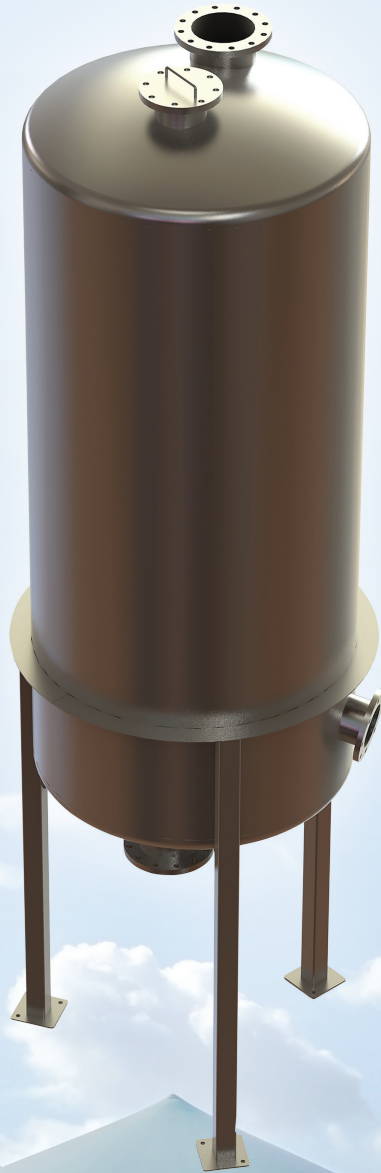




PROCARB

INDUSTRIAL MOLECULAR FILTRATION SOLUTIONS
HORIZONTAL DEEP BED FILTERS FOR BIOGAS INDUSTRY

METRIC



Clean air solutions

PROCARB HORIZONTAL DEEP BED BIOGAS FILTER

INTRODUCTION

Horizontal Deep Bed Biogas filters are robust molecular filtration scrubbers for biogas industry. This product is designed to ensure the highest levels of performance for biogas application where the process may be heavy contaminated by hydrogen sulphide, siloxanes, ammonia and Volatile Organic Compounds (VOCs).

Performance is delivered in terms of extremely high removal efficiency and the longest possible lifetime per fill of filtration media. Seven standard sizes are available with airflow capacities ranging from 50 m³h⁻¹ to 2 000 m³h⁻¹.

HDB Biogas are designed to ensure simple and safe installation and operation. This product can be filled with a different molecular filtration media to provide flexibility in operation and the ability to control a wide range of contaminants. HDB Biogas are entirely passive in operation and require minimal routine maintenance.



FEATURES	BENEFITS
Very long contact time to optimise media usage and lifetime	Confidence in high level of purification of biogas
Convenient gravity removal of spent media, easy to regulate media flow	No requirement for expensive vacuum equipment to change media
Inherently leak-free design	Highly reliable performance
Construction material on 316 quality stainless steel	Corrosion resistant
Compact cylindrical footprint for minimal use of plant room space	Minimum requirement for concrete or steel foundation
Design and construction for maximum pressure of 0.49 barg	Reliable performance for biogas application

DESCRIPTION

HDB Biogas are configured for vertical airflow and allow a single deep bed of media to cover the entire surface area of the filter, using this arrangement enables an engineered approach to create an inherently leak free unit, ensuring zero air bypass of the media.

The design and construction of HDB Biogas filters takes account of the system pressure for biogas industry, typically up to 0.49 barg. HDB Biogas filters are constructed from heavier gauge material of stainless steel 316, have cylindrical shells and use dished ends. Flanged inlet and outlet connections and bosses for instrumentation will be according to a recognized standard.

HDB Biogas are designed to ensure ease of installation and servicing procedures. Effectively, any molecular media may be selected for use in the HDB units, depending on the contaminants to be controlled.

The media is easily introduced into the units from the top filling port. Media is simply emptied under gravity via the removal port on the side of the unit. This enable a quick and clean media change out.

