

The HydroDOS HD550G

Our **HydroDOS HD550G** chlorine dioxide generator can be used to prevent and control the establishment of pathogenic bacteria and viruses in domestic cold water systems.

Chlorine dioxide is a highly effective and powerful oxidizing biocide that targets both planktonic (floating) and sessile (biofilm) bacteria.

It is significantly more powerful than chlorine and more effective against more complex micro-organisms such as cryptosporidium

Additionally, chlorine dioxide will not react with organic compounds and will create significantly less disinfection byproducts ensuring the greater permissible level of total oxidants being chlorine dioxide.

The Design

The HydroDOS is a fully lockable cabinetised system, with controller, chemical containment self cleaning residual monitor, dosing pumps, reaction chamber, flow meter and injection point all integral to the device.

The system design is optimised for dosing cold water tanks in a recirculatory arrangement



Key Benefits

- High ClO₂ yield
- Fully WRAS Approved
- Fully lockable enclosure
- Integral self-cleaning ClO₂ monitor
- Market Leading Chemistry Analyser and Controller
- Optimised for recirculatory tank dosing
 - Reducing atmospheric loss of chemistry
 - Reduces risk of localized CIC

Links to Additional Information

- [Verified EPD](#)
- [BIM Model \(2019\)](#)
- [WRAS Directory Listing](#)

HydroDOS HD550G Method of Operation

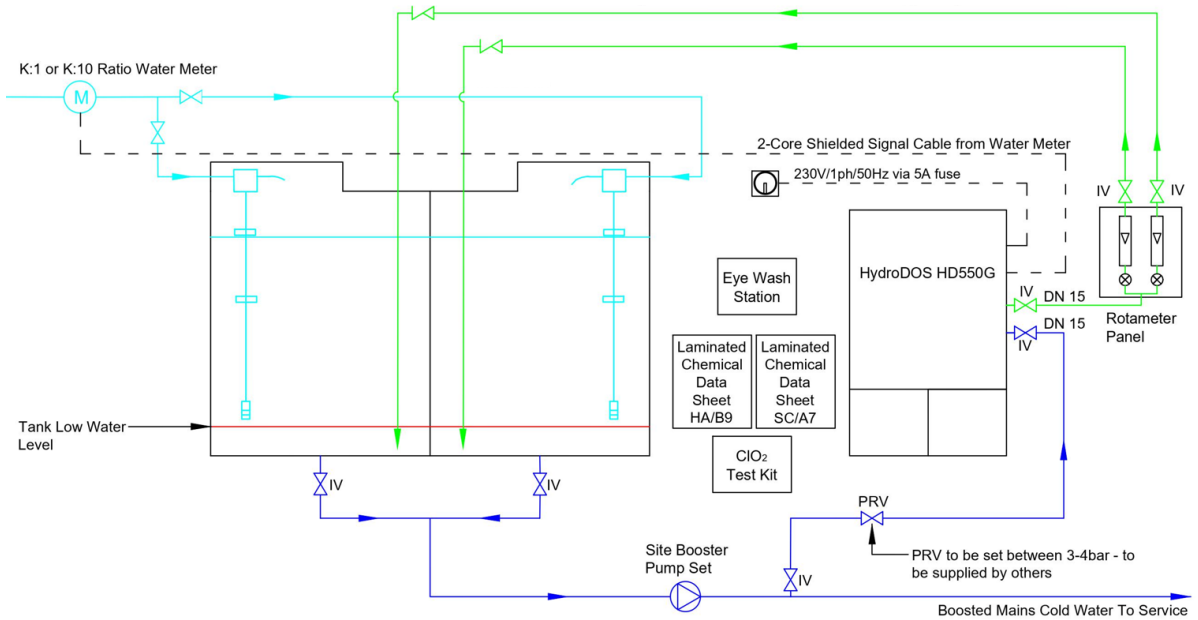
- A Contacting water meter on the inlet to a cold-water storage tank records incoming water and a pulse is generated, this pulse will be based on 1, 10 or 100 litres of water (K-ratio)
- The HydroDOS controller initiates the two integral digital dosing pumps to pump a predetermined amount of precursor chemical, this amount is based on the K-ratio and required ClO₂ residual, the precursors are injected into the ClO₂ reaction chamber, the amount of chemical generated is proportional to the amount of water entering the tank.
- Pre-prepared ClO₂ is injected into pipework integral to the HD550G which makes up part of a larger recirculating loop of water.
- The newly dosed water is then introduced to the cold-water storage tank, to prevent evaporative loss, these dosing line/s terminate below the low-level point of the tank
- Stored water is boosted on demand as normal
- Downstream of the booster set a DN15 branch off feeds back to the HD550G where ClO₂ residual levels are monitored by the integral sensor. (If levels are greater or lower than the user defined set points, typically 0.5ppm and 0.1ppm, the unit will go into alarm and dosing will cease.)
- Once the tank is full and no water is being recorded by the contacting water meter the unit will cease dosing and will only monitor ClO₂ residual levels, only once the tank begins fill again will the HD550G recommence dosing.



