

CLEAN AIR LAMINAR FLOW CEILING CG³

ULTRA CLEAN VENTILATION SYSTEM WITH UNIDIRECTIONAL FLOW



- Draft-free, comfortable room climate
- Minimal, undistruptive noise level
- Easy to disinfect housing design with smooth surfaces
- Minimal pathogen concentration (< 10CFU/m³) in the sterile field
- Highly economical energy consumption from a very low pressure drop
- Perfectly seamless integration of ceiling mounted equipment and OT Ceiling
- Flexible, modular range of solutions, adjustable to the local requirements

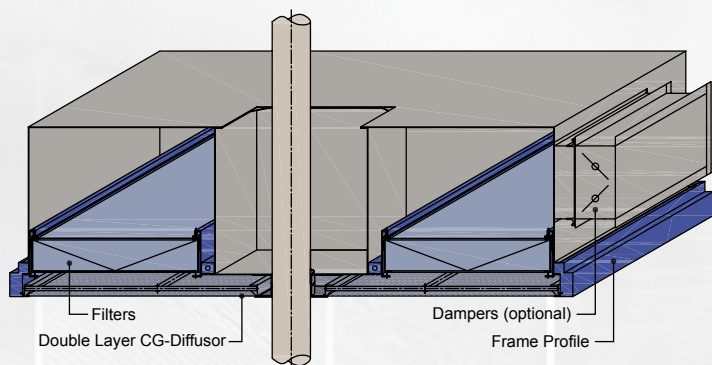
The third generation of Vokes-Air Laminar Flow Ceilings combine our proven experience in the field of UCVS with the latest technologies, unsurpassed quality and effective cost management.

Over the past decades we have successfully equipped thousands of operating theatres (OT) and our customers have enjoyed the quality of our systems for many years.

The third generation of Vokes-Air CG³ meets today's increased requirements for performance, flexibility and quality.

OUR SYSTEMS AND MODULAR DESIGN ARE PERFECTLY SUITED TO MATCH YOUR SPECIFIC REQUIREMENTS

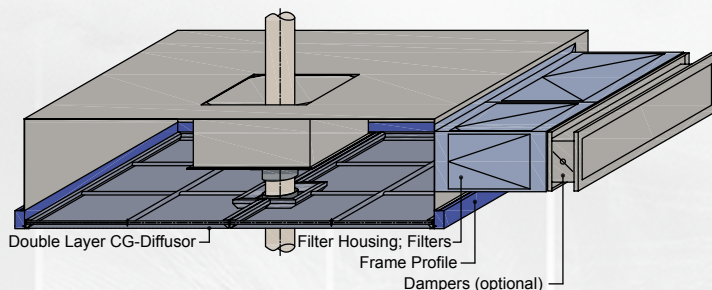
VOKES-AIR CG³ - P



FULL COVERAGE OF THE PLENUM WITH FILTERS

- Modular structure:
 - Large range of possible sizes, depending on the architectural and hygienic requirements
 - Swift installation will not obstruct the buildings construction progress
 - Fast and cost effective maintenance
- Efficient energy balance
 - Reduced pressure drop due to large filter surface
 - Filter technology with minimised pressure drop
- Sterile air field and minimal air turbulences according to European standards
- Minimal noise level ≤ 48 dB(A) even when running the recirculation units at full capacity.
- Seamless integration with surrounding equipment and existing OT ceiling. (Lighting, Media Supply, Ceiling Pendants)

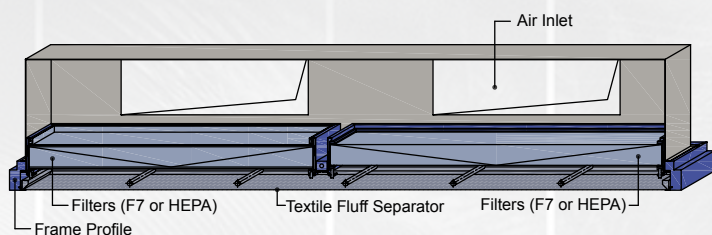
VOKES-AIR CG³ - N



ECONOMIC COMPACT CEILING WITH SIDE POSITIONED HEPA FILTERS

- Modular Structure:
 - Large range of possible sizes, depending on the architectural and hygienic requirements
 - Swift installation will not obstruct the buildings construction progress
 - Fast and cost effective maintenance
- Low height for low room ceilings
- Sterile air field and minimal air turbulences according to European standards
- Filter technology with extremely low pressure drop
- Seamless integration with surrounding equipment and remaining OT ceiling
- Perfect Integration of Lighting and Media Supply

