



# WEDECO BX Series

MAXIMUM DISINFECTION PERFORMANCE WITH MINIMUM ENERGY CONSUMPTION

**WEDECO**  
a xylem brand

# UV Disinfection Systems - BX Series

**In order to ideally utilise UV disinfection for individual operating conditions also, Xylem has developed the compact UV system WEDECO BX. Numerous options facilitate the integration into existing processes concerning municipal and industrial water treatment.**

The reactors of the WEDECO BX series are equipped with efficient high-intensity low-pressure Spektrotherm® UV lamps. In combination with special flow installations for the improvement of hydraulic conditions, very good disinfection results are achieved with low energy consumption at the same time.

The result is an extremely compact design, small number of UV lamps, and maximum disinfection performance with minimum energy consumption.

## ADVANTAGES

- ▶ High disinfection performance with low energy consumption
- ▶ Temperature-stable Spektrotherm® UV lamps
- ▶ Fully-automatic wiping system and Vario system (optional)
- ▶ Compact design with U or Z-connections
- ▶ Continuous monitoring thanks to calibrated UV sensor with high selectivity
- ▶ Selected models certified in accordance with US EPA
- ▶ Simple integration into external process control systems
- ▶ Easy operation and maintenance

Type	Flow rate approx.* m <sup>3</sup> /h	Flange connection	Power consumption (kW)	Reactor dimensions W x H x D mm
BX 20	27	DN 80	0,23	260 x 930 x 330
BX 30	41	DN 80	0,34	275 x 930 x 348
BX 80	112	DN 150	0,8	365 x 1.000 x 443
BX 100	167	DN 150	0,8	275 x 1.530 x 368
BX 200	298	DN 200	1,5	365 x 1.535 x 458
BX 280	435	DN 250	1,5	365 x 1.535 x 458
BX 400	530	DN 250	2,2	470 x 1.535 x 565
BX 650	850	DN 300	3,0	470 x 1.535 x 565
BX 900	1037	DN 350	3,7	600 x 1.540 x 700
BX 1000	900	DN 300	4,3	700 x 1.540 x 800
BX 1200	1039	DN 350	4,5	770 x 2.400 x 825
BX 1800	1357	DN 400	6,7	730 x 2.400 x 925
BX 3200	2120	DN 500	11,6	1.060 x 2.400 x 1.380

\* 400 J/m<sup>2</sup>; UV transmittance = 98 % per 1 cm at the end of the lamp lifetime. Spektrotherm® UV lamp in models larger than the BX 80. All specifications are subject to change without notice.

# WEDECO BX system components

## Spektrotherm® UV lamp

Higher light yield and a lower heat generation at the same time: WEDECO Spektrotherm® UV lamps reach a temperature of just 100 °C in operation. For comparison: Medium-pressure lamps reach temperatures of 600 - 800 °C. Thanks to this, WEDECO Spektrotherm® UV lamps become less susceptible to varying water temperatures.



The spectrum emission controller (SEC) handles all control and monitoring functions



