



MULTI-WAVELENGTH ANTIMICROBIAL BLUE LIGHT (ABL)

Automated, continuous disinfection for food processing environments

- ✓ Touch-free
- ✓ Chemical-free
- ✓ UV-free
- ✓ Effective on *Listeria*, *Salmonella*, and biofilms

Spectral Blue MWHI® antimicrobial blue light

Automating surface hygiene control at an industrial scale

Traditionally, surface disinfection in food processing environments has relied on chemical disinfectants and manual procedures. While effective, these traditional practices are often expensive and labor-intensive, and results can vary depending on execution. Today, they are increasingly challenged by concerns around chemical exposure, material compatibility, environmental impact, and microbial adaptation. As a result, the demand for more sustainable, automated hygiene control continues to grow.

Spectral Blue MWHI® Multi-Wavelength, High-Intensity antimicrobial blue light (aBL) is a patented, fully automated disinfection technology for food processing environments. The chemical-free and UV-free solution provides continuous microbial control without operator input. It disinfects air, surfaces, equipment, and water, reducing the need for chemicals and manual routines. It's effective even on the most challenging microbial risks, like *Listeria*, *Salmonella*, molds, and biofilms, while remaining uniquely safe for staff, materials, equipment, and the environment.

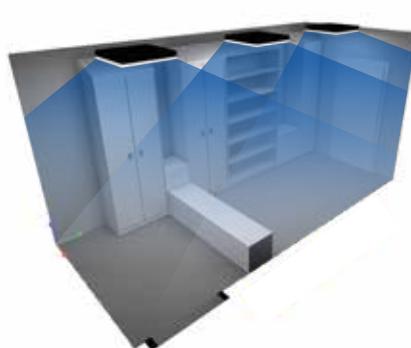
Safeguard the hygiene of critical machines and personnel cut-off rooms

Spectral Blue MWHI® disinfection devices operate automatically during off-hours or 24/7, continuously reducing bioburden. Deploy them at production machines and personnel cut-off rooms to automatically

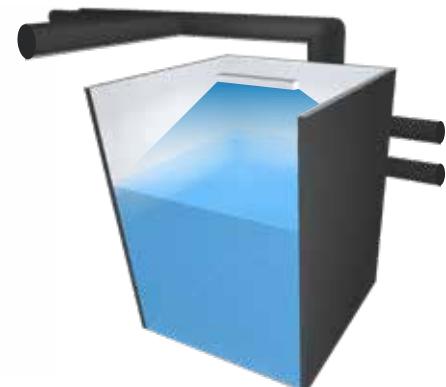
and continuously reduce the risk of microbial growth. Closed water systems can also be treated continuously with Spectral Blue to keep the water hygienic.



