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As part of our continuous improvement, Camfil Farr reserve the right to change specifications without notice.

Why Molecular Filtration?

Air pollution caused by traffic, manufacturing, power plants, agriculture and even forest fires is a growing problem in our industrialized world.

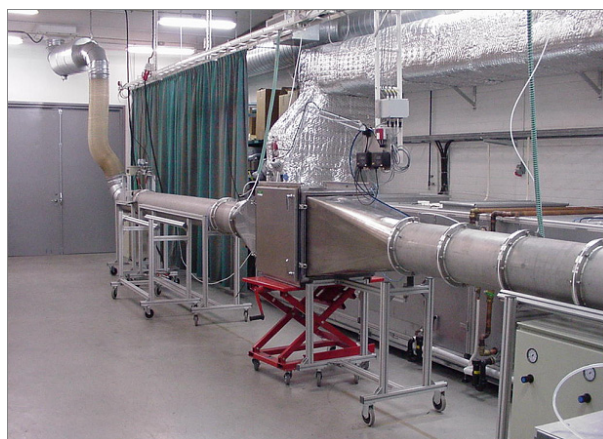
Molecular gaseous compounds are invisible and all around us. Some of these compounds are so toxic, and yet so hard for us to detect, that they can do us harm with our even realizing we have been exposed.

Unfortunately we are routinely being subjected to such hazardous compounds in our offices, our homes, our cities and even during our leisure time.

The impact of such exposure can be significant. High ozone or volatile organic compound (VOC) levels represent a serious health threat for all of us. At the same time air pollution can damage everything from valuable artifacts in museums to exposed surfaces in our homes and offices.

In manufacturing environments Airborne Molecular Contamination (AMC) can cause a variety of problems. In semiconductor manufacturing, for example, AMC can reduce product yield, corrode valuable optical components and damage a wide range of process equipment.

In other industries, as products and processes become more complex and more sensitive to all types of contamination, the control of AMC will become an ever more critical part of ensuring product quality and improving process yield rates.



Picture: Filter test rig in Camfil AB, Sweden



Gigacheck



Campure Coupon

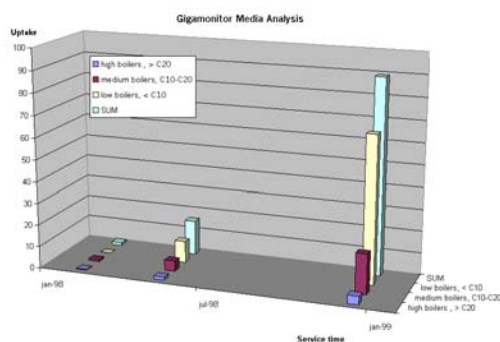
Additional services

Camfil offers a wide range of AMC focused services that allow our customers to remain focused on their core business. These services include filter life time analysis, real time online measurement of contaminants and passive sampling to precisely determine the type and concentration of the problem compounds.

Once local analysis has been completed our AMC experts can propose comprehensive AMC solutions based on the minimum possible Life Cycle Cost available to meet customer needs.

Camfil Farr is the only filter company equipped with a full size filter test facility designed to performance test not just filter media samples but also full size filters under precisely simulated conditions. This full size filter testing is the basis for all our published technical data and can be used to test filter performance against wide and varied range of AMC challenges under precise temperature, humidity and air flow conditions.

This type of performance data can be invaluable when it comes to determining the optimal solution for any specific AMC challenge.



Example: Rest capacity check of a chemical filter in operation

Our "City" - Products

Sick-Building-Syndrom

Sick-Building-Syndrom is the negative impact on health of human beings caused by harmful substances.

The sources of harmful substances are outside e.g. traffic, power plants, industrial manufacturing, forest fires and bacteria. Inside of buildings e.g. furniture's, coatings, carpets and detergents.

All these chemical, harmful substances together can cause headache, fatigue, allergy and decreasing concentration.

Our 2-in-1 principle

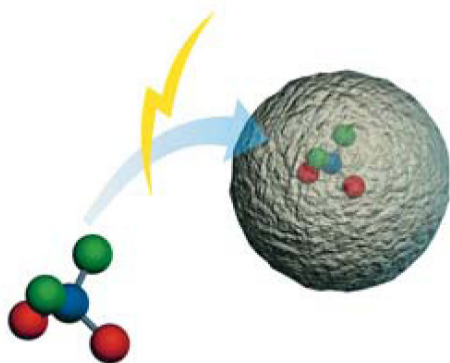
Our CityPleat, CityFlo and CityCarb filter are able to remove particles, bacteria, spores, air pollution and smell. As a result the indoor air quality (IAQ) index is significantly improved.

This improvement is due to:

1. High efficiency particle filtration: filter class F7 / F9 according EN 779.
2. Adsorption of volatile organic compounds (VOC), smell, sulfur dioxide and ozone: High efficiency through RAD principle.

RAD Principle

RAD stands for Rapid Adsorption Dynamics and is the basis for high efficiency gas filtration. Our filters are able to remove effectively smell and gaseous air pollutants. Ozone for instance is removed with an efficiency higher than 90%. Camfil is using best-in class media to achieve a relative long life time in some cases of the filters.



Easy installation

Our filters can be easily installed due to the customer friendly HF frame set. The "City" filters can be normally installed in the existing bag filter frames.

Active against dust, air pollution and smell with only one filter!