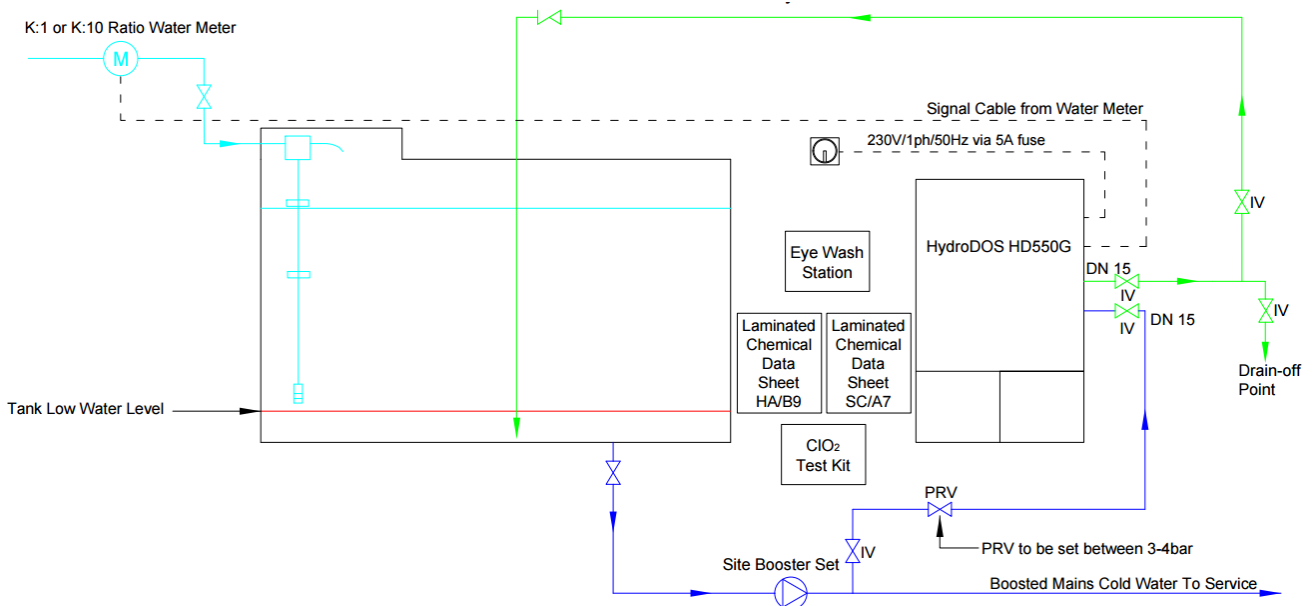
Installation Notes

- Dosing/Sample Lines should be corrosion resistant, PVC-u is recommended
- The HD550G should be installed in an open well-ventilated area
- If boosted services pressure is >4 bar a PRV set to 3-4 bar must be installed on the return sample line
- In addition to terminating below the tank LL, the dosing termination points must be positioned away from the tank inlet and outlet
- A single phase 240V mains connection should be provided to the unit
- Access should be available for commissioning and servicing
- Technical data and technical guidelines should be followed per the O&M manual and local regulations.

