

ULTRAVIOLET TREATMENT IN PUBLIC SWIMMING POOL FACILITIES



LOCATION:

The Netherlands

COMMISSIONED:

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TECHNOLOGY:

Ultraviolet (UV) treatment

CAPACITY:

System 1: 150 m³/h

System 2: 22 m³/h

System 3: 42 m³/h



CONTEXT

A Dutch organization specializing in the management of various sports facilities previously relied on conventional water treatment processes that combined flocculation, sand filtration, and chlorination for its swimming pools.

Following the introduction of new Dutch regulations for public swimming pools in 2024, the facilities faced challenges in meeting stricter limits for combined chlorine in the water and trichloramine in the air. As compliance with these updated guidelines was not achieved, the organization sought a solution to prevent potential pool closures.

To meet the new requirements, reduce the need for supplemental water, and improve overall water and air quality across multiple pools, the organization turned to bestUV solutions to upgrade its treatment process.

SOLUTION

Though other technologies were considered as potential solutions, it quickly became apparent that UV treatment was the most environmentally friendly and efficient way to solve the issue at hand without the need for additional chemical treatment and its associated risks.

Medium-pressure UV systems were installed in three treatment lines across different swimming pools on location. These units were positioned after sand filtration and before chlorine dosing.

Unlike low-pressure UV systems, medium-pressure UV systems are capable of breaking down a broader range of chloramines, including mono-, di-, and trichloramine. In contrast, low-pressure UV systems only target monochloramine. This distinction is important, especially as trichloramine is the most problematic form of combined chlorine. It can cause irritation of the eyes, nose, and throat, and prolonged exposure may also lead to asthma-like symptoms.

The systems are also easy to maintain and can be installed inline directly in the full flow system; a bypass is therefore not required. Plus, because medium-pressure UV systems can reduce the demand for make-up water by up to 50%, they are cost efficient, with a relatively short payback time. More importantly, they help create safe and healthy swimming environments that meet all regulatory requirements.



RESULTS

The installation of the UV systems enabled the facility to achieve its key objectives. Combined chlorine levels are now well below the required limits, supplemental water use has been reduced, and the typical chlorine smell in the pool has been eliminated. As a result, this upgrade has improved the overall conditions for both the swimmers and the staff.

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