**Conveyors,
machines, and their
surroundings**



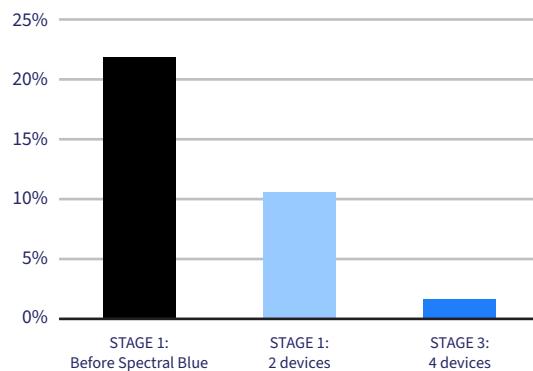
**Personnel
cut-off rooms**



Water systems

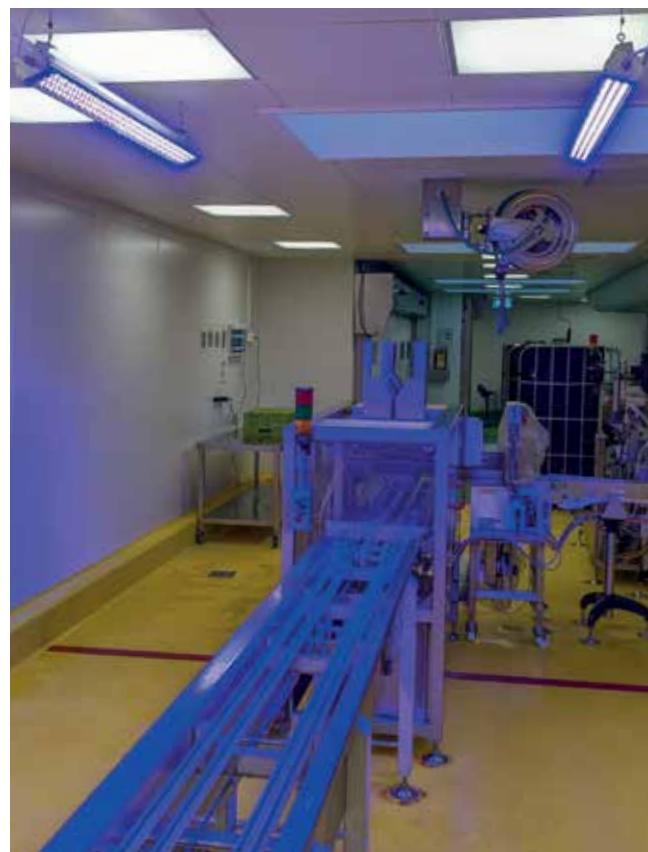
Automation improves consistency & safeguards your brand

Continuous protection against foodborne pathogens like *Listeria monocytogenes*



*Percentage of positive *L. monocytogenes* samples before & after installing Spectral Blue MWHI® devices at a sushi facility.
 Results presented at the IAFP European Symposium, 2025.*

Including the automated Spectral Blue disinfection as part of your daily hygiene management practices improves consistency and reduces deviations, reducing the risk of hygiene failures, production losses, and recalls. Its alternate mechanism of action also supports and enhances your existing microbial control practices and regulatory compliance.



Works on *Listeria*, *Salmonella*, and biofilms

Spectral Blue is highly effective even against the most challenging foodborne pathogens. Its efficacy has been proven in both controlled laboratory testing and real-world environments.

Protected quality, enhanced brand protection & consumer trust

Automated, consistent hygiene control improves quality, shelf life, and food safety, safeguarding your brand and reputation.

More sustainable operations with safe & environmentally friendly technology

Our chemical-free and UV-free technology supports more sustainable hygiene control without compromising quality. The long-lifetime LED devices contain no mercury, generate no ozone, and require no routine lamp changes or special maintenance.

Proven customer results

Real-world food protection performance with continuous disinfection

Discover four food customer case examples demonstrating how Spectral Blue reduces hygiene issues without disrupting operations.

CASE 1:

Sushi producer eliminated *Listeria monocytogenes* at a packing line

A ready-to-eat (RTE) sushi producer in Central Europe faced recurring *Listeria monocytogenes* findings around a packing line, despite regular cleaning and disinfectant use. The contamination kept reappearing, creating an ongoing problem and additional workload for the team.

After installing Spectral Blue at the line, the producer saw a strong reduction in positive *Listeria* findings, and eventually achieved a level with zero positive findings. The results showed that continuous, automated blue light disinfection can effectively support hygiene programs in demanding RTE food production environments.

CASE 2:

Brüggli fish farm improved hygiene in fish processing

Brüggli-Forellen, a Swiss trout farm, implemented Spectral Blue technology across its production areas to further strengthen hygiene and reduce contamination risks during fish processing. As a high-volume operation, maintaining consistently clean conditions is essential for both product quality and food safety.

By adding automated, continuous disinfection as an additional hygiene measure, Brüggli-Forellen was able to optimize daily hygiene routines and support its long-term quality and sustainability goals. The solution provides an extra layer of protection in demanding fish processing and aquaculture environments.