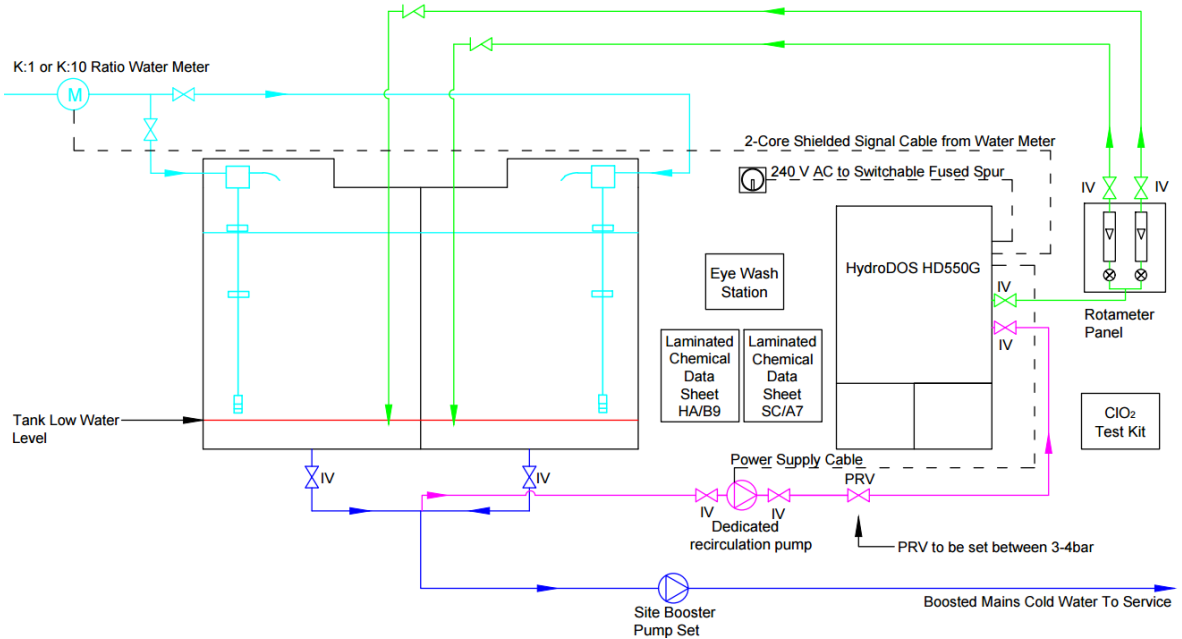
Cold Water Storage Tank with Central Divide



