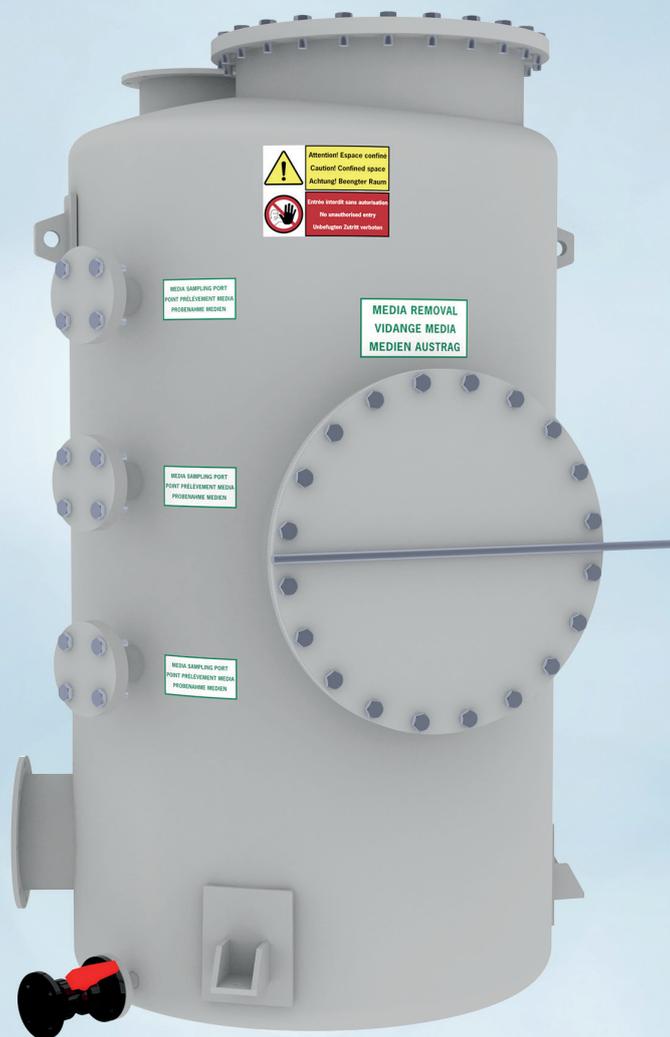


PROCARB HDB-C

Fiberglass horizontal deep bed filters



FIBERGLASS HORIZONTAL DEEP BED FILTERS (PROCARB HDB-C)

INTRODUCTION

HDB-C is made of non-corrosive fiberglass and resin offering superior durability and protection against molecular contaminants in heavy industrial applications. HDB-C can be used in either supply air or exhaust air. This is designed to provide the highest levels of performance in applications where plant reliability and elimination of corrosive gases, toxic gases and odours is essential for operational security and regulatory compliance.

This product is ideal for waste water treatment plant where application conditions are very challenging: very high gas concentration and high humidity levels.

The HDB-C product family offers ten standard sizes with airflow capacities ranging from 500 m³/h to 30,000m³/h. The combination of its fiberglass construction and large media bed provide a durable, long lasting scrubber capable of delivering an extremely removal efficiency and lifetime in high contaminant areas. The standard and optional features of the HDB-C ensure reliable and safe operation in the most extreme industrial environments.



HDB-C single bed design



HDB-C dual bed design

OPTIONAL:

- Fan
- VFD speed control
- Sampling points and sampling spear ensure collection of meaningful media samples for residual lifetime analysis
- Media removal port with pivot handle for easy and controlled media removal quantity
- Slop bottom and water drain valve
- Magnahelic pressure loss gauges
- Custom dimensions upon request

