



# PROCARB HDB

INDUSTRIAL MOLECULAR FILTRATION SOLUTIONS  
HORIZONTAL DEEP BED FILTERS (HDB)

METRIC



Clean air solutions

# PROCARB HORIZONTAL DEEP BED FILTERS (HDB)

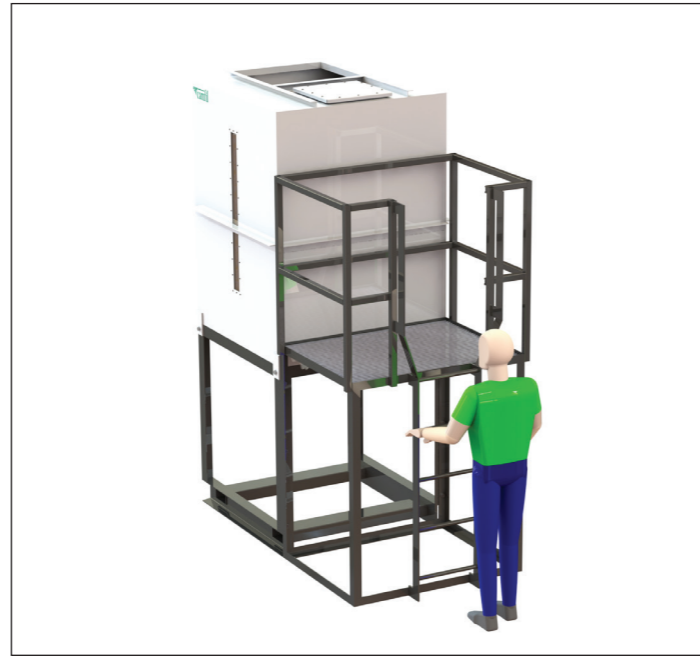
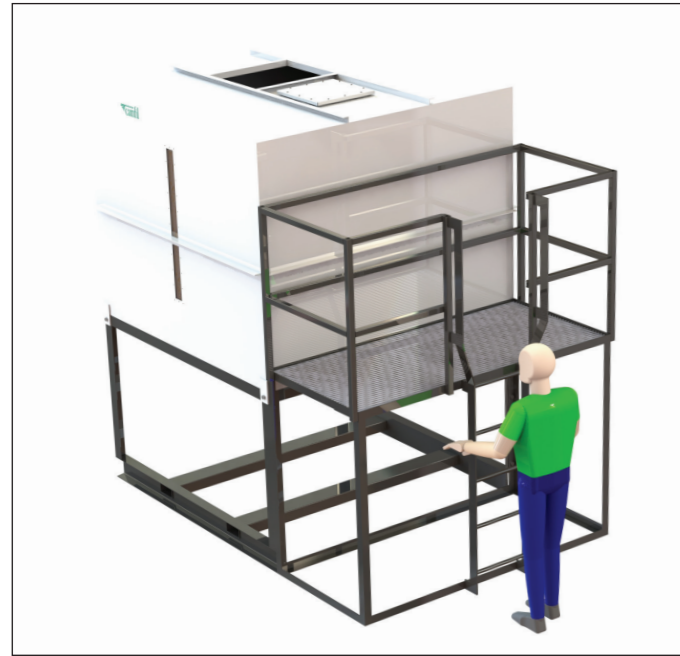
## INTRODUCTION

Horizontal Deep Bed filters (HDB) are highly durable cost effective molecular filtration scrubbers for process industries. HDB can be used in either supply air or exhaust air applications. This product 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.

Performance is delivered in terms of extremely high removal efficiency and the longest possible lifetime per fill of filtration media. Standard and optional features ensure reliable and safe operation. Five standard sizes are available with airflow capacities ranging from 850m<sup>3</sup>h<sup>-1</sup> to 5,100m<sup>3</sup>h<sup>-1</sup>