CASE 3:

Metzgerei Künzli strengthened hygiene in meat production

Metzgerei Künzli implemented Spectral Blue technology in its production facilities to supporting the company's commitment to high hygiene standards in everyday food production.

By adding automated blue light disinfection as an additional hygiene measure, Metzgerei Künzli strengthened routine contamination control in processing areas without relying solely on manual cleaning. The installation demonstrates how continuous disinfection can support food safety, improve hygiene consistency, and reduce risks in demanding production environments.

CASE 4:

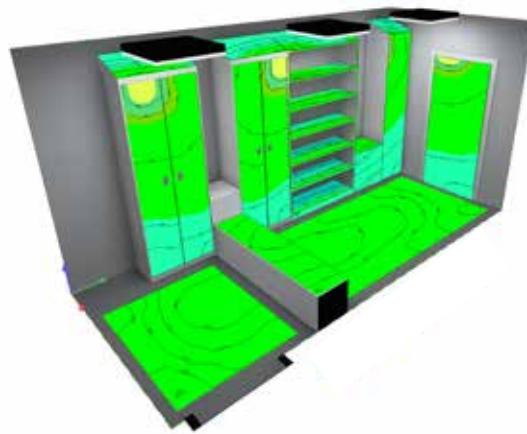
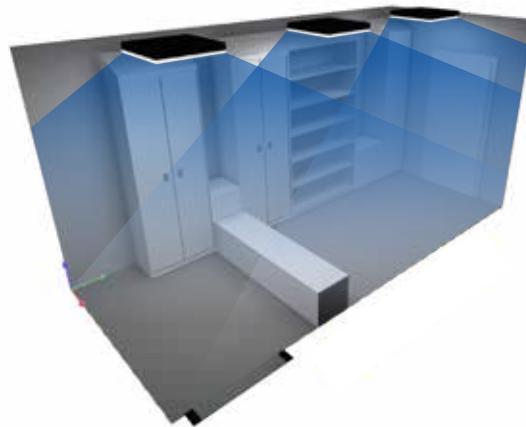
Atria achieved 100% elimination of *Listeria monocytogenes* in a biosafety cabinet

Atria Finland's food QA laboratory tested the Spectral Blue SALO XL device in a biosafety cabinet to evaluate its effectiveness against *Listeria monocytogenes*. The test was done under controlled conditions using multiple sample plates placed inside the cabinet.

After overnight exposure to Spectral Blue MWHI® antimicrobial blue light, the laboratory confirmed complete elimination of *Listeria* colonies. The result demonstrates that Spectral Blue can be used as an automated disinfection method in laboratory workflows to help prevent cross-contamination and improve hygiene consistency.

3D disinfection planning

Optimal device placement through simulation



Every site is different and every microbial challenge is unique. Using a proprietary simulation model developed by our scientists, we create a 3D model of your space and Spectral Blue device placements. We verify the blue light coverage and optimize the setup, ensuring a solution that works in real operating conditions and delivers faster return on investment.

How the simulation process works

We simulate different device layouts and refine the design with you until the setup matches your goals — whether you want to tackle a specific problem, introduce an additional safeguard, or reduce reliance on chemicals.

What you will receive

You will get a clear recommendation for the optimal Spectral Blue MWHI® setup for your site, including:

- Recommended device type(s) and quantity
- Suggested placement for best coverage
- Price, either as an investment or as a monthly subscription fee

What we need from you

To get started, we only need basic information, such as:

- A floor plan or drawing (PDF or CAD if available — a sketch works too)
- Room dimensions and ceiling height
- Major machine or furniture placement
- Notes on room usage and operational routines

Spectral Blue is your long-term partner in contamination control

Our approach is to help you strengthen disinfection performance, protect critical hygiene zones, and achieve measurable, sustainable results in day-to-day operations. We measure success by the results you achieve.

Ready to let us run a simulation for you?

Simply send us your layout and requirements and we'll propose an optimized Spectral Blue MWHI® setup for your facility. The planning is a free service from us and there's no obligation to purchase.

