

KLARO

KLARO *Container.Xtra*

Mobile wastewater treatment solution



GERMAN
DESIGN AND
ENGINEERING



No mechanical parts
in the wastewater



No pumps
in the wastewater



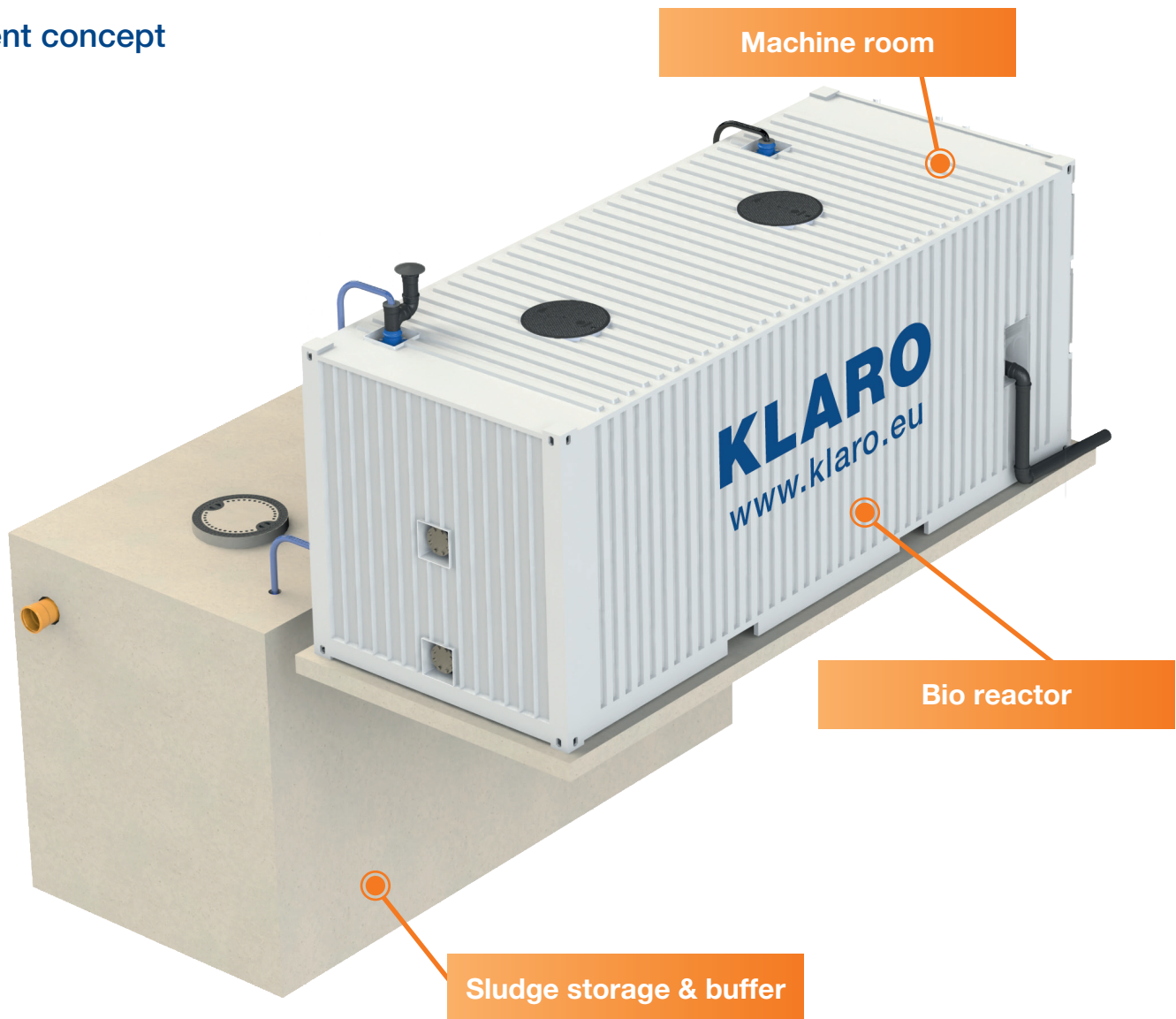
No electrical parts
in the wastewater

KLARO Container.Xtra

Product description

KLARO *Container.Xtra* is the clever solution to combine the containerized units of KLARO with local or even existing underground tanks. With the combination of one or more 10 ft, 20 ft or 40 ft containers and the underground tank a treatment capacity up to 1380 PE (207 m³/day) is possible. The system is using the two stage SBR method with upstream sludge storage and buffer. Depending on the required effluent values different treatment capacities are possible. The effluent values are classified in standard and premium values.