Features	Customer Benefits
Very long contact time to optimize media usage and lifetime	Confidence in high level protection for downstream equipment/environment
Cylindrical design with single bed and dual bed options to have optimum pressure drop and footprint	Energy saving and minimum requirement for concrete or steel foundation
Accepts any loose-fill molecular media (single or multiple layers)	Ability to target specific gas types
Polyester resin reinforced by fiberglass construction	Corrosion resistant
Inherently leak-free design	Safe and reliable performance

Example Industries	Target Gases
Waste water treatment: Odour and corrosion control	Hydrogen sulphide, mercaptans and nitrogen containing molecules
Emergency gas scrubbers	Wide range
Petrochemical: Corrosion control	Hydrogen sulphide, sulphur dioxide, nitrogen dioxide etc
Pulp and paper mills: Corrosion control	Acidic gases
Chemical processing	Wide range
Industrial processes	Wide range

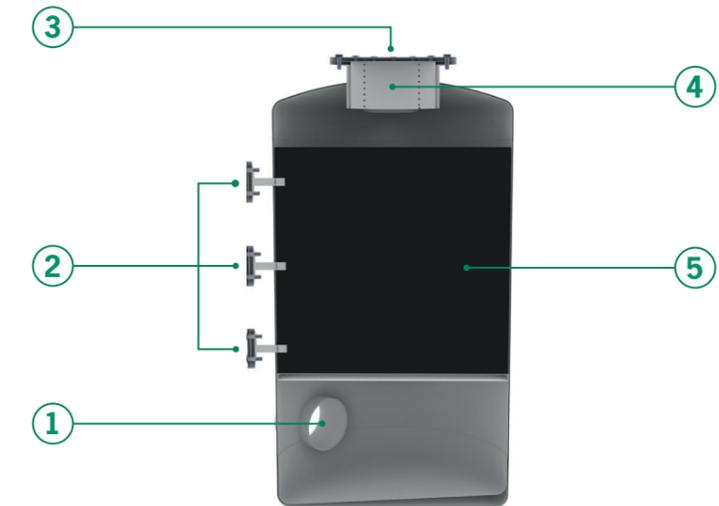
DESCRIPTION

HDB-C filters are constructed from a polyester resin reinforced in fiberglass for increased durability and corrosion resistance. The vertical airflow design configuration of the single and dual deep beds of media was engineered via Computational Fluid Dynamics (CFD) to maximize media usage, optimize the lifetime, and create an inherently leak-free scrubber to ensure zero air bypass of the media.

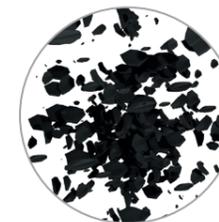
The vertical orientation and convenient access ports ensures reduced installation footprint and ease of service. Application specific media(s) are easily gravity fed from the media loading flange at the top of the unit. Media quantity is designed for a combination of 500 Kg bags or 25 Kg sacks, or cubic foot boxes media. Media can be tested for remaining service life by extracting samples from the three sampling ports. At the end of life the media is simply emptied under gravity from the removal port on the side of the unit.

