

PRODUCT INFORMATION
FILTERBOX FOR DISPLAY CASES





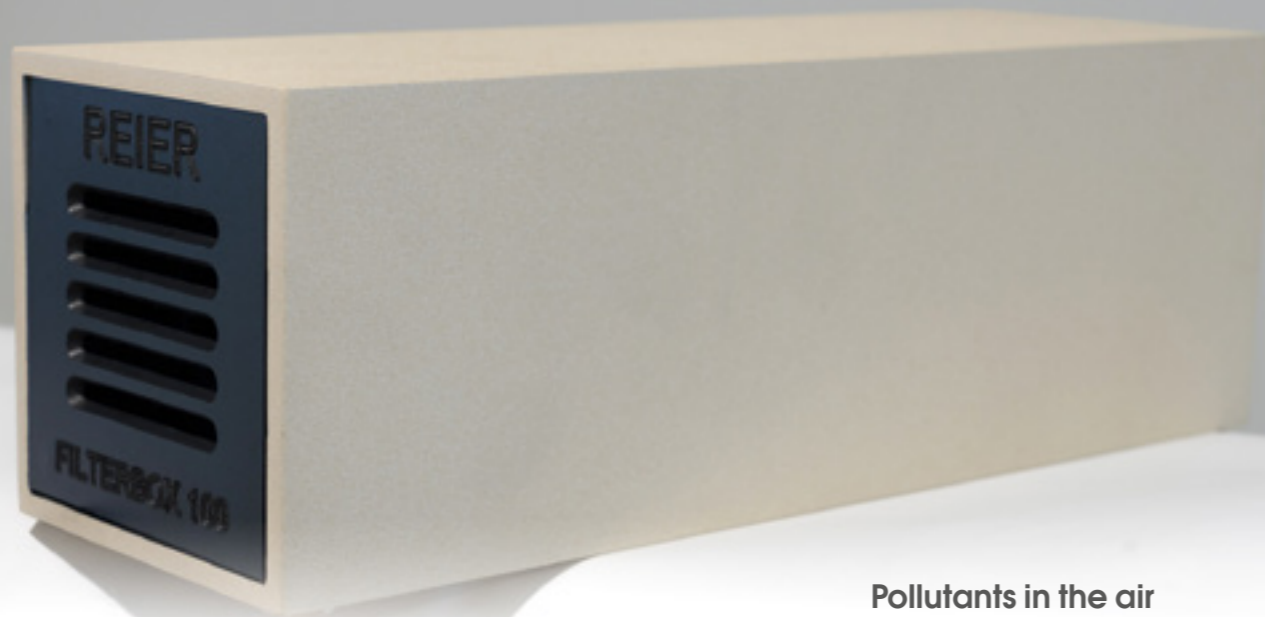
VITRINEN- UND GLASBAU REIER THE ART OF KEEPING ART

The company Vitrinen- und Glasbau REIER GmbH was founded in 1988 in Lauta, Saxony, by Volker Reier as a sole proprietorship. Today it is an innovative company with 100 skilled employees and is one of the few highly specialized manufacturers of museum equipment and showcase technology worldwide. The company is certified according to ISO 9001.

The company's goal is to develop and manufacture high-quality products that protect and preserve valuable cultural assets and meet all requirements in terms of design, functionality, safety and conservation protection. High quality craftsmanship, which is constantly monitored by a quality management system, characterizes the products.

In cooperation with recognized research institutes, the effects of lighting, climate and harmful emissions on the exhibits are investigated and the findings of this research are taken into account in our work. Numerous new developments demonstrate our competence and innovative strength.

The company's history is characterized by a continuous, consistent and very successful development, demonstrated by projects for numerous museums with a worldwide reputation.



Pollutants in the air

Museum display cases are intended to protect and preserve art and cultural assets not only from theft and vandalism, but also from **exhibit-damaging influences**.

However, numerous examples vividly illustrate that works of art are also exposed to unfavorable environmental influences within the display cases, which lead to irreversible changes in the objects stored or exhibited. In addition to the absence of any foreign substances or pollutants, today's requirements for exhibition display cases also include a high degree of impermeability to ensure climatic constancy.

These requirements are very difficult to meet synchronously, since there is no such thing as THE emission-free material, and thus almost any release of substances, no matter how small they are, leads to an **accumulation inside the display case**.

In response to this, REIER has had its display case construction materials such as adhesives, varnishes and paints, but also plastics and organic materials, tested and certified for years at the Federal Institute for Materials Research and Testing (BAM) in Berlin, among others. Despite this measure, it was found in isolated projects that even the most minor emissions from display case construction materials, which were classified as harmless, interacted with emissions from exhibits and in turn developed a potential for damage in the display cases.

