



## TECHNICAL INFORMATION

### ADVANTAGES

- Optimal efficiency
- Hydrodynamically optimised UV chamber
- Ergonomic design
- Low installation cost
- Extremely low pressure loss
- Long service life of the UV lamps and components
- Simple installation
- Freely selectable installation position
- Simple maintenance and cleaning
- Powerful cleaning mechanism
- Cleaning possible during operation
- Optional UV sensor
- For flow rates of up to 64 m<sup>3</sup>/h

## UV WAVE

### WALLACE & TIERNAN UV TECHNOLOGY

The **UV Wave** was primarily designed for the disinfection of drinking water, swimming pool and process water with flow rates of up to 64 m<sup>3</sup>/h. It is equipped with special **Wallace & Tiernan** lamps, type WTL, in accordance with the low pressure principle. These emit a UV-C wave length spectrum which is absorbed by micro-organisms in the water. The rays with a wave length of 253.7 nm attack the DNA of the micro-organisms, thereby inactivating or destroying it. The **UV Wave** lamp chamber is characterised by its optimal hydrodynamics as well as a low pressure loss, which ensures the economical efficiency of this system. A special feature of the **UV Wave** is its unique configuration which enables the chamber to be built in quickly, easily and at low cost.



### GENERAL INFORMATION

Since UV radiation is not harmful to the environment, it is increasingly employed as an alternative to chemical disinfection methods, especially for applications in which a depot effect is not required. The advantages are evident:

- There are no by-products
- The taste and smell of the water remain neutral
- Possible resistance of micro-organisms to UV radiation is unknown to date
- UV radiation is non-corrosive
- Very effective against parasites, cryptosporidia and legionellae

In combination with the development of powerful and durable components, these advantages are responsible for the fact that UV technology is now used around the world for many applications.

### APPLICATIONS

The **UV Wave** is mainly used for drinking water, swimming pool water as well as industrial and process water. Some examples are fish farms, the food industry, the pharmaceutical & chemical industries as well as the brewing & soft drink industries.

### REQUIREMENTS

Selection of a suitable UV disinfection unit depends on the properties of the water to be treated. Special attention must be paid to transmission. This is defined as the penetration of UV light through a water sample of a certain thickness and is given in a percentage. It depends for example on the turbidity or the temperature of the water to be treated. Alternatively, the spectral absorption coefficient SAC can be used as the design basis for a UV disinfection unit.

### DESIGN AND PRINCIPLE OF OPERATION

The heart of the **UV Wave** is the radiation chamber with the WTL high-performance lamps. The chamber is designed to ensure optimal disinfection of the water to be treated. The pressure loss in the unit is extremely low due to the special construction of this chamber. In addition, installation of the **UV Wave** is fast, flexible and space-saving. No bends or angles are required to install the system in an existing pipe. The radiation chamber can be mounted either horizontally or vertically as well as rotated around its own axis.

Emphasis was also placed on service functions when the device was designed. Each individual lamp is automatically monitored and its operating status indicated with LED's on the control cabinet. Maintenance accessibility also played an important role in its design. As an example, service technicians can replace the lamps quickly, easily and without special tools.

### CONTROL CABINET

The **UV Wave** control unit can be executed in either a sheet steel or stainless steel cabinet. All important equipment data are displayed on the operating panel. Operational and error messages are additionally visualised with LED's. Floating contacts are provided for the exchange of data with higher-level systems.

## WALLACE & TIERNAN

[www.wallace-tiernan.com](http://www.wallace-tiernan.com)

## TECHNICAL DATA



Manual cleaning mechanism (optional)

### UV CHAMBER

**Max. Operating Pressure:**  
10 bar

**Enclosure:**  
IP 54

**Material:**  
Stainless steel 316 Ti or 1.4571

### CONTROL CABINET

**Dimensions (H x W x D):**  
600 x 380 x 210 mm or other dimensions

**Electrical Connections:**  
1/N/PE AC 230 V, 50 Hz

**Material:**  
Steel, powder coated RAL 7035 or  
stainless steel 304 or 1.4301

**Installation Type:**  
Wall mounting

**Cable Length:**  
5 m to the UV chamber, longer lengths optionally available.

**Max. Air Humidity:**  
60 %

**Miscellaneous:**  
Control cabinet temperature monitor,  
integrated elapsed time clock

### OPTIONS

- Manual cleaning mechanism
- UV sensor with floating alarm contact
- Mounting frame for chamber and / or control cabinet

### CLEANING MECHANISM

Wallace & Tiernan supplies an optional easy-operation mechanical cleaning mechanism especially for manual removal of the deposits on the quartz tubes. It is especially recommendable for applications in which the treated water tends to form deposits. Cleaning is also possible during operation.

### UV SENSOR

The UV intensity in the chamber is continuously monitored by the UV sensor and shown on the control cabinet display as a status message.

The compact sensor is equipped with reliable filter technology to ensure consistent monitoring, and is protected to IP 65. The housing is made of stainless steel.

Type	UV lamp	Maximum flow rate <sup>(1)</sup> [m <sup>3</sup> /h]	Connections (Rp to DIN 2999)	Weight of UV chamber [kg]	Dimensions of UV chamber l x W <sup>(2)</sup>	Weight of control cabinet [kg]	Power consumption [W]
UV Wave 3	1 x WTL20	3	G 2"	5	641 x 214	17	43
UV Wave 4	1 x WTL40S	4	G 2"	5	641 x 214	17	71
UV Wave 6	1 x WTL40	6	G 2"	10	981 x 214	17	70
UV Wave 9	1 x WTL65	9	G 2"	10	981 x 214	17	83
UV Wave 12	1 x WTL80	11	G 2"	10	981 x 214	17	114
UV Wave 20	1 x WTL80	21	G 3"	35	1052 x 406	17	114
UV Wave 35	2 x WTL80	34	G 3"	35	1052 x 406	18	228
UV Wave 50	3 x WTL80	49	G 3"	35	1052 x 406	19	342
UV Wave 65	4 x WTL80	64	G 3"	35	1052 x 406	20	456

<sup>(1)</sup> Flow rate in m<sup>3</sup>/h at T<sub>10</sub> = 100 % and a dose of 40 mJ/cm<sup>2</sup>

<sup>(2)</sup> Installation length x width in mm

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