



CrossFlow – PRODUCT INFORMATION

Medium Pressure Technology

Wherever biological purity is important, Hanovia has become the natural choice throughout the world. Ultraviolet technology can be applied to a wide variety of disinfection, dechloramination, deozonation, dechlorination and TOC reduction applications.



The polychromatic spectral output of Hanovia medium pressure UV lamps makes them ideal for the treatment of a wide variety of applications. The UVC absorption spectra of individual micro-organism's DNA and other chemical compound's coincide with the Hanovia lamp medium pressure UVC spectral output thereby maximising performance efficacy.

Applications

- Municipal drinking water
- Municipal waste water

Benefits

- Most efficient against all organisms
- Treatment is effectively monitored and fully automatic.
- Arc tubes are individually monitored to verify system performance
- Reduced connection costs
- Simple operation and maintenance
- Very low pressure loss
- Biosimetric tested units available

Certifications & Standards

- UL, CE
- ISO9001
- EN60204 and BS5500
- United States EPA

CrossFlow is ideal for the disinfection of municipal drinking water and municipal waste water where quality, performance and reliability are important operational requirements. The monitoring of the UVC intensity output of each arc lamp by a dedicated UVC intensity monitor ensures optimum system performance and control.

SIZING OF A CROSSFLOW SYSTEM

The selection of a UV system will depend on the type of water to be treated. The key factors in the selection are the water transmittance (free testing offered by Hanovia), the maximum flow to be treated, the water temperature and the challenge micro-organisms.

If a challenge is set on a particular micro-organism or chemical compound, Hanovia will guarantee the performance of the system in response to this challenge, following US EPA guidelines and/or O-Norm recommendations in Europe.

DESIGN

The UV treatment chamber is designed to ensure optimal reaction between the liquid to be treated and the high UVC output lamps. The pressure loss resulting from installing a Crossflow system is very low (typically under 70 mbars).

The Crossflow system performance has been independently validated in accordance with the United States EPA validation protocol.

CONTROL AND MONITORING

The Modicon PLC control used with the Crossflow system is an interactive micro-processor controlled system for optimum ease of operation and traceability. It features a menu driven system software with membrane switches for selective display of parameters and adjustment of set points. The control box is supplied as standard in Epoxy coated steel, 316L SS is available as an option.

The UV intensity monitor responds specifically to the UVC output of Hanovia lamps (A validated monitor option is available).

TECHNICAL DATA

Operational features:

- Modicon PLC stream controller
- Lamp on/off
- Remote/ local operation
- PLC controlled automatic wiper system with status messages
- Dose computation from fixed or variable flow
- Selectable auto restart following power failure
- Water flow and chamber temperature readout

Screen displays:

- System UV dose mJ/cm²
- UVC intensity @ chamber wall in mW/ cm² per lamp
- UVC intensity @ sleeve in mW/ cm²
- Hours run per lamp - resettable
- Hours run per PSU – non resettable
- Water flow rate
- Chamber temperature
- Transmittance T10
- Operational Power Level
- Individual lamp status
- Stream Status
- Local or Remote operation

Key Alarm messages:

- Low UV Dose
- ELCB trip
- Chamber over-temperature
- Lamp fail
- Power supply over-temperature

Note: some alarm messages may be configured as warnings or trips.

External interfaces:

(via comms to SCADA or via hard wired interface)

Inputs

- 4-20 mA signals for flow & transmittance
- VFC inputs for UV start and remote reset

Outputs

- 4-20 mA signals for UV dose and intensity
- Volt-free contacts for 8 status indicators

Hanovia UV monitor:

- Optimised response to germicidal UVC wavelengths
- Monitor probe immersed directly in the water

Installations notes:

- Install in a dry area
- Temperature between 0 and 50 degC
- Rh < 90%
- Insulate from extreme cold
- Install chamber horizontally according to directional indication.
- Allow maintenance space around system

Options:

