

**Technical Data**

**WEDECO TAK 55 Smart™**

**Main Applications**

Disinfection of

- Primary, secondary and tertiary treated wastewater effluents for discharge
- Wastewater for reuse (e.g. for irrigation of parks, agriculture)
- Process water for industrial use
- Aquaculture applications (up to 250m<sup>3</sup>/h with PE channel)

Water temperature	recommended range	5 – 45 °C (41-113 °F)
	possible range	0 – 60 °C (32-140 °F)
UV transmittance (@ 254 nm, 1 cm)		min. 45 %
Flow capacity		max. 1030 m <sup>3</sup> /h max. 4,535 GPM

**Technical Description**

- Open UV channel system
- Lamp Configuration: Horizontal, parallel to flow
- Module Configuration : 2 to 8 lamps per module
- Bank Configuration: Up to 4 modules per bank
- Channel Configurations: Up to 2 banks per channel (Duty/Duty, Duty/ Assist, Duty/Standby)
- Baffle Plate to smooth out the water flow for optimum hydraulic conditions
- Fixed finger weir to regulate and maintain the water level in the open UV Channel.
- Highly efficient low pressure WEDECO ECORAY® UV lamps, easily removable

**Options**

- Channel Options: Concrete, Stainless Steel (SS 304), HDPE
- Automatic wiping system
- Calibrated UV intensity monitoring system
- Dose Pacing Control (incl. variable lamp output)
- SCADA (Ethernet IP, Modbus TCP, Profibus DP)
- Lifting device

**UV CHANNEL**

*Material* - Concrete (SS inlays supplied for one module-wide configurations),  
*(alternate options):* - Stainless Steel (SS 304), or  
- HDPE (marine grade)

*Included:*

- Inlet-/ Outlet boxes (not with concrete)
- Brackets for UV modules
- Fixed finger weir
- Baffle plate with attachments (standard for 2, 3 and 4 module wide configurations; optional for others)
- SS liner at UV section (for 1-module wide concrete channels only)
- Channel covers (provided with same material as channel construction; not included for concrete installations)

**UV MODULE**

*Material:* stainless steel SS 316Ti (1.4571); PETP, Quartz  
*Sealing Material:* FPM  
incorporating frame and module cover plate for UV irradiation protection  
(additional channel cover recommended -for concrete channels only)

*UV Lamp* Cylindrical, highly efficient WEDECO ECORAY® -UV lamp,  
operated with electronic ballast

*UV Sensor* Calibrated according to ÖVGW M5873-1, 160° measuring angle accuracy ±3 %, selectivity 240 -290 nm > 90 %, ageing stability, temperature stability up to 70°C during continuous operation

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**ELECTRICAL CABINET**

Single cabinet to be installed adjacent to the channel  
(max. distance module / electrical cabinet: 2.5 m (8 ft.))

*Material*

Type 12/ IP55 Enclosure: Painted Sheet Steel  
Type 4X/ IP66 Enclosure: Stainless Steel (SS 304)

*Design*

Ready for connection, incl. module connectors  
Ambient temperature range  
10 - 40 °C (41 – 104°F)  
10 - 50 °C (41 – 122°F) for outdoor cabinets with A/C  
Ambient humidity max. 95% @ 25 °C

*Supply Voltage*

cUL: 480/277 +/- 10 %, 60 Hz (5 Wire WYE; L1,L2,L3,N,GND)  
CE: 400/230 +/- 10 %, 50 Hz (TN-S Net)  
Power factor ~ 0.98

*Components*

Mains isolator switch  
Electronic ballasts  
Electronic single-lamp-surveillance  
UV intensity measuring system with two limit switches (Optional)  
Enclosure fan filters (for Type 12/ IP54 and Type 4X/ IP66 enclosure)  
A/C option (for Type 4X/ IP66 enclosure)

EcoTouch controller with blue illuminated operator touch panel displaying the following

- *System status*
- *Lamp Status*
- *Alarm messages*
- *Process values*

Available languages: English, German, Spanish, French, Italian, Portuguese

*Customer Terminals*

*In:* remote ON / OFF (230V or volt-free),  
water flow rate (4 – 20 mA)

*Out:* UV dose adjustable (4 – 20 mA),  
Volt-free contacts for:  
System running, high priority alarm, low priority alarm

SCADA: System status  
Lamp Status  
Alarm messages  
Process values

**Automatic Wiping System (Option)**

PTFE/ Viton sandwich wipers automatically clean the quartz tubes and sensor window in adjustable intervals. Pneumatically driven by a compressed air that needs to be oil-free.