Adsorption index of activated carbon



Key:

- 4: A very high level of adsorption
 3: Good index, increased contact time may be needed.
 2: Mediocre index that may require a particularly long contact time or impregnated grades.
 1: Practically no adsorption, another solution must be sought

Adsorption index of Activated Carbon for various types of odour

| | | | | |
|-----------------------|------------------------|-----------------------|--------------------------|-----------------------|
| 2 Acetaldehyde | 1 Carbon monoxide | 3 Ethyl bromide | 4 Lubricants | 3 Pentylene |
| 4 Acetic acid | 4 Carbon tetrachloride | 1 Ethylene | 4 Medicinal odours | 3 Pentyne |
| 4 Acetic anhydride | 3 Chlorine | 4 Ethylene dichloride | 4 Menthyl | 4 Perchloroethylene |
| 3 Acetone | 4 Chlorobenzene | 2 Ethylene oxide | 4 Mercaptan 2-4 | 4 Perfumes, cosmetics |
| 1 Acetylene | 4 Chloroform | 2 Ethyl mercaptan | 1 Methane | 4 Perspiration |
| 3 Acids 2-4 | 4 Chloronitropropane | 4 Ethyl silicate | 3 Methyl acetate | 4 Petrol |
| 3 Acrolein | 4 Chloropicrin | 4 Eucalyptol | 4 Methyl acrylate | 4 Phenol |
| 4 Acrylic acid | 4 Chloroprene | 4 Faecal odours | 2 Methyl alcohol | 3 Phosgene |
| 4 Acrylonitrile | 3 Cigarette smells | 3 Farmyard smells | 3 Methyl bromide | 4 Plastics |
| 4 Adhesives | 4 Cleaning solvents | 4 Fertiliser | 4 Methyl butyl ketone | 2 Propane |
| 4 Alcohol 2-4 | 3 Cooking smells | 3 Film developing | 3 Methyl chloride | 4 Propanol |
| 4 Amines 2-4 | 4 Creosote | 2 Fish odours | 4 Methylcyclohexane | 2 Propylene |
| 2 Ammonia | 4 Cresol | 4 Floral odours | 4 Methylcyclohexanol | 4 Propyl mercaptan |
| 2 Amyl acetate | 4 Cyclohexane | 2 Formaldehyde | 4 Méthylcyclohexanone | 4 Resins |
| 4 Amyl alcohol | 4 Cyclohexanol | 3 Formic acid | 4 Methylene chloride | 4 Rubber |
| 4 Amyl ether | 4 Cyclohexanone | 3 Freon | 3 Methyl ether | 2 Slaughterhouse |
| 3 Anaesthetics | 4 Cyclohexene | 4 Gangrene smell | 4 Methyl ethyl ketone | 3 Soap |
| 4 Aniline | 4 Deodorants | 4 Garlic | 4 Methyl isobutyl ketone | 3 Solvents |
| 4 Animal carcasses | 4 Detergents | 4 Heptane | 4 Methyl mercaptan | 4 Styrene monomer |
| 3 Animal odours | 4 Dibromoethane | 4 Heptylene | 4 Monochlorobenzene | 2 Sulphur components |
| 4 Antiseptics | 4 Dichlorobenzene | 3 Hexane | 4 Naphtha (coal tar) | 2 Sulphur dioxide |
| 4 Asphalt fumes | 4 Dichloroethane | 3 Hexylene | 4 Naphtha (oil) | 4 Sulphuric acid |
| 3 Bathroom smells | 4 Dichloroethylene | 3 Hospital odours | 4 Naphthalene | 3 Sulphur trioxide |
| 4 Benzene | 4 Diesel fumes | 4 Household smells | 4 Nicotine | 4 Tar |
| 3 Bleaching solutions | 3 Diethylamine | 1 Hydrogen | 3 Nitric acid | 4 Tetrachloroethane |
| 2 Body odours | 3 Diethyl ketone | 2 Hydrogen bromide | 4 Nitrobenzene | 4 Tetrachloroethylene |
| 4 Bromine | 4 Dimethylaniline | 2 Hydrogen chloride | 4 Nitroethane | 3 Tetrahydrofuran |
| 4 Burnt flesh | 4 Dimethylsulfate | 2 Hydrogen cyanide | 2 Nitrogen dioxide | 4 Tobacco odours |
| 3 Butadiene | 4 Dioxane | 2 Hydrogen fluoride | 4 Nitroglycerine | 4 Toilet smells |
| 2 Butane | 4 Dipropyl ketone | 3 Hydrogen iodide | 4 Nitromethane | 4 Toluene |
| 4 Butanone | 4 Disinfectants | 2 Hydrogen sulphide | 4 Nitropropane | 4 Trichlorethylene |
| 4 Butyl acetate | 4 Embalming products | 4 Incense | 4 Nitrotoluene | 4 Urea |
| 4 Butyl alcohol | 4 Essential oils | 3 Industrial waste | 4 Nonane | 4 Uric acid |
| 4 Butyl chloride | 1 Ethane | 4 Iodine | 4 Octane | 4 Vehicle exhaust |
| 2 Butylene | 3 Ether | 4 Iodoform | 4 Onions | 4 Vinegar |
| 4 Butyric acid | 4 Ethyl acetate | 3 Isoprene | 4 Ozone | 2 Vinyl chloride |
| 4 Camphor | 4 Ethyl acrylate | 4 Isopropyl acetate | 4 Paint odours | 2 Wood alcohol |
| 4 Caprylic acid | 2 Ethyl alcohol | 3 Isopropyl alcohol | 4 Paradichlorobenzene | 4 Xylene |
| 3 Carbon disulphide | 3 Ethylamine | 4 Kerosene | 3 Pentane | |
| 1 Carbon dioxide | 4 Ethylbenzene | 4 Lactic acid | 4 Pentanone | |

CityPleat



Advantages

- Compact "2 in 1" solution
- Double action: particle and odour filtration
- Ideal for filtering most low concentration interior and exterior pollutants
- 100% incinerable
- Can be used to upgrade existing installations
- Range of standard sizes

Application: High efficiency particle filtration for deodorisation and removal of gas pollutants, used for filtration in offices, airports.

Type: Prefilter for gas and particles removal.

Frame: Moisture resistant cardboard.

Media: Synthetic fibre and broad spectrum carbon.

EN 779:2002 filter class: G4.

ASHRAE 52.2:1999 filter class: MERV 7.

Recommended temperature: 0 - 40°C.