VOKES-AIR FM³



FILTER MODULE FOR STERILE AIR SUPPLY AND EXHAUST AIR

- Exhaust Air Module integrated in the OT Ceiling, if air recirculation is installed outside of the OT
- Sterile Air Supply Module for sterile fields, installed in the ceiling or in the wall.
- Aluminum profile for the perfect integration into the ceiling or with the Laminar Flow Ceiling
- Pressure Chamber – constructed from galvanised steel and painted white (RAL 9010) – and textile fluff separator enable a visually perfect integration in the OT ceiling.

QUALITY WITHOUT COMPROMISE

We are serious about cost reduction and are committed to competitiveness, but never at the expense of quality.

- We only use high quality and durable materials; filter housings and pressure chamber are made out of high-end stainless steel (quality: 1.4301). The frame for the Vokes-Air CG³ System, the CG-Diffuser and the surrounding equipment are constructed from high quality, anodised aluminum profiles.
- Tuned to the architectural layout of the OT, the aluminum profile enables the seamless integration of airflow stabilisers, ceiling pendants, media bridges, OT illumination, and the remaining ceiling of the OT outside of the sterile field. No more cumbersome and often crude coverage and closure of gaps between the various installations and the remaining ceiling. The whole OT ceiling is presented as one perfectly integrated solution.
- Vokes-Air Laminar Flow Ceilings are designed for long lasting quality and reliability. Our satisfied customers have experienced this through thousands of installations over the past three decades.

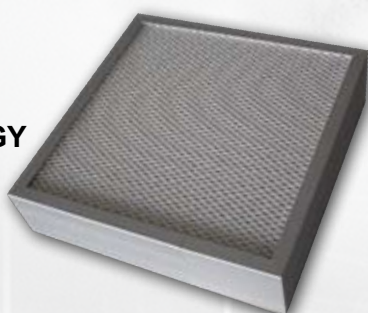


SEAMLESS INTEGRATION OF SURROUNDING EQUIPMENT

We design our OT ceilings as part of an integrated OT system. We are only satisfied once the medical team is able to work under the laminar flow ceilings and with the surrounding equipment to its full potential. This ensures that the attention is focused on the patient and is not disrupted by technology. Therefore we supply and install integrated solutions, by planning the full integration of the OT in close cooperation with the suppliers of surrounding ceiling equipment (OT lights, ceiling pendants, media bridges etc).

FILTER TECHNOLOGY

As one of the leading manufacturers for HEPA filters we know what's essential in filter technology:



- Lifetime: a low pressure drop allows for the long-term usage of the HEPA filters. Usually, our filters only need to be changed after 5 years, providing a significant saving of the running cost of the Laminar Flow Ceiling.
- Reliable filter efficiency: our filters are guaranteed to remove particles and germs with the usual H13 filters retaining 99.95 % of the particles and germs and our H14 filters removing 99.995% at MPPS.
- Minimal pressure drop: a low pressure drop ensures the energy saving characteristic of the Laminar Flow Ceiling. For example the pressure drop of our 93 mm H13 filters is only approx. 60 Pa, at an airflow of 1000 m³/h/m².

UNIDIRECTIONAL AIRFLOW

Our high quality CG-Diffuser secures the unidirectional airflow according to EN ISO 14644. The double-layer textile screen constructed from specialised material with more than 100 fibres/cm, ensures an even diffusion of the air. This technology avoids turbulences which might otherwise draw germs from the non-sterile area into the operating field. Low cost materials, one layer diffusers, or perforated plates can not guarantee this.

