

WHITEPAPER: UV DISINFECTION FOR Salons, Barbershops & Spas



Avenues for Infection

While salons and health spas provide their customers with valuable services, they present many avenues to spread germs. Harmful microbes can be transferred through circulated air, surfaces, water, and salon tools. Among 120 salons surveyed in Rome, 67.5% reported infections among their clients.¹

Tools

Several studies found brushes, hair dryers, rollers, hairpins, and nail care tools to be sources of bacterial and fungal pathogens.² Styling using a razor poses a greater risk of ringworm from *Trichophyton* fungi. Three German university hospitals saw 1,915 such cases during 2018 and 2023 combined, providing evidence of inadequate barbershop disinfection.³



Due to the ubiquity of microorganisms and high probability of transmission, the instruments could act as fomites even if the site is not apparently contaminated. Fomites are objects contaminated by microorganisms that may act as route of transmission of infections.

*Pathogens and Immunity Journal*⁴



Surfaces

Even the best surface disinfection practices can leave some areas untouched or allow certain germs to survive. Yoga mats are typically used barefoot and can be havens for several bacteria such as *Staphylococcus* or *Trichophyton*.⁵ Spa treatments such as massage, aromatherapy, waxing, and facials require exposed skin, which can transfer bacteria from the skin to surfaces or vice versa. If a customer's skin has small nicks, there is greater risk of infection.

Water

Footbaths can be sources of infection, even after standard disinfection procedures, since bacteria have been known to form dense layers called biofilms.⁶ One study examining salons in North Carolina found 40 cases of pedicure-associated *Mycobacteria* infections over a 4-year period.⁷ Another study found the same bacteria in 97% of footbaths from 18 salons in California.⁸

How UV Disinfection Helps

UV-C rays at 254 nanometers destroy the DNA of harmful microbes, discouraging the spread of bacteria, viruses, and fungi in air, on surfaces, and in water.

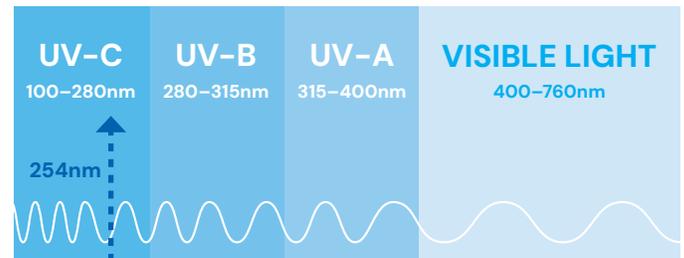


Figure 1: A Portion of the Electromagnetic Spectrum

ASHRAE supports germicidal UV disinfection as a means to reduce cross infection.⁹ An extensive study conducted in Montreal office buildings reduced microbial and endotoxin concentrations by 99% after a UV-C duct system was installed.¹⁰

When several salon tools were subjected to UV-C light inside a disinfection cabinet, *Staphylococcus*, *Pseudomonas*, and *Trichophyton* bacteria, among others, were neutralized in just a few minutes.⁴

UV-C Doses

The UV-C doses below will neutralize many harmful microbes that can be found in salons and spas—in the air, on surfaces, and in water.¹¹ Millijoules per square centimeter (mJ/cm²) measure energy produced by germicidal lamps over a certain amount of time.

Microorganism	UV Dose (mJ/cm ²)
<i>Staphylococcus aureus</i>	6.60
<i>Staphylococcus epidermidis</i>	5.80
<i>Streptococcus</i>	.80
<i>Pseudomonas aeruginosa</i>	3.90
<i>Mycobacterium fortuitum</i>	19.20
<i>Legionella</i>	12.30
<i>Trichophyton rubrum</i>	16 (surfaces) / 40 (water)
<i>Aspergillus</i>	226

Table 1: UV-C Doses to Neutralize Various Microbes

UV-C Air & Surface Solutions

Upper Room UVGI

Our Hygeaire® fixtures continuously treat circulating air as it enters the upper portion of your salon or spa rooms—safely away from employees and customers. Models must be mounted at least 7 feet from the floor. One-lamp (wall mounted) models install on a plumb, vertical surface able to support 16 pounds. Two-lamp (ceiling mount) installations must support 40 pounds.