Recommended relative humidity: 30 - 70%.

Recommended final pressure drop: 250 Pa.

Maximum final pressure drop: 250 Pa.

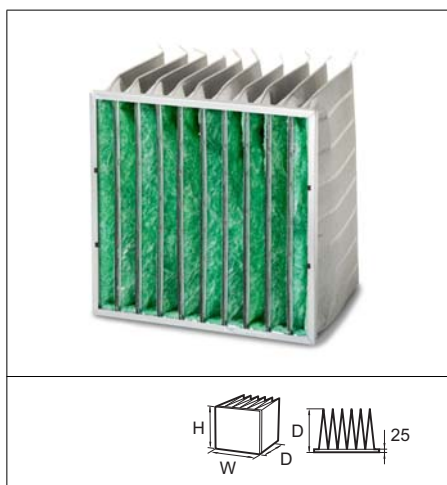
Ozone removal efficiency: 25 - 70% depending on model.

All values are +15%.

| Reference | Model | Dimensions (WxHxD) mm | Particle removal filter class | Ozone removal efficiency at rated airflow (%)* | Air flow / pressure drop m³/hr/Pa | Unit weight kg | Unit Volume m³ |
|-----------|--------------------------|-----------------------|-------------------------------|--|-----------------------------------|----------------|----------------|
| 5103001 | CityPleat-100-594x594x44 | 594 x 594 x 44 | G4 | 25% | 1900/135 | 1.0 | 0.019 |
| 5103007 | CityPleat-100-289x594x44 | 289 x 594 x 44 | G4 | 85% | 900/135 | 0.5 | 0.010 |
| 5103005 | CityPleat-200-594x594x44 | 594 x 594 x 44 | G4 | 50% | 3175/135 | 1.8 | 0.019 |
| 5103004 | CityPleat-200-289x594x44 | 289 x 594 x 44 | G4 | 50% | 1500/135 | 0.9 | 0.10 |
| 5103011 | CityPleat-200-594x594x95 | 594 x 594 x 95 | G4 | 50% | 3175/90 | 2 | 0.039 |
| 5103008 | CityPleat-200-289x594x95 | 289 x 594 x 95 | G4 | 50% | 1500/90 | 1 | 0.019 |
| 5103010 | CityPleat-480-594x594x95 | 594 x 594 x 95 | G4 | 70% | 3175/50 | 3.8 | 0.039 |
| 5103009 | CityPleat-480-289x594x95 | 289 x 594 x 95 | G4 | 70% | 1500/50 | 1.9 | 0.019 |

*Full size test in Camfil Farr molecular filtration test rig.

City-Flo



Advantages

- Double action: particle and molecular filtration
- Range of standard sizes
- Can be used to upgrade existing installations
- Ideal for filtering most low concentration interior and exterior pollutants
- Robust metal header frame

Application: Particle and odour removal in Hospitals, Offices, Airports etc.

Type: Multi pocket particle and gas filter.

Frame: Galvanised steel.

Media: Glass fibre and broad spectrum carbon (RAD).

EN 779:2002 filter class: F7.

ASHRAE 52.2:1999 filter class: MERV 13.

Recommended temperature: 50°C maximum in continuous service.

Recommended relative humidity: 70% RH maximum.

Holding frames: Front and side access holding frames are available: Type 8 and FC Housings.

Recommended final pressure drop: 250 Pa.

Maximum final pressure drop: 450 Pa.

Ozone removal efficiency: 80%.

Filter also available with F9 media.

| Reference | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Ozone removal efficiency at rated airflow (%)* | Number of pockets | Media area m ² | Air flow/pressure drop m ³ /hr/Pa | Unit weight kg | Unit volume m ³ |
|-----------|-----------------------|-----------------------------------|--|-------------------|---------------------------|--|----------------|----------------------------|
| 604001 | 592x592x534 | F7 | 80 | 10 | 6.2 | 3400/140 | 6 | 0.05 |
| 604003 | 490x592x534 | F7 | 80 | 8 | 5 | 2550/140 | 4.6 | 0.05 |
| 604002 | 287x592x534 | F7 | 80 | 5 | 3.1 | 1700/145 | 3,5 | 0.03 |

Two filters in one

Well known bag filter construction is now available with a particle and gas filtration layer. The frame components are made of galvanized sheet metal to ensure a robust construction.

Ultimate solution

City-Flo is the ultimate solution when a high performance bag filter and a high performance odour removal filter are needed in the same encapsulated space. The filter can be easily fitted into new or existing standard filter frames. High performance Camfil Farr glass fibre media is now combined with an exclusive broad spectrum carbon media that utilises the benefits of RAD (Rapid Adsorption Dynamics) to remove a wide range of VOCs and odours.

1. Highly effective filtration: Classed as F7 according to EN779:2002, it stops 85% of 1 micron particles and meets the recommendations of UNICLIMA and EUROVENT 12/1-92.

2. Adsorption of odours and pollution: This specifically designed product can provide very high efficiencies for ozone, Polyaromatic Hydrocarbons (PAH) and organic contaminants, which are the main pollutant in urban environments.

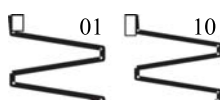
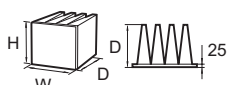
Service life

The filter can be replaced when pressure loss exceeds the maximum allowed value for the ventilation system or after a maximum of one year.

Maintenance

Following good practice for all filters, used City-Flo filters should be bagged immediately after removal from the unit and disposed of by the appropriate route.

CityCarb®



Advantages

- Compact "2 in 1" solution
- Double action: particle and molecular filtration
- Ideal for filtering most low concentration interior and exterior pollutants
- 100% incinerable
- Can be used to upgrade existing installations
- Range of standard sizes

Application: High efficiency particle filtration for deodorisation and removal of gas pollutants, used for filtration in e.g. offices, airports and industrial workshops.

