

sterilAir®

hygiene solutions  since 1939

Your ticket into the world of disinfection
UVC – more than just «blue light»



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Disinfection systems

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Expertise in UVC disinfection for more than 80 years

sterilAir is one of the world's oldest and most experienced companies in the field of UVC disinfection. Our particular strengths are solution-oriented hygiene concepts that are individually tailored to customer needs.

The eco-friendly sterilAir® UVC technology disinfects air, surfaces and liquids. The areas of application are extremely diverse. Our devices are used in particularly large numbers in the food industry and in air conditioning and ventilation systems. Other successful installations can be found in the pharmaceutical industry, laboratories and laundries. Water treatment in various industries also offers a wide range of applications.

End customers as well as machine manufacturers and building designers benefit from our know-how gained from over 80 years of experience. We offer science-based solutions at the highest technical level. The focus on effectiveness and functionality is reflected in our product design. Intensive exchange with customers and partners is our drive for innovation. As a result, sterilAir repeatedly takes on a pioneering role in the industry.

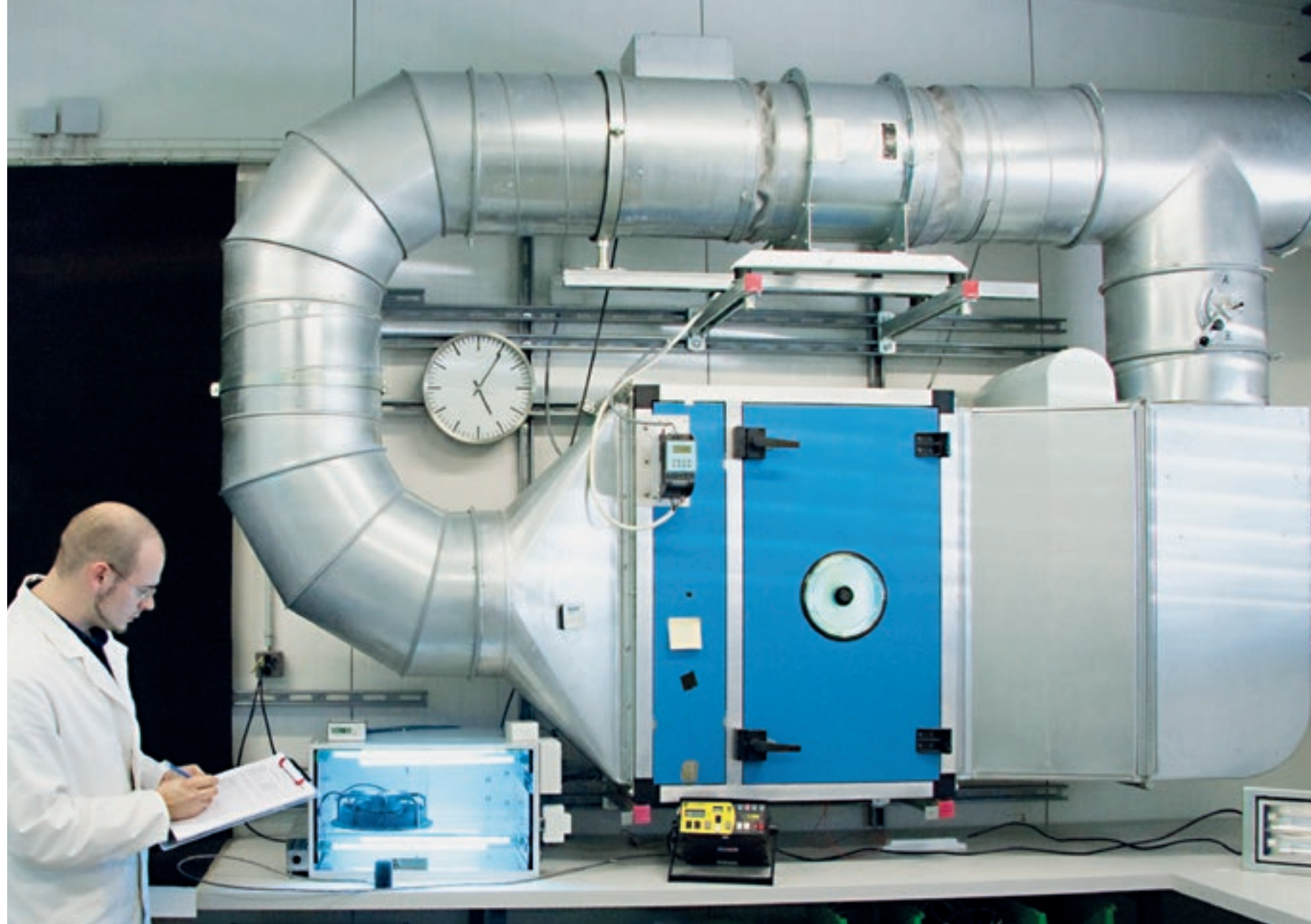
We act responsibly

UVC technology enables the avoidance of toxic, aggressive or chemical additives for disinfection purposes. It does not lead to any risky degradation products. Our systems are optimised for energy efficiency that is exemplary in the industry.

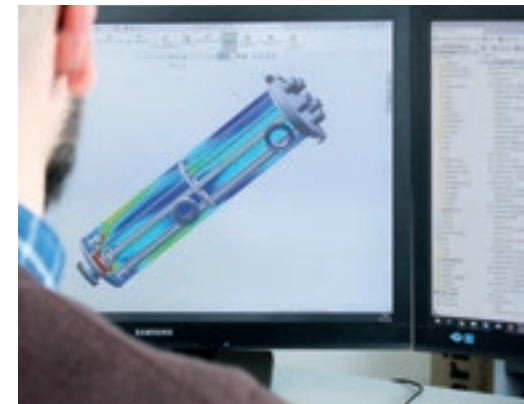
To ensure food and consumer safety, our products are in line with the requirements of the HACCP concept and thus support IFS and BRC certification.

In our company, which is certified in accordance with "DIN EN ISO 9001" and "DIN EN ISO 14001", we guarantee proper disposal of the returned UVC tubes.

Our headquarters in Weinfelden, Switzerland, is equipped with a photovoltaic system that produces sustainable electricity. In this respect too, sterilAir takes its responsibility and sets the course for a better future.



Our know-how – your success



The selection of the suitable UVC tube, the appropriate electronics, the right system design, the required amount of radiation and the recording of the relevant process data – all this makes the difference for us.