Switch and control cabinet

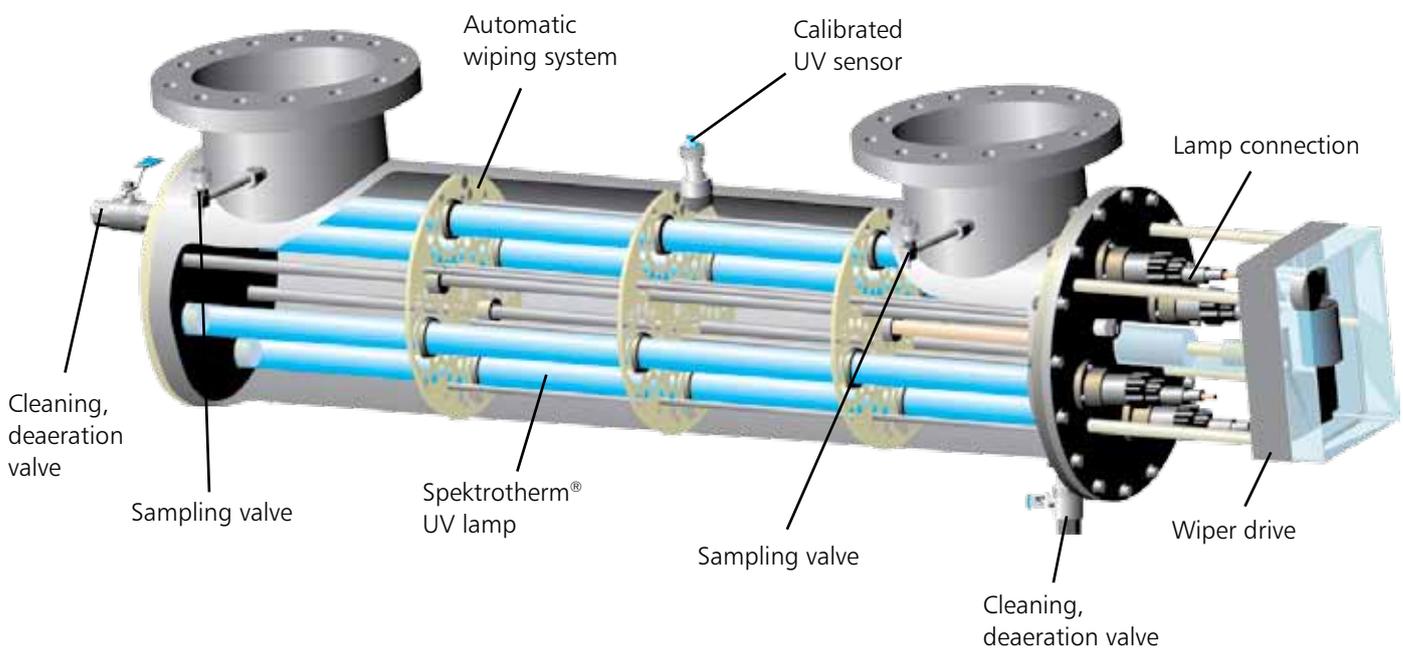


Electronic ballasts ensure that the Spektrotherm® UV lamps operate cost-effectively and reliably



The stable, calibrated UV sensor, according to ÖNORM, is an extremely precise monitoring instrument

## WEDECO BX UV system with automatic wiping system



# WEDECO BX Applications

## Drinking Water

The main field of application of UV disinfection is the drinking water supply, mostly managed by local municipal authorities. The WEDECO BX systems are particularly appealing for municipal drinking water utilities with specific circumstances such as limited space conditions.

## Process Water

A large proportion of the drinking water used throughout the world is utilized in industrial applications, e. g. as process water for the production of beverages and food, in the cosmetics industry, or for rinsing and recycling processes. Thanks to a short design with U and Z connections as well as a variable flow direction, the WEDECO BX system can be easily integrated into existing pipelines.

## Hot Water / Legionella

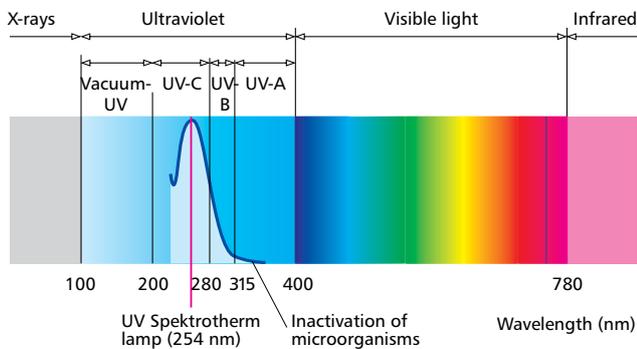
UV disinfection is also ideal for the inactivation of harmful legionella which are often found in hot water circuits. Compared to conventional UV lamps, the temperature-stable Spektrotherm® UV lamp guarantees the best disinfection results, also in hot water.



# Harmful microorganisms stand no chance

## Disinfection with ultraviolet light

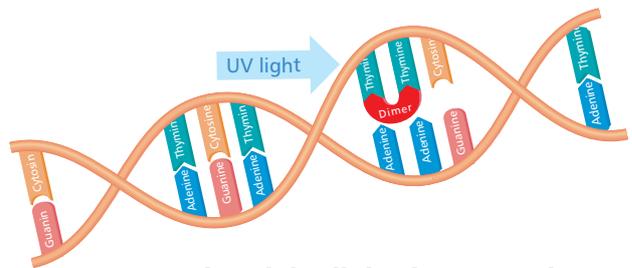
The deployment of chlorine, chlorine dioxide, hypochlorite and other chemical substances to disinfect liquids can result in effects which are detrimental to health and the environment. UV technology is the better alternative to chlorine disinfection. The intensively researched and technologically mature disinfection method with ultraviolet light is adapted from the natural action of sunlight.



**Ultraviolet light is light with very high energy levels and a wavelength of 200 - 400 nm. One of the most effective wavelengths for disinfection is 254 nanometres (nm).**

## How UV disinfection works with liquids

The intensive UV-C radiation, most strongly in the wavelength range of 254 nm, reaches the microorganisms and impacts directly on their DNA. By changing the DNA the cell division of the microorganism is interrupted – it can no longer reproduce itself and thus loses its pathogenic effect. With UV technology it is possible to destroy more than 99.99 % of all pathogens within seconds, without addition of chemicals, without harmful side effects, inexpensively, highly efficiently and absolutely reliably.



**Ultraviolet light destroys microorganisms by changing their genetic information DNA.**



**UV system WEDECO BX 200 with 4 UV lamps and control cabinet**

# WEDECO Spektrotherm® technology



this, a constantly high UV light yield is achieved with a substantially extended lamp service life at the same time. Moreover, by using this technology, it is no longer necessary to apply liquid mercury inside the lamp.

## Long-life WEDECO Spektrotherm® UV lamp with the highest energy efficiency

WEDECO Spektrotherm® UV lamps can no longer be beaten with regard to economic efficiency. The light yield in relation to the energy expenditure is 3 times higher in comparison to medium pressure lamps.