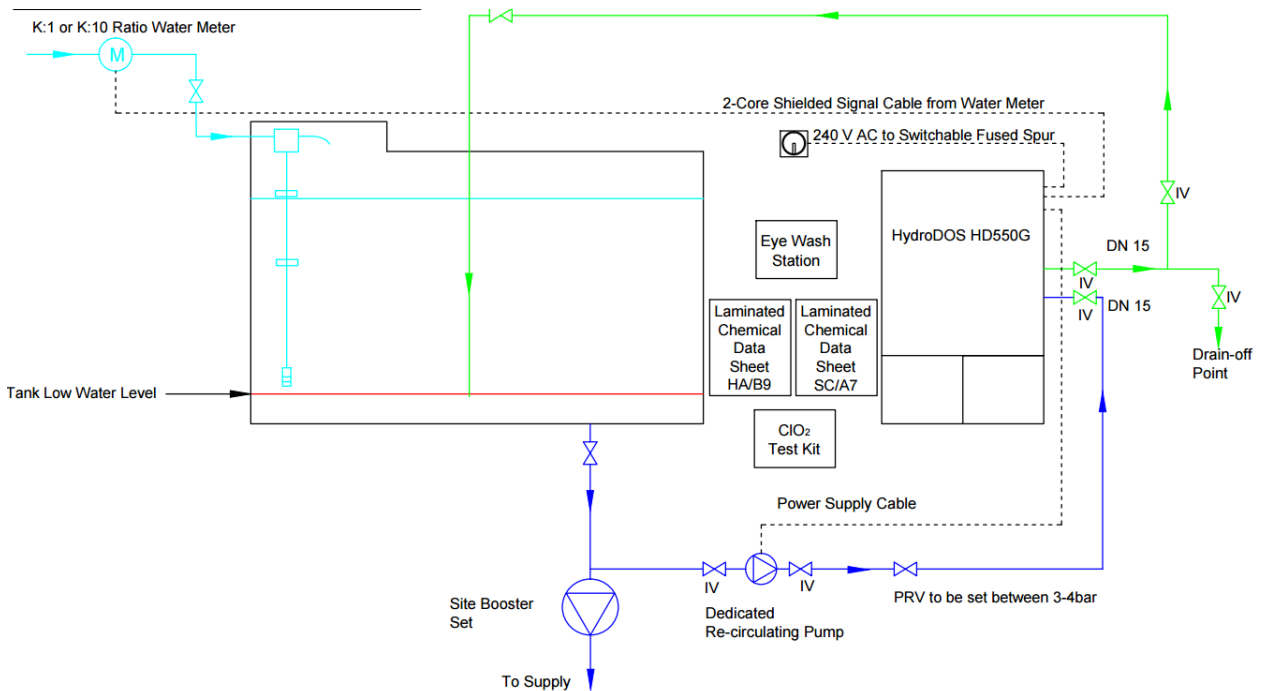
Cold Water Storage Tank with Single Compartment