## OPTIONAL ACCESSORIES:

- Fan
- VFD speed control
- Sight glass for visual indication of media condition (for certain applications)
- Sampling points and sampling spear ensure collection of meaningful media samples for residual lifetime analysis.
- Pre-and after filters from standard Camfil range
- Access platform and ladder in painted steel
- Magnahelic pressure loss gauges
- Larger sizes upon request



| FEATURES   | CUSTOMER BENEFITS  |
|--|--|
| Very long contact time to optimise media usage and lifetime                                      | Confidence in high level protection for downstream equipment/environment |
| Convenient gravity removal of spent media, easy to regulate media flow                           | No requirement for expensive vacuum equipment to change media            |
| Can be used in conjunction with any filtration media (single or multiple layers)                 | Ability to target specific gas types                                     |
| Air contact parts from 6061 T-6 aluminium or 316 grade stainless steel, depending on application | Corrosion resistant  |
| Painted steel support frame  | Robust support   |
| Inherently leak-free design  | Highly reliable performance  |
| Media supported on 316 quality stainless steel screen  | Corrosion resistant  |
| Lifting points for fork lift truck   | Simple and safe to install   |
| Compact rectangular footprint for minimal use of plant room space                                | Minimum requirement for concrete or steel foundation                     |

| EXAMPLE INDUSTRIES                   | TARGET GASES  |
|--------------------------------------|---|
| Waste water treatment: Odour control | Hydrogen sulphide, mercaptans and nitrogen containing molecules |
| Petrochemical                        | Toluene diisocyanate (TDI), amines, VOC                         |
| Food processing: Odour control       | Wide range  |
| Waste processing: Odour control      | Wide range of organics, aldehydes, alcohols and acids etc.      |
| Chemical processing                  | Wide range  |
| Industrial processes                 | Wide range  |
| Biogas                               | Hydrogen sulphide, siloxane, VOC                                |

