

## HYDRO WELL®

### UV disinfection system

#### Type: Compact

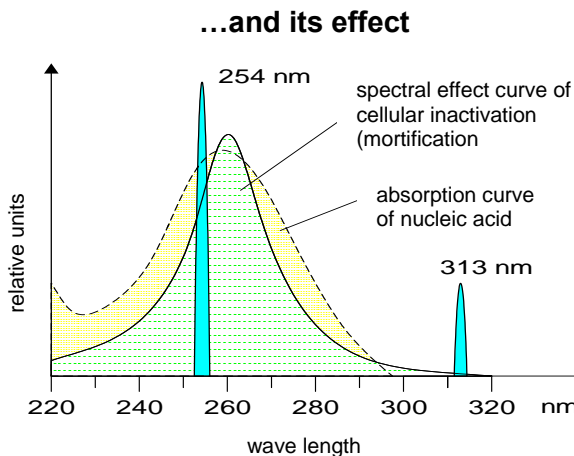
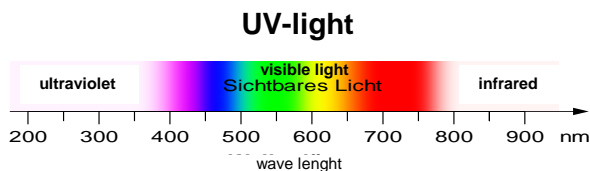
#### Application

Our HYDRO WELL® UV disinfection systems of type Compact are used for disinfection of iron and manganese free drinking water as well as for treatment of pool water. The systems are suited for cold water and hot water applications.

UV light has much energy and is very effective for disinfection at a wavelength between 250 and 260 nm.

In this range the DNA of dangerous micro organisms (e.g. germs, legionella bacteria, pseudomonas and coli) is changed so that they lose their ability to reproduce themselves and get inactivated.

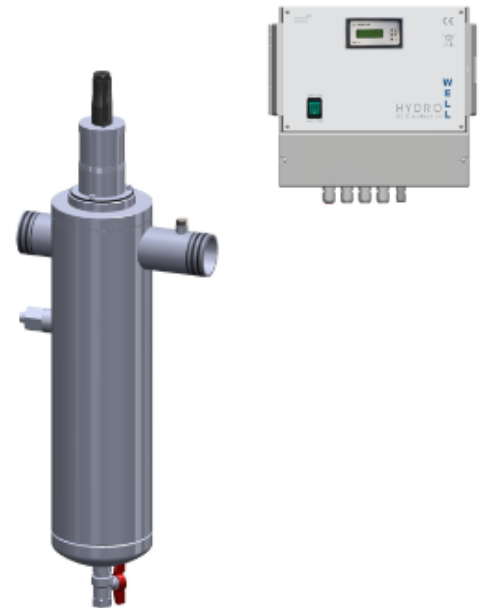
Our HYDRO WELL® UV disinfection systems are designed and used for drinking water applications at irradiation intensity of 400 J/m<sup>2</sup> at the end of the operating life of lamps. The maximum effect of the UV disinfection system is given at the disinfection spectral range with 254 nm (wave length).



The efficiency of UV systems is determined by the light transmission of the water.

96% transmission should be observed for UV systems, but the aim should be at 98%. Impairments of light transmission of the water are possible because of turbid substances, iron content etc.

The risk of formation of dangerous by-products (e.g. trihalomethanes (THM) at the chlorination) does not exist because there are no chemical substances to be used.



#### Advantages of UV disinfection:

- low operating costs
- easy use
- fast disinfection
- no change of water quality in terms of odour and taste
- no use of chemicals
- operational safety

#### Use of the UV disinfection in the following areas of application:

- private and local drinking water supplies
- industrial process water
- beverage and food industry
- rainwater utilisation
- pool water
- cooling water

**Information about the operating location and the operating mode as well as a water analysis is required to determine the use of our systems for the specific application.**

## System description / scope of supply

Irradiation of the water is by means of a flow-through reactor.

