FACT SHEET – HYDRALOOP CASCADE

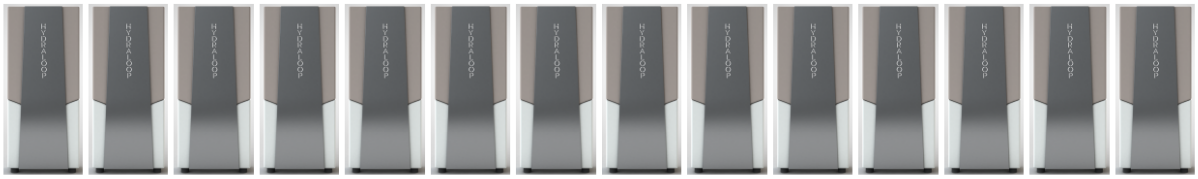
With the scalable and made to measure Hydraloop Cascade system, you can recycle up to 95% of shower, bath and/or handbasin water + the cooling water from air-conditioning units. Due to its innovative and breakthrough technology the maintenance requirements and corresponding costs are very low.

The Hydraloop Cascade can be assembled by configuring two or more Hydraloop units in cascade arrangement. Depending on the building and the application, one central location can be chosen in the building for one cascade configuration. Or several locations with 2 or more compact cascade configurations.

Each Hydraloop unit in the cascade set up works independently in the cleaning process. The treated and disinfected recycled water is stored in one volume which is formed by the interconnected individual water storage tanks of the Hydraloop units. Treatment and storage tanks form one integral cluster. A powerful booster pump distributes the recycled water in the building to be used for toilet flushing and garden irrigation. In case of a temporary shortage of recycled water, the system automatically switches to its back-up water source like tap water or rainwater.

An online information system is available for real-time status information and performance.

EXAMPLE: HYDRALOOP CASCADE 14 DURING 3-MONTH PERIOD



Unit 01	Unit 02	Unit 03	Unit 04	Unit 05	Unit 06	Unit 07	Unit 08	Unit 09	Unit 10	Unit 11	Unit 12	Unit 13	Unit 14
Online	Online	Online	Online	Online	Online	Online	Online	Online	Online	Online	Online	Online	Online
previous month **2929** total **6395**	previous month **2276** total **5364**	previous month **4005** total **9125**	previous month **5163** total **18158**	previous month **3787** total **8723**	previous month **4036** total **9543**	previous month **5205** total **11468**	previous month **3910** total **11746**	previous month **5928** total **15237**	previous month **5203** total **14659**	previous month **6153** total **19306**	previous month **6989** total **20847**	previous month **6559** total **19040**	previous month **6679** total **18857**

Total 188468 liters water recycled

Hydraloop Cascade

Input	Greywater from showers, baths, handbasins (no water from kitchen, kitchenette and sink), cooling water from air-conditioning units. Hydraloop Cascade cannot collect greywater from the washing machine.
Output	1 outlet for recycled water for each Hydraloop Cascade cluster for toilet flushing and irrigation
Colour	Stone
Front Plate	Stainless-steel front plate with white coloured logo and status light

Hydraloop Specifications

Treatment capacity	Scalable from 1060 liters | 280 gallons per day up to 10,600 liters | 2800 gallons per cluster Multiple Hydraloop Cascade clusters can be installed
Voltage	100 | 240 Volt, 24 Volt internal
Internet	The Hydraloop unit needs to be connected with an internal internet connected (wifi) network
Noise Level	Depending on the size of the installation

The Hydraloop Cascade consists of several H300 units connected together. The H300 unit is certified to the NSF/ANSI 350 standard.

The NSF/ANSI 350 standard verifies that all design and performance requirements of the standard have been met, and confirms through testing that effluent reuse water meets the stringent quality criteria. The NSF/ANSI 350 standard also sets water quality requirements for the reduction of chemical and microbiological contaminants for non-potable water use.

During the 26-week NSF/ANSI 350 testing period, the Hydraloop product was dosed daily with a greywater mix that contained raw wastewater, secondary effluent, body wash, shampoo, conditioner, soap, toothpaste, deodorant, bath cleaner, lactic acid, liquid handsoap, laundry detergent & softener, Na_2SO_4, $NaHCO_3$, Na_3PO_4 and test dust. The incoming greywater and the treated recycled water was lab tested for 26 weeks, typically 3 days a week.

Influent values of the incoming greywater used for the 26 week test

Parameters	Required range
TSS (mg/L)	50 - 160 mg/L
BOD5	130 - 210 mg/L
Temperature	25 - 35 Celcius
PH (SU)	6.0 - 8.5
Turbidety	30 - 100 NTU
Total phosphorous-P	1.0 - 3.0 mg/L
Total Kjeldahl -N	3.0 5.0 mg/L
COD	250 - 400 mg/L
Total coliforms	$10^3 - 10^7$ cfu/100 mL
E.coli	$10^2 - 10^6$ cfu/100 mL

Effluent values NSF-350 requirements and Hydraloop treated water test results

NSF/ANSI 350 requirements		HYDRALOOP average results	
CBDO5 (mg/L)	< 10	CBDO5 (mg/L)	6
TSS (mg/L)	< 10	TSS (mg/L)	3.3
Turbidity (NTU)	< 5	Turbidity (NTU)	2.3
E. coli (MPN/100mL)	< 14	E. coli (MPN/100mL)	< 1
PH (SU)	6.0 - 9.0	PH (SU)	6.0 - 9.0

For more information, please visit www.hydraloop.com