of any late delivery.
- The seller will be discharged from his obligation to deliver in the event of the intervention of Force Majeure, such as war, riots, fire, flooding, strike, accidents, impossibility of supply, etc.
No obligation or damages and interests may be charged to the seller.
- In all cases, delivery within the delay can only take place if the buyer is up to date in his obligations towards the seller, whatever the cause.

4. Delivery - Risks
The products travel at the risks and perils of the addressee, who must, in the case of damaged or missing goods, make all necessary declarations, and confirm his reservations to the carrier by registered letter with receipt notification within three days of receiving the goods.

5. Reception
Without prejudice to the precautions to be taken with respect to the carrier, claims concerning patent defects, or the non-compliance of the product delivered with the product ordered or with the shipping order, must be made in writing within three days of the reception of the product.
The buyer must provide all proof concerning the reality of the defects or anomalies noted. He must make the necessary arrangements to allow the seller to observe these defects and to provide a remedy for them.
He shall refrain from intervening himself, or demanding the intervention of a third party to this effect. For products sold or Packed, the weights and measures on departure are taken to be the quantities delivered.

6. Return - Conditions
All returns of products must result from formal agreement between the seller and the buyer.
Any product returned without this agreement will be held at the disposal of the buyer and will not give rise to the establishment of a credit note.
The charges and risks of return are always at the buyer's expense.

7. Return - Consequences
All returns by customers of items considered to be new must be performed within two weeks of reception.All returns accepted by the seller will give rise to the establishment of a credit note for the buyer, after qualitative and quantitative checking of the products returned.
In the case of a patent defect or non compliance of the products delivered, duly recognized by the seller under the conditions provided in article 5, the buyer may obtain the free replacement, or the reimbursement of the products, at the seller's discretion, to the exclusion of any compensation or damages and interests.

8. Warranty - Scope
Products are guaranteed against all mechanical, electronic or electrical faults, for a period indicated according to each product at the time of the order. This warranty starts from the date of delivery, in compliance with the warranty certificate included with the products, and becomes void in the event that payments owed are not made.
Interventions made under the terms of the warranty will not have the effect of extending the warranty period.
The presentation of the warranty certificate is strictly compulsory for any warranty claims.
In the terms of this warranty, the only obligation due to the seller will be the free replacement or repair of the product or the component recognized to be faulty by the seller's services.
The current warranty therefore includes parts and labour, to the exclusion of any travelling expenses and delivery charges, which remain at the buyer's expense.
Any product destined to benefit from the warranty must first be submitted to the seller's after-sales department, whose agreement is essential before any replacement can be considered.

9. Warranty - Exclusions
Faults and damage caused by normal wear, external accident, incorrect assembly, faulty maintenance, abnormal use, non-compliant storage, failure to observe the expiry date, intervention of a third party or a modification to the product not approved or specified by the seller, are excluded from the guarantee.
The probes on pH controllers do not benefit from any contractual warranty.
In addition, the warranty will not apply for any patent defects that the buyer must claim under the terms of article 5.
All travelling expenses due to an excluded cause will always be at the buyer's expense.
All interventions taking place outside warranty will be invoiced: - parts, labour and travelling expenses according to the tariff applicable at the time of the order.

10. Prices
Products are supplied at the price applicable at the time that the order is made.
Prices are understood to be net, ex-factory, including Packaging except for special packaging, which is subject to an additional charge.
The VAT applied will be at the rate applicable on the day of the event generating the tax.

11. Payment – Conditions
11.1 Invoices are payable to the seller's head office. Conditions of payment are as follows:
-Payment 30 days from the end of the month by signed and accepted bill of exchange or direct bill of exchange or bank cheque drawn for the full amount, without discount;
-All first orders placed by new clients are considered to be payable in cash on delivery, net without discount, by bank cheque.

11.2 If the financial position of the buyer deteriorates, or if the seller should come to have legitimate reasons to fear that the buyer would not be able to meet the agreed deadline for payments, it is specifically agreed that the seller reserves the right to modify the conditions of payment and to deliver goods only in exchange for immediate and complete payment of the pending order and all preceding orders.
Any terms of payment granted to the buyer do not provide him with any rights, but are solely on a short-term basis and liable to be revoked, in compliance with the terms of this article.

12. Late payment or default
In the event of late payment, the seller may suspend all pending orders, without prejudice to any other course of action.
All amounts remaining unpaid at the agreed payment deadline will automatically give rise to the payment of interest on overdue payment at the statutory rate of interest plus 5 percentage points, without any prior formal notice demand, notwithstanding article 1153 of the French Code Civil. This interest is calculated from the date of the payment deadline until the payment date.
The amount of these penalties will be automatically imputed against any rebate, discount or reduction owed by the seller.
In the event of failure to pay, 48 hours after a formal notice demand has remained without effect, the sale will be automatically rescinded if the seller so wishes. The seller may then demand, by court order, the return of the product, without prejudice to any other claims for damages and interests.
The order concerned will be rescinded, as will all other preceding and unpaid orders, whether delivered or pending delivery, and whether payment is due or not.
In the event of payment by commercial bill, failure to return the bill will be considered as a refusal of acceptance, and considered to be a default of payment. In the same manner, when the payment is by instalments, failure to pay one of the instalments will lead to the entire amount owed becoming due immediately, without any prior formal notice demand.
In all the above cases, the amounts that may be due for other deliveries, or for any other reason, will immediately become due if the seller does not choose to rescind the corresponding orders. The buyer must reimburse all expenses caused by the legal recovery of the amounts owed, including the court officer's fees and an amount corresponding to 10 % of the unpaid invoices in damages.
Any invoice recovered by a legal process will be increased by a fixed compensation amount for unrecoverable expenses, which is fixed at 15 %.
It is explicitly agreed that interest is to be accrued as soon as it is owed for a full year. This interest will generate interest at the same rate.
Under no circumstances may payments be suspended, nor be subject to any form of compensation, without prior written agreement from the seller.
Any part payment made after the payment deadline will first be imputed against late payment interest, then against the oldest outstanding amounts due.