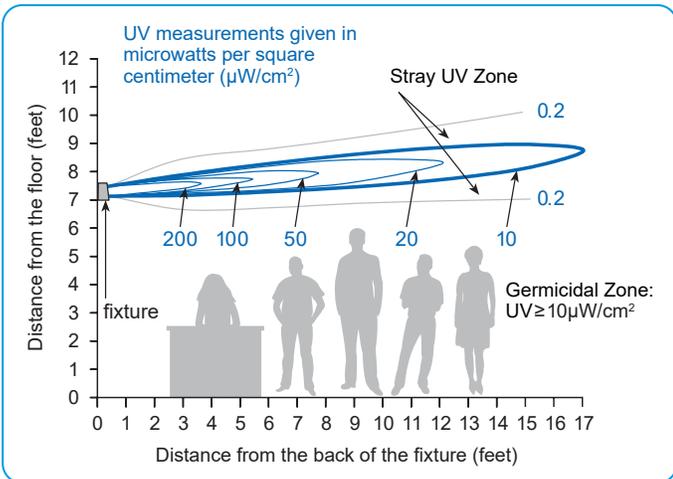


Figure 2: Distribution of UV Rays from Hygeaire®

Upper room UV disinfection had the lowest cost per equivalent room air change when compared with four other room air cleaners. It is also found to be nearly 10 times more cost-effective than mechanical ventilation.¹²

Room Air Disinfection

In salon and spa areas that are often crowded or have poor ventilation, our Sanitaire® models are especially useful. They accomplish room air changes by drawing in air, exposing it to germicidal UV rays, and filtering it back into the room. With UV-C lamps completely enclosed, these models protect your personnel and clients. Models are available for wall mounting, ceiling mounting, or mobile use in various room sizes. For well-ventilated areas, we recommend a model that yields 3 room air changes per hour.

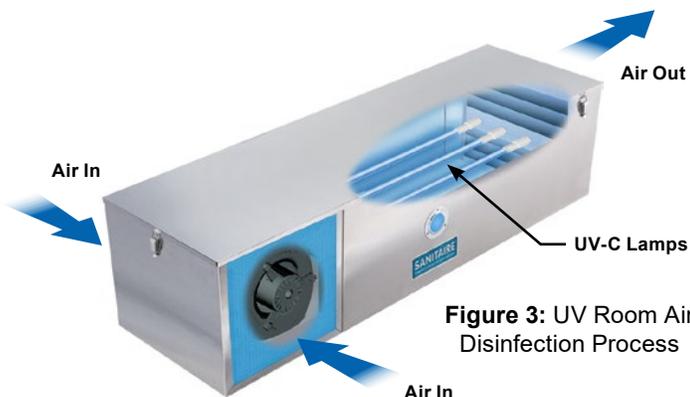


Figure 3: UV Room Air Disinfection Process

HVAC System Disinfection

Our AeroLogic® UV disinfection models can be easily installed inside HVAC systems. For best results, mount perpendicular to airflow and direct at the condenser coil, where microbes tend to grow and thrive. In-duct systems are most efficient when installed in a long, straight run allowing at least 0.25 seconds of UV exposure.¹³ We can recommend the model that best fits your duct or air handling unit size, air speed, and air temperature.

Adding UV disinfection to your facility's air duct or air handling unit can help disinfect airstream and coil surfaces, lowering maintenance costs and potentially improving your HVAC system's performance.¹³

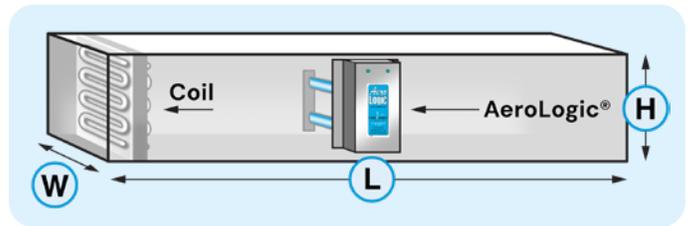


Figure 4: UV Disinfection Installed Horizontally in Air Duct

Direct Air & Surface Disinfection

Our SaniDyne® UV-C portable sanitizers are perfect for overnight use. It will rapidly neutralize microbes in the air and on surfaces. Enhance your disinfection of high-risk areas like workstations, treatment areas, yoga mats, and bathrooms. Carry or roll the sanitizer into the appropriate unoccupied space, post supplied caution signs, and program the timer remotely. If someone accidentally enters the room during a treatment session, occupancy sensors will detect movement and shut off the unit.