Cold Water Storage Tank with Central Divide and Recirculation Pump



Cold Water Storage Tank with Single Compartment and Recirculation Pump



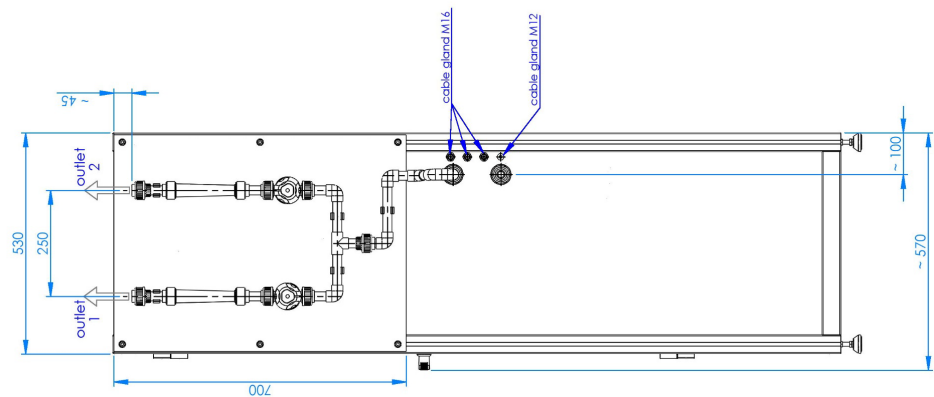
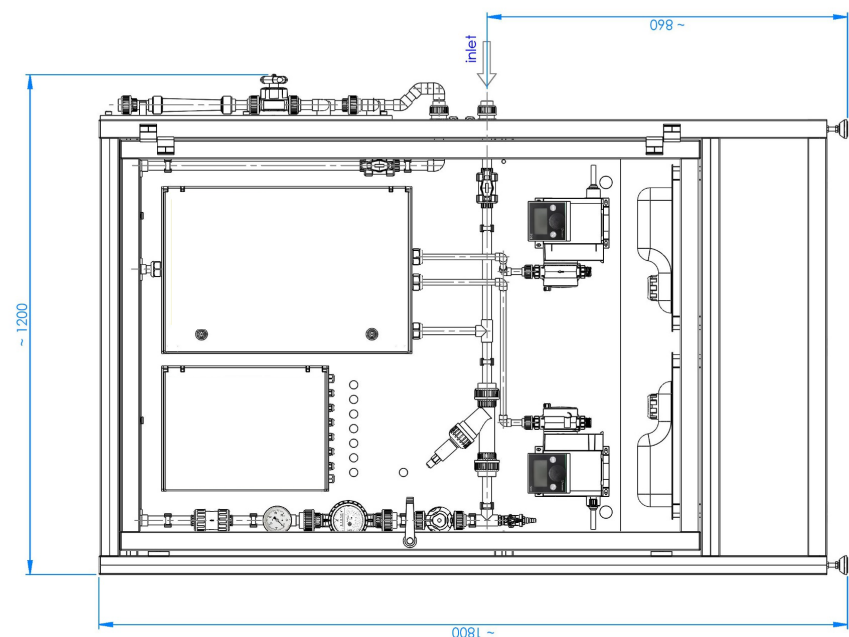
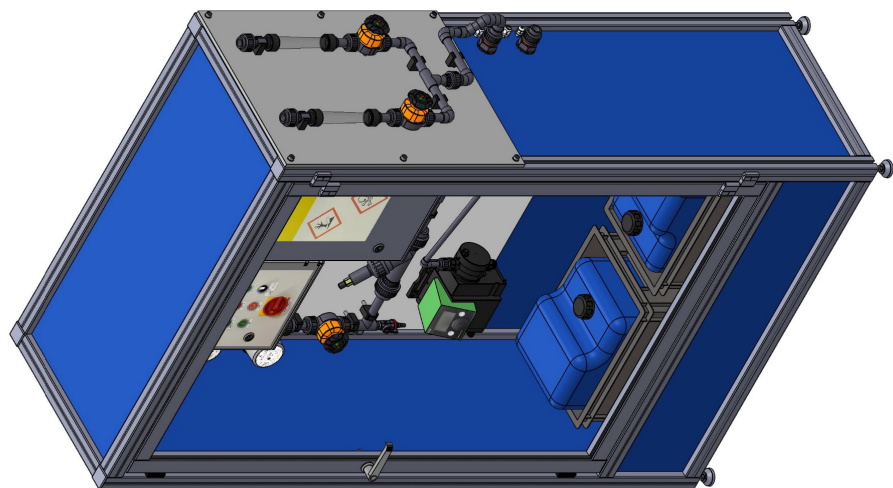
Item	Rating
Regulatory approval	WRAS
Production rate	215g/h
Capacity at 0.5ppm dose	10,320m ³ /day
Operating pressure	2 - 6bar
Water temperature	5 - 30°C
Ambient temperature	5 - 40°C
Relative Humidity	70% not condensing
Inlet/Outlet connections	DN15 uPVC plain adhesive weld
Shipping weight	120kg
Operating weight	175kg
Power supply	230V/1pH/50Hz
Power consumption	200-500W
Protection type	IP54
Chemical conversion efficiency	>90%
Operational mode	Proportional - based on water meter input (water meter must be with K=1 or 10)
	Sensor - based on chlorine dioxide probe measurements
Optional extra(s)	Water meter (K1= or 10)
	Rotameter panel
	Recirculation pump
	Neon gas alarm warning system
	Chlorine dioxide pocket colorimeter test kit