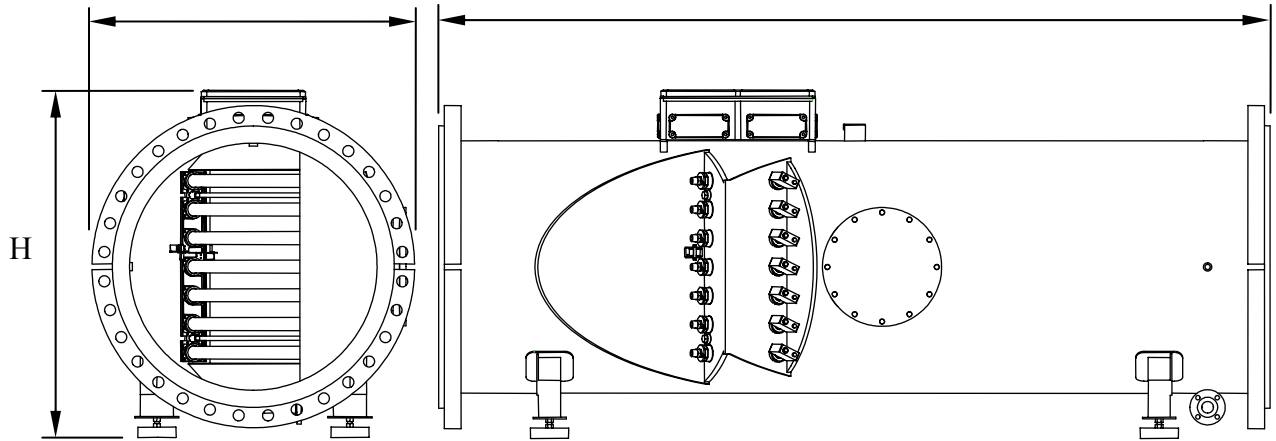
- Data logging provides retrievable data on operations over twelve months. RS232 interface for download to PC .
- Dose related variable power to arc tubes controlled by the PLC stream controller, with status messages
- Cabinets in 304 or 316 Stainless Steel
- Vent/ drain valves
- Certified arc tubes and UV monitors
- Electropolished Chamber
- FDA Validation pack

Standard connections:

PN16, ANSI 150lb, JIS 10k

Construction:

- Chamber body 316L SS pickled and passivated
- High purity quartz sleeves
- Working/Test pressure: 7/10.5 bar
- Pressure loss <70 mbar at max flow
- Cabinet IP ratings: IP 44/NEMA 12
- Cabinet in epoxy coated carbon steel
- Cooling fans



Model	Maximum Disinfection Capacity ⁽¹⁾ (m ³ /h)	Number of lamps	Max. Total Power (kW)	Chamber Dimensions (mm) L x H x D ⁽²⁾	Control Cabinet & PSU dimensions (mm) H x W x D ⁽³⁾	Number of Cabinets	Weight of UV Chamber (kg)	Weight of Control Cabinet (kg)
XF30	2500	6	46KW	2670x1045x900	Control 2100x1000x800 PSU 2100x800x800	1 3	780Kg	1140Kg
XF36	3500	7	132KW	3000x1260x1170	Control 2100x1000x800 PSU 2100x800x800	1 4	1185Kg	1250Kg

Notes:

(1) The maximum disinfection capacity is based on a transmittance of 95% in a 10 mm cell and a UV dose of 40 mJ/cm² RED (Reduction Equivalent Dose using MS2 phage as test organism as prescribed by the US EPA) at end of lamp life.

(2) Installation Length x Height x Depth in mm

(3) Installation Height x Width x Depth in mm

Standard connections: PN16, ANSI 150lb, JIS 10k

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 High purity quartz sleeve
 Working/test pressure: 7/10.5 bars
 Pressure loss < 70 mbars at maximum flow
 Cabinet IP ratings: IP44/ NEMA 12
 Cabinet in epoxy coated carbon steel
 Cooling fans

Supply Voltages: 380 to 480 V, 50/60 Hz – for other voltages please enquire.