TECHNICAL DATA

MODEL	AIRFLOW (M ³ /H) ¹	UNIT WEIGHT (KG) ²	DIMENSIONS (MM)	
			DIAMETER	TOTAL HEIGHT
HDB50	50	1 200	1 000	2 560
HDB100	100	2 200	1 300	2 800
HDB250	250	5 100	1 400	4 260
HDB500	500	9 800	1 600	5 760
HDB1000	1 000	18 900	2 000	6 910
HDB1500	1 500	27 800	2 500	6 990
HDB2000	2 000	36 600	2 750	7 380

1) Standard sizes achieve 40 s contact time at rated flow

2) Estimated maximum weight during use. Please refer to technical drawings for detailed information

SPECIALISED SOFTWARE

The lifetime of a HDB Biogas installation can be simulated using the unique Molecular Contaminant Control Lifetime Determination (MCCLD) software. The purpose of this software is to provide best estimates of the performance of molecular filtration products under selectable conditions that approximate real applications. Predicting the performance of molecular filters in the real world is a complex issue. We find a very good correlation between software simulations and in-situ measurements as shown in figure below.

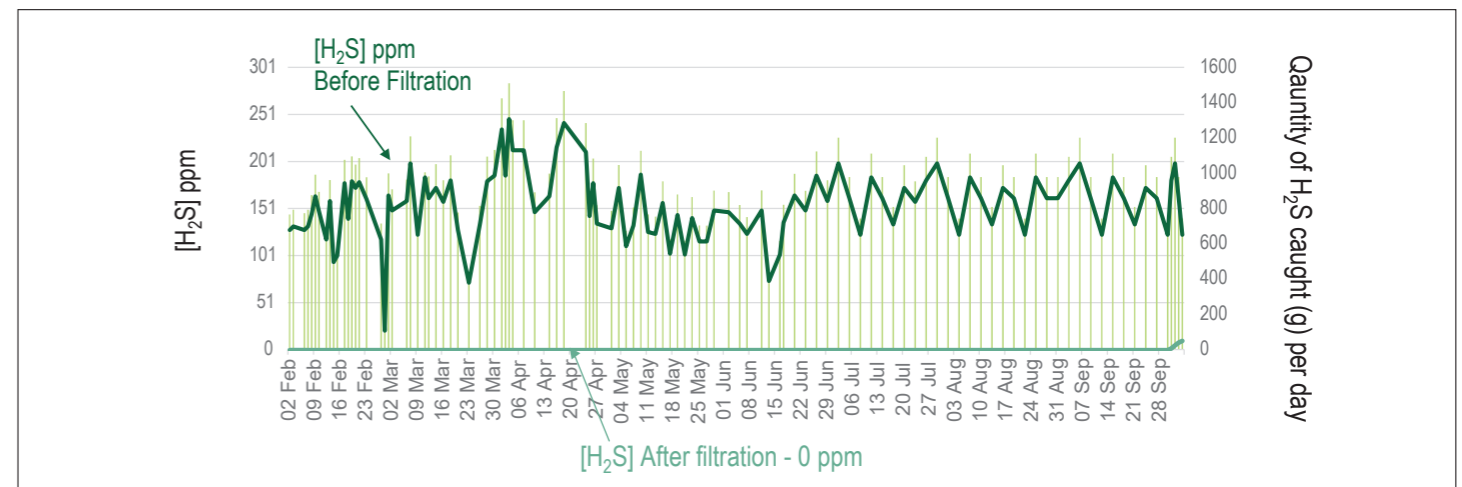
This software takes account of the key factors that affect the performance of molecular filters; the gas/vapour to be controlled, concentration, type of adsorbent, amount of adsorbent (contact time), and temperature.

The software has been developed using adsorption theory, many years application knowledge, field measurements and results of extensive product testing in Camfil's unique molecular filtration test laboratory.

SERVICING

After commissioning the filters and housings are completely passive in operation and require minimal routine maintenance.

The molecular filtration media will need to be replaced when it is exhausted. The media is easily removed via removal port located on the side of the unit. The media can be collected into media sack or another suitable container.



Camfil – a global leader in air filters and clean air solutions

For more than half a century, Camfil has been helping people breathe cleaner air. As a leading manufacturer of premium clean air solutions, we provide commercial and industrial systems for air filtration and air pollution control that improve worker and equipment productivity, minimize energy use, and benefit human health and the environment.

We firmly believe that the best solutions for our customers are the best solutions for our planet, too. That's why every step of the way – from design to delivery and across the product life cycle – we consider the impact of what we do on people and on the world around us. Through a fresh approach to problem-solving, innovative design, precise process control and a strong customer focus we aim to conserve more, use less and find better ways – so we can all breathe easier.

The Camfil Group is headquartered in Stockholm, Sweden, and has 30 manufacturing sites, six R&D centres, local sales offices in 30 countries, and 4,800 employees and growing. We proudly serve and support customers in a wide variety of industries and in communities across the world. To discover how Camfil can help you to protect people, processes and the environment.

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