Type: High efficiency, activated carbon, incinerable filter.

Frame: Polypropylene.

Media: Synthetic fibre and broadspectrum carbon (RAD).

Sealant: Polyurethane.

Gasket: Seamless PU gasket.

EN 779:2002 filter class: F7.

ASHRAE 52.2:1999 filter class: MERV 13.

Recommended temperature: 50°C maximum in continuous service.

Recommended relative humidity: 70% RH maximum.

Maximum flow rate: 4000m³/h.

Mounting system: "Camfil holding frame" frames in kit form, FC type housings.

Recommended final pressure drop: 250 Pa.

Maximum final pressure drop: 450 Pa.

Ozone removal efficiency: 90%.

| Reference | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Media area m ² | Type of carbon | Air flow/initial pressure drop m ³ /h/Pa | Unit weight kg | Unit Volume m ³ |
|-----------|-----------------------|-----------------------------------|---------------------------|----------------|---|----------------|----------------------------|
| 56700001 | 592x592x292 | F7 | 8 | RAD | 3400/120 | 9.8 | 0.13 |
| 56700010 | 592x490x292 | F7 | 6.6 | RAD | 2800/120 | 8.2 | 0.13 |
| 56700002 | 592x287x292 | F7 | 3.5 | RAD | 1400/120 | 4.9 | 0.06 |

CityCarb is specifically designed to handle common substances found in atmospheric contamination:

Volatile Organic Compounds (VOC's) are caused by vehicle exhaust, solvents and aerosols.

PAH and ozone is caused by vehicle emissions

Butadiene 1.3 is caused by vehicle emissions.

Some of these molecules are included in the calculation of the atmospheric pollution index.

1. Highly effective filtration: Classed as F7 according to EN 779:2002, it stops 85% of 1 micron particles and meets the recommendations of UNICLIMA and EUROVENT 12/1-92.

2. Adsorption of odours and pollution: This specifically designed product can provide very high efficiencies for ozone, Polyaromatic Hydrocarbons (PAH) and organic contaminants, which are the main pollutant in urban environments.

The filter can be replaced when pressure loss exceeds the maximum allowed value for the ventilation system or after a maximum of one year.

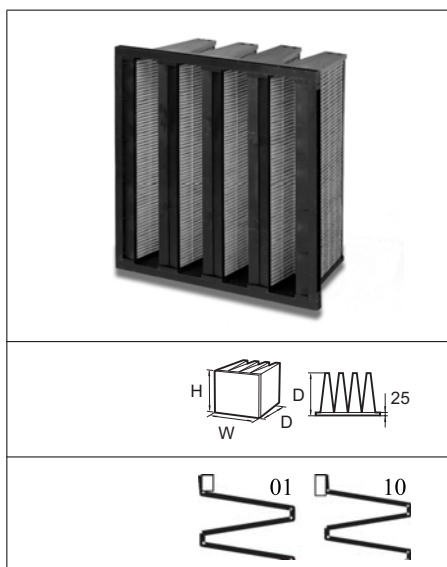
Following good practice for all filters, used CityCarb filters should be bagged immediately after removal from the unit and disposed of by the appropriate route.

The RAD or Rapid Adsorption Dynamic ensures the optimum efficiency of CityCarb. Rather than the amount of carbon (the traditional measure), it is the capacity of this new form to rapidly trap gasses which ensures the advanced performance of CityCarb. The carbon is in the form of very small granules into which gas molecules can rapidly diffuse.

Citycarb is designed to fit in place of the existing pocket or compact filter within an air handling system. The existing frames can be used because the filter fixings are the same and as you are not adding an extra filter stage, the pressure drop remains low.

CityCarb is also available with a media for acid removal.

CitySorb



Advantages

- Compact solution
- Range of standard sizes
- Rigid design concept
- High efficiency
- Large air flow capacity
- Constant pressure drop
- Incinerable

Application: Adsorption of odours and gasses in air conditioning applications.

Type: Rigid pleated filter.

Frame: Polystyrene.

Media: Multilayer carbon media.

Sealant: Polyurethane.

Gasket: Seamless PU gasket.

Recommended temperature range: 0 - 40°C.

Recommended relative humidity: < 70% RH.

Recommended pressure drop: Constant if filter is protected by F7 particle filtration.

Holding frames: Front and side access housings and frames are available, Type 8 and FC Housings.

Ozone removal efficiency: 70%.

| Reference | Dimensions (WxHxD) mm | Media area m ² | Type of Carbon | Air flow / pressure drop m ³ hr/Pa | Unit weight kg | Unit Volume m ³ |
|-----------|-----------------------|---------------------------|----------------|---|----------------|----------------------------|
| 56700003 | 592x592x292 | 8 | RAD | 3400/80 | 10.8 | 0.13 |
| 56700004 | 592x490x292 | 6.6 | RAD | 2800/80 | 9.2 | 0.13 |
| 56700005 | 592x287x292 | 3.5 | RAD | 1500/80 | 5.4 | 0.06 |

CitySorb is a high-efficiency compact molecular filter for addressing IAQ issues in public and commercial buildings. This filter satisfies demands to tackle nuisance odours such as PAH, ozone and butadiene 1.3 caused by vehicle emissions and VOCs from vehicle exhaust, solvents and aerosols and provide occupants with the highest indoor air quality as specified in the European Standard EN 13779. The material selection and construction method ensures that CitySorb is a clean, light filter that is both quick and easy to maintain.