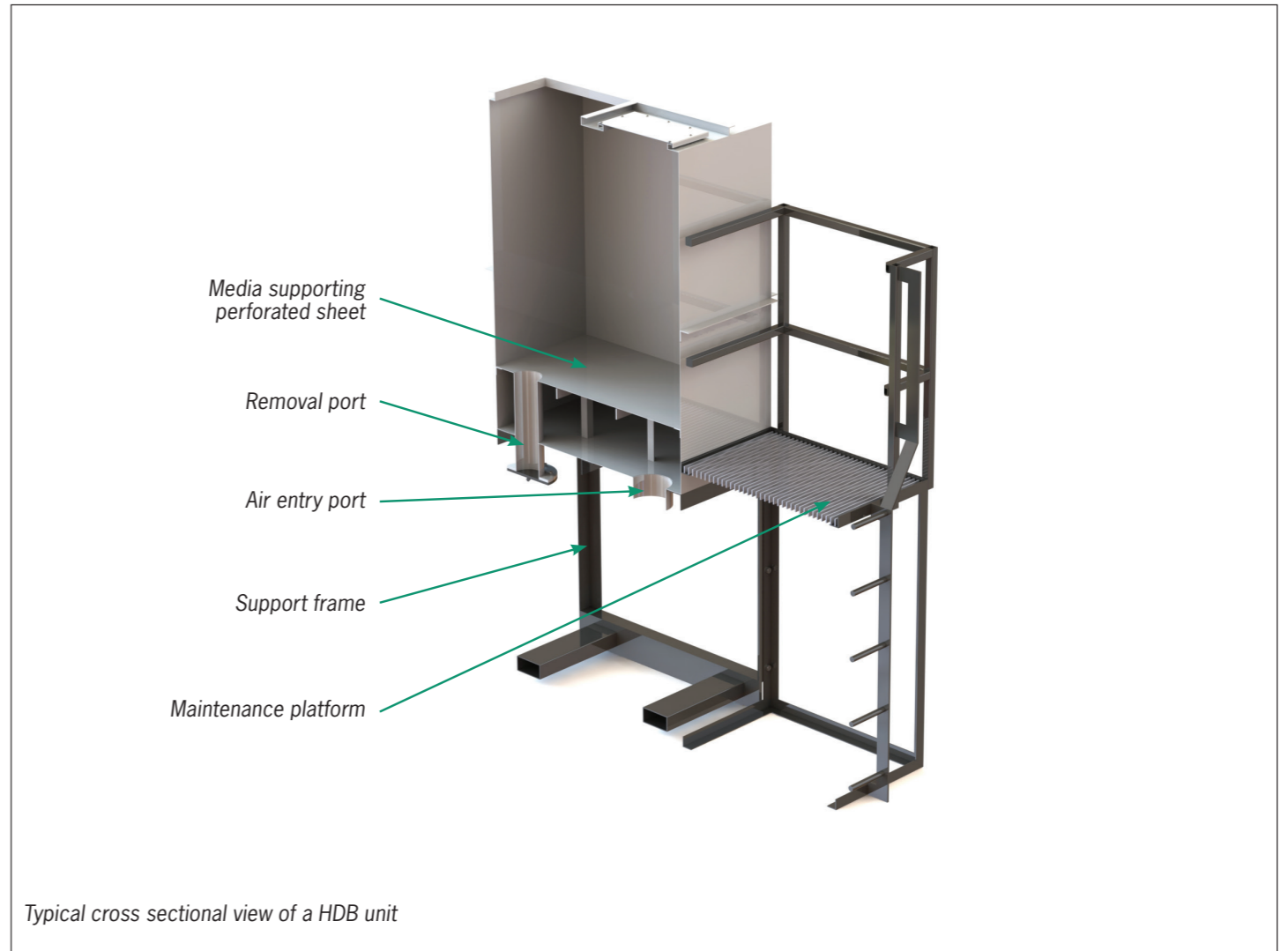
## DESCRIPTION

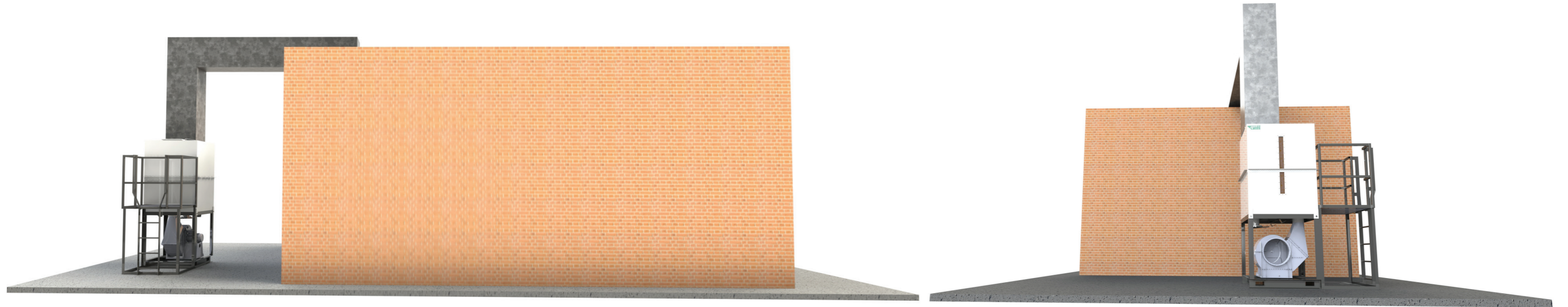
HDB are configured for vertical airflow and allow a single deep bed of media to cover the entire surface area of the filter. This arrangement enables an engineered approach to create an inherently leak free unit, ensuring zero air bypass of the media.

The housings are fully welded unit and constructed using stainless steel or aluminium. They are designed to ensure ease of installation and servicing procedures. Effectively, any molecular filtration

media may be selected for use in the HDB units, depending on the contaminant(s) to be controlled. These may be used individually or in a layered configuration.

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.