The holistic view of the production processes is an essential part of our solution finding. Often, the visible or measurable problems of our customers are only symptoms, the cause of the problems can be found elsewhere. Therefore, our goal is always to identify the root cause and start there. This approach guarantees long-term and sustainable success.

Our employees combine up-to-date expertise with the know-how gained from over 80 years of experience in UVC technology. This enables us to offer a wide range of services.

With our knowledge and experience, we regularly supervise bachelor's and master's theses as well as dissertations. In this way, sterilAir promotes motivated and creative young talents.

Calculation software

For the calculation and system design, we use unique, scientifically based simulation software, which sterilAir developed in cooperation with physicists of the ETH Zurich. This results in the highest degree of forecasting reliability.

A spectrophotometer allows us to measure the transmission of liquids at different wavelengths. These examinations are fundamental to a successful project. Based on the analysis, we evaluate whether and to what extent UVC technology can be used for the effective treatment of a specific liquid. In the later design, the transmission value is included in all calculations.





Microbiology & Electrical Engineering

In our in-house microbiology laboratory, we determine reliable lethality values depending on surface and microorganism in order to validate the disinfection performance for partners and customers. Our S2 laboratory qualifies us to work with microorganisms that are hazardous to health. This enables us to examine industry-specific pathogens such as Salmonella or Listeria.

We use air samplers to measure the microbiology present in the air. Based on this expertise, we provide our customers with an individually tailored hygiene concept at the highest level.

In our technical laboratory, we determine the optimum configuration of the UVC units, taking into account all external parameters. Electronics and UVC tubes are developed and tested in Weinfelden. Only a perfect symbiosis between electronic ballast and UVC emitter guarantees a reliable effect in practice.

Continuous long-term and stress tests in our test benches ensure the highest level of quality and product safety and guarantee a flawless installation.

Test series on the UVC resistance of a wide range of materials are carried out professionally in our laboratory.



UV radiation

Three radiation ranges

- **UVA** (long-wave): 400 to 315 nm

The long-wave UVA rays hit the earth's surface as part of the solar radiation. They cause various photochemical processes, have a short-term pigment-forming effect (sun tan) and can cause indirect DNA damage and melanomas. UVA rays penetrate glass and transparent plastics.

- **UVB** (medium-wave): 315 to 280 nm

The medium-wave UVB rays show a delayed pigment-forming effect, which results in increased melanin production. In addition, they can cause sunburn. Likewise, UVB is also responsible for the formation of pre-vitamin D in the human body. This radiation is used for therapeutic purposes, among others. Even normal window glass is no longer permeable to these and shorter UVC rays.

- **UVC** (short-wave): 280 to 100 nm

UVC rays have a shorter wavelength and are more energetic than UVA and UVB rays. They cover most of the entire UV spectrum and have a strong germicidal effect in the range around 260 nm. UVC rays decrease in intensity with increasing distance from the source.

In sufficient doses, UVC inactivates microorganisms reliably and in a very short time. UVC radiation damages the DNA of the germs and inactivates them without leaving any residues.

Safe use of UVC

Your sterilAir® consultant will always position an application so that there is no danger to employees. Unlike UVA or UVB radiation, the penetration depth of UVC radiation into human skin is very low. UVC rays do not penetrate solid materials – not even window glass. Simple rules of conduct are:

- Never look directly into open radiation sources
- Avoid open radiation if possible
- Always switch off the units for maintenance
- Wear protective goggles and gloves to check the function



Manufacturing



Fully committed to the reputation of a "Swiss quality product", we place the highest value on functionality, precise and first-class workmanship as well as a consistent hygienic design. In our in-house production, these standards are implemented by our highly qualified employees.

Every product undergoes a multitude of tests during its assembly and is checked one last time for function and completeness before shipping.



Underestimated hygiene risk without UVC

Problem

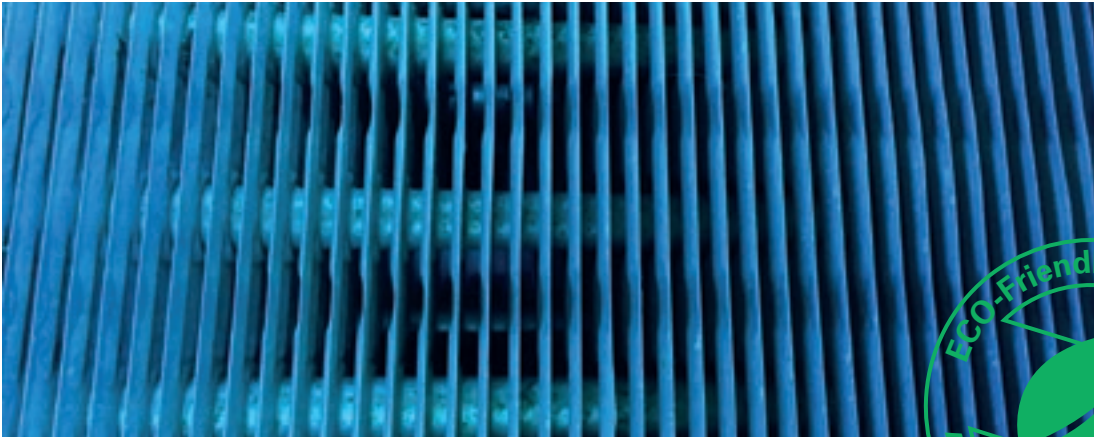
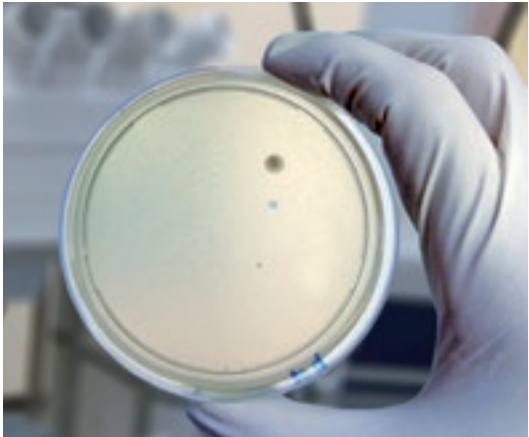
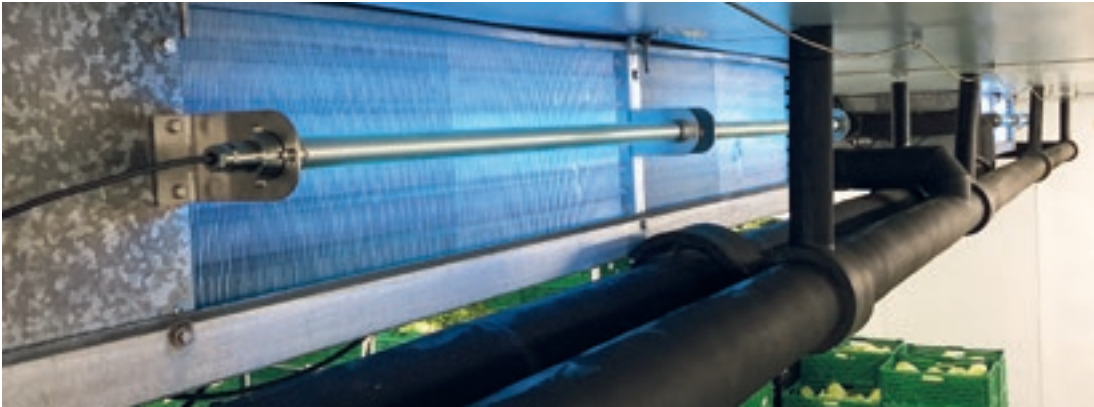
- Unwanted microorganisms
- Increasing germ load
- Biofilm on various surfaces
- Danger of cross-contamination
- Decreasing operational safety
- Shelf life at risk
- Product recalls
- High cleaning effort
- Production interruptions
- Increased use of aggressive chemicals