### UV reactor

Cylindrical stainless steel reactor  
connection: threaded connection

### UV lamp

U-bend mercury low pressure lamp  
easy to remove for maintenance and repair works

### Lamp protection tube

one-way locked and easy to remove, made of pure quartz glass, endowed

### UV sensor

gauged UVC measuring equipment with sensor and LED display  
resistant to ageing  
temperature-resistant at continuous operation until 70° C

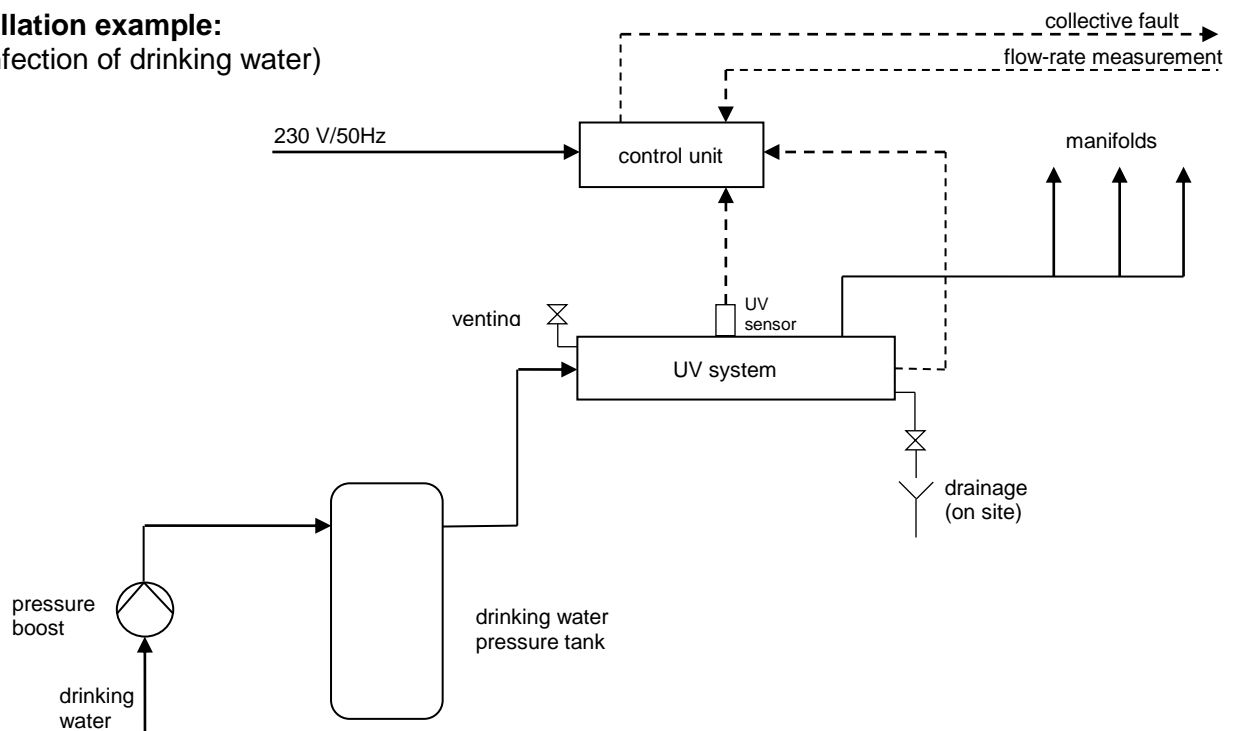
### Control unit

in plastic housing for wall mounting, EMC-tested, mounted ready for connection

### Components consisting of:

on-/off switch  
electronic ballast with integrated soft start ignition system  
UV irradiance monitoring with limit values  
input and output signals  
operating hours meter absolute/relative