CitySorb uses a special ingredient - RAD

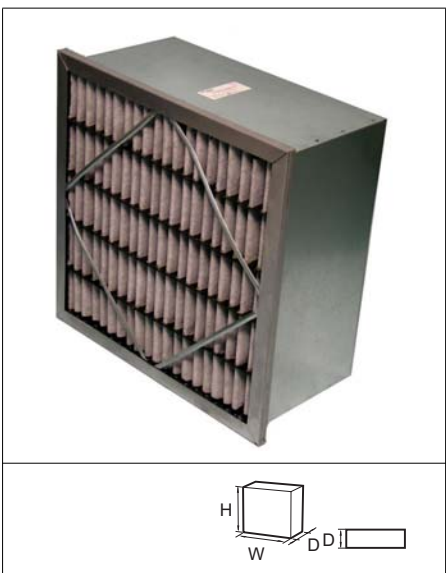
RAD or Rapid Adsorption Dynamic ensures the optimum efficiency of CitySorb. Rather than the amount of carbon (the traditional measure), it is the capacity of this new form to rapidly trap gasses which ensures the advanced performance of CitySorb. The carbon is in the form of very small granules into which gas molecules can rapidly diffuse.

Also available, CitySorb Acid, for more efficient treatment of specific acid molecules.

The filter can be replaced after a maximum of one year or when the smell or problem reappears.

Following good practice for all filters, used CitySorb filters should be bagged immediately after removal from the unit and disposed of by the appropriate route.

RigaCarb



Advantages

- Standard design for removal of acids, alkalines, organic smells and condensable organics.
- Available as box type, single or double header
- Compact solution with low pressure drop

Application: Adsorption of gases for industrial application such as harddisk facilities.

Type: Disposable carbon filter.

Frame: Galvanised steel (other on request).

Media: Type 202: nonwoven fiber material with impregnated carbon for removal of acids and condensable organics. Type 204: nonwoven fiber material with impregnated carbon for removal of alkalines and condensable organics.

Recommended temperature: 0 - 40°C.

Recommended relative humidity: 30 - 70%.

Particle cleanliness: ISO Class 6.

| Reference | Model | WxHxD mm | Media area m ² | Air flow / pressure drop m ³ /h/Pa | Unit weight kg | Unit volume m ³ |
|-----------|--------------------|-----------------|---------------------------|---|----------------|----------------------------|
| 5640001 | RC-202-24-24-12-BH | 592 x 592 x 292 | 6 | 3400/124 | 15 | 0.1 |
| 5640010 | RC-202-12-24-12-BH | 287 x 592 x 292 | 3.2 | 1700/124 | 8 | 0.05 |
| 5640006 | RC-202-24-24-12-PH | 592 x 592 x 292 | 6 | 3400/124 | 15 | 0.1 |
| 5640004 | RC-202-12-24-12-PH | 287 x 592 x 292 | 3.2 | 1700/124 | 8 | 0.05 |
| 5640002 | RC-204-24-24-12-BH | 592 x 592 x 292 | 6 | 3400/124 | 15 | 0.1 |
| 5640012 | RC-204-12-24-12-BH | 287 x 592 x 292 | 3.2 | 1700/124 | 8 | 0.05 |
| 5640011 | RC-204-24-24-12-PH | 592 x 592 x 292 | 6 | 3400/124 | 15 | 0.1 |
| 5640005 | RC-204-12-24-12-PH | 287 x 592 x 292 | 3.2 | 1700/124 | 8 | 0.05 |

BH: Double Header; PH: Single Header

CamSure



Advantages

- Range of standard and non standard sizes
- High performance
- Suitable for a wide range of air volumes

Application: Adsorption of odours and gases in air conditioning applications.

Type: Loose fill adsorbent panels.

Frame: Galvanised steel.

Media: Campure or activated carbon based materials.

Temperature: 40°C maximum in continuous service.

Recommended relative humidity: 30 - 70%.

Mounting systems: Front and side access housings and frames are available.

| Reference | Model | Dimensions (WxHxD) mm | Air flow / pressure drop m ³ /hr/Pa | Unit weight (kg) | Unit volume m ³ |
|-----------|---------------|-----------------------|--|------------------|----------------------------|
| 5100003 | RS80-D-LGS048 | 594 x 594 x 47 | 850/70 | 7.5 | 0.017 |
| 5100004 | RS80-D-LGS048 | 594 x 289 x 47 | 425/70 | 4 | 0.0083 |

Above are sample sizes, filters are available in a comprehensive range of sizes, please specify.

Also available with stainless steel case.

Efficient gas filtration with CamCarb

Advanced, high capacity media is used in the CamCarb cylinders to remove smell, corrosive and toxic gases as well as organics in make-up and exhaust air applications.

CamCarb design

Camfil Farr offers a wide range of high efficient media tailored to the customer requirements. Camfil Farr experts select the right CamCarb model and the best suitable media based on lowest cost-of-ownership to fulfill customer requirements. .

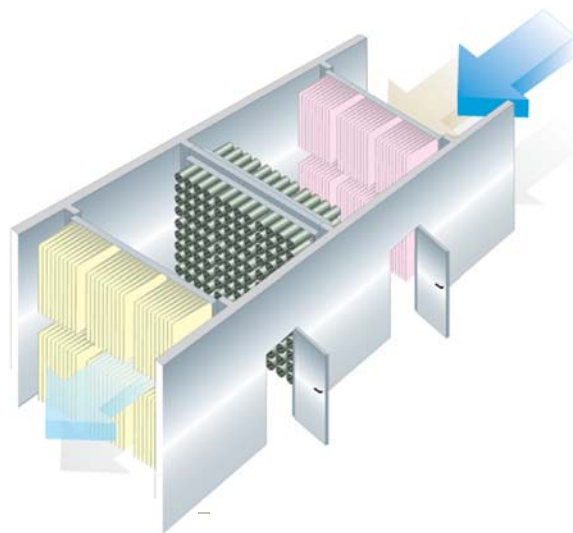
Non impregnated activated carbon is typically used to remove volatile organic compounds (VOC) including smell whereas typically impregnated activated carbon is used to remove acidic, caustic and corrosive gases.