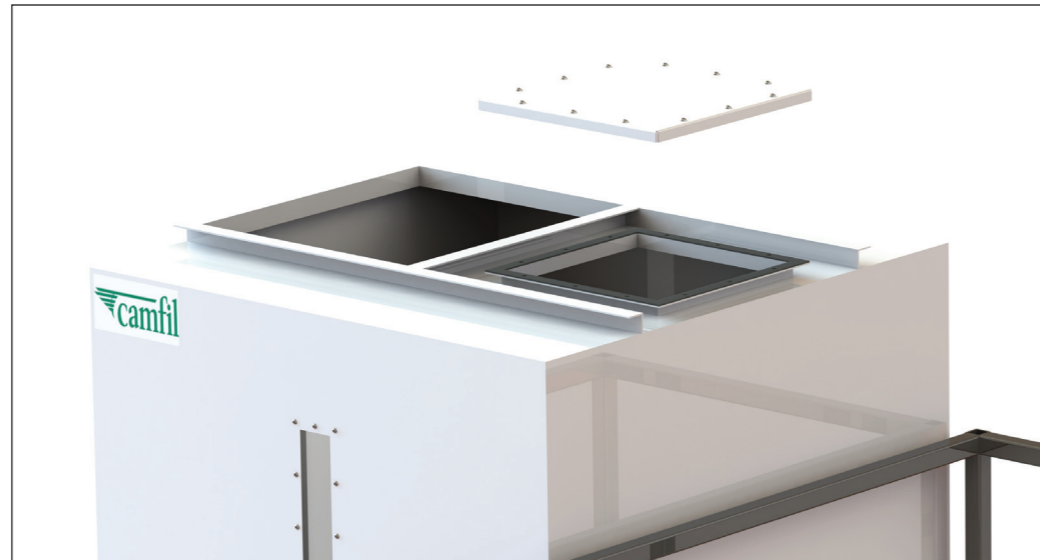




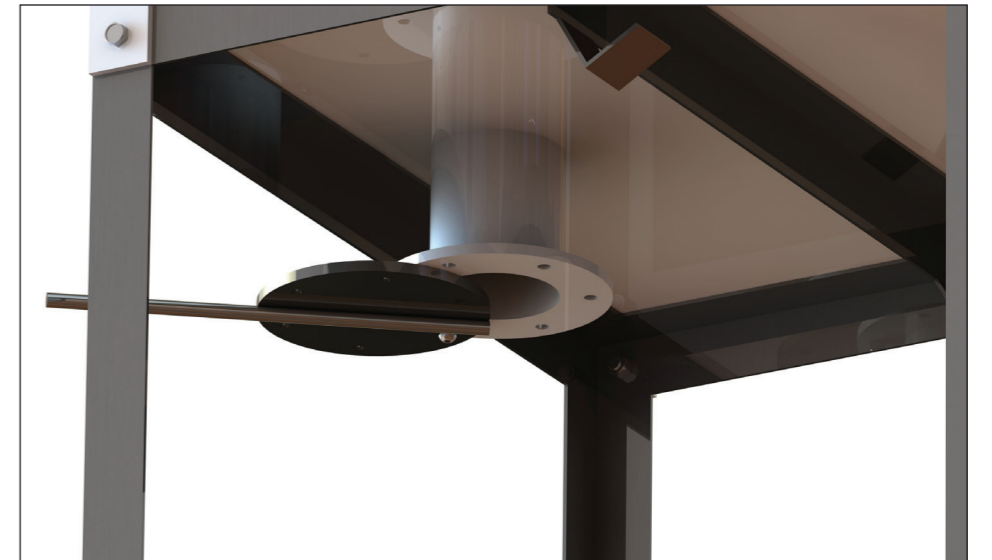
HDB in situ.  
Above image shown in a supply air scenario.



HDB units can be fitted with magnehelic gauges to establish the working pressure.



HDB units are filled with media from above.



Media is easily and effectively removed via a media removal port. Media evacuates under the assistance of gravity.

**TECHNICAL DATA**

| MODEL   | AIRFLOW (m <sup>3</sup> /h) 1 | DIMENSIONS (mm) 2  | PRESSURE DROP (Pa) 3 | UNIT WEIGHT (kg) 4, 5 |
|---------|-------------------------------|--------------------|----------------------|-----------------------|
| HDB850  | 850                           | 2800 x 900 x 900   | 2000                 | 850                   |
| HDB1700 | 1, 700                        | 2800 x 1260 x 1260 | 2000                 | 1, 600                |
| HDB2550 | 2, 550                        | 2800 x 1530 x 1530 | 2000                 | 2, 300                |
| HDB3400 | 3, 400                        | 2800 x 1700 x 1700 | 2000                 | 3, 000                |
| HDB5100 | 5, 100                        | 2800 x 2060 x 2060 | 2000                 | 4, 350                |

**NOTES:**

- 1 Rated airflow at 2.5 seconds contact time
- 2 Overall approximate dimensions (H x W x D)
- 3 Pressure drop for CamPure 15 media at rated airflow
- 4 Stainless steel construction
- 5 Estimated maximum weight during use. Please refer to technical drawings for detailed information.