Key Features

1. Air inlet
2. Sampling ports
3. Media loading flange
4. Air outlet
5. Media



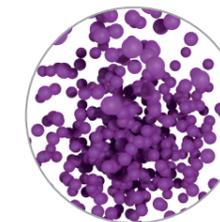
MEDIA OPTIONS



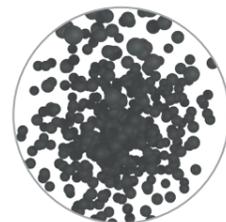
Activated Carbon Granular



Activated Carbon Pelletized



Activated Alumina CamPure™

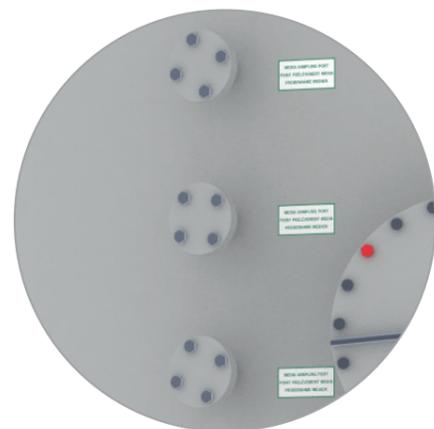


Hybrid Activated Carbon CamPure™

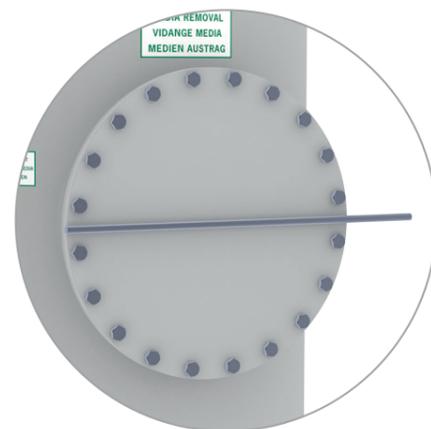
HDB-C & Fan in make up air unit



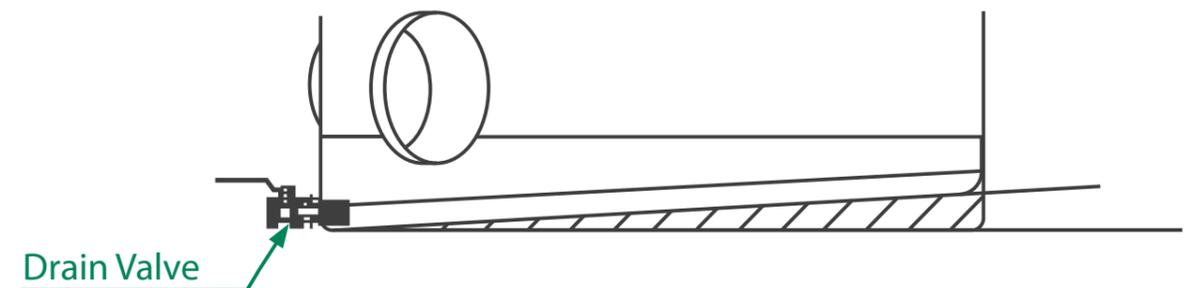
HDB-C in exhaust air unit



Media sampling port



Pivot handle for easy and controlled media removal



Removal of condensed water option

TECHNICAL DATA

Single bed

model	Airflow (M ³ /H)	Unit weight (KG) *	Dimensions (mm)	
			Diameter	Total Height
HDB-C 600	500 - 700	890	900	1800
HDB-C 1000	700 - 1250	1540	1200	1850
HDB-C 1500	1250 - 1800	1980	1400	1900
HDB-C 2500	1800 - 3200	3200	1800	2000
HDB-C 3500	3200 - 4600	5330	2350	2100
HDB-C 5500	4600 - 6600	5330	2350	2200

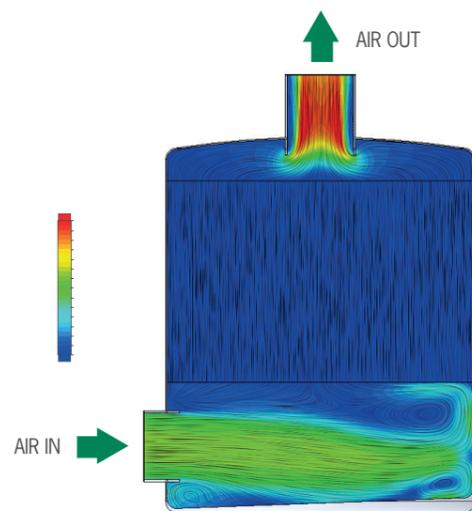
Dual bed

model	Airflow (M ³ /H)	Unit weight (KG) *	Dimensions (mm)	
			Diameter	Total Height
HDB-C 7500	6600 - 9000	10230	2350	4100
HDB-C 10000	9000 - 13000	12240	2500	4400
HDB-C 15000	13000 - 20000	17450	3000	4500
HDB-C 25000	20000 - 30000	24700	3500	4700