Get your free planning service:

www.spectral.blue/free-planning

Spectral Blue devices for food producers

Designed & made in Finland



PRODUCTION AREAS AND PERSONNEL CUT-OFF ROOMS:

L100 & L200 disinfection devices

- Surface installation on walls or ceilings
- Polycarbonate light cover and IP65 enclosure
- Power consumption: 100 W / 200 W
- Dimensions: L x W x H 650/1200 x 90 x 59 mm
- Control method: DALI or on/off



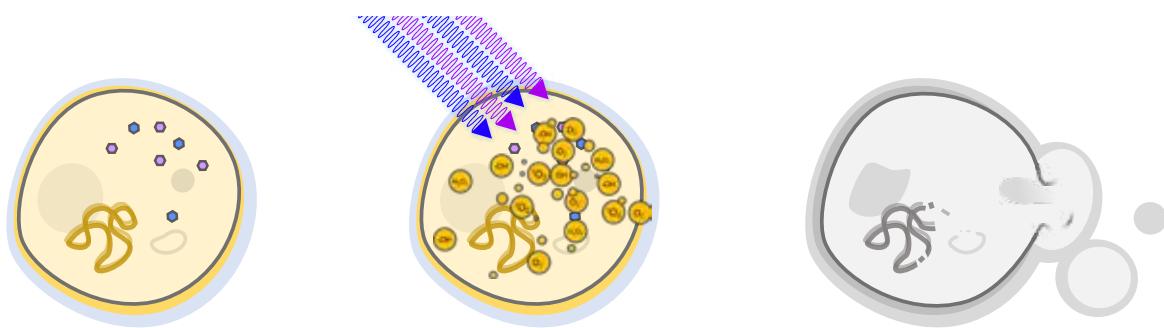
QUALITY LABS: BIOSAFETY CABINETS

SALO & SALO XL plug & play disinfection devices

- Magnetic mounting for quick deployment and removal
- Power consumption: 50 W / 100 W
- Dimensions: L x W x H 604/1160 x 109 x 66 mm
- Control method: on/off

The science & how it works

Multi-wavelength, High-Intensity MWHI blue light technology



Microbial cells contain light-absorbing compounds such as porphyrins and flavins.

Spectral Blue wavelengths activate the compounds. ROS start forming inside the cell.

The ROS damage the cell's vital structures, leading to microbial inactivation and death.

How it works

Spectral Blue MWHI® devices emit safe visible blue light at 405 nm and 450 nm wavelengths. When exposed to these specific wavelengths of high-intensity blue light, light-absorbing compounds naturally occurring within microbial cells are activated.

This activation triggers a cascade of reactions, leading to the intracellular production of reactive oxygen species (ROS). The ROS cause widespread, non-specific damage to vital cellular structures, resulting in microbial inactivation and death.

Spectral Blue wavelengths travel well through water and other clear materials such as glass and plastics. The light can also penetrate biofilms, allowing it to efficiently attack colonies protected inside biofilms.

The spectrum of light



Scientifically & field proven

Backed by nearly 3,000 peer-reviewed studies and proven in real-world pharmaceutical manufacturing environments, Spectral Blue has demonstrated efficacy on bacteria, yeasts, molds, and viruses—including spore-forming micro-organisms and biofilms.

Learn more about the science and efficacy of Spectral Blue at: www.spectral.blue/science

Safe for people

Human cells do not contain these same light-sensitive compounds in a way that causes this reaction. As a result, blue light does not trigger the same effects in human skin, eyes, or tissues—making it safe for human environments when used as intended.

Learn more about the safety profile of Spectral Blue at: www.spectral.blue/safety



Your manufacturing processes run on automation. Why should your contamination control still be manual?



**Learn more & request free
3D disinfection planning**
www.spectral.blue/food

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Spectral Blue MWHI® is a next-generation
disinfection technology patented in
the USA, Europe, and China

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analytichem 
your science enabled