Since a chemical analysis of all possible interactions is not feasible in advance of an exhibition concept, **a simple solution** had to be found for the **subsequent air cleaning of new and existing display cases**.

This consideration led us to the development of our new, inexpensive as well as easy and uncomplicated to handle **FILTERBOX**.

PRODUCT INFORMATION

FILTERBOX FOR DISPLAY CASES

Emissions in display cases and exhibition rooms and the resulting pollutant loads on exhibits are a perennial topic. Measurements are often not carried out at all or are not repeated on a regular basis.

The total concentration of emissions/pollutants is then not known. This leads time and again, especially long term, in damage to valuable cultural objects as well as to display case glazing (due to fogging and crizzling).

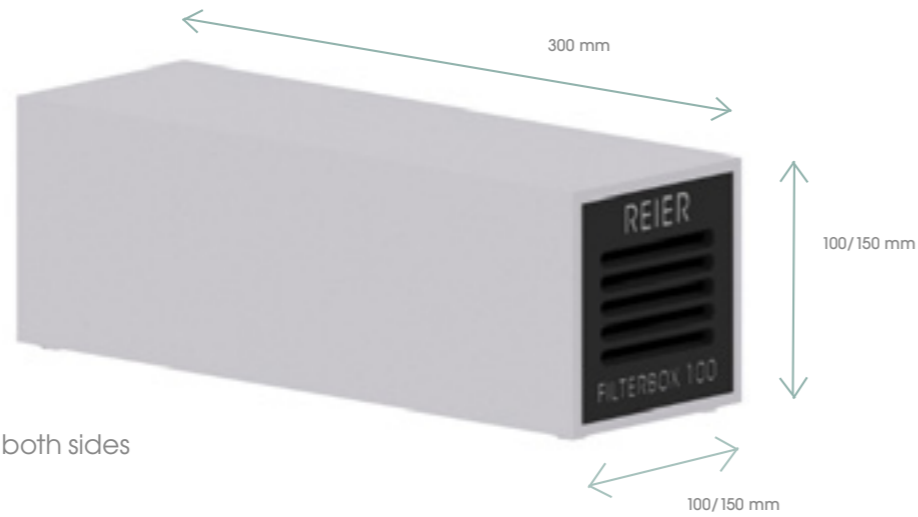
Remedy can be created by the use of our newly developed filter devices, which can be equipped with suitable sorbents (non-toxic) against pollutants brought in from the outside and created indoors such as

- Volatile organic compounds (VOC's)
 - Formic acid, Acetic acid
 - Formaldehyde, Acetaldehyde
 - Hydrocarbons, Alcohols
- Nitrogen oxides
- Hydrogen sulfide
- and other emissions

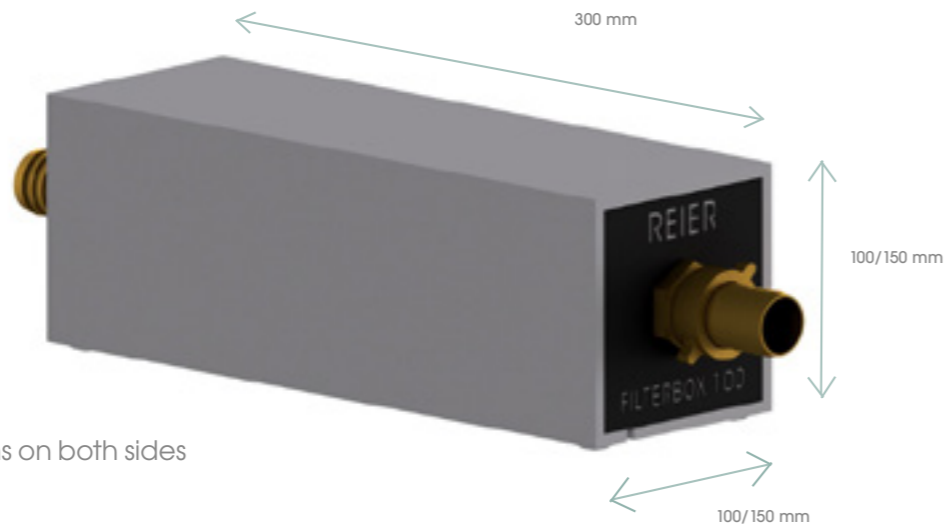
Depending on the selection, the sorbents ensure broad adsorption, absorption and also chemical binding of harmful gases. In the presence of a full analysis of the display case air, an exact determination of the composition of the sorbent is possible.