**UV Dose Pacing (incl. variable lamp power) (Option)**

WEDECO's TAK 55 Smart™ control philosophy gives assured disinfection by measuring continuously the UV-C intensity after travelling through the water. The EcoTouch Controller uses the intensity value, given by the UV-C sensor and computes along with the flow rate signal the applied dose to the water. This ensures that the specified UV-C dose is being applied and the desired disinfection level will be achieved, while energy consumption is minimized.

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Type	TAK55 Smart (1 bank)							
	1-1	2-1	3-1	2-2	3-2	4-2	4-3	4-4

UV Lamps								
Type	ECORAY® ELR 30							
Lamp power (W)	315							
UV-C output 254 nm (W)	150							
Quantity	2	4	6	8	12	16	24	32
Lamp life (h)	14000							

UV Module								
Module length (mm/in)	2,000 / 78.74							
Weight per module (kg/lbs), approx.	37/80	43/90	50/103	43/90	50/103	56/124	56/124	56/124
No. of modules	1	1	1	2	2	2	3	4
Lamps per module	2	4	6	4	6	8	8	8
Protection class	IP 65							

Electrical Cabinet								
Type 12/ IP55 w/ fan Enclosure								
Material	Painted Sheet Steel							
Size: W x H x D mm (inches) approx.	800 x 2100 x 600 (31.5 x 82.7 x 23.6)							
Weight (kg / lb) approx.	481 / 1060							
Power consumption (kW)	0.76	1.39	2.02	2.65	3.91	5.25	7.77	10.36
Protection class	Type 12/ IP 55							
Type 4X/ IP66 w/ fan Enclosure								
Material	Stainless Steel							
Size: W x H x D mm (inches) approx.	976 x 2200 x 782 (38.4 x 86.6 x 30.8)							
Weight (kg / lb) approx.	508 / 1120							
Power consumption (kW)	0.76	1.39	2.02	2.65	3.91	5.25	7.77	10.36
Protection class	Type 4X/ IP66							
Type 4X / IP 66 w/ AC Enclosure								
Material	Stainless Steel							
Size: W x H x D mm (inches) approx.	1168 x 2200 x 600 (46 x 86.6 x 23.6)							
Weight (kg / lb) approx.	580 / 1278							
Power consumption (kW)	3.78	4.42	5.05	5.68	6.94	8.27	10.79	13.38
Protection class	Type 4X/ IP66							
General								
Power losses/ heat loss (W)	336	399	462	525	651	786	1138	1399
Supply voltage	cUL: 480/277 +/- 10 %, 60 Hz (5 Wire WYE; L1,L2,L3,N,GND) CE: 400/230 +/- 10 %, 50 Hz (TN-S Net)							

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Type	TAK55 Smart (1 bank)							
	1-1	2-1	3-1	2-2	3-2	4-2	4-3	4-4

SS UV Channel (Option)								
Max. Width (mm/ inch)	410 / 16	410 / 16	560 / 22	610 / 24	930 / 36.5	NA	NA	NA
Max. Length (mm/ inch)	3240 / 128	3460/ 137	4010/ 158	4015 (4245)*/ 158 (168)*	5055 (7501)*/ 199 (295)*	NA	NA	NA
Max. Height (mm/ inch)	850 / 33.5	940/ 37	1045/ 41	1070/ 42	1190/ 47	NA	NA	NA
Piping connection for Standard (DN/ ANSI) flange.	DN150/ 6"	DN200/ 8"	DN300/ 12"	DN300/ 12"	DN400/ 16"	NA	NA	NA
Channel weight (kg / lbs), approx.	132/ 290	168/ 370	261/ 575	272/ 600	445/ 980	NA	NA	NA

PE UV Channel (Option)								
Max. Width (mm/ inch)	455 / 18	455 / 18	605 / 23.7	655 / 25.7	NA	NA	NA	NA
Max. Length (mm/ inch)	3660 / 144	3925 / 154.5	4585 / 180.5	4585 / 180.5	NA	NA	NA	NA
Max. Height (mm/ inch)	855 / 33.7	950 / 37.4	1055 / 41.5	1080 / 42.4	NA	NA	NA	NA
Piping connection Standard (DN/ ANSI) flange.	DN150/ 6"	DN200/ 8"	DN300/ 12"	DN300/ 12"	NA	NA	NA	NA
Channel weight (kg / lbs), approx.	130 / 280	205 / 450	290 / 635	310 / 685	NA	NA	NA	NA