Instrument Disinfection

Salon and spa tools can be disinfected in our innovative SaniUV-Cube™. Simply lay the items within the stainless steel chamber, shut the access door, program the timer, and let 4 high output UV-C lamps do their work. This professional-grade model features a UV-C blocking glass window and a safety switch that disconnects power if the door is opened during treatment.

Figure 5: Closeup of SaniUV-Cube™ UV Disinfection Chamber



UV-C Water Solutions

Adding UV water disinfection can provide much-needed protection against harmful microorganisms — whether brought in by customers or already in the water supply. Models can be installed at the point of use—at the site of sinks, footbaths, hydrotherapy pools, and hot tubs—or at the point of entry for an entire building.

Table 2: Comparison of UV Water Purifier Models

Feature	Minipure®	Mighty Pure®	Sanitron®
Flow Rate (GPM)	1–9	3–20	3–40
Min. Clearance (Lamp/Quartz)	10 ³ / ₈ –29"	16–49"	17–50"
Min. Clearance (Gland Access)	6"	6"	6"
Lamp Indicators	✓		
Point of Use Models	✓	✓	✓
Point of Entry Models	✓	✓	✓
Sight Port	✓	✓	✓
Drain Fitting		✓	✓
UV Monitor		Optional	Optional
Audio Alarm	Standard	Optional	Optional
Solenoid Valve	Optional*	Optional	Optional
Flow Control Valve	Optional	Optional	Optional

*Available for Models MIN-3, MIN-6, and MIN-9 only.

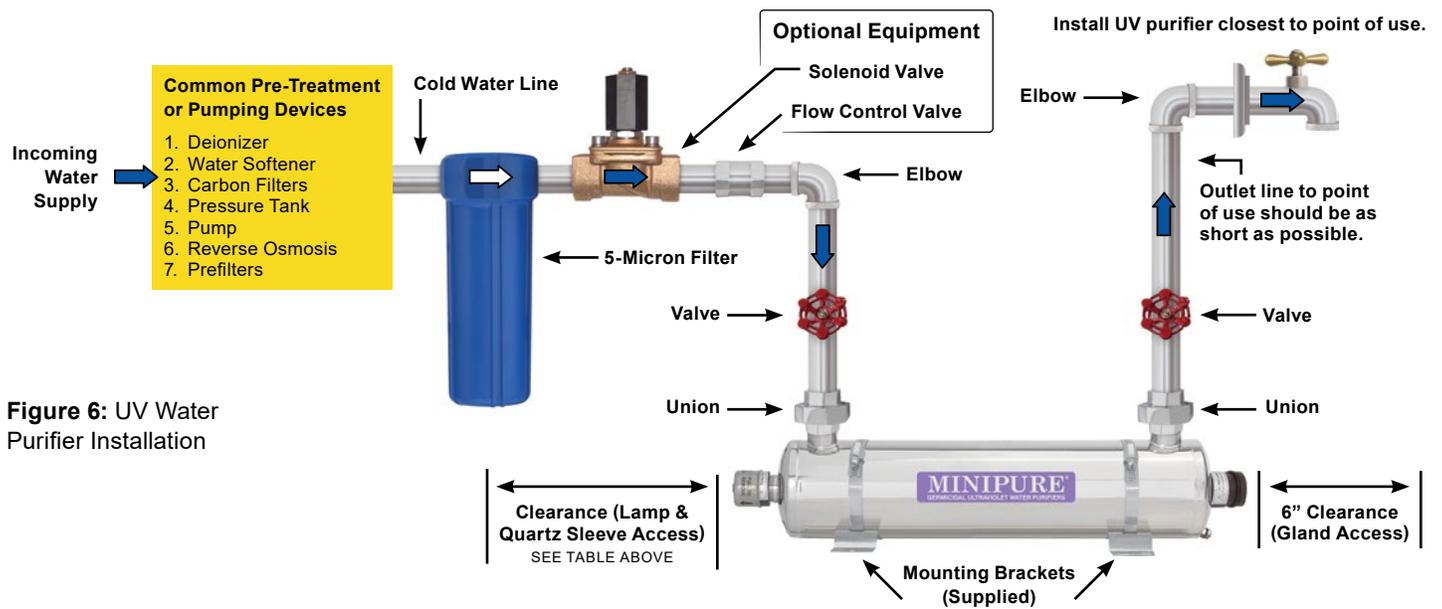


Figure 6: UV Water Purifier Installation

Sources

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