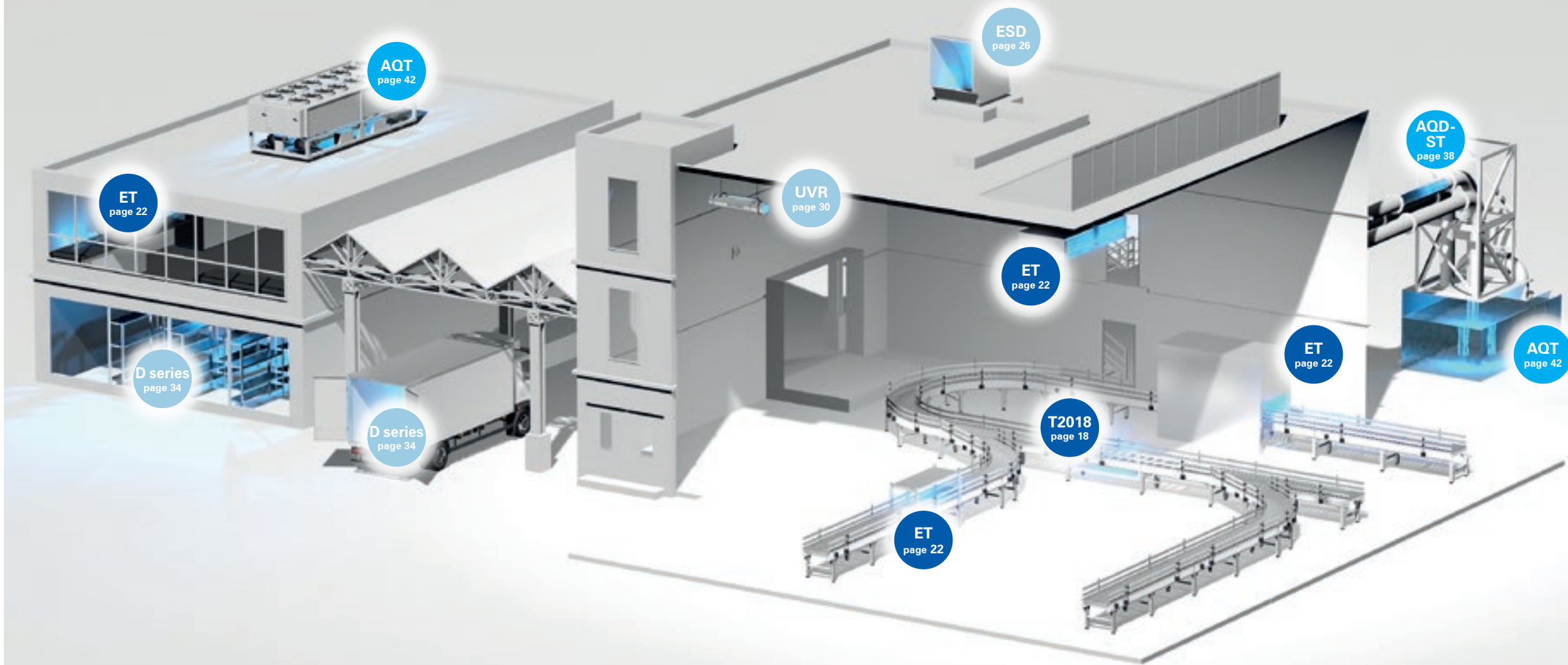


Improved hygiene – simple & sustainable with UVC

Solution

- UVC effectively inactivates microorganisms
- Lower germ load
- Improved food quality
- Minimised risk of cross-contamination
- Improved operational safety
- Extended shelf life
- Reduces food-borne diseases
- No known development of resistance
- 24/7 operation without interruption
- Eco-friendly
- Flexible range of applications

