

wwtp Gabrovo

Plant:	wwtp Gabrovo, Bulgaria
Contractor:	Biogest International GmbH Berthold-Haupt-Str. 37 01257 Dresden Germany
Type of plant:	Municipal Wastewater Treatment Plant
Capacity:	99,800 p.e.
Start-up year:	2013
Application:	Mixing and Homogenization in an anoxic / aerobic rectangular basin Intermittent Aeration for Nitrification & BOD-Removal
Scope of delivery:	Engineering 4 CYBERFLOW [®] - Accelerators 3 HYPERCLASSIC [®] - Mixers 7,262 iDISC [®] - Membrane Aerators 24 iCBA [®] - Coarse Bubble Aerators 4 HYPERCLASSIC [®] - Mixers Installation Start-Up

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Technical Data – Nitrification / Denitrification Basin:

Shape of tank:	rectangular	
Number of tanks:	2	
Length:	89.0	m
Width:	20.0	m
Water depth:	4.3	m
Freeboard:	0.5	m
Volume:	7,654	m ³
Number of accelerators per tank:	2	
Total number of accelerators:	4	
Mixer type:	CFM/2500	
Propeller diameter:	2,500	mm
Number of aerators per tank:	3,631	
Total number of aerators:	7,262	
Aerator type:	iDISC® 260	
Aerator diameter:	280	mm

Operational Data - Nitrification / Denitrification Basin:

Rotational speed:	44	upm
Installed motor power:	5.5	kW
Consumed motor power:	5.7	kW
Specific power input:	1.5	W/m ³

Operational Data - Nitrification / Denitrification Basin:

Air volume flow per diffuser:	1.7	m _N ³ /h
Total volume flow:	12,345	m _N ³ /h
Standard oxygen transfer rate (SOTR):	542	kgO ₂ /h

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Technical Data – Bio-P – Basin:

Shape of tank:	rectangular	
Number of tanks:	2	
Length:	12.3	m
Width:	7.2	m
Water depth:	4.3	m
Freeboard:	1.0	m
Volume:	381	m ³
Number of mixers per tank:	1	
Total number of mixers:	2	
Mixer type:	HCM/2300	
Mixer diameter:	2,300	mm

Operational Data Bio-P – Basin:

Rotational speed:	18	upm
Installed motor power:	1.5	kW
Consumed motor power:	1.2	kW
Specific power input:	2.4	W/m ³

Technical Data – Equalization Basin:

Shape of tank:	rectangular	
Number of tanks:	1	
Length:	15.0	m
Width:	7.2	m
Water depth:	4.3	m
Freeboard:	1.0	m
Volume:	464	m ³
Number of mixers per tank:	1	
Total number of mixers:	1	
Mixer type:	HCM/2500	
Mixer diameter:	2,500	mm

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Operational Data – Equalization Basin:

Rotational speed:	16	upm
Installed motor power:	1.5	kW
Consumed motor power:	1.2	kW
Specific power input:	2.0	W/m ³

Technical Data – Grit chamber Aeration:

Shape of tank:	funnel shaped trench
Number of tanks:	2
Length:	25.0 m
Width:	4.05 m