VARIANTS

Variant A
with ventilation grids on both sides



Variant B
with hose connections on both sides



Common features of both variants:

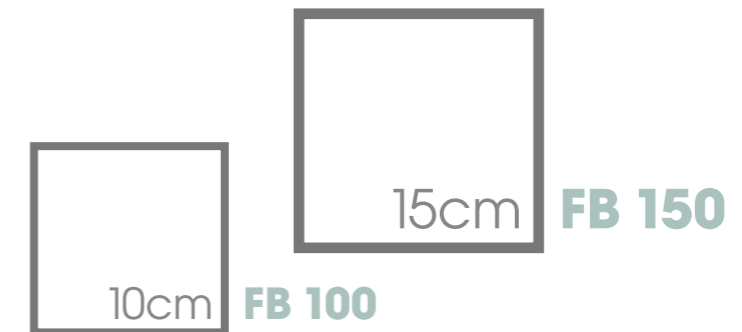
- Case components made of plastic and aluminum
- Stainless steel clip for tool-free replacement of the filter material
- 2x fine dust filter EU5
- Filter material fill: usually activated carbon granulate
- Low-voltage axial fan
- Power supply (concealed on the bottom)

DESCRIPTION

THE FILTERBOX MODEL VARIANTS

The newly developed REIER filterbox combines a unique simple design with a practice-oriented installation for an easy tool-free maintenance.

Depending on the requirements and available space, there is the possibility to choose between 2 sizes:



Display case volume

FB 100 up to 3 m³ / FB 150 starting at 3 m³

Colouring

Housing powder coated in white aluminum (RAL 9006) and deep black (RAL 9005), other colors as powder coating on request.

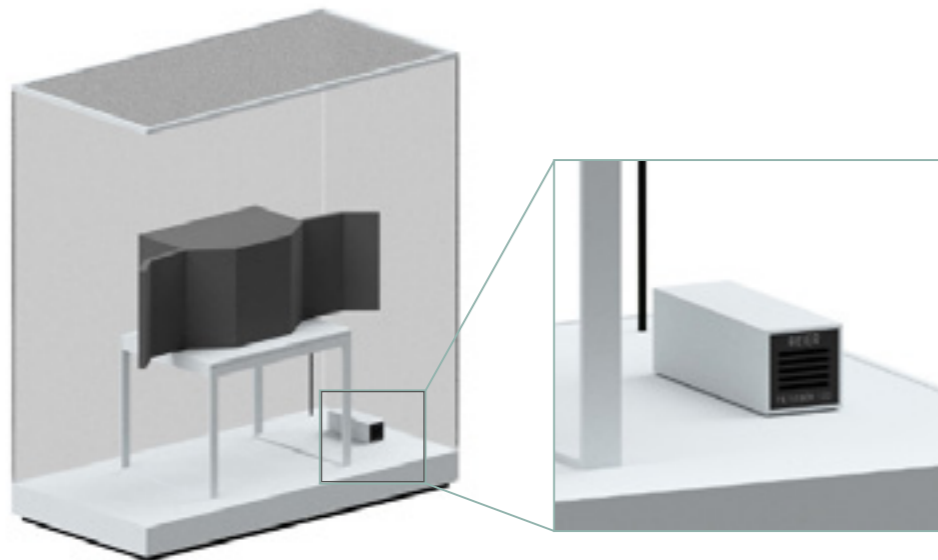
Two different variants

Variant A and Variant B (see left)

VARIANTS

Variant A

- simple design allows the **visible installation** on the shelf
- recirculating air filtration is possible without complex constructive execution or conversion of display cases
- The visible installation by positioning the filterbox on the shelf of the display case creates the possibility of subsequent filtering of pollutants in permanent and temporary exhibition display cases with little effort.



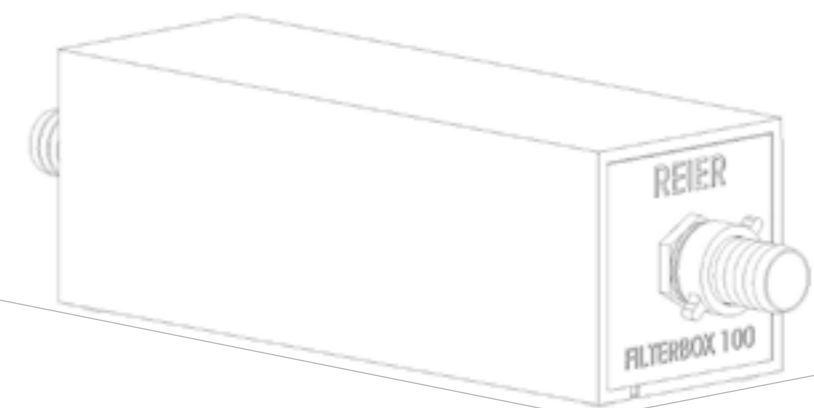
The only prerequisite for the display case is an existing grid connection for the power supply (230 V or 12 V) and a suitable opening for cable routing (e.g. hole, sealing gap).