## Leading the market due to efficiency and safety

The centrepieces of the WEDECO BX UV systems are particularly energy-efficient UV lamps. They have a long service life, operate continuously even at varying water temperatures and are far superior to conventional UV lamps thanks to their particularly high efficiency.

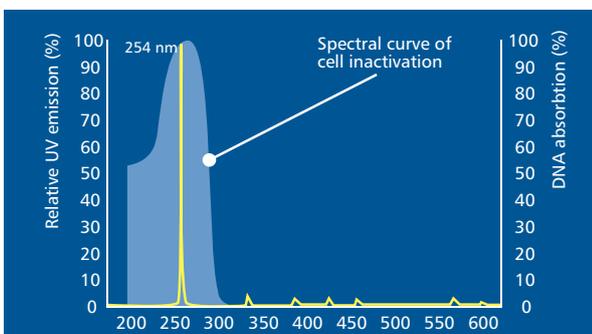
## The ideal choice for water disinfection

WEDECO Spektrotherm® UV lamps emit UV light mainly in the spectral region of 254 nm (nanometres). This UV light region is particularly effective for the disinfection of drinking water and wastewater. The special characteristic of the WEDECO Spektrotherm® UV lamp is its special amalgam/indium doping. Thanks to

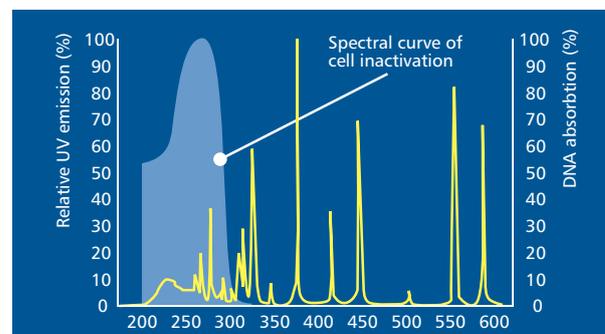
**ADVANTAGES**

- ▶ 5 times higher UV-C output than conventional low pressure lamps
- ▶ 3 times more efficient than medium pressure lamps
- ▶ Stable UV-C output
- ▶ Up to 3 times longer lamp life than medium pressure lamps

## Emission spectra [wavelength in nm]



The monochromatic Spektrotherm® UV lamp emits at a wavelength of 254 nm, which is in the maximum of the effective disinfection range of the spectrum.



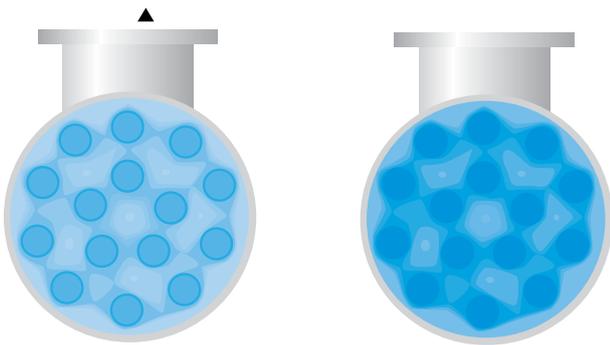
Medium pressure lamps emit a wide-band spectrum, most of which is outside the part of the spectrum that is relevant for disinfection. In addition, the formation of by-products cannot be excluded.

# UV dose control with the variable system

WEDECO BX systems can be optionally equipped with a fully automatic dose control. This unique feature of the WEDECO technology enables the output to be exactly adjusted to the water quality and flow. Overdosage is thereby avoided.

The output of the Spektrotherm® UV lamp is continuously controlled, resulting in substantial reduction of operation cost. The UV intensity is determined at a representative point within the UV reactor and serves, together with the flow signal, to regulate the UV output.

Low flow rate + improved water quality automatically reduces UV radiation intensity



ADVANTAGES
▶ Constant UV dose irrespective of changes in water quality or flow
▶ Continuous output regulation of the Spektrotherm® UV lamp (for models larger than LBX 90)
▶ Fully automatic PLC control and visualization via SCADA connection and telemetry
▶ Maximum disinfection reliability
▶ Optimization of energy costs
▶ Longer lamp life and easy operation and monitoring

High flow rate + poor water quality automatically increases UV radiation intensity

## Automatic Wiping System reduces of deposits

WEDECO BX UV systems are designed for quick and easy maintenance. It can be dismantled easily for manual cleaning and is prepared to be connected with an optional chemical rinsing system.

Additionally the UV reactor can be equipped with an Automatic Wiping System to prevent the formation of deposits on the quartz sleeves. As a result, operation interruptions due to manual cleaning of the sleeves will hardly be required. The chemical free Wiping System employs PTFE/ Viton wiperrings which avoid formation of organic and inorganic deposits on the protective quartz tubes while being unaffected by the high intensity UV light at the lamp surface.



# Xylem ['zīləm]

- 1) The tissue in plants that brings water upward from the roots
- 2) A leading global water technology company

We're 12,000 people unified in a common purpose: creating innovative solutions to meet our world's water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to [xyleminc.com](http://xyleminc.com).

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