POWERFUL, LOW-NOISE RECIRCULATION SYSTEMS

- Our recirculation systems guarantee compliance with noise levels of ≤ 48 dB(A) required by European standards. Minimising the noise level is highly important for the OT team, which has to stay focused on the medical procedure over many hours. We care about each dB(A), as an increase of only 3 dB(A) is equal to doubling the noise energy.
- Settings control of the recirculation system can be integrated directly in the OT panel. The recirculation can be controlled and adjusted without opening the ceiling.



THE CG³ ALUMINUM FRAME: PERFECT INTEGRATION OF THE OT CEILING

The rigid frame system, made from anodised aluminum profile enables the perfect integration of the OT Ceiling with the surrounding installations.

- The OT lighting is integrated into a frame system which ensures its air sealed integration with the OT ceiling. The installation frame of the lighting supplier is no longer required. We can also supply and install the entire system, including the lighting.
- Our frame system allows the seamless and air-sealed coverage of all gaps between the various installations and for the direct connection to the remaining OT ceiling – a perfectly integrated solution for your OT.

PERFECT INTEGRATION OF THE ENTIRE OT CEILING INCLUDING ALL CEILING MOUNTED EQUIPMENT.

OT Lighting

The illumination of the sterile field (OT table) by the OT lighting should reach 1000 – 2000 lux. The lighting is installed on the sides of the Laminar Flow Ceiling. Our close cooperation with leading manufacturers ensures that your OT is only equipped with lighting which is suitable for use in an Operating Theatre. This lighting is used for the sterile field as well as for the surrounding OT.



Surgical Light and Ceiling Pendants

We work closely with the manufacturers of surgical lights and ceiling pendants, and with the medical equipment designer to coordinate the system's layout and integration. The final drawings you receive for approval will include the integration of surgical lights and ceiling pendants.

Media Bridge

Through our partnership with leading manufacturers, we offer the media bridge together with our Laminar Flow Ceilings and take responsibility for the entire system. The media bridge is the alternative to ceiling pendants and is equipped with airflow stabilisers. If you source the media bridge directly from your supplier, we will coordinate the integration of OT ceiling and media bridge.



VOKES-AIR: INTEGRATED STERILE AIR SYSTEMS FOR HOSPITALS AND LABORATORIES

WE OFFER VERSATILE SOLUTIONS FOR STERILE AIR DIFFUSERS FOR HOSPITALS, LABORATORIES AND INDUSTRY. WE ARE HAPPY TO SUPPORT YOU IN YOUR PLANNING EFFORTS. TOGETHER WITH YOU WE DEVELOP A COST EFFECTIVE SOLUTION, WHICH MATCHES YOUR SPECIFIC REQUIREMENTS.



Vokes-Air Sterile Air Diffusor

HORIZONTAL DIFFUSERS

We offer horizontal sterile air diffusers from the wall of treatment rooms, where the room height might be too low or where ceiling rails (C-Arc, CT-Scanner etc.) make the installation of a Laminar Flow Ceiling impossible. These Sterile air diffusers with integrated HEPA filters provide clean air, but no unidirectional airflow. The housing is made out of welded stainless steel (1.4301) with polished surface. The diffuser is designed as perforated plate.

Please contact us to request further information on our horizontal diffusers.



Vokes-Air FM[®] Horizontal Sterile Air Diffusor

PATHOLOGY AIR OUTLETS

For Pathology and Forensic applications we have designed special air outlets with laminar flow. The laminar airflow flushes away the Formaldehyde fumes in order to

relieve the staff from those fumes whilst working on the pathology table. The air-sealed housing is made from coated (RAL 9010) or stainless (1.4301) steel. The

diffuser is a double layer textile mesh and the lighting is integrated on the side of the air outlet.

Please contact us to request further information on our pathology outlets.

