

WEDECO · DRINKING WATER UV DISINFECTION

WEDECO Spektron Series

Closed-vessel UV disinfection for drinking water and high-UVT industrial water, from single-lamp units to 24-lamp reactors for large municipal plants.



Overview

WEDECO Spektron is a closed-vessel UV range for disinfecting drinking water in public supply and industrial use. UV-C light inactivates bacteria, viruses and parasites such as *Cryptosporidium* and *Giardia* in a fraction of a second, without adding chemicals and without changing the taste or odour of the water. Sixteen standard sizes cover everything from small supplies to large municipal plants. The latest DIN 19294-1 certified models have reactors up to 50% shorter, for plant upgrades where space is tight.

Ozone UV Solutions supplies Spektron systems as an authorised WEDECO reseller and supports them locally: sizing, installation, commissioning, servicing, lamps and spare parts.

Key features

- Disinfection performance certified and validated to DVGW, ÖNORM and the US EPA UV Disinfection Guidance Manual (UVDGM, 2006), depending on model; newest models certified to DIN 19294-1
- Ecoray low-pressure high-output amalgam lamps up to 600 W, with a rated lamp life of 14,000 hours
- OptiDose dose pacing on variable-power models: lamp output follows water quality and flow (50–100% power)
- ÖNORM-compliant UV intensity sensor and individual lamp monitoring
- OptiCone flow diverter for even hydraulics regardless of inlet piping; horizontal or vertical installation
- EcoTouch touch-panel controller with SCADA communication; PLC control available on larger models

Design and operation

Hydraulics and dose

The lamps sit in quartz sleeves parallel to the flow. The flow distribution was developed with CFD modelling, and on larger models the OptiCone flow diverter evens out velocities across the chamber whatever the inlet arrangement, while keeping head loss low. Multiple flange options suit a wide range of pipework.

Lamps and energy

Ecoray lamps and matched electronic ballasts give a higher relative UV-C output in dimmed mode than conventional amalgam lamps, with shorter warm-up and reduced mercury content. The 600 W lamps cut lamp count by up to 60% compared with smaller lamps. OptiDose dims the lamps to the dose actually needed.

Monitoring and controls

An ÖNORM-compliant sensor that meets reference sensor requirements monitors UV output continuously and feeds the OptiDose closed loop. The EcoTouch touch panel brings sensor signals, alarms and SCADA connectivity together; outputs cover system status, lamp status, alarm messages and process values.

Maintenance

Optional automatic mechanical wiping keeps the sleeves clean in water down to 70% UVT (models 2e, 5e and 10e are unwiped). On the new models, lamps can be changed from either side of the reactor and guided front plate supports give easy access to the reactor inserts.



Typical applications

- Municipal drinking water supply, from small communities to large treatment plants
- Plant upgrades and retrofits where installation space is limited
- Industrial and process water with high UV transmittance

Supplied and supported by Ozone UV Solutions

System selection and UV dose sizing · Installation and commissioning · PLC/SCADA integration · Planned servicing and lamp changes · Genuine WEDECO lamps, spare parts and consumables · 24/7 technical support line
+61 422 081 913

Model selection

The right model depends on flow rate, UV transmittance (UVT) of the water and the dose or certification required. Send us these figures and we will confirm the model and configuration.

Performance and lamps

Model	Max. flow (m³/h)*	UVT range (%)	UV lamps	Power per lamp	Lamp type	Power consumption (approx.)
Spektron 2e	6.6	70–98	1	50 W	Ecoray	0.10 kW
Spektron 5e	10	70–98	1	70 W	Ecoray	0.12 kW
Spektron 10e	18	70–98	1	120 W	Ecoray	0.17 kW
Spektron 15	20	70–98	1	210 W	Spektrotherm	0.42 kW
Spektron 25	42	70–98	1	300 W	Spektrotherm	0.53 kW
Spektron 30e	49	70–98	1	290 W	Ecoray	0.38 kW
Spektron 50e	101	70–98	2	290 W	Ecoray	0.70 kW
Spektron 75e	130	60–98	4	290 W	Ecoray	1.34 kW
Spektron 90e	152	70–98	3	230 W	Ecoray	0.78 kW
Spektron 180e	223	70–98	3	290 W	Ecoray	1.03 kW
Spektron 250e	390	70–98	4	290 W	Ecoray	1.34 kW
Spektron 350e	670	70–98	6	290 W	Ecoray	2.2 kW
Spektron 650e	1,247	70–98	8	290 W	Ecoray	2.8 kW
Spektron 900e	1,795	70–98	12	290 W	Ecoray	4.0 kW
Spektron 2000e	3,020	70–98	12	600 W	Ecoray	7.6 kW
Spektron 4000e	6,032	70–98	24	600 W	Ecoray	15.1 kW

