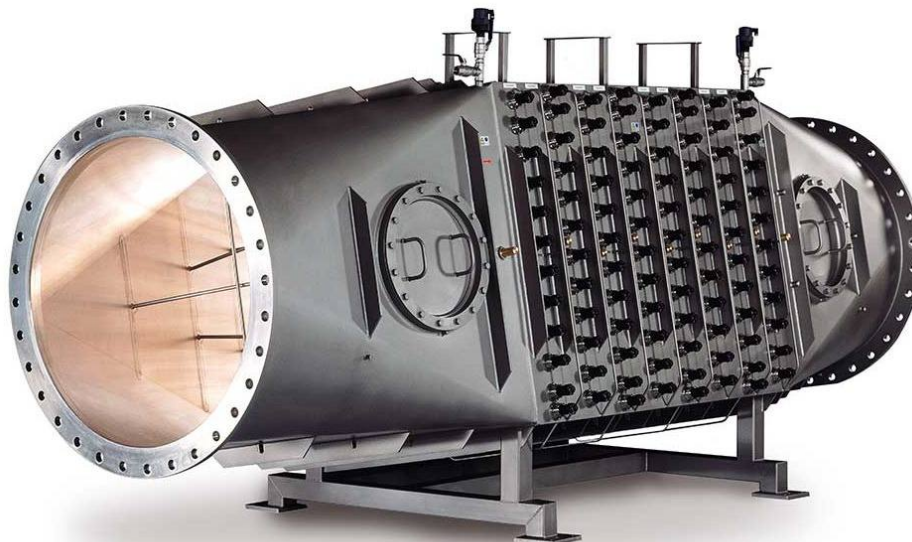


WEDECO · CLOSED-VESSEL UV FOR LARGE DRINKING WATER PLANTS

WEDECO K143 Series

High-capacity closed-vessel UV reactors for municipal drinking water, up to 6,300 m³/h per unit.



Overview

WEDECO K143 is a closed-vessel UV reactor for disinfecting drinking water at large municipal treatment plants. Each unit treats up to 6,300 m³/h, and rows of Ecoray low-pressure high-output lamps are arranged across the flow inside the vessel. The in-line installation keeps head loss very low. The K series is validated to the US EPA UVDGM (2006) over a wide UVT range and for target organisms including adenovirus, and treats water with UV transmittance as low as 70%. As a purely physical, chemical-free process, UV forms no disinfection by-products such as THMs or HAAs.

Ozone UV Solutions supplies K143 systems as an authorised WEDECO reseller and supports them locally: sizing, installation, commissioning, servicing, lamps and spare parts.

Key features

- Up to 6,300 m³/h of drinking water per unit, with very low head loss from the in-line design
- Validated to the US EPA UVDGM (2006), including adenovirus; treats water down to 70% UVT
- Ecoray LPHO amalgam lamps, rated lamp life 14,000 hours; up to 20% average energy saving in dimmed mode
- OptiDose dose control with an ÖNORM-certified UV intensity sensor; lamp rows switch off at low demand
- 2 to 13 lamp rows per reactor, with room or flanges for adding rows later
- Offline cleaning system; PLC control and visualisation with bus or SCADA connection

Design and operation

Reactor and hydraulics

The stainless-steel vessel installs in-line in the main pipe. Rows of lamps run across the flow, and the number of rows, from 2 to 13, is chosen for the flow range. A vessel can be supplied with space for additional rows, or with flanges so rows can be added later as demand grows.

Lamps and energy

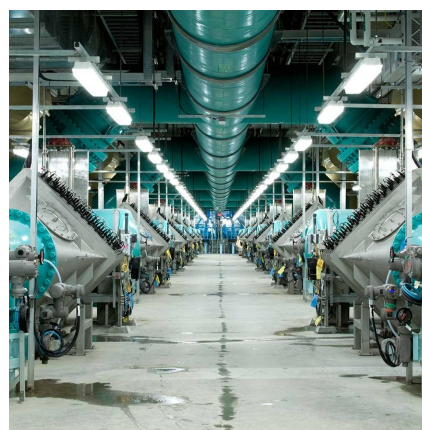
Ecoray lamps emit mainly at 254 nm and run on matched electronic ballasts with continuously variable output. In dimmed mode they save up to 20% energy on average, and their low operating temperature reduces fouling of the quartz sleeves. During low water demand, whole lamp rows can be switched off.

Dose control and monitoring

Integrated, calibrated UV sensors measure the UV radiation actually reaching the water. OptiDose combines flow, UV transmittance and UV intensity to hold a constant dose whatever the water quality or flow, without overdosing.

Controls and maintenance

A fully automatic PLC controls and visualises the system, with bus or SCADA connection. An offline cleaning system keeps the sleeves clean with minimal manual effort. The control cabinet can stand indoors or outdoors, even at high ambient temperatures [stainless-steel enclosure] [air conditioning].



Typical applications

- Primary disinfection at large municipal drinking water plants
- Plants replacing or reducing chlorine disinfection
- Drinking water with UV transmittance down to 70%

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
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Model selection

K143 reactors are configured for each plant: the number of units and the number of lamp rows per reactor follow from the flow, UV transmittance and the dose or log credit required. These are the elements we configure:

System configuration

Design element	Options
Capacity per unit	Up to 6,300 m ³ /h
Lamp rows	2 to 13 rows per reactor
Future expansion	Vessel with room for more rows, or flanges for adding rows later
Power control	Variable lamp output · [dose pacing with OptiDose] · row switching at low demand
Control	PLC with visualisation · bus or SCADA communication
Control cabinet	Indoor or outdoor · [stainless-steel enclosure] · [air conditioning]

Options are shown in [square brackets]. The capacity per unit depends on UV transmittance and the required dose; we confirm it at sizing.

Common specifications

UV LAMPS & MONITORING	
Lamp type	Ecoray low-pressure high-output (LPHO) amalgam, main output at 254 nm
Rated lamp life	14,000 hours
Power control	Electronic Ecoray ballasts, continuously variable output · row switching
UV monitoring	Calibrated UV intensity sensors, ÖNORM certified
Dose control	OptiDose: real-time flow, UVT and UV intensity
Validation	US EPA UVDGM (2006), third-party tested; target organisms include adenovirus
UV REACTOR	
Design	Closed vessel, in-line, lamp rows across the flow
Capacity	Up to 6,300 m³/h per unit
Lamp rows	2 to 13 per reactor · expandable
UVT	Down to 70% (1 cm)
Sleeve cleaning	Offline cleaning system
Installation	Indoor or outdoor
CONTROL CABINET	
Controller	Fully automatic PLC with visualisation
Outputs / SCADA	Sensor signals, alarms and OptiDose closed-loop control · bus or SCADA communication
Cabinet	Indoor or outdoor, including high ambient temperatures · [stainless-steel enclosure] [air conditioning]

Request sizing or a quote

Send us your design flow (average and peak), UV transmittance, the required dose or log-credit target and the available space and pipe size. We will configure the K143 system and quote supply, installation and ongoing service.

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Specifications subject to change without notice.