Treatment concept



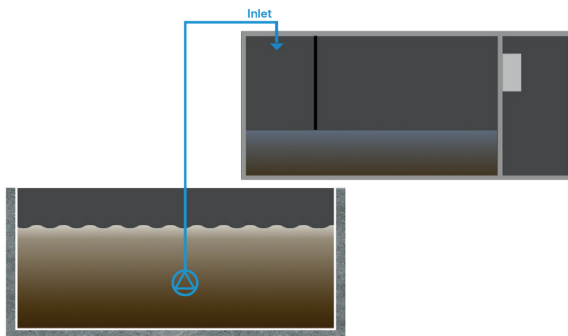
Additional options

- ✓ Railing
- ✓ Sieve screw
- ✓ KLARO WebMonitor
- ✓ UV disinfection
- ✓ Chlorine disinfection
- ✓ Phosphate reduction

KLARO Container.Xtra

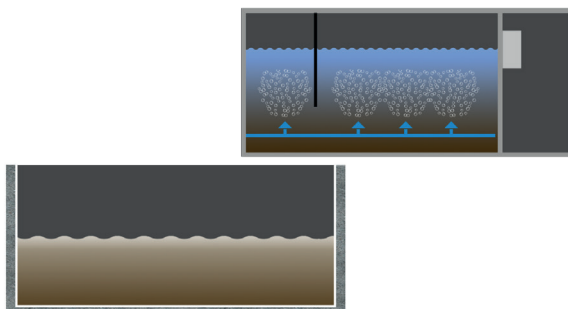
Treatment process

The KLARO Container.Xtra versions are working according to the two stage SBR (= sequencing batch reactor) process and are carrying out four treatment cycles per day as standard. Each treatment cycle is taking six hours and is divided into the following treatment steps:



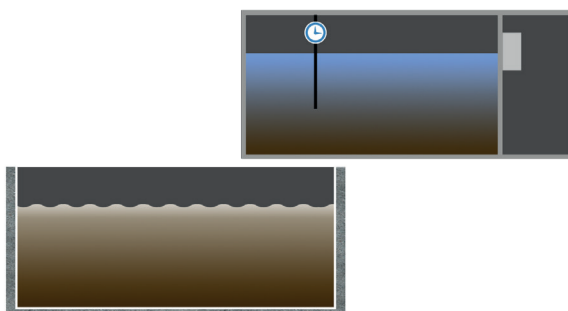
Charging

The raw wastewater temporarily stored in the underground sludge storage & buffer is supplied to the SBR by a submersible pump. The pump is positioned so that only solid-free water is pumped out.



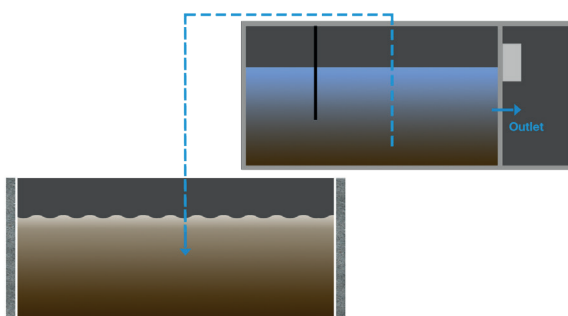
Aeration

The raw wastewater, coming from the underground tank, enters the bio reactor and undergoes aerobic treatment. The microorganisms in the activated sludge are supplied with oxygen and thus pollutants are reduced.



Sedimentation

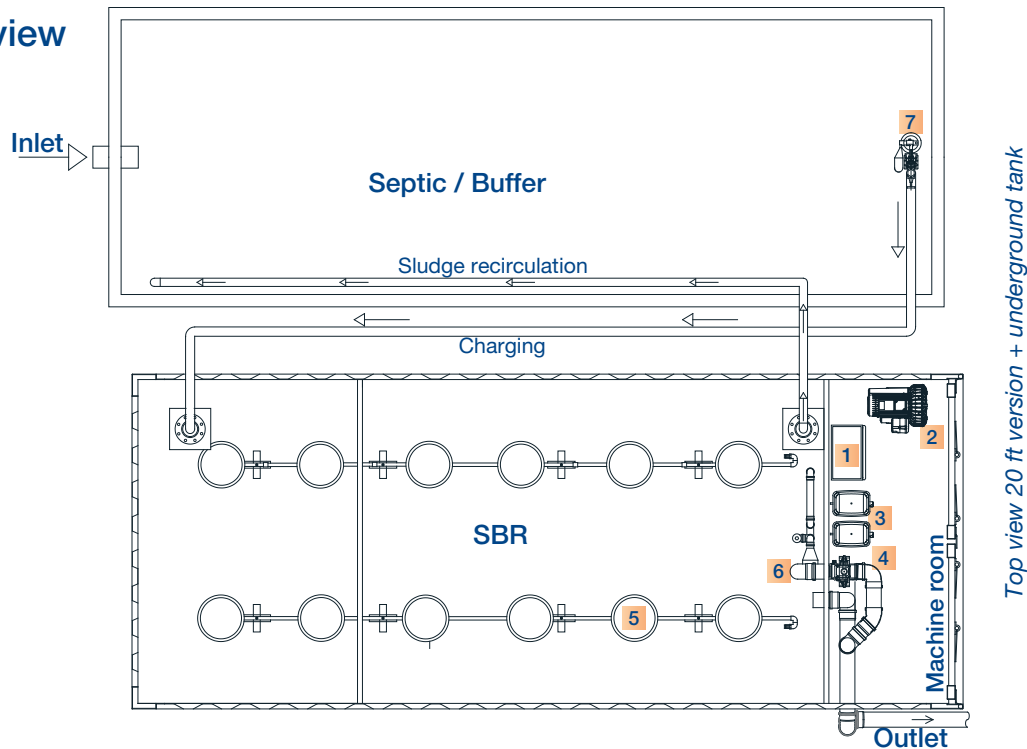
When aeration is stopped, the activated sludge settles to the bottom. A clear water zone forms in the upper part of the container. If any raw wastewater enters the system, it is buffered and pre-treated in the underground tank.