Reactor and certification

Model	Flange (DN / ANSI)	Reactor length A (mm)**	Max. pressure	Sleeve cleaning	Certified / validated
Spektron 2e	DN40	430	16 bar	Manual	DVGW · ÖNORM
Spektron 5e	DN50	520	16 bar	Manual	DVGW · ÖNORM
Spektron 10e	DN65	770	16 bar	Manual	DVGW · ÖNORM
Spektron 15	DN65	1,340	16 bar	Manual	DVGW · ÖNORM
Spektron 25	DN80	1,660	16 bar	Manual	DVGW · ÖNORM
Spektron 30e	DN80 / 3"	1,660	10 bar	Manual [automatic wiping]	ÖNORM
Spektron 50e	DN100 / 4"	1,665	10 bar	Manual [automatic wiping]	DVGW · ÖNORM
Spektron 75e	DN150	1,530	10 bar	Manual [automatic wiping]	DVGW · ÖNORM
Spektron 90e	DN125 / 5"	1,607	10 bar	Manual [automatic wiping]	DVGW · ÖNORM
Spektron 180e	DN150 / 6"	2,010	10 bar	Manual [automatic wiping]	DVGW · ÖNORM
Spektron 250e	DN200 / 8" or DN300 / 12"	2,061	10 bar	Manual [automatic wiping]	DVGW · ÖNORM · UVDGM
Spektron 350e	DN250 / 10" or DN350 / 14"	2,283	10 bar	Manual [automatic wiping]	DVGW · ÖNORM · UVDGM
Spektron 650e	DN300 / 12" or DN450 / 18"	2,501	10 bar	Manual [automatic wiping]	DVGW · ÖNORM · UVDGM
Spektron 900e	DN350 / 14" or DN500 / 20"	2,389	10 bar	Manual [automatic wiping]	DVGW · ÖNORM · UVDGM
Spektron 2000e	DN500 / 20"	2,711	10 bar	Manual [automatic wiping]	DVGW · UVDGM
Spektron 4000e	DN700 / 28"	2,732	10 bar	Manual [automatic wiping]	DVGW · UVDGM

Options are shown in [square brackets]. * Maximum flow at 98% UVT and 400 J/m² at end of lamp life. ** Approximate; varies with flange size. Further pressure ratings available on request. Where two flange sizes are listed, either can be supplied.

Common specifications

UV LAMPS & MONITORING	
Lamp type	Ecoray low-pressure high-output (LPHO) amalgam (2e, 5e, 10e, 30e–4000e); Spektrotherm LPHO amalgam (15, 25)
Rated lamp life	14,000 hours (Ecoray lamps)
UV monitoring	Germicidal UV intensity sensor, ÖNORM compliant · individual lamp monitoring
Power control	2e–25: constant output (100%) · 30e–4000e: variable output 50–100% with OptiDose dose pacing
Certification	DVGW, ÖNORM and US EPA UVDGM depending on model (see model table) · DIN 19294-1 on the newest models
UV REACTOR	
Reactor material	Stainless steel 1.4404 / 1.4435 (ASTM 316L)
Flow diverter	Integrated (2e–50e) · none (75e) · OptiCone (90e–4000e)
Sleeve cleaning	Manual (2e–25) · manual [automatic mechanical wiping] (30e–4000e)
Protection class	IP65 (2e–25) · IP54 (75e) · IP65 / NEMA 4X (30e, 50e, 90e–4000e)
Installation	Horizontal or vertical · multiple flange options
CONTROL CABINET	
Ballast	Electronic; high-efficiency variable output on 30e–4000e
Controller	EcoTouch (2e–25) · EcoTouch or PLC (30e–4000e)
Outputs / SCADA	System status, lamp status, alarm messages, process values · SCADA communication via EcoTouch or PLC
Cabinet	Painted sheet steel or stainless steel · IP65 (2e–10e), IP54 (15, 25), IP54 / cUL Type 12 [Type 4X] (30e–4000e)
Electrical standards	CE (2e–25) · CE, UL, cUL (30e–4000e)
Power supply	2e–250e: 1 L/N/PE 230 V ±10%, 50–60 Hz (cUL: 120/240 V ±10%, 60 Hz on 30e–250e) · 350e–4000e: 400/230 V ±10%, 50 Hz (UL/cUL: 480/277 V ±10%, 60 Hz)

Request sizing or a quote

Send us your flow rate, UV transmittance, the required dose or certification (DVGW, ÖNORM, UVDGM, DIN) and the available installation space. We will recommend the model and configuration and quote supply, installation and ongoing service.

+61 422 081 913 · jonathan.andry@ozoneuv.com.au · ozoneuv.com.au

Specifications subject to change without notice.