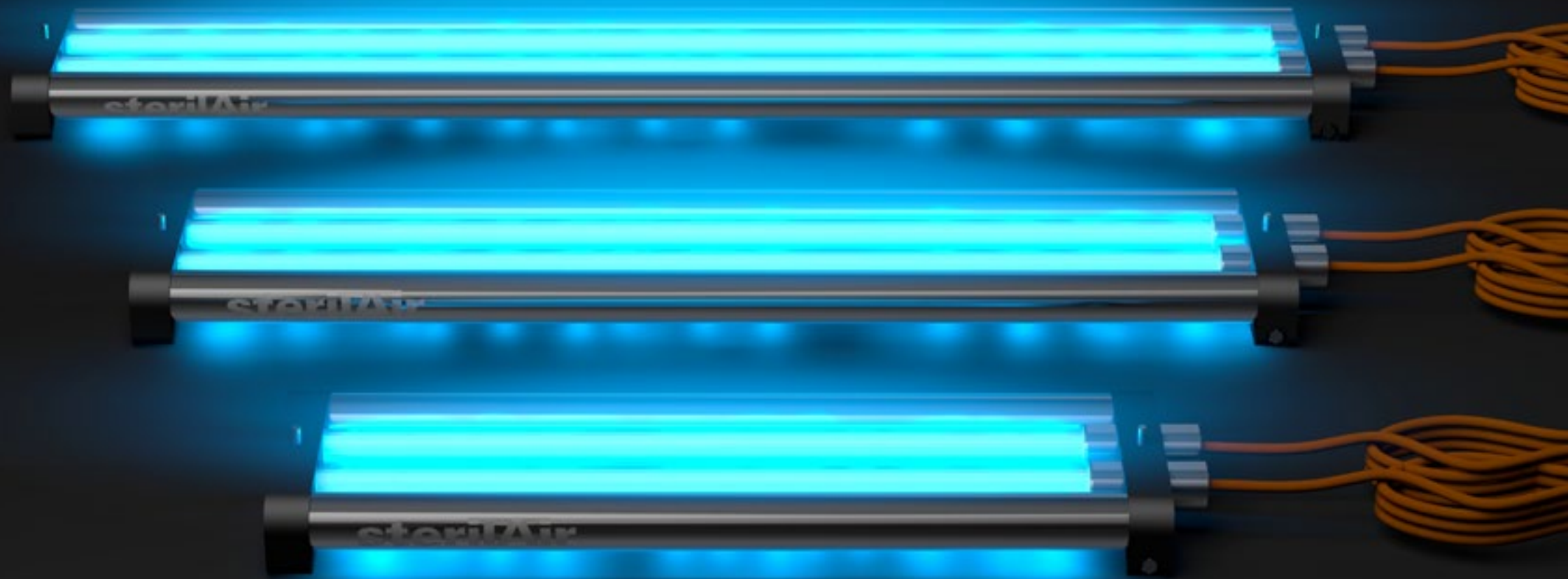




Radically better. Everywhere.

Where to benefit from sterilAir® products:

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T2018

Conveyor belt disinfection

sterilAir® **T2018** effectively prevents contact and smear infections of meat, fish and fresh produce. Conveyor belts remain microbiologically safe despite multi-shift operation. This ensures perfect production hygiene and secures the best-before dates.

We set standards

sterilAir® **T2018** is a revolutionary new conveyor belt disinfection system. It sets new standards in terms of disinfection performance, installation, handling, flexibility, hygiene and maintenance. The system was developed with experts from the meat industry.

With the launch of the first UVC under-belt disinfection system, sterilAir established a now widely used standard more than 15 years ago.

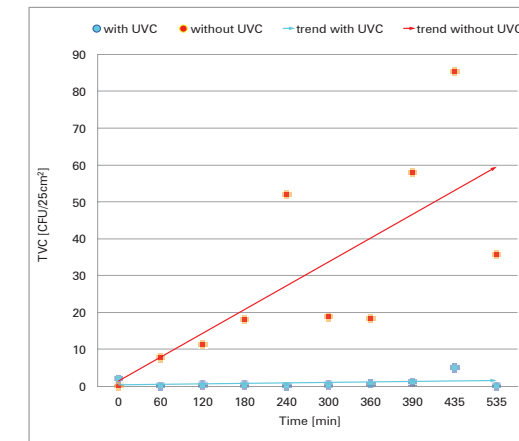
Areas of application

- Conveyor belts of all types
- For adverse operating conditions (IP69K)
- Also for heat-sensitive surfaces



Food hygiene without compromise

sterilAir® **T2018** is pressurised water-tight (IP69K) and impresses with its external simplicity in perfect hygienic design. The system can be installed flexibly and quickly. An emitter change is possible in less than two minutes and without any dismantling. Of course, the UVC tubes are splinter-protected and thus compliant to the HACCP requirements.



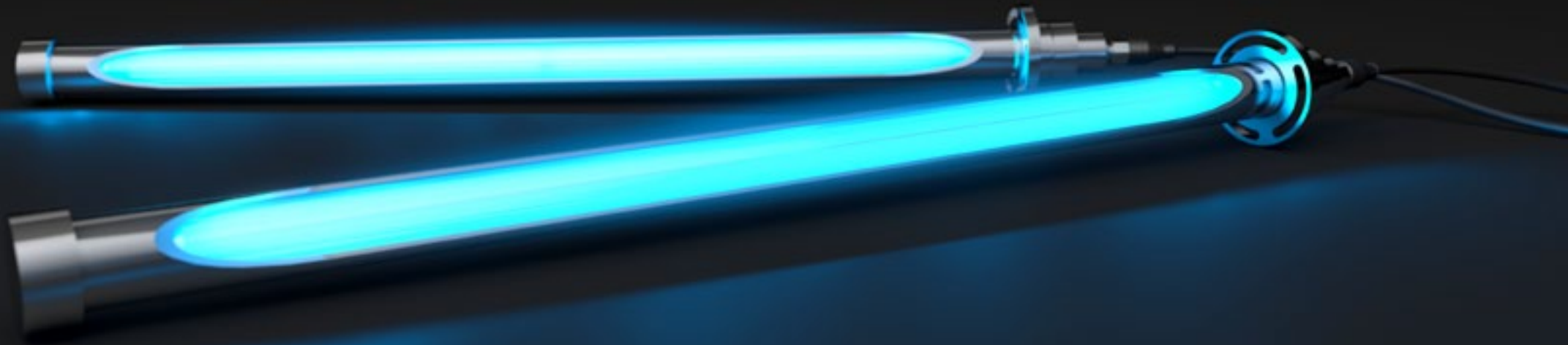
sterilAir® T2018 ensures perfect production hygiene and secures the best-before dates.



Application examples T2018

The sterilAir® T2018 is mounted under the conveyor belt using a two-point screw connection. The system can be optimally adapted to various belt widths by means of angled installation or head-to-head mounting.





E series – ET

Modular surface disinfection

Surface hygiene plays a key role in many areas. UVC components are therefore increasingly integrated directly into production machinery in the food industry.

sterilAir® **ET** modules are market-proven industrial components. Due to the modular set-up, the application range is extremely versatile. The stainless steel protection tube secures the emitter against breakage, dirt and moisture. In addition, the protection tube contains a radiation reflector. This combination enables maximum effect by targeting the UVC rays at the surface to be disinfected. Regardless of whether it is a conveyor belt, a packaging film, a proofing tray or the cooling coil of an evaporator.