Multiple gas filtration with one, two or three filter stages in series can be achieved in applications with unknown gas mix or when for instance VOC's acids and bases are present in the same air stream. Media blends are also available

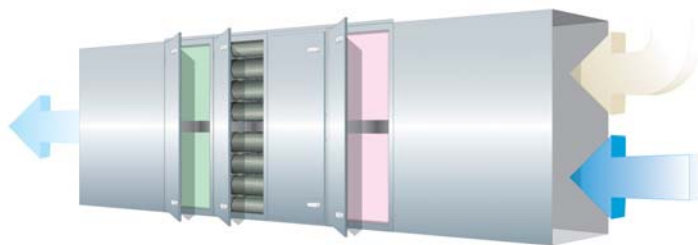
A special designed holding plate system is used as installation frame for the CamCarb cylinders (CamCarb and CamCarb green). The system is available in three different standard sizes.

It is recommended to use a F7 pre-filter to protect the CamCarb syst against particle contamination. Particles in the air block the micro po of the high efficient activated carbon resulting in rapid performance decrease.

Enforcement of the holding plates is required in big scale CamCarb installations (e.g. make-up air unit). Camfil Farr offers the right stabilization solution with the RZA/MZA modular frame set.



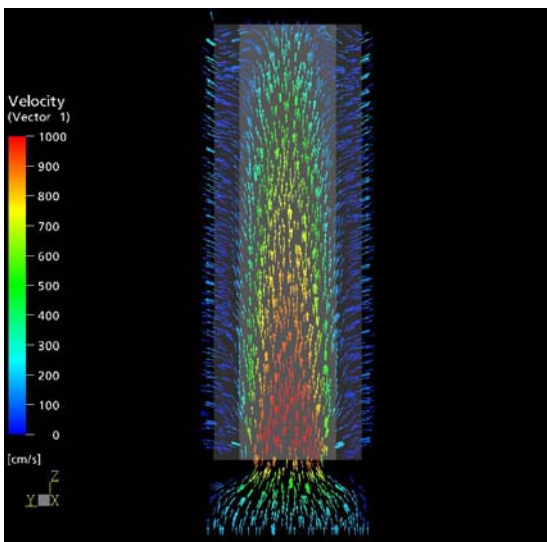
Example of RZA/MZA modular frame set system



Application in make-up air unit

CamCarb air flow distribution

Camfil did CFD (Computer Fluid Dynamics) simulations to design the Camcarb cylinder to achieve a uniform air flow distribution through the media resulting in longer life time compared to competitor products.



CamCarb® Green



Advantages

- Completely incinerable
- Low pressure drop
- Reduced weight
- Conical inlet
- Two integral moulded TPE gaskets
- Rapid bayonet fitting system
- Corrosion resistant
- High performance

Application: Adsorption of odours, VOC's and / or low toxicity gases for airports, museums, kitchens, hospitals or clean room industry.

Type: Cylindrical carbon cartridge in ABS and HDPE.

Temperature: 40°C maximum in continuous service.

Recommended relative humidity: 30 - 70%.

Mounting system: Camcarb mounting frame, FC-CC housings.

Adsorbent: "Broad Spectrum" activated carbon, adsorption of odours, ozone and organic gases. Impregnated activated carbon or campure impregnated alumina for adsorption of both organic and inorganic gases.

| Reference | Model | Dimensions (Ø, L) mm | Adsorbent volume L | Adsorbent type | Airflow/ pressure drop m³/h/Pa for 16 cylinders | Unit weight kg |
|-----------|-------------------------|-------------------------|-----------------------|--|--|-------------------|
| 56800005 | Camcarb G 2600 - LGS036 | 147x450 | 4.3 | LGS036 Coconut shell activated carbon granules | 2600/120 | 2,7 |
| 56800004 | Camcarb G 3500 - LGS036 | 147x600 | 5.7 | LGS036 Coconut shell activated carbon granules | 2600/110 3400/175 | 3,7 |
| 56800006 | Camcarb G 2600 - CEX003 | 147x450 | 4.3 | Coal activated carbon pellets | 2600/120 | 2.7 |
| 56800007 | Camcarb G 3500 - CEX003 | 147x600 | 5.7 | Coal activated carbon pellets | 2600/110 3400/175 | 3.7 |

*Other media options are available on request.

CamCarb® Mounting Frames



Advantages

- Modular design adaptable for all types of installations
- Reduced weight
- Rapid fitting system via bayonet fitting
- Quick and easy service

Application: Assembly of Camcarb cylinders.

Type: Quick bayonet-mounted support frame for Camcarb cylinders.

Design: Galvanised steel or stainless steel.

For filters: Camcarb cylinders (Green or Metal).

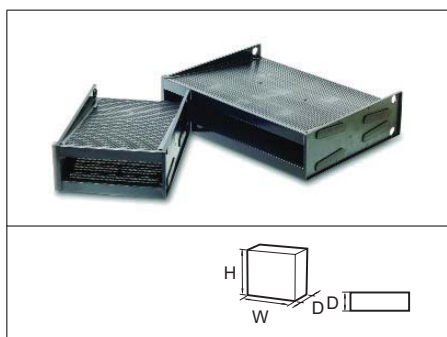
Mounting: Bayonet locking.

| Type | Model | Dimensions (WxHxD) mm | Cylinder capacity | Unit weight kg | Unit volume m ³ |
|---------|--------------|-----------------------|-------------------|----------------|----------------------------|
| Camcarb | Frame G8 SS | 305x610x70 | 8 | 5 | 0.02 |
| Camcarb | Frame G12 SS | 457x610x70 | 12 | 5.7 | 0.03 |
| Camcarb | Frame G16 SS | 610x610x70 | 16 | 6 | 0.04 |

RZA, MZA and ZWB installation accessories are also available on request



CamPure® GDM Green Disposable Modules



Advantages

- Completely incinerable
- Low pressure drop
- Various medias available dependent upon the contaminant(s) of concern
- Retrofit of existing installations

Description: Disposable plastic adsorber module designed to remove corrosive gases from industrial or commercial environments.