Clear water extraction & excess sludge return

The clarified wastewater is extracted by a discharge device. The discharge device is briefly backwashed to prevent any sludge from coming out. In the final step excess sludge is returned to the underground tank via an integrated air lifter.

Schematic view



1 Switch cabinet 2 Compressor 3 Blower 4 Butterfly valve 5 Diffusor 6 Decanter 7 Pump

Type program for standard effluent values

PE	max. hydraulic load	max. organic load	Volume septic tank	Container					
[PE]	[m ³ /d]	[kg BOD/d]	[m ³]	[no.]	[type]	[no.]	[type]	[no.]	[type]
90	13,50	5,40	12,60	1	10 ft	–	–	–	–
200	30,00	12,00	27,30	–	–	1	20 ft	–	–
460	69,00	27,60	62,40	–	–	–	–	1	40 ft HC
600	90,00	36,00	81,90	–	–	1	20 ft	1	40 ft HC
920	138,00	55,20	126,40	–	–	–	–	2	40 ft HC
1000	150,00	60,00	135,20	–	–	2	20 ft	2	40 ft HC
1380	207,00	82,80	189,00	–	–	–	–	3	40 ft HC

Type program for premium effluent values

PE	max. hydraulic load	max. organic load	Volume septic tank	Container					
[PE]	[m ³ /d]	[kg BOD/d]	[m ³]	[no.]	[type]	[no.]	[type]	[no.]	[type]
67	10,05	4,02	13,50	1	10 ft	–	–	–	–
150	22,50	9,00	30,00	–	–	1	20 ft	–	–
360	54,00	21,60	72,80	–	–	–	–	1	40 ft HC
480	72,00	28,80	95,50	–	–	1	20 ft	1	40 ft HC
720	108,00	43,20	142,80	–	–	–	–	2	40 ft HC
800	120,00	48,00	159,60	–	–	1	20 ft	2	40 ft HC
1080	162,00	64,80	214,20	–	–	–	–	3	40 ft HC

Design criteria

The containerized treatment plant is designed based on German regulations and standards for wastewater treatment. The design factors in both hydraulic and organic loads as well as the required treatment efficiency. Depending on the treatment capacity different effluent values are possible. The possible effluent values are classified in standard and premium values.

Raw wastewater

KLARO containerized treatment plants are designed with the following wastewater values:

pH	7,5 - 8,5
BOD ₅	150 - 400 mg/l
COD	300 - 800 mg/l
TSS	150 - 450 mg/l
TN	20 - 80 mg/l
TP	6 - 25 mg/l

Special inflow values on request!

Effluent values

The quality of the treated wastewater is normally within or below the following ranges:

	Standard values	Premium values
BOD ₅	< 40 mg/l	< 20 mg/l
COD	< 150 mg/l	< 90 mg/l
TSS	< 30 mg/l	< 20 mg/l
NH ₄ N	-	< 10 mg/l
TN	-	< 25 mg/l

Different effluent values on request!

Systems specifications

Container		for each 10 ft container	for each 20 ft container	for each 40 ft HC container
Dimensions (external)	Length	2989 mm	6058 mm	12192 mm
	Width	2438 mm		
	Height	2591 mm	2591 mm	2896 mm
Capacity		13,4 m ³	30,4 m ³	71,1 m ³
Weight incl. mounting parts		2050 kg	3150 kg	5700 kg
Inlet pipe	Connection	DN 110		
	External height	2591 mm	2591 mm	2896 mm
Outlet	Connection	DN 110		DN 160
	External height	945 mm	945 mm	900 mm
Connection pipe	Connection	DN 110		
	External height	1200 mm		
Excess sludge return		DN 70		
Recommended operating voltage		400 V, 50/60 Hz		
Recommended current load		63 A		
Power consumption		avg = 20,7 kWh/d	avg = 23,2 kWh/d	avg = 39,2 kWh/d
Operating temperature range		-10°C ... +35°C		
Standard calculated sludge removal intervall		3 - 6 months		

Address



KLARO GmbH
Spitzwegstraße 63
95447 Bayreuth

Telephone



+49(0)921 16279-0
Technical hotline:
+49(0)921 16279-370

Website



Further information:
www.klaro.eu

Information



Email:
info@klaro.eu

