



HIGH-RATE™ BIOPANT Package Wastewater Treatment Plant – BIOMAX type

The BIOMAX is an effective High-Rate biological treatment unit based on the Moving Bed Biofilm Reactor with Integrated Fixed Film Activated Sludge and TUBE-Settling technologies. It is unique due to its compactness and performance with respect to volumetric efficiency. These technologies are combined in a prefabricated, standardized tank system with variable length, suitable for overseas transportation. The overall size of the plant is based on the ISO freight container dimensions.

DEVISE ENGINEERING offers a number of standard models ranging from 60 to 700 m³/day and they are constructed into two series:

- **BIOMAX 3/4** system with 2 or 3 aerobic cells and a high-rate clarifier for BOD removal and nitrification.
- **BIOMAX 4D/5D** system with 1 anoxic cell for denitrification, 2 or 3 aerobic cells and a high-rate clarifier for BOD removal and Total Nitrogen (TN) reduction.

All models have integrated machine rooms with PLC equipped Electrical Panels.

Heavy Duty and Efficient System

HIGH-RATE™ Bioplant is a compact and heavy duty wastewater treatment unit, suitable for indoor and outdoor installation, which can operate in all weather conditions. It incorporates robust design and innovative engineering for minimum maintenance and reduced supervision.

The basic biological treatment process has been designed based on typical* municipal sewage but the final system selection is done after consideration of actual wastewater quality parameters.

The expected effluent quality of the treated wastewater from the HIGH-RATE™ Bioplants is shown in the following table:

Treated water parameters		
Parameter	BIOMAX 3/4	BIOMAX 4D/5D
TSS	20-30 mg/L	20-30 mg/L
BOD ₅	20-30 mg/L	20-30 mg/L
TN	<30 mg/L	<15 mg/L
TP	<9* mg/L	<9** mg/L

* The above values are for the following wastewater quality: Temperature 15-20°C, BOD₅: 300mg/L, COD : 600 mg/L, TSS: 350 mg/L, TN: 45mg/L, TP: 12mg/L.

** Concentrations of TP ≤ 3 mg/L can be achieved by direct dose of flocculant in the Bioreactor. In this case the hydraulic capacity of BIOMAX is reduced by 20-25% due to additional chemical sludge production.

HIGH-RATE™ BIOPANT – The Core of a Sewage Treatment Facility

The HIGH-RATE™ Bioplant is the core process unit of a complete Package Sewage Treatment Plant which would incorporate a combined pretreatment system, followed by further polishing stages such as filtration and disinfection (UV or chlorination).

The BIOMAX units can also be used for extensive and high rate bio-degradation in a wide range of Industrial Wastewater. They can be combined effectively with other treatment methods such as Physical-Chemical or Anaerobic, so to provide Total Solutions for a vast range of Wastewater Treatment facilities.



Advantages

Smart Design

- Pre-engineered & prefabricated plants
- Modular design
- Compact and high-rate performance
- Fully tested before dispatch
- Ready to plug & play
- Space saving - Small foot print

Easy & Reliable Operation

- Fully automatic – PLC controlled system
- User friendly interface (touch screen HMI)
- Remote monitoring
- Low maintenance requirements
- Self-cleaning mechanisms incorporated



Technical Specifications

BIOMAX 3/4 SERIES	High Rate MBBR-IFAS system for BOD removal					
Type	10BIOMAX-3	15BIOMAX-3	21BIOMAX-4	33BIOMAX-4	40BIOMAX-4	96BIOMAX-4
Daily flow, m ³ /d	75	110	150	250	300	700+
Population Equivalent, PE	375	550	775	1225	1500	3500
Length, m	4.4	5.9	7.7	10.2	12.0	2X12
Width, m	2.4	2.4	2.4	2.4	2.4	2.4
Height*, m	2.8	2.8	2.8	2.9	2.9	3.0

BIOMAX 4D/5D SERIES	High Rate MBBR-IFAS system for BOD, TN and TP** removal				
Type	15BIOMAX-4D	21BIOMAX-5D	33BIOMAX-5D	40BIOMAX-5D	96BIOMAX-5D
Daily flow, m ³ /d	80	115	180	225	500+
Population Equivalent	400	575	900	1125	2500
Length, m	5.9	7.7	10.2	12.0	2X12
Width, m	2.4	2.4	2.4	2.4	2.4
Height*, m	2.8	2.8	2.9	2.9	3.0

* In top closed bioreactors the height is increased approx. 20 cm

** Coagulant addition results to a capacity reduction of approx. 20% in terms of P.E.

Customized configurations are available on request



Advanced Engineering



Easy to Transport



Plug & Play



Modular Design



Prefabricated Units



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