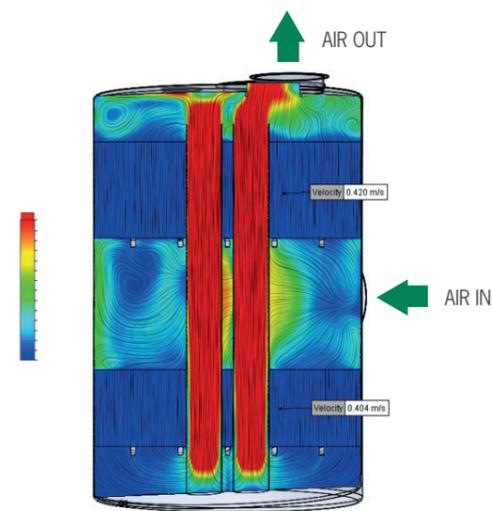
* Estimated maximum weight during use

HIGHEST FILTER PERFORMANCE WITH ADVANCED RESEARCH

Based on Computational Fluid Dynamic (CFD) simulations, the design of the housing with single and dual media bed are optimized providing uniform air distribution, balanced air velocity, and even contact time through the filtration media, which directly corresponds to extended life time and steady utilization of the media.



HDB-C single bed design



HDB-C dual bed design

HIGH PERFORMANCE MOLECULAR FILTRATION

Camfil manufacture all their key media in-house according to stringent QA procedures in an ultra-modern, purpose designed facility that uses the latest process control technologies. Performance testing is also undertaken in-house in Camfil's unique molecular filtration test laboratory.

All media has gone through performance test in accordance to the test method listed in the ISO 10121-1:2014 document. The test conditions depicted in the standards are closely reflective to actual operating conditions.

UNIQUE LIFETIME SIMULATION SOFTWARE

The lifetime of a HDB filter installation can be simulated using the unique Camfil Molecular Contamination Control Lifetime Determination (MCCLD) software for molecular filtration.

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.

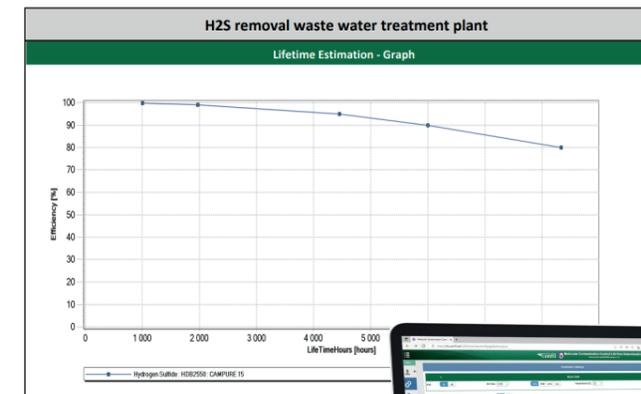
This software takes account of the key factors that affect the performance of molecular filters; the gas/vapour to be controlled, concentration, type of adsorbent, amount of adsorbent (contact time), and temperature. The software has been developed using adsorption theory, many years application knowledge, 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.

Periodic sampling of the media is required to determine when it needs to be replaced. Each media bed has three sampling ports: closed to the air inlet, center and closed to the air outlet. A sampling spear can be used to extract the media to be tested from the sampling ports and sent to a Camfil laboratory for remaining life analysis.

Once the media has reached it's service life it can be easily emptied via the removal port on the side of the unit and collected into a suitable container..



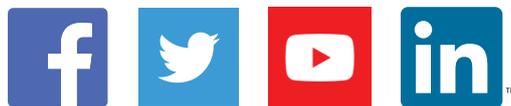
Camfil – a global leader in air filters and clean air solutions

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 35 countries, and about 5,600 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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