13. Transfer of risks
The transfer of risks concerning the products takes place as soon as they leave the seller's warehouses.
All handling, transport, customs and insurance operations are the buyer's responsibility, and are carried out at his expense and at his own risk.
In the event of dispatch by the seller, at the express demand of the buyer or otherwise, this dispatch is performed with carriage due, in the best conditions according to the seller's possibilities, but always under the entire responsibility of the buyer. The seller always intervenes, by express agreement, as the buyer's agent. Under no circumstances may the seller be held responsible for the carriage mode selected or the tariff charged by the carrier.
Goods always travel at the buyer's risk.

14. Reservation of ownership
The seller reserves the ownership of the goods delivered until their full payment by the buyer.
This right of ownership includes all improvements and additions that the buyer may have made to the goods delivered.
This right is extended to all goods delivered by the seller, in stock at the buyer's premises.
The buyer is held responsible for applying a distinct label indicating the seller's reservation of ownership to the goods covered by reservation of ownership.
Any damage to the goods must be immediately communicated to the seller.
The buyer must immediately inform the seller in the event of receivership or compulsory liquidation, judicial seizure or any other measures taken by third parties concerning goods under reservation of ownership.
The buyer must also inform the seller of the exact locations where goods that have been delivered and not yet paid for are being stored.
The seller may claim goods for which he reserves the ownership by registered letter with confirmation of reception addressed to the buyer, charging the latter to return the goods to the seller's possession.
If the buyer does not comply with this injunction, the seller may appeal to the court of Montpellier to demand an order for the compulsory restitution of the goods for which he reserves the ownership with penalties.

15. Exceptional loan of equipment
The seller may very exceptionally decide to place equipment at the disposal of the buyer, in order to replace equipment that has been returned for repairs.
This loaned equipment must be returned to the seller as soon as the buyer recovers the equipment repaired.
The seller may also exceptionally place equipment for trials at the disposal of any buyer for a maximum period of one month, after which the equipment must be returned.
In all cases, the equipment loaned must be returned without any prior notice demand, within the deadlines indicated. All delivery charges are at the buyer's expense.
If these conditions are not met, the equipment will be invoiced to the buyer at the tariff applicable at the date of invoicing.

16. E-Commerce
Professional buyers who wish to sell BIO-UV products on their website must first obtain a written authorisation duly signed by the Management, validating both the image reproduction rights and observation of the retail prices.
If this clause is not observed, the seller shall require the buyer, by registered letter with acknowledgement of receipt, to remove all publications concerning his products from the aforementioned website. If the buyer does not comply with this demand, the seller may initiate proceedings in the Montpellier court to order removal.

17. Court of competent jurisdiction
In the event of any litigation or dispute concerning the terms or the execution of the order, only the Court of Montpellier is competent, unless the seller prefers to appeal to another competent court.
These courts will rule under French law, which incorporates the International Sale of Goods Convention.
This clause applies even in the event of a summary procedure, a collateral procedure or multiple claims against the defendant, whatever the mode and method of payment.

18. Cancellation
The buyer who cancels, of his own will, whole or part of an order or who differs its delivery, shall compensate the seller for all expenses incurred at the date of reception of the buyer information, without prejudice to eventual direct and indirect consequences which the seller shall bear following the buyer decision.

Terms and conditions are subject to change.

The unique identifier **FR218278_07VEKK** attesting to registration in the register of producers of the **DDS sector**, in application of article L.541-10-13 of the Environmental Code, has been allocated by ADEME to the BIO-UV Group (SIRET 527 626 055 00026). This identifier attests to its compliance with its obligation to register with the register of producers of Specific Diffused Waste and to the completion of its declarations of placing on the market with ECO DDS

The unique identifier **FR025482_05PUJ3** attesting to the registration in the register of producers of the **EEE sector**, in application of article L.541-10-13 of the Environmental Code, has been attributed by ADEME to the BIO-UV Group (SIRET 527 626 055 00026). This identifier attests to its compliance with its obligation to register with the Register of Producers of Electrical and Electronic Equipment and to the completion of its declarations of placing on the market with Ecosystem

The unique identifier **FR218278_01AILP** attesting to the registration in the register of producers of **household packaging**, in application of article L.541-10-13 of the Environmental Code, has been attributed by ADEME to the BIO-UV Group (SIRET 527 626 055 00026). This identifier attests to its compliance with its obligation to register with the Register of Producers of household packaging and to the completion of its declarations of placing on the market with Citeo

BIO-UV Group

www.bio-uv.com

Our local partner

ISO 9001:2015 BUREAU VERITAS Certification

La FRENCH FAB

EUO3TA.org European Ozone Trade Association

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