**MEDIA FILTER LIFE ANALYSIS**

With the aim of optimizing time to change the media, Camfil disposes an analysis service to check the condition and remaining lifetime of the media.

The media is simply checked by taking a sample of the media from the media bed. A sampling spear can be provided upon request. This media is sent to Camfil for analysis. With reasonable frequency, it is possible to determine the optimum lifetime of the media.

**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. Pre and after-filters must be replaced when the differential pressure drop reaches the upper limiting value.

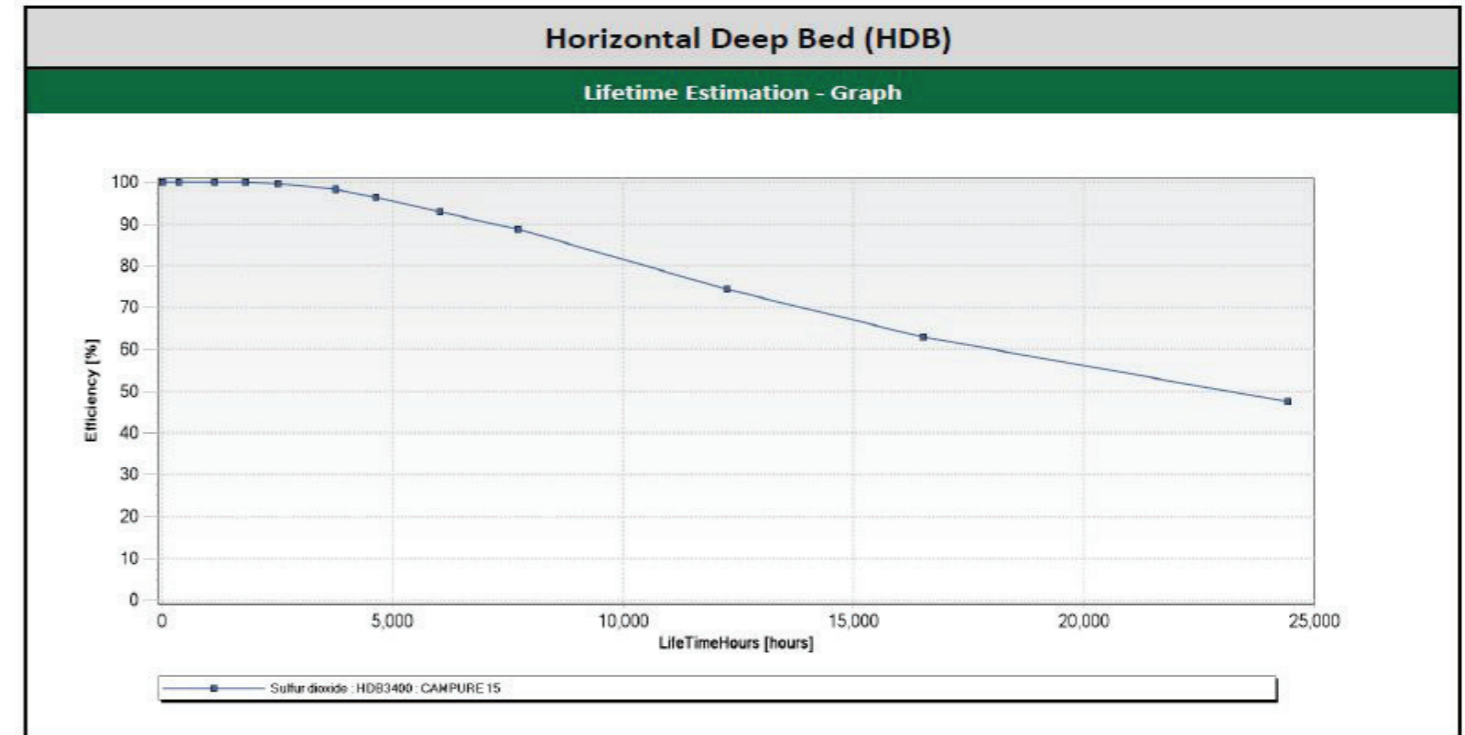
**SPECIALISED SOFTWARE**

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.



## 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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