Typical application: Existing side-access housings or built up bank assemblies.

Efficiency: Media selection dependent, consult factory.

Adsorbent: "Broad Spectrum" activated carbon, adsorption of odours, ozone and organic gases. Impregnated activated carbon or campure impregnated alumina for adsorption of both organic and inorganic gases.

Temperature: Maximum continuous operating temperature of 50°C.

Recommended relative humidity: 30 - 90%.

| Model | Dimensions (WxHxD) mm | Air flow / pressure drop m ³ /h/Pa | Media volume | Application |
|----------|-----------------------|---|--------------|--|
| GDM 300F | 600x295x300 | 425/75 | 27L | Make up air-handling units (MUA), recirculation air handling units, exhaust. |
| GDM 300H | 300x295x300 | 212/75 | 13.5L | Make up air-handling units (MUA), recirculation air handling units, exhaust. |
| GDM 440F | 600x145x440 | 700/50 | 13.5L | Make up air-handling units (MUA), recirculation air handling units, exhaust. |
| GDM 440H | 300x145x440 | 350/50 | 6.75L | Make up air-handling units (MUA), recirculation air handling units, exhaust. |

*Housings are available on request.

Activated Carbon and Campure Media

Effective molecular filtration media

A comprehensive range of molecular filtration medias for the control of corrosive gases, toxic gases, odours and other gaseous pollutants. The medias may be used as part of original equipment packages or as replacement for spent media.

The campure media range comprises chemically impregnated adsorbents based on activated alumina which may be use on their own or blended with activated carbon.



such as hydrogen sulphide, sulphur dioxide, chlorine and oxides of nitrogen may cause serious damage to key electrical equipment essential to process management. Other applications include the control of acidic and odourous gases in waste water treatment applications and the protection of sensitive artefacts in museums and art galleries.



Flexible filtration solutions and support services

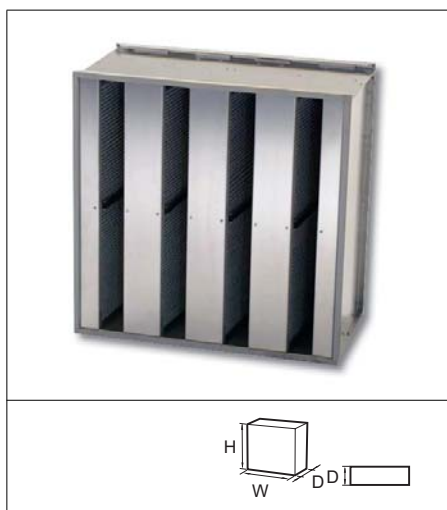
Activated carbon and campure medias may be deployed in a range of Camfil Farr hardware systems. These allow standard and custom, solutions for all industrial and commercial applications using various media amounts and bed depths. Activated carbon and campure medias may be re-filled directly into other manufacturers hardware. These medias are supported by a comprehensive range of technical support services including: media life analysis, corrosion monitoring coupons, on-line monitoring and media handling.

Demanding applications

Campure medias are designed for the most difficult and demanding applications in industrial and commercial environments. The principal areas of use include the control of acidic gases in pulp and paper, oil refining, and steel production industries. If left untreated, acidic gases

| Media | Target gases | Media type |
|---|---|---|
| CEX003 CEX004 | VOCs, hydrocarbons, general odours | Extruded activated carbon, 3 and 4mm diameter (coal based) |
| LGS036 LGS048 | Light VOCs, hydrocarbons, general odours | Granular activated carbon (coconut shell based) |
| Impregnated Carbon | Acids, Alkalines, etc. | A wide range of impregnation is available. |
| Campure 4 | H ₂ S, SO ₂ , NOX, formaldehyde, ethylene, light VOCs, Blow mol. Wt. aldehydes and organic acids | H ₂ S, SO ₂ , NOX, formaldehyde, ethylene, light VOCs, low mol. Wt. aldehydes and organic acids |
| Campure 5 | Halogens, halogen acids and organic halides | Activated alumina with chemical impregnation |
| Campure 8 | Enhanced removal of H ₂ S, SO ₂ , NOX, formaldehyde, ethylene, acid gases | Activated alumina with chemical impregnation |
| Campure 15 | H ₂ S, SO ₂ , mercaptans, acid gases, chlorine | Activated alumina and activated carbon with chemical impregnation |
| Blends | Any of the Campure medias may be blended with either of the activated carbon based medias to provide an adsorption system that combines broad spectrum and highly specific characteristics. The usual blend ratio is 50/50 by volume. | |
| See individual data sheets for grade specifications | | |

Gigapleat XPC



Advantages

- Reduced waste through re-usable housing.
- Exchangeable panels
- Dual layer solution for removal of multiple gases (acids, alkalines, sulfur and organic compounds)
- Compact solution
- High media cleanliness

Application: Clean room recirculation air and clean room make up air.

Type: Compact filter with exchangeable panels.

Housing: Stainless steel. Removable sheet metal profiles for panel replacement.

Gasket: Polyurethane gasket. Position: 01 - downstream, 10 - upstream.

Sealant: Polyurethane.

Configuration: 2 layers of 8 panels / full size housing.

Recommended temperature range: 10 - 40°C.

Recommended relative humidity: 30 - 70%.

Particle cleanliness: ISO Class 6.