Areas of application

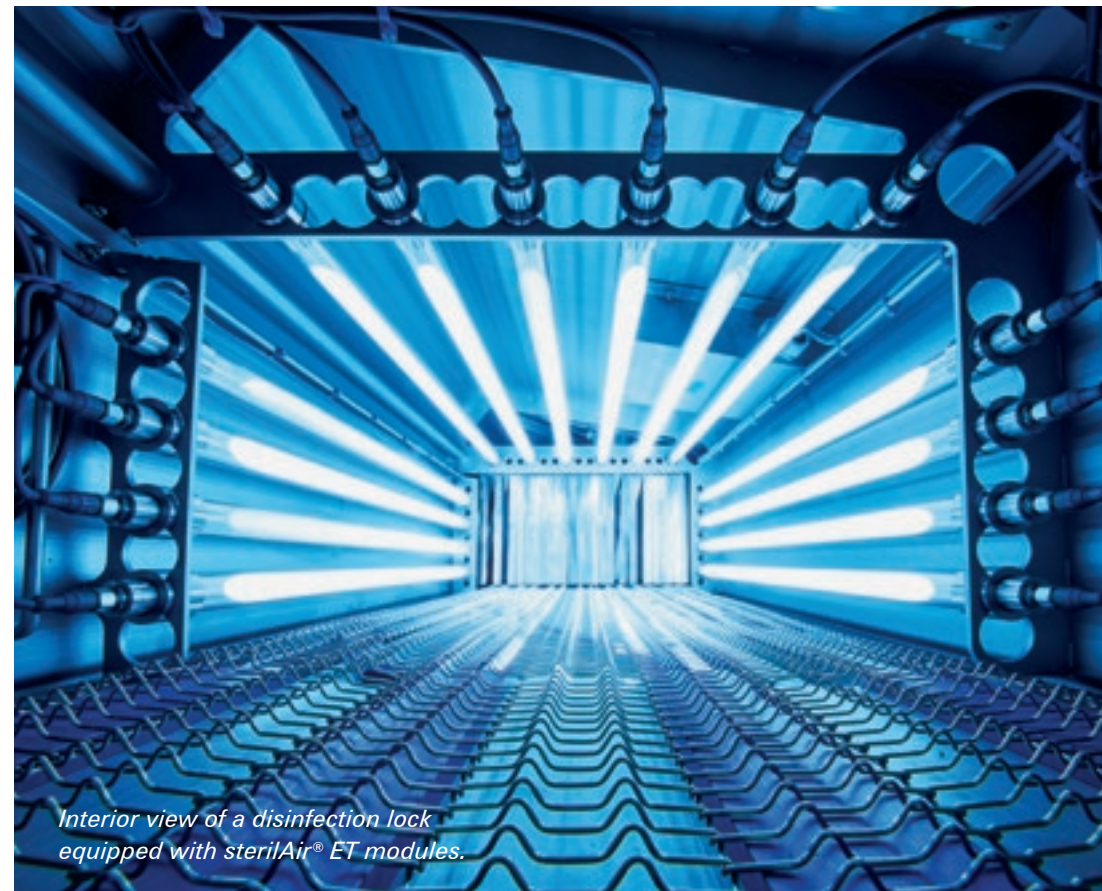
- Evaporator fins in refrigerated rooms
- Conveyor belts
- Disinfection of films and packaging
- Proofing cloths and proofing hangers
- Locks for boxes or products
- Installation in machines
- Surfaces with contamination risk

Coil disinfection on a room air cooler with sterilAir® ET module. Reduction of biofilm with positive influence on indoor air quality.



Application examples ET

Thanks to its modular design, the sterilAir® E series is highly versatile.



Interior view of a disinfection lock equipped with sterilAir® ET modules.



ESD/EX

In-duct air disinfection

Even the most modern filters can hardly stop airborne germs. As the filter class increases, so do the costs for operation and maintenance. The filters retain dust, pollen and larger organisms. A UVC barrier then inactivates the smaller microorganisms, which include most pathogens. UVC is therefore the perfect complement to filtration in ventilation systems and a highly effective measure against bacteria, viruses and phages.

Calculation as the basis for success

Using state-of-the-art software, sterilAir calculates the required number of UVC tubes and their optimal arrangement. The calculation software takes into account all relevant parameters such as cross-section, volume flow, air temperature and reflection. It was developed with the involvement of experts from ETH Zurich.



Airflow disinfection without compromise

The **ESD** is as a ready-to-install unit with two UVC tubes. It can be mounted directly into the air duct. This allows for easy retrofitting into existing systems.

With the **EX** flange module, the UVC tubes are mounted into the air duct through the duct walls. This is particularly advantageous for small ducts, as maintenance is possible from the outside without an inspection door.