FLUFF SEPARATORS AND EXHAUST SYSTEMS

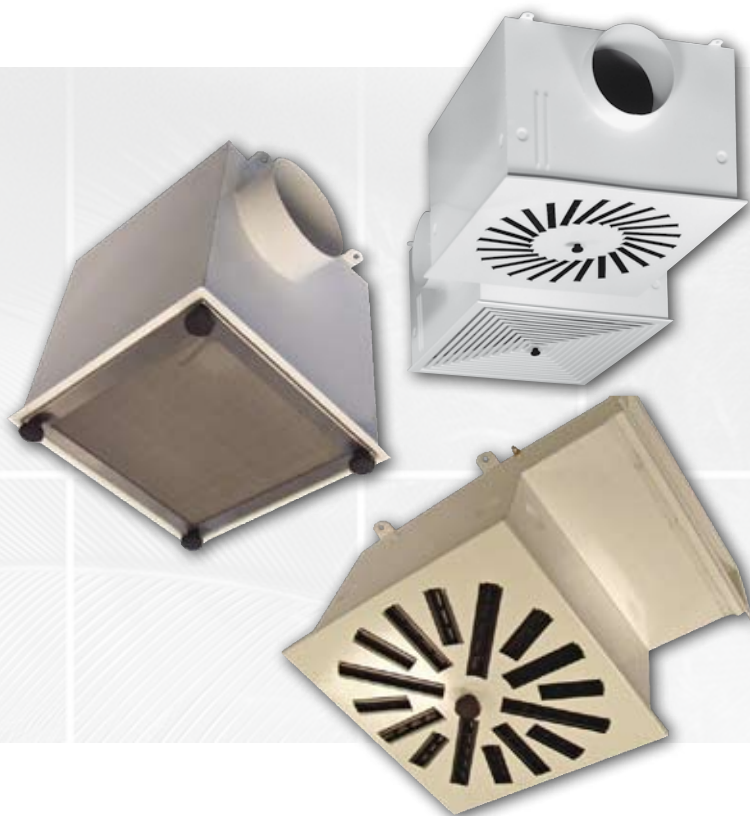
Our fluff separators are installed for the handling of the exhaust air in OT's and other functional rooms. They are available in various models, specially designed for the individual architectural requirement. A fine stainless steel mesh minimises the transport of textile fluff into the air duct system. All materials are made out of stainless steel (1.4301).

We also supply complete exhaust cabinets with integrated air duct inside the OT and integrated fluff separator.

Vokes-Air ceiling exhaust systems with fluff separators are adjusted to the aluminum frame system of Vokes-Air Laminar Flow Ceilings. The pressure chamber is made out of galvanised steel, painted white (RAL 9010) and equipped with a fine textile mesh. In addition F7 or F9 filters can be installed for the effective filtration of the exhaust air.



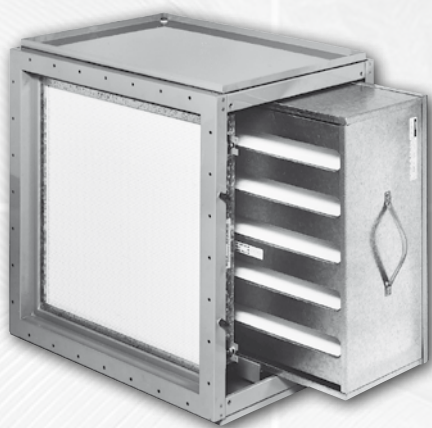
VOKES-AIR: INTEGRATED STERILE AIR SYSTEMS FOR HOSPITALS, LABORATORIES AND HEALTHCARE INDUSTRY



FILTRASEPT

Filtrasept filter outlets are installed, where clean air and avoidance of germs are an important requirement, such as in hospitals, laboratories and clean production processes (pharma, chemical industry, food, optics, electronics etc). Housings are made out of powder coated steel (RAL 9010). Stainless steel and specialised fire protection are optional. Filters and diffusers are available in large variety of brands, shapes and sizes.

Please contact us to receive further information on our Filtrasept product.



NG FILTER HOUSINGS AND NSC SAFE CHANGE HOUSINGS

Aerosol-tight filter housings for easy and safe exchange of contaminated filters. Designed for high operating pressure and permanently adjusting filter seal. These filter housings are used where safety requirements are high, such as in nuclear installations, pharmaceutical and biotech facilities isotope laboratories or isolation wards.

Please contact us to receive further information on our NG and filter housing products.