

Technical data sheet for KLARO Container. One wastewater treatment plant

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Plant size

100 PE

Maximum flow	Qd	15,00 m ³ /d
Maximum organic load	Bd	6,00 kg/d

Design according to EN 12566-3

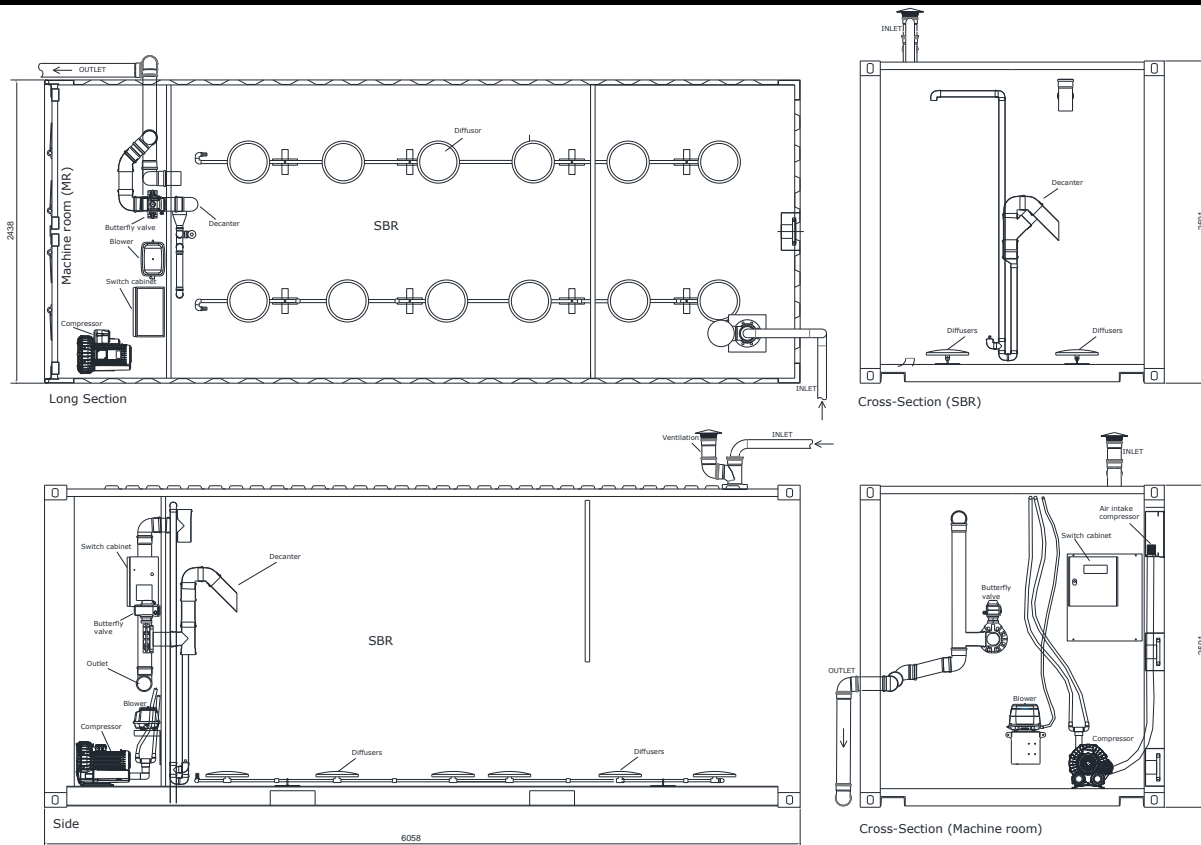
Effluent values:

	BOD₅	COD	SS	NH₄N	TN	TP	Coliforms
<	20 mg/l	90 mg/l	20 mg/l	10 mg/l	25 mg/l		

Total tank capacity: 30,4 m³

Air compressor	Type:	Side channel	SV 201/2
	Installed motor power		1,50 kW
	Power consumption at 0,3 bar		1,30 kW
	Motor design	0,4 bar 50 Hz 3~	400 V

Daily operating time 12,8 h/d



Symbolic representation

Stage	Number	Container, material	Diameter Width [m]	Length [m]	Maximum water depth [m]	Maximum volume [m ³]
SBR	1	Container 20ft, metal	2,44	5,30	2,35	30,4

Calculation for KLARO Container. One wastewater treatment plant according to EN 12566-3

Basic data / project data

Customer	KLARO GmbH	Date	30.06.2023
Project		Editor	Pilarski Iwo
Type of waste water:	domestic		
Particularities			

Base of calculation

	BOD ₅	COD	SS	NH ₄ N	TN	TP	Coliforms
Outlet	< 20 mg/l	< 90 mg/l	20 mg/l	< 10 mg/l	< 25 mg/l		
Population equivalent						100	PE
Wastewater	Q _d		at Q _{PE}	150 l / (PE*d)		15,00	m ³ /d
Daily peak factor						10	h/d
Waste load BOD ₅			B _d	60 g/(PE x d)		6,00	kg/d
Waste load COD				120 g/(PE x d)		12,00	kg/d
Treatment cycles per day						2	

Calculation

Container type		Container 20ft
Number of containers / proportion of chambers		1
Number of chambers		1
Connection of the chambers		Dividing wall with submerged opening
Width		2,44 m
Length		5,30 m
Water depth		2,35 m
Total area		12,93 m ²
Required volume		17 m ³ + 12,75 m ³ = 29,75 m ³
Existing total volume	V _{BB}	30,39 m ³
Minimum water depth after clear water extraction		
Required volume	170 l/PE x 100 PE =	17,00 m ³
Required water depth		1,31 m
Selected water depth		1,36 m
Selected volume		17,59 m ³
Buffer	Percentage of daily load	85%
Required volume	85% x 15 m ³ /d =	12,75 m ³
Required water depth		0,99 m
Selected water depth	2,35 m - 1,36 m =	0,99 m
Selected volume	85% x 15 m ³ /d =	12,80 m ³
During the aeration phase		
Average volume	17,59 m ³ + 60% x 15 m ³ =	26,59 m ³
Average water depth		2,05 m
Volume load BOD ₅	B _R 6 kg/d / (17,59 m ³ + 12,75 m ³) =	0,20 kg / (m ³ x d)
Maximum water depth before clear water extraction		
Maximum volume	17,59 m ³ + 85% x 15 m ³ =	30,34 m ³
Maximum water depth	1,00 m <	2,34 m
Control exchange ratio	0,66 >	0,58