Concrete UV Channel Insert (Option)								
Channel insert	Incl.	Incl.	Incl.	NA	NA	NA	NA	NA
Max. Width (mm/ inch)	Please refer to the respective GA drawings							
Max. Length (mm/ inch)								
Max. Height (mm/ inch)								

Baffle plate								
Inlet baffle plate	optional	optional	optional	included	included	included	included	included

\*Longer channel length for high flow weir (TAK 55 Smart 2-2 /3-2 HF)

**Technical Data**

**WEDECO TAK 55 Smart™**

Type	TAK55 Smart (2 banks)							
	1-1	2-1	3-1	2-2	3-2	4-2	4-3	4-4

UV Lamps								
Type	ECORAY® ELR 30							
Lamp power (W)	315							
UV-C output 254 nm (W)	150							
Quantity	4	8	12	16	24	32	48	NA
Lamp life (h)	14 000							

UV Module								
Module length (mm/in)	2,000 / 78.74							NA
Weight per module (kg/lbs), approx.	37/80	43/90	50/103	43/90	50/103	56/124	56/124	NA
No. of modules per bank	1	1	1	2	2	2	3	NA
Lamps per module	2	4	6	4	6	8	8	NA
Protection class	IP 65							

Electrical Cabinet								
Type 12/ IP55 w/ fan Enclosure								
Material	Painted Sheet Steel							
Size: W x H x D mm (inches) approx.	800 x 2100 x 600 (31.5 x 82.7 x 23.6)							
Weight (kg / lb) approx.	508 / 1120							
Power consumption (kW)	1.4	2.66	3.99	5.25	7.77	10.42	15.46	NA
Protection class	Type 12/ IP 55							
Type 4X/ IP66 w/ fan Enclosure								
Material	Stainless Steel							
Size: W x H x D mm (inches) approx.	1168 x 2200 x 600 (46 x 86.6 x 23.6)							
Weight (kg / lb) approx.	580 / 1278							
Power consumption (kW)	1.4	2.66	3.99	5.25	7.77	10.42	15.46	NA
Protection class	Type 4X/ IP66							
Type 4X / IP 66 w/ AC Enclosure								
Material	Stainless Steel							
Size: W x H x D mm (inches) approx.	976 x 2200 x 782 (38.4 x 86.6 x 30.8)							
Weight (kg / lb) approx.	580 / 1278							
Power consumption (kW)	4.42	5.68	7.02	8.28	10.79	13.45	18.49	NA
Protection class	Type 4X/ IP66							
General								
Power losses/ heat loss (W)	399	525	651	786	1138	1399	1912	NA
Supply voltage	cUL: 480/277 +/- 10 %, 60 Hz (5 Wire WYE; L1,L2,L3,N,GND) CE: 400/230 +/- 10 %, 50 Hz (TN-S Net)							

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**WEDECO TAK 55 Smart™**

Type	TAK55 Smart (2 banks)							
	1-1	2-1	3-1	2-2	3-2	4-2	4-3	4-4

SS UV Channel (Option)								
Max. Width (mm/ inch)	410 / 16	410 / 16	560 / 22	610 / 24	930 / 36.5	NA	NA	NA
Max. Length (mm/ inch)	5684 / 223,75	5906/ 232,49	6458/ 254,25	6458 (6693)*/ 254,25	7246 (7501)*/ 285,31	NA	NA	NA
Max. Height (mm/ inch)	850 / 33.5	940/ 37	1045/ 41	1070/ 42	1190/ 47	NA	NA	NA
Piping connection Standard (DN/ ANSI) flange.	DN150/ 6"	DN200/ 8"	DN300/ 12"	DN300/ 12"	DN400/ 16"	NA	NA	NA
Channel weight (kg / lbs), approx.	236/ 522	276/ 610	377/ 832	394/ 870	514/ 1136	NA	NA	NA

Concrete UV Channel Insert (Option)								
Channel insert	Incl.	Incl.	Incl.	NA	NA	NA	NA	NA
Max. Width (mm/ inch)	Please refer to the respective GA drawings							
Max. Length (mm/ inch)								
Max. Height (mm/ inch)								

Baffle plate								
Inlet baffle plate	optional	optional	optional	included	included	included	included	included

\*Longer channel length for high flow weir (TAK 55 Smart 2-2 /3-2 HF)

Options/ Accessories (extra charges)
<ul style="list-style-type: none"> <li>• ÖNORM conform germicidal UV sensor</li> <li>• Automatic wiping system</li> <li>• Compressor</li> <li>• PE/ SS channels</li> <li>• Spare module</li> <li>• Crane for module lifting</li> </ul>