Areas of application

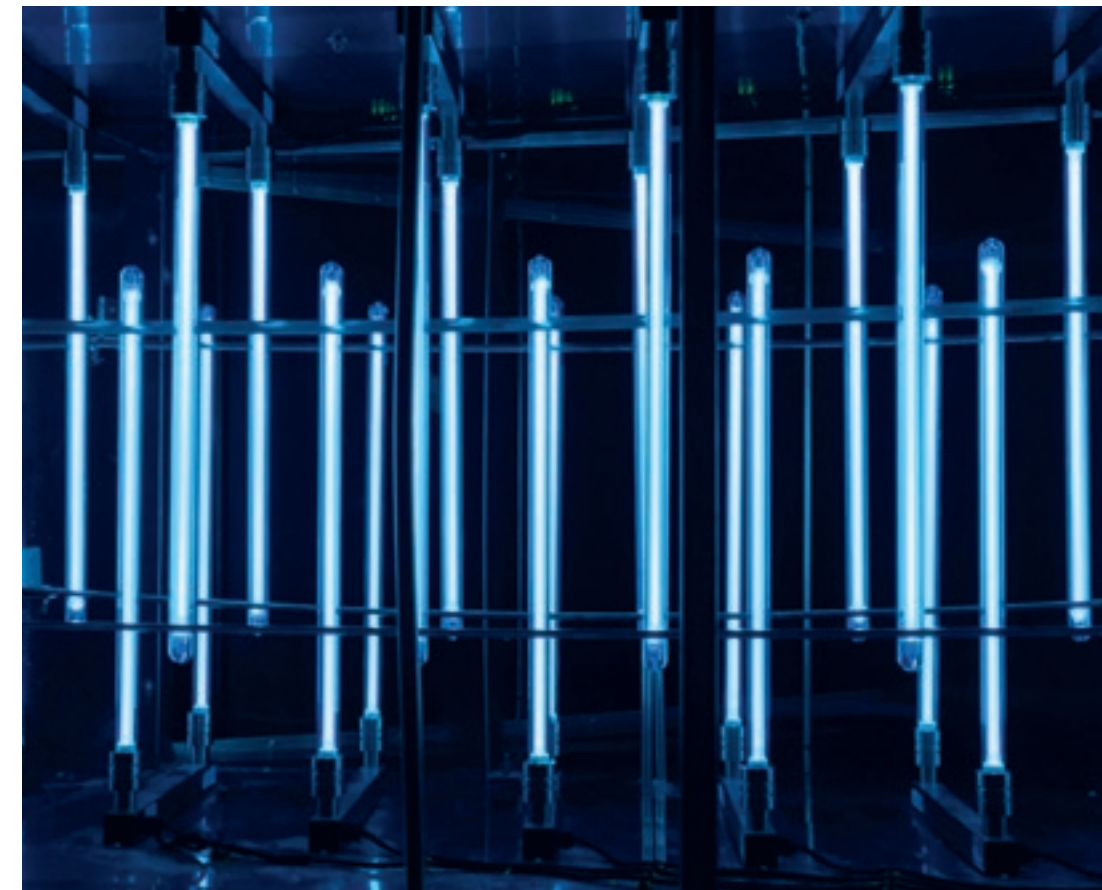
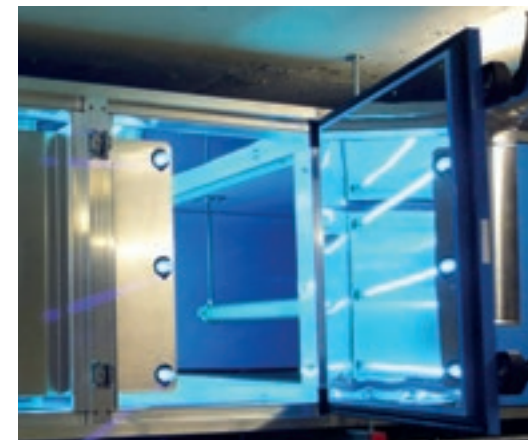
- Food production
- Processing and storage
- Pharmaceutical industry
- Hospitals, clinics
- Office and administration buildings

sterilAir® EX modules for air disinfection in a ventilation system.



Application examples ESD/EX

Taking all relevant parameters into account, sterilAir uses state-of-the-art software to calculate the required number of UVC tubes and their optimal arrangement.



UVR-4K

Industrial air disinfection

Since airborne germs are not visible, the influence of ambient air on product quality is often significantly underestimated. This applies in particular to fungal spores, which spread almost exclusively through the air. Once airborne, mould can settle directly on the products and accelerate their spoilage. Packaging materials, machines, conveyor belts, work surfaces, tile joints and seals are also at risk for contamination via the air.

Flawless air hygiene around the clock

sterilAir® UVR-4K systems reliably inactivate airborne microorganisms. Even the most resistant mould spores are inactivated by up to 90% with a single passage.

Floats above your production

A corrosion-protected fan delivers a volume of 700 m³/h, which can be optionally throttled. Thanks to special protective grids, sterilAir® **UVR-4K** units can be used around the clock. Even in rooms with people present.

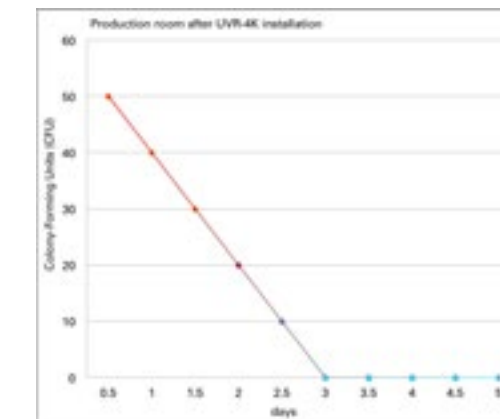


Swiss quality down to the smallest detail

- All functional parts made of 316 stainless steel
- Corrosion-free special reflector
- Particularly easy to maintain
- Moisture resistant
- Hygienic design
- Optionally with HACCP compliant glass splinter protection

Areas of application

- Production and packaging areas
- Cooling and storage rooms
- Laboratories



The sterilAir® UVR-4K can be used quickly and easily in a wide variety of areas and has an unrivalled high UVC disinfection performance.



Application examples UVR-4K



Mounted on two fixed points, the sterilAir® UVR-4K ensures optimal air quality everywhere.





D series

Room and upper-room disinfection

The areas of application of the sterilAir® **D series** are just as diverse as the technical options. Various emitter types are available, each adapted to the corresponding room climatic conditions.

Variable use of the different models

Systems with freely radiating UVC tubes may only be switched on when no people are present. For example, to decontaminate laboratories at night or to disinfect truck loading areas.

Wall units with protective grids, on the other hand, can also be used when humans are permanently present. These devices continuously inactivate airborne pathogens in medical practices, laboratories or offices.

Mould reduction in the ripening room

Ceiling units with a protective screen provide a germ barrier in the overhead area without affecting the products and areas below. The air flowing through this area is disinfected. At the same time, the ceiling and wall surfaces are continuously irradiated: Mould growth is inhibited directly at the source.



Simple and effective

- Low germ load in the air and on surfaces
- Reduction of cross-contamination
- Easy to install and maintain
- Reflectors or protective screens available
- For different temperature ranges
- Optionally with HACCP compliant glass splinter protection

Areas of application

- Ripening, fermentation and dry-age rooms
- Curing and cold storage rooms
- Truck loading areas
- Sluices
- Laboratories
- Medical and dental practices

In ripening rooms, the UVC tubes of the sterilAir® D series are of course equipped with splinter protection.



sterilAir® ceiling and wall emitters improve the hygiene in ripening rooms, laboratories and medical practices as well as truck loading areas.



Application examples D series





AQD-ST

Flow-through systems

Microorganisms find ideal growth conditions in recirculated water. Chemical disinfectants lead to a number of undesirable side effects, such as changes in surface tension, corrosive effects, foaming and odour formation. UVC treatment of water does not encounter such problems. It is a purely physical process without chemical residues. At the same time, the cost efficiency of this disinfection method is impressive.

Superior technology for critical cases

sterilAir® photoreactors have been specially developed for demanding applications. Sophisticated flow turbulence always achieves maximum disinfection performance, so that even turbid liquids, such as cheese brine, can be treated effectively. Thanks to the clamp mechanism, the systems are remarkably quick and easy to clean. This aspect receives great approval from the food industry.



