

WEDECO · OPEN-CHANNEL UV DISINFECTION FOR WASTEWATER

WEDECO Duron 6

Vertically inclined open-channel UV system for mid-size to large wastewater treatment plants, new builds and retrofits of existing chlorine contact channels.



Overview

WEDECO Duron 6 is an open-channel UV disinfection system for secondary and tertiary wastewater effluent. Its 600 W Ecoray lamps sit at 45° in modules that install straight into a concrete channel, which keeps the channel shallow and the footprint small. Sensor-based dose control dims the lamps to the dose actually needed, and the integrated lifting mechanism lifts a module out of the channel without a crane. Duron 6 has more than ten years of field experience and is validated to NWRI and the US EPA UVDGM.

Ozone UV Solutions supplies Duron 6 systems as an authorised WEDECO reseller and supports them locally: sizing, installation, commissioning, servicing, lamps and spare parts.

Key features

- Third-party validated to the US EPA UVDGM (2006), the IUVA protocol (2011) and NWRI guidelines (2003/2012), including California Title 22 acceptance
- Ecoray 600 W low-pressure high-output amalgam lamps, 1.4 m long, vertically inclined at 45°
- OptiDose dose control with an ÖNORM-certified UV intensity sensor: lamp power follows flow, UVT and UV intensity
- Automatic, chemical-free OptiWipe sleeve cleaning [OptiBrush stainless-steel brush for high fouling]
- Integrated manual or automatic module lifting, no crane; maintenance-free electric drives, no hydraulic oil
- Electrical components out of the water, in separate cabinets rated for indoor or outdoor installation

Design and operation

Inclined lamp geometry

The 45° lamp arrangement lowers the required channel depth while keeping a small footprint. Together with the 600 W lamps this cuts the number of lamps compared with conventional low-pressure amalgam systems, and the 1.4 m lamp length remains easy for one operator to handle.

Dose control and energy

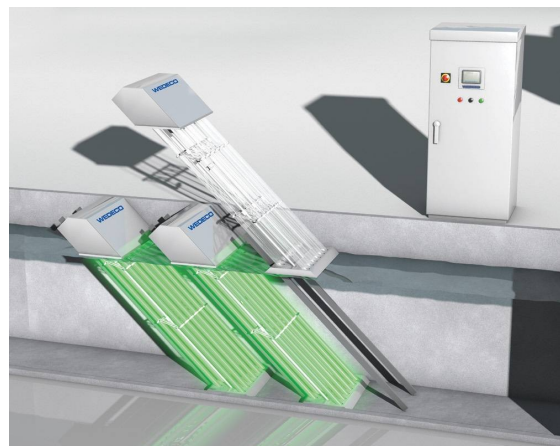
OptiDose measures flow, UV transmittance and UV intensity in real time and sets lamp power to the minimum needed for the required dose. Ecoray lamps keep a higher relative UV-C output in dimmed mode than conventional amalgam lamps, so the system saves energy across most operating conditions.

Cleaning and lifting

OptiWipe wipers with PTFE and fluoroelastomer (FPM) blades keep the quartz sleeves clean without chemicals; for effluents with high fouling potential an OptiBrush with a stainless-steel brush is available. Lamps are changed without removing the module. For wiper or sensor work, one module is lifted at the touch of a button while the other banks stay in service.

Flexible layout and upgrades

Variable bank sizes and bank quantities fit the system to the channel. Capacity can be raised later for higher flows or tighter limits by adding banks, with little channel modification. Safety switches de-energise a module before lamp replacement or lifting.



Typical applications

- Disinfection of secondary and tertiary municipal wastewater effluent
- Retrofit of existing chlorine contact channels and horizontal UV channels
- Water reuse, including California Title 22 applications
- Combined sewer overflows and aquaculture water

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

Duron systems are engineered to order rather than chosen from a list of fixed models: the number of channels, banks, modules and lamps comes from a validated dose calculation for your flow, water quality and discharge standard. The table below compares the two Duron models.

Duron range at a glance

	Duron 6	Duron 8
UV lamps	Ecoray low-pressure high-output amalgam, 600 W	Ecoray, 800 W
Lamp arrangement	Vertically inclined at 45°, lamp length 1.4 m	Flexible module lamp arrangement, based on the Duron 6 concept
Best suited to	Small to medium flows and head loss; shallower channels, including retrofit of horizontal UV channels	Lower UV transmittance or high UV dose (stormwater, reuse); deep channels such as chlorine contact chambers
Flow per channel	Set by sizing	Higher than Duron 6; fewer channels for the same flow
Third-party validation	NWRI and US EPA UVDGM	NWRI and US EPA UVDGM
Module lifting	Manual or automatic, no crane	Integral lifting, manual or automatic, no crane
Remote access	–	App-based monitoring and troubleshooting on a mobile device
Field record	Over 10 years of installations	Launched 2022

What we need to size a Duron system

Design input	Why it matters
Peak and average flow	Sets the number of channels, banks and lamps
UV transmittance (UVT) of the effluent	Low UVT needs more UV power per unit of flow
Required dose or discharge / reuse standard	Fixes the validated dose the design must deliver
Channel width, depth and water level range	Decides the module and bank layout, and whether a retrofit fits
Effluent type and fouling potential	Decides the sleeve-cleaning option and design margins
Power supply and cabinet location	Indoor or outdoor cabinets, cable routing

Options are shown in [square brackets]. Duron systems serve flows of over 10,000 m³/h (> 60 MGD) with multiple channels. Validated dose design (D_L approach) sizes the system to the site so it is neither over- nor undersized.

Common specifications

UV LAMPS & MONITORING	
Lamp type	Ecoray low-pressure high-output (LPHO) amalgam, 600 W, lamp length 1.4 m
Lamp arrangement	Vertically inclined at 45°
Mercury content	Up to 80% less than other lamps
UV monitoring	ÖNORM-certified UV intensity sensor
Dose control	OptiDose: real-time flow, UVT and UV intensity, automatic lamp dimming
Validation	US EPA UVDGM (2006) · IUVA protocol (2011) · NWRI (2003/2012), Title 22 acceptance · approved by the Norwegian Veterinary Institute for aquaculture
UV MODULES & CHANNEL	
Installation	Concrete open channel, new plant or retrofit of chlorine contact channels
Sleeve cleaning	Automatic, chemical-free OptiWipe (PTFE and FPM blades) [OptiBrush with stainless-steel brush]
Lamp replacement	Without removing the module
Module lifting	Compact sliding mechanism at 45°, manual or automatic, no crane; individual modules lifted while other banks stay in service
Drives	Electric, maintenance-free, no hydraulic oil
Operator safety	Safety switches de-energise the module before lamp replacement or lifting
ELECTRICAL	
Ballasts	Ecoray electronic ballast cards, separated from the UV modules
Cabinets	Separate from the channel, out of the water · rated for indoor or outdoor service

Request sizing or a quote

Send us your peak and average flow, effluent UV transmittance, the required dose or discharge standard and your channel dimensions. We will size the Duron system, check whether it fits your existing channel and quote supply, installation and ongoing service.

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Specifications subject to change without notice.