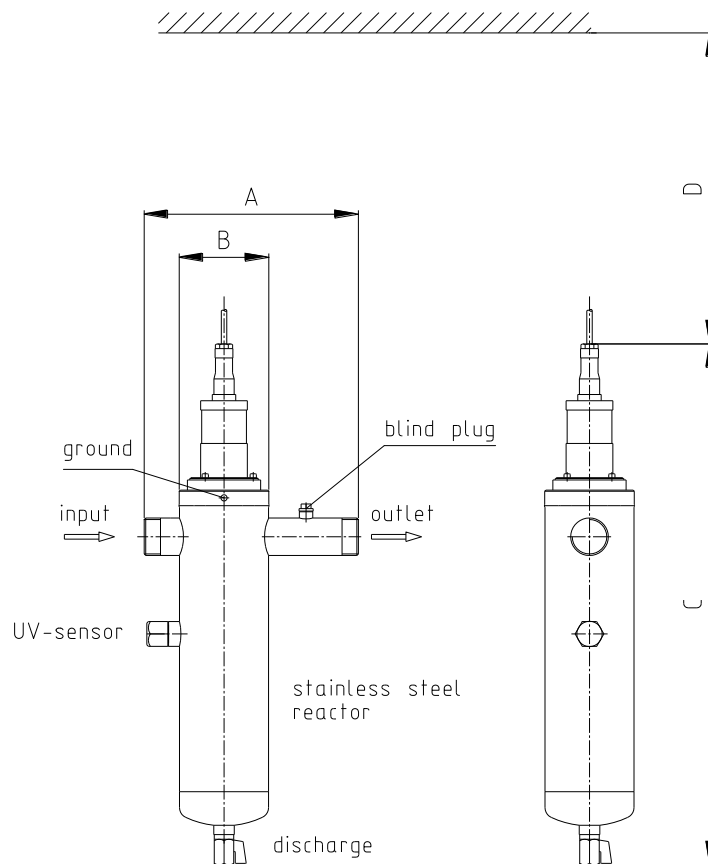
## Installation example: (disinfection of drinking water)



## Notes / installation conditions

- Water quality before feeding into UV system:
  - turbidity < 0.3 NTU
  - iron < 0.2 mg/l
  - manganese < 0.05 mg/l
- Technical data and general technical standards as well as local installation conditions must be observed.
- The UV reactor is mounted between the pipelines. Therefore it is to be ensured that there is enough space available according to the dimensional drawing.
- It is imperative that the reactor will not run dry.
- The ambient temperature and possibly occurring radiation heat may not exceed 40°C.
- The installation site must be frost-resistant.
- The installation site must be free from solvent, colorant, varnish and chemical vapours.
- A water meter is to be installed for observation of the flow rate.
- It is to be ensured that the operating pressure will not be exceeded. Vacuum is to be avoided as well.
- Pressure surges in piping system are to be avoided.
- Pipelines and reactor are to be connected voltage free. Mounts must be designed for the respective weight.
- It is to be ensured that no pollutants find their way into the reactor.
- A floor drain must be provided. (Consider reactor volume!)

## Dimensional drawing



## Technical data

System		HYDRO P WELL® Compact 1 E	HYDRO WELL® Compact 2 E	HYDRO WELL® Compact 5 E	HYDRO WELL® Compact 10 E
Flow-rate	m³/h	1.8	3.0	4.5	9.3
Water temperature	°C	5 - 30	5 - 50		
Ambient temperature max.	°C	30			
Reactor					
Nominal size		R 1 ½ “	R 1 “	R 1 ½ “	R 2 “
Connection		External thread			
Length (A)	mm	240	275	275	275
Depth (B)	mm	110	90	115	140
Height (C)	mm	610	510	670	770
Distance (D)	mm	> 450	> 300	> 400	> 600
Empty weight ca.	kg	11.5	5	8	9
Operating weight ca.	kg	13.5	7.6	11	14
Material		1.4571			
Operating pressure	bar	10			
Pressure drop	bar	< 0.1			
Power supply					
Electrical connection		230V / 50 Hz			
Height	mm	320	305	305	305
Width	mm	360	320	330	330
Depth	mm	150	170	170	170
Power consumption	W	42	60	100	130
Housing		Plastic housing with inspection window			
Protection class		IP 54			
UV power (new)	W	12	17	27	38
after 8,000 operating hours	W	10	11	18	25
Irradation intensity (new)	J/m²	470	615	615	615
after 8,000 operating hours	J/m²	400	400	400	400

Horizontal installation of UV system, lamps vertical