
## انواع فیلتر ها و تجهیزات کلین روم (اتاق تمیز)

## اطلاعات کلی فیلتراسیون



## راهبردهای فیلتراسیون



## پیش فیلترها



## فیلترهای کیسه ای



## فیلتر هپا و اولپا



## فیلتر کربن اکتیو و شیمیایی



## بدنه و فرم فیلتر و موارد خاص

## فیلتر هوا:

فیلترها مواد متخلخلی هستند که در فرایند جداسازی یا تغلیظ مورد استفاده قرار می‌گیرند. مهم‌ترین ویژگی فیلترها، داشتن خلل هایی با اندازه و ابعاد مشخص است، به همین دلیل، فیلتر را یک محیط متخلخل می‌نامند. سوراخها درصد بسیار زیادی از حجم فیلتر را دربرمی‌گیرند و شبکه پیچیده‌ای از حفره‌ها را می‌سازند.

## تعریف فیلتراسیون:

فیلتراسیون، فرایندی است که در آن سیال به دلیل اختلاف فشار یا اختلاف پتانسیل الکتریکی و یا اختلاف غلظت از فیلتر عبور می‌کند. با انجام عمل فیلتراسیون ذراتی که از اندازه حفره‌های فیلتر کوچک تر هستند از آن عبور کرده و ذرات با اندازه بزرگ تر، از سیال جدا شده و در پشت فیلتر باقی می‌مانند.

## عمر فیلتر:

عمر فیلترهای مختلف متفاوت است و هر کدام بسته به میزان کارکرد و نوع غبار محلی عمر های مختلفی دارند. اما باید به این نکته توجه داشت که سطح فیلتر ارتباط مستقیمی با عمر آن دارد، بررسی ها نشان داده که با افزایش سطح فیلتر (به صورت منطقی) عمر مفید آن هم افزایش پیدا می کند. به یاد داشته باشید که سطح فیلتر مهم است نه سطح فیلتر قابل استفاده، چون پس از پر شدن منافذ قسمت های قابل استفاده فیلتر، جریان هوا از قسمت هایی که منافذ آنها هنوز باز است عبور می کند.

## کلاسه بندی فیلترها:

فیلتر های هوا پس از اندازه گیری تحت شرایط استاندارد بر اساس راندمان فیلتر کردن هر یک از آنها، کلاسه بندی می شوند. توجه داشته باشید که یک استاندارد بین المللی واحد برای کلاسه بندی فیلترها وجود ندارد اما چند کلاسه بندی ملی و بومی برای فیلتراسیون وجود دارد که مهمترین آنها در اروپا توسط EUROVENT (کمیته اروپایی تولید کنندگان هواساز و تجهیزات سردسازی) و در آمریکا توسط ASHRAE ( جامعه آمریکایی مهندسین گرمایش، سردسازی و تهویه مطبوع) ارائه شده است.

## در زیر جدولی جهت مقایسه چند استاندارد متداول در دنیا ارائه شده است:

| EUROVENT Class | MERV Per ASHRAE Standard 52.2-2007 | EN779 (average