

TECHNICAL DESCRIPTION FOR AUTOMATIC CAR WASH

# RBBR system for car wash washing 450 cars per day



## System components

\*Replaces the washing machines' old water storage tank

Unit process	Device	Number of devices	Unit price, freight not incl.	Total price [€]
1 Biological filter	Clewer RBBR R4000	3	€13,600	€40,800
2 Aeration	Diaphragm blower	6	€494	€2,964
3 Solid-liquid separation	Lamella Clarifier	1	€8,320	€8,320
4 Automation	Distribution central	1	€2,540	€2,540
5 Nutrient dosing	Dosing pump	1	€308	€308
6 Excess foam breaking	Clewer antifoam device	1	€700	€700
Water storage*	Clewer storage tank	1	€2,890	€2,890
			<b>Total price [€]</b>	<b>€58,522</b>

## Containerized package

Unit process	Device	Number of devices*	Unit price, freight not incl.	Total price [€]
Plant frame	20' container (insulated, heated, alight)	2	€13,500	€27,000
Installation + accessories	Components installed to the containers	1	€8,200	€8,200
Containerized buffer tank**	20' container (insulated, heated) + 15m <sup>3</sup> buffer tank	1	€12,240	€12,240

\*Required for the composition mentioned in System components table  
\*\*If existing system does not have enough volumetric water buffer capacity

## Power consumption

Device	Function	Power
Submersible pump*	Water recycle	~2.4kW
Air blowers	Aeration of the RBBR	1.5kW
Antifoam	Excess foam breaking	0.4kW
Chemical pump	Nutrient dosing	0.015kW
<b>Total continuous power demand</b>		<b>4.3kW</b>

\*Installed into the sand separator

## Maintenance

Procedure	Performed/year	Working time
Cleaning of the aerator pipes	Every 3-5 years	1 1/2 hour (draining the reactors ~1 hour)
Cleaning/changing the air blower filters	Every three months, depending on the indoor air quality	1 1/2 hour
Chemical refills	According to storage volume, consumption approximately 30ml/wash	1/2 hour
Sludge removal	According to sludge tank volume	1-2 hours

## Consumables

Nutrient for the microbes	Consumption approximately 30ml/wash (list price €2/l)
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