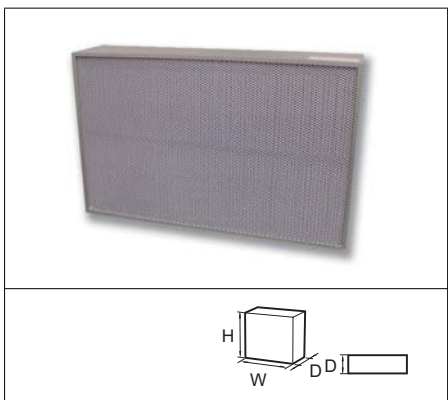
| Reference | Type | Model | Dimensions (WxHxD) mm |
|-----------|---------|---------------------------------------|-----------------------|
| 56600000 | housing | Gigapleat XPC 610x610x292 s/s Housing | 610 x 610 x 292 |
| 56600002 | housing | Gigapleat XPC 305x610x292 s/s Housing | 305 x 610 x 292 |

| Reference | Model | Dimensions (mm) | Typical pressure drop | Target Gas |
|-----------|---------------|-------------------------|-----------------------|--|
| 56300016 | XPC A2 Panel | For housing 610x610x292 | 2600/95 | Impregnated activated carbon for alkalines/organic condensables/Ozone |
| 56300004 | XPC B46 Panel | For housing 610x610x292 | 2600/95 | Ion exchange resin for alkalines |
| 56300003 | XPC C2 Panel | For housing 610x610x292 | 2600/95 | Impregnated activated carbon for general acids/sulfur compounds/organic condensables/Ozone |
| 56300015 | XPC C3 Panel | For housing 610x610x292 | 2600/95 | Impregnated activated carbon for strong acids like HCl, HF/organic condensables/Ozone |
| 56300011 | XPC L3 Panel | For housing 610x610x292 | 2600/95 | Activated carbon for organic condensables/Ozone |

*Other media types are available on request.

| AMC vs Media Type | L | B | A | C |
|----------------------------------|-----|-----|-----|-----|
| Acids | | | | YES |
| Bases | | YES | YES | |
| Condensables (B.Pt > 150 deg. C) | YES | | Yes | Yes |
| Dopants (Organophosphates) | YES | | Yes | Yes |
| Dopants (BF3) | | | | YES |
| Organics (B.Pt < 150 deg. C) | YES | | | |
| Ozone | YES | | Yes | Yes |

Gigapleat NXPP



Advantages

- Extremely low pressure drop
- High media cleanliness
- Aluminium frame
- Extremely small form factor
- Low weight
- Multiple media types can be combined into the same filter

Application: For cleanroom ceiling, FFU, mini-environment or process equipment.

Type: Panel filter.

Frame: Aluminium.

Media: Pleated ion exchange media, pleated impregnated carbon media for alkaline, acidic and VOC gas removal.

Sealant: Polyurethane.

Gasket: 01=Downstream polyurethane gasket, 10=Upstream polyurethane gasket.

Faceguard: 02: Downstream faceguard; 20: Upstream faceguard.

Recommended temperature range: 10 - 40°C.

Recommended relative humidity: 30 - 70%.

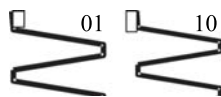
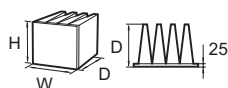
Particle cleanliness: ISO Class 6.

| Type | Model | Dimensions (WxHxD) mm | Pressure Loss at 0.4m/s Pa | Performance | Unit weight kg | Unit Volume m³/l |
|-----------|-------------------------------|-----------------------|----------------------------|-------------|----------------|------------------|
| Gigapleat | NXPP-LBC.610x610x165.KD.01/22 | 610x610x165 | 40 | on request | 10 | 0.061 |

*Adapter frames for FFU installation are available on request. For filter dimensioning please contact Camfil Farr.

| AMC vs Media Type | L | B | A | C |
|----------------------------------|-----|-----|-----|-----|
| Acids | | | | YES |
| Bases | | YES | YES | |
| Condensables (B.Pt > 150 deg. C) | YES | | Yes | Yes |
| Dopants (Organophosphates) | YES | | Yes | Yes |
| Dopants (BF3) | | | | YES |
| Organics (B.Pt < 150 deg. C) | YES | | | |
| Ozone | YES | | Yes | Yes |

Gigapleat NXPH



Advantages

- Low pressure drop
- High media cleanliness
- Plastic frame with high chemical resistance and low out-gassing

Application: Cleanroom make up air, cleanroom redirection air.

Type: Rigid header frame.

Frame: Polystyrene.

Media: Pleated ion exchange media, pleated impregnated carbon media for alkaline, acidic, and VOC gas removal.

Sealant: Polyurethane.

Gasket: Polyurethane gasket. 01 = downstream, 10 = upstream.

Recommended temperature range: 10 - 40°C.

Recommended relative humidity: 30 - 70%.

Particle cleanliness: ISO Class 6.

| Reference | Model | Dimensions (WxD) mm | Air flow / pressure drop m³/hr/Pa | Approximate unit weight kg | Unit Volume m³ |
|-----------|---------------------|---------------------|-----------------------------------|----------------------------|----------------|
| 56000003 | NXPH-A2 242412-01PU | 592x592x292 | 2600/60 | 12 | 0.13 |
| 56002000 | NXPH-A2 241212-01PU | 592x287x292 | 1100/60 | 6.5 | 0.06 |
| 56015001 | NXPH-B 242412-01PU | 592x592x292 | 2600/50 | 12 | 0.13 |
| 56015002 | NXPH-B 241212-01PU | 592x287x292 | 1100/50 | 6.5 | 0.06 |
| 56000001 | NXPH-C2 242412-01PU | 592x592x292 | 2600/60 | 12 | 0.13 |
| 56005002 | NXPH-C2 241212-01PU | 592x287x292 | 1100/60 | 6.5 | 0.06 |
| 56005009 | NXPH-C3 242412-01PU | 592x592x292 | 2600/60 | 12 | 0.13 |
| 56005010 | NXPH-C3 241212-01PU | 592x287x292 | 1100/60 | 6.5 | 0.06 |
| 56010009 | NXPH-L3 242412-01PU | 592x592x292 | 2600/60 | 12 | 0.13 |
| 56010005 | NXPH-L3 241212-01PU | 592x287x292 | 1100/60 | 6.5 | 0.06 |

*Combination media for removal of particle and gas are also available.

For media table, please refer to Gigapleat XPC, NXPP or NXPC.