ENVIRONMENTAL DATA SUMMARY	HYDRODOS HD550G
EPD Reference	EPD_Hydrotec_(UK)_Ltd_HydroDOS_HD550G_HUB-0805_2023-10-30
Declared unit	1 unit of water disinfecting equipment
Declared unit mass	116 kg
GWP-fossil, A1-A3 (kgCO2e)	1.13E+03
GWP-total, A1-A3 (kgCO2e)	1.10E+03
Secondary material, inputs (%)	3.4
Secondary material, outputs (%)	35.5
Total energy use, A1-A3 (kWh)	5170
Total water use, A1-A3 (m³)	1.73E+01
Variation in GWP-fossil for A1-A3 (%)	-
PRODUCT RAW MATERIAL MAIN COMPOSITION	
Metals Amount, mass- %	51.22
Minerals Amount, mass- %	0
Fossil materials Amount, mass- %	48.78
Bio-based materials Amount, mass- %	0
 BIOGENIC CARBON CONTENT	
Biogenic carbon content in product, kg C	0
Biogenic carbon content in packaging, kg C	10.5
FUNCTIONAL UNIT AND SERVICE LIFE	
Declared unit	1 unit of water disinfecting equipment
Mass per declared unit	116 kg
Functional unit	1 unit of water disinfecting equipment running at 200W, 24 hours a day, all year round
Reference service life	15
SUBSTANCES, REACH - VERY HIGH CONCERN	The product does not contain any REACH SVHC substances in amounts greater than 0,1 % (1000 ppm).

HydroDOS

Chlorine Dioxide Generator

Type: HD550G



HydroDOS Chlorine Dioxide Generator Specification Clause

For the control of microbiological populations in water systems the mechanical contractor shall install a WRAS approved chlorine dioxide generation and dosing unit.

This design is based on the HydroDOS HD550G designed and manufactured by Hydrotec (sales@hydrotec.co.uk)

The device shall generally be in accordance with the flowing schedule:-

Production Rate : 215g/h chlorine dioxide

Capacity: 10,320m³/day

Mode of Operation: Proportional - based on water meter input

The unit shall comprise a two-pack pre-cursor system, pre-mounted and pressure tested chlorine dioxide generator, integral chemical bunds for safety, furthermore a lockable safety cabinet will provide security to dosing system.

The unit will feature dual digital dosing pumps to ensure a very high degree of accuracy and control.

Chemical composition shall ensure a very high conversion efficiency of >90% for both minimal precursor use and also to ensure the highest possible levels of free chlorine dioxide available in the treated system.

The unit should provide continuous chlorine dioxide monitoring via integral self-cleaning ClO₂ residual analyser with digital read out, 2 chemical drum low level alarms and flow monitor to ensure dosing safety.

To prevent the risk of localised chemical induced corrosion and the atmospheric loss of chemistry the system shall be optimised for a recirculatory dosing arrangement between the boosted services and the cold water storage tank with dosing lines terminating below the low-level water point of the cold water storage tank. Inline chemical dosing shall be avoided where applicable.

Dosage rates shall be controlled proportionally via a dedicated contacting water meter, dosing control shall strictly not be via chemical residual levels.

Volt free connections to a BMS system are provided.

A 230V/1ph/50Hz supply through a switchable 5A fused spur should be provided for the unit.

- To be supplied with initial supply of both precursor chemicals
- To be supplied with WRAS Approved Contacting Water Meter with a K:10 ratio
- To be supplied with Rotameter Panel for Equal Dosing of Each Tank Compartment
- To be supplied with NEON Gas Alarm with visual and audible alarm, w/VFC
- To be supplied with chlorine dioxide residual test kit
- To be supplied with a recirculation pump

For the accurate monitoring of environmental impact it is preferred that the manufacturer is able to provide a Verified EPD or alternatively a mid-level LCA in accordance with the TM65 Embodied Carbon Calculation Methodology

The unit shall be installed in strict accordance with the manufacturer's literature.

Notes/Features

- Unit must be WRAS Approved
- Self-contained free standing housing complete with clear fascia panel for visual inspection.
- Chemical safety bunds ensuring chemical leak containment.
- >90% chemical conversion efficiency.
- Safety devices; Continuous chemical monitoring station with digital display, low level chemical alarm, recirculation loop for flow monitoring and chemical levels.
- Chemicals shall be converted / activated prior to entering system to be treated.
- Volt free contacts for BMS integration.

The recommended specification clauses above are intended to cover a wide variety of applications. We recommend speaking to a Hydrotec representative to produce project-specific tailored specifications.