Number of modules per tank:	12
Total number of modules:	24

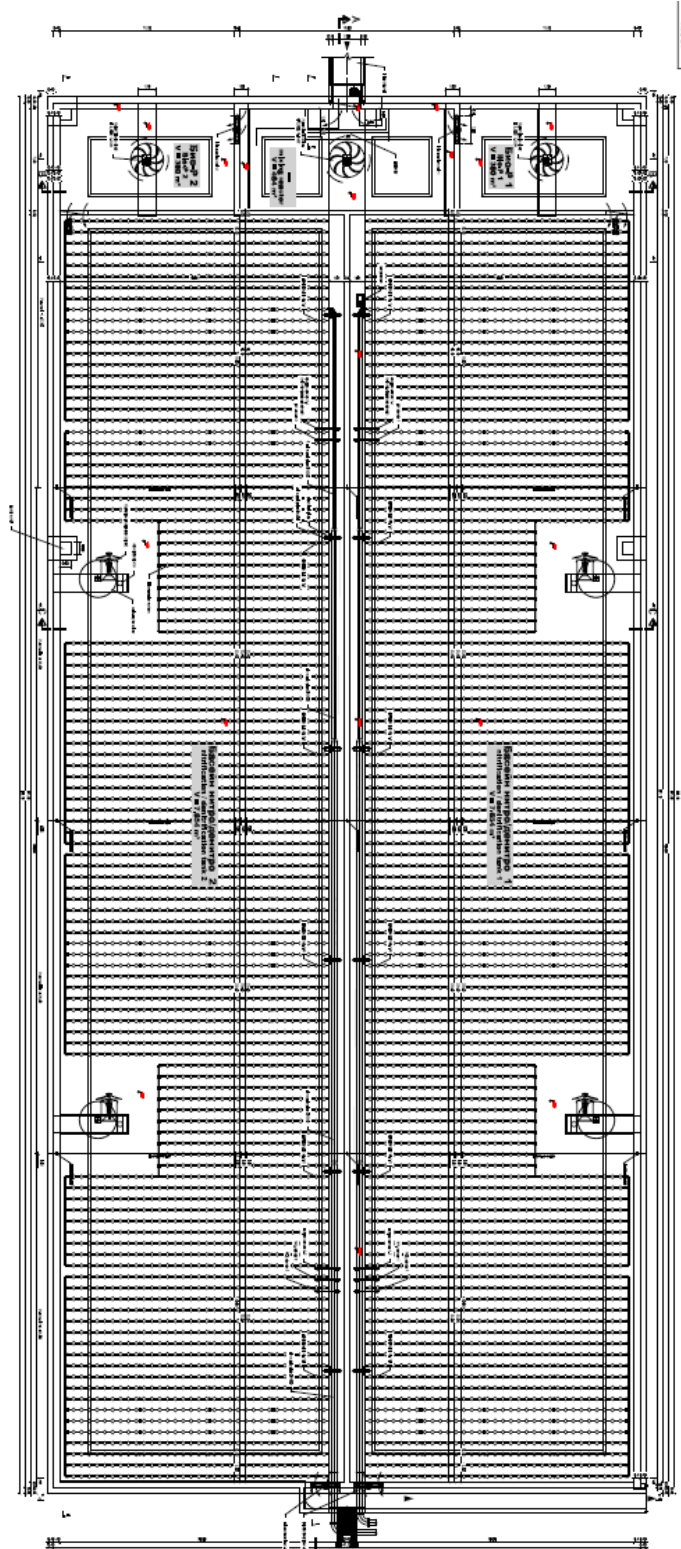
Aeration type: **iCBA1200**

Operational Data - Grit chamber Aeration:

Aeration depth:	3.0	m
Minimum airflow per diffuser :	10	mN ₃ /h
Maximum airflow per diffuser:	100	mN ₃ /h
Max. pressure loss to battery limit (incl. hydr. Pressure):	310	mbar

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Plant layout:



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Plant impressions:



Figure 1: Basin overview - **CYBERFLOW**[®] - Accelerators & **iDISC**[®] - Membrane Aerators

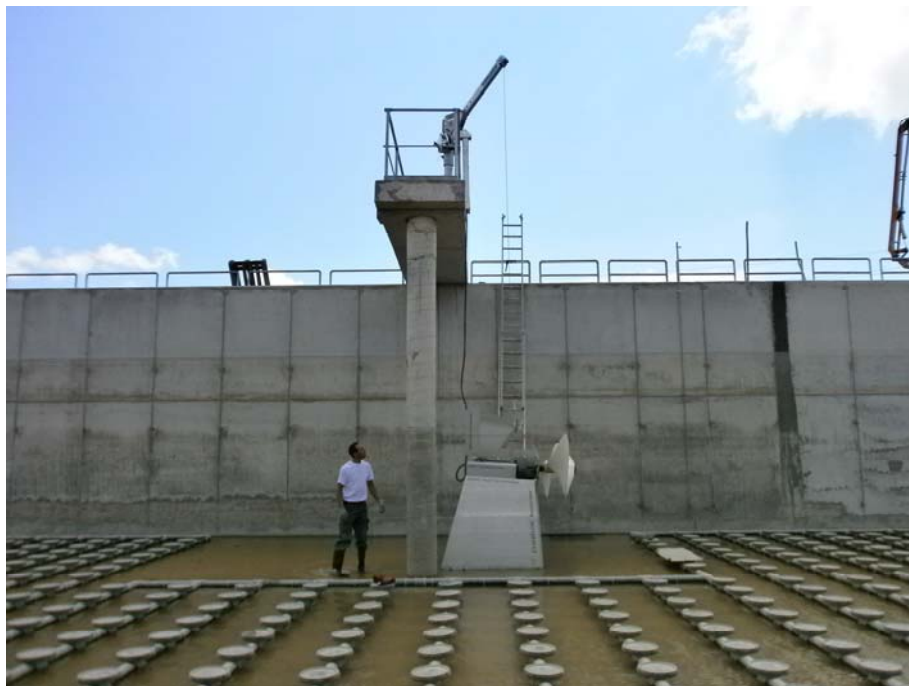


Figure 2: **CYBERFLOW**[®] - Accelerator & **iDISC**[®] - Membrane Aerators during installation

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*Figure 3: Top view - **CYBERFLOW**[®] - Accelerator & **iDISC**[®] - Membrane Aerators during installation*

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*Figure 4: **CYBERFLOW**[®] - Accelerator installed*