- **AQD-ST1** with 1 tube for up to 2 500 l/h
- **AQD-ST3** with 3 tubes for up to 10 000 l/h
- **AQD-ST6** with 6 tubes for up to 20 000 l/h

Splinter protection? Crystal clear!

Even in case of damage to the UVC tube, your process and products are optimally protected. Thanks to an innovative special screw connection, our shatter protection can now also be used in water. In the event of glass breakage, no shards can enter the circuit. The system thus complies with HACCP requirements.

Areas of application

- Washing, cooling and process water
- Turbid liquids
- Brine

*Cheese production with sterilAir® AQD-ST
for brine disinfection.*



Application examples **AQD-ST**



*sterilAir® AQD-ST in use for sterilising
cooling water, salad washing water
and process water.*



AQT/EQ

Submersible systems

Water is a precious resource. Using water sparingly protects the environment and saves money. However, reuse makes process water susceptible to microbial contamination. Germ growth is often intensified by warm temperatures, long standing times or the introduction of impurities.

Reduces germs and costs

sterilAir® submersible systems reliably reduce the germ load of process water. By positioning them directly in the container, they additionally ensure clean surfaces without biofilm. It is a purely physical process: safe, sustainable and without residues. sterilAir® immersion systems are an economical and eco-friendly alternative to chemical disinfection processes.



Versatile in use

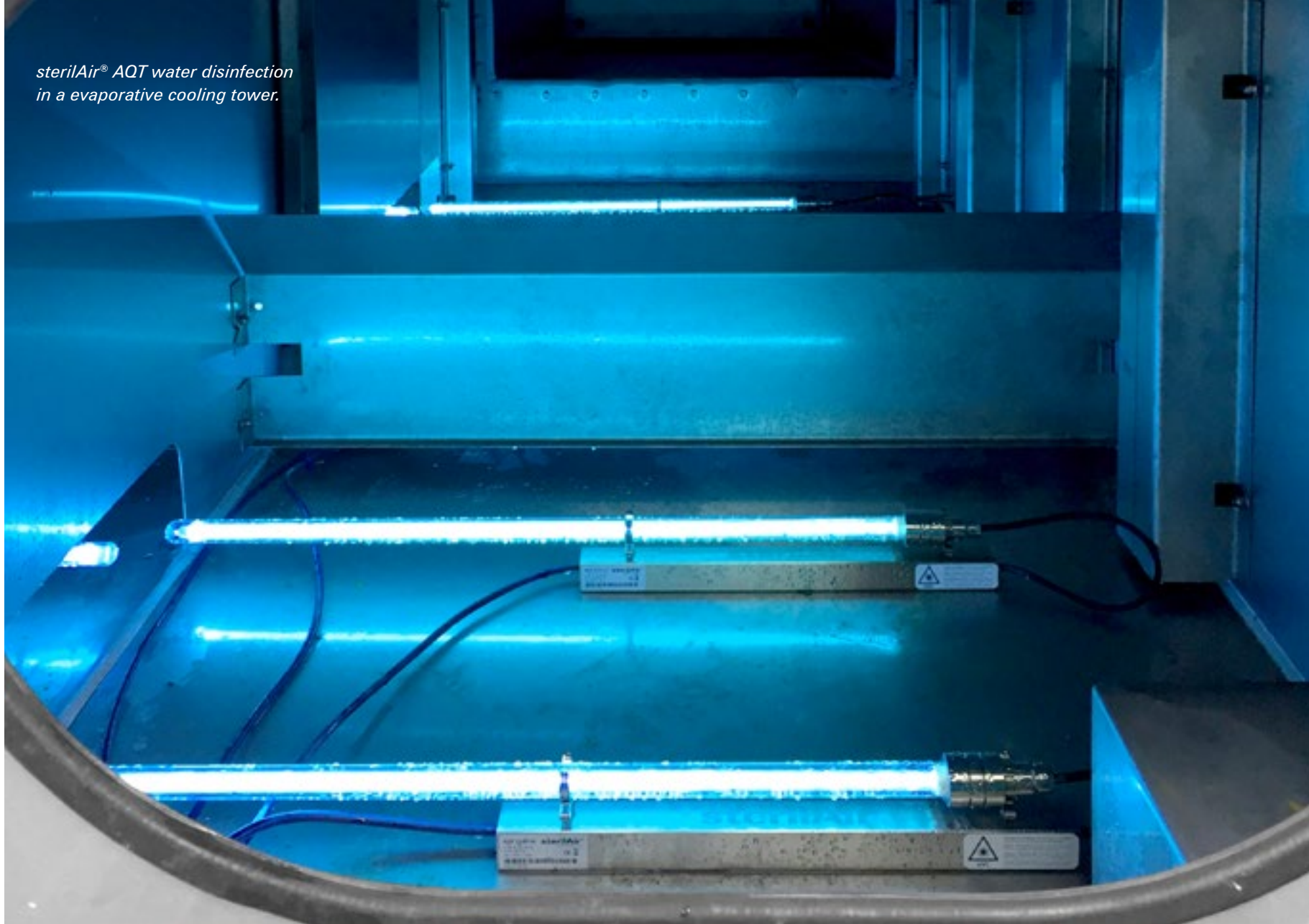
sterilAir® **AQT** submersible units can be easily integrated into existing systems. They are submerged including electronics.

sterilAir® **EQ** immersion lamps are the modular alternative. Only the UVC emitters are submerged, the electronics remain out of the water. Equipped with detachable connectors, the electronic ballasts are available as a mono or duo version.