THE FILTERBOX

FLEXIBLE INSTALLATION

Variante B

- small size enables **concealed installation** inside of the display case
- targeted air flow through hoses
- When purchasing a new display case, consider the use of the REIER filterbox or plan display cases for subsequent filter installation (possibility of connecting air hoses to the base plate as well as all-round circulation joint of the shelf).
- In the case of existing display cases, conversion of the display case floor and, if necessary, installation of an air-conditioning compartment under the floor to accommodate the filterbox.



TECHNICAL SPECS

THE FILTERBOX SPECIFICATIONS

	FB 100	FB 150
CONSTRUCTION SIZE (MM) (H X W X L)	100 X 100 X 300	150 X 150 X 300
DISPLAY CASE VOLUME (M ³)	< 3	> 3
FINE FILTER	2X FINE FILTER EU 5	
ACTIVATED CARBON FILL (LITER)	1,1	2,6
POWER SUPPLY	12 V WALL WART (STANDARD SCOPE OF SUPPLY) ADJUSTABLE POWER SUPPLY UNIT (ON REQUEST)	
12V-POWER UNIT (MM) (H X W X L)	50 X 50 X 100 (DIVERGENT CONSTRUCTION SIZE POSSIBLE)	
CABLE	1,5 M (SCOPE OF SUPPLY) WITH PLUG CONNECTION FOR EASY MOUNTING	
HOSE CONNECTION FOR VARIANT B	BRASS SCREW CAP (DISASSEMBLY TOOLLESS)	

subject to change without notice

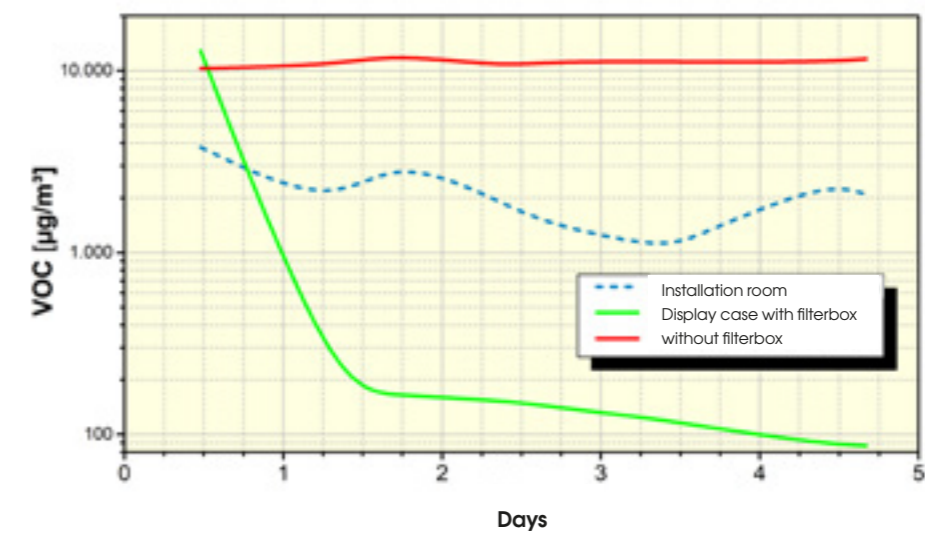
Maintenance

- All maintenance operations, such as disconnecting the filterbox from the hoses and changing the filter, do not require any tools.
- Easy filter change by sliding the fan and filter unit out of the housing.
- Depending on the load of the display case air, replacement of the filter material is required every 12 - 24 months.
- The axial fan is maintenance-free. In the event of a defect, it can be replaced in a few simple steps.

Material availability

- Upon request, we supply replacement fans and portioned, shrink-wrapped filter materials.

Filter efficacy





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ENGINEER SERVICES OUR EXPERTISE

Verification of the tightness of display cases by means of CO₂ concentration measurement

Depending on the results, maintenance/repair work can be carried out on the display cases.

Emission measurements with the „ppbRAE 3000“ PID meter

The emission measurements of the display case air as well as the room air provide information on whether a subsequent filter installation will be necessary. Within one day the sum values of the emissions of 10 - 20 display cases as well as some rooms can be determined metrologically with our measuring instrument with high accuracy.

Request our services for the examination of your existing display cases, for leakage and emissions harmful to exhibits as well as our recommendations of effective filter methods and devices.







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