Areas of application

- Wet and hybrid cooling towers
- Evaporative cooling systems
- Air washers
- Humidifiers
- Process water and CIP tanks
- Rinsing water in painting lines

*sterilAir® AQT water disinfection
in a evaporative cooling tower.*

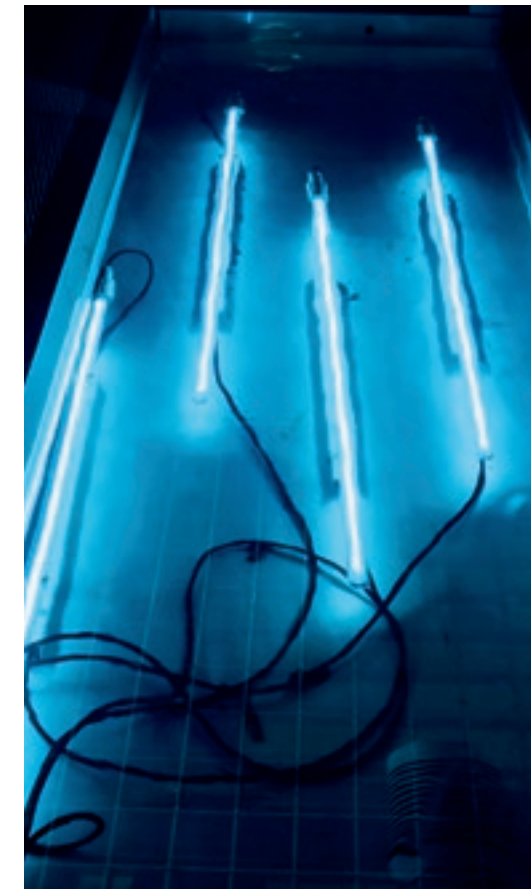
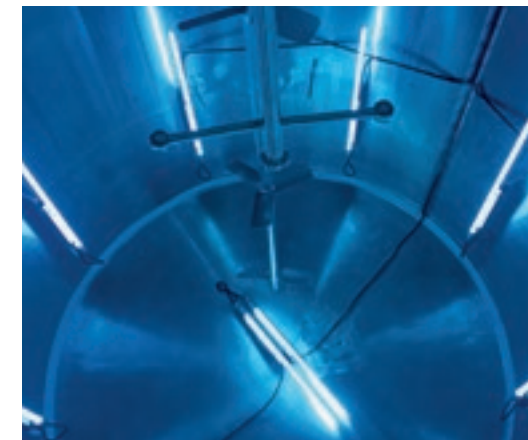


Application examples [AQT/EQ](#)

*sterilAir® EQ modules integrated
in the water tank of a painting line.*



*sterilAir® AQT for water disinfection
in a CIP tank and an air washer.*





Your ticket into the world of disinfection
UVC – more than just «blue light»



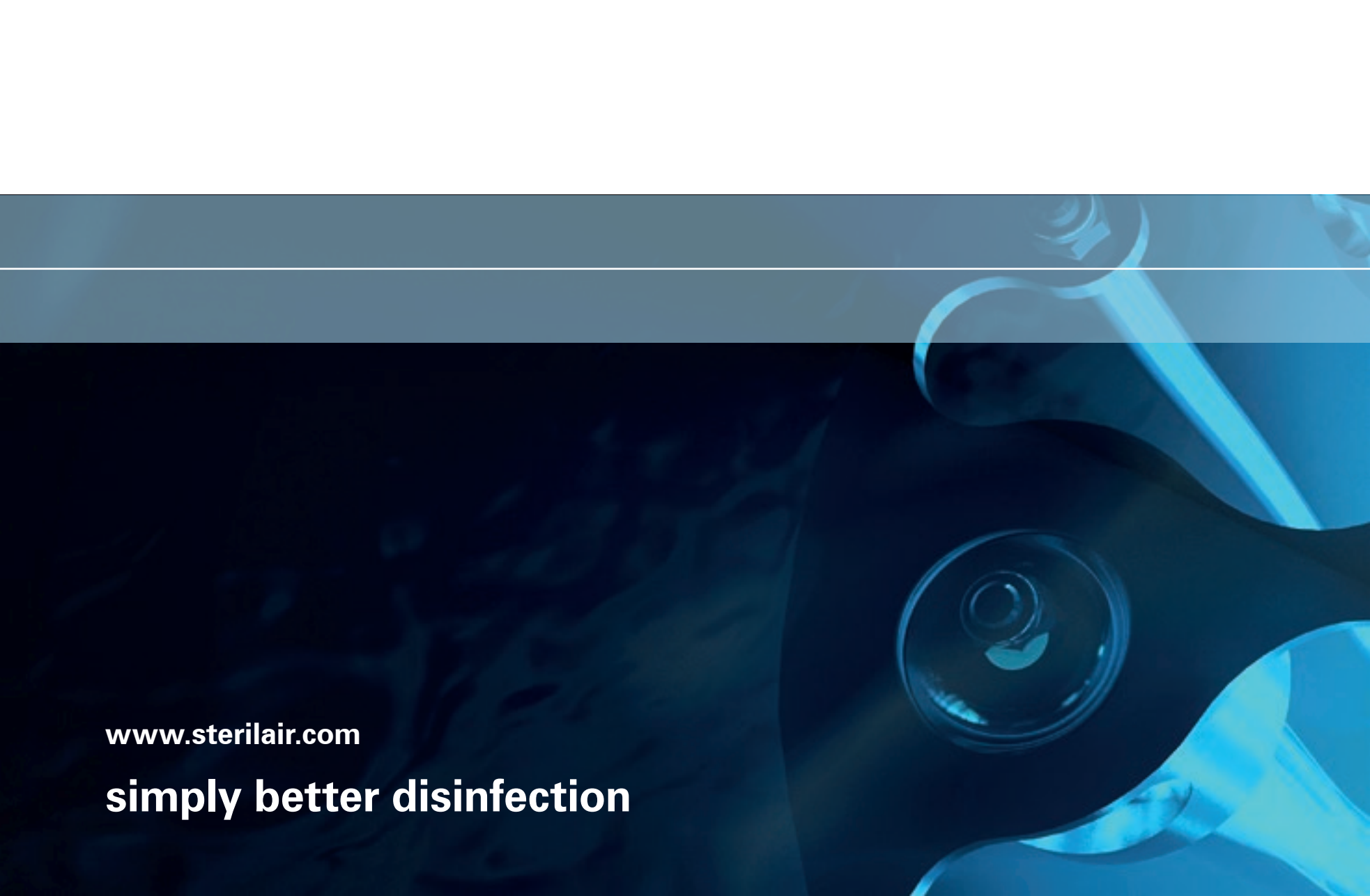
sterilAir AG
Oberfeldstrasse 6
8570 Weinfelden, Switzerland
+41 71 626 98 00
info@sterilair.ch



sterilAir EU warehouse
August-Borsig-Strasse 13
78467 Konstanz, Germany
+49 7531 584 60-0
info@sterilair.de



sterilAir UK Ltd
Murley Moss Business Village
Kendal, LA9 7RL, England
+44 1524 805 908
info@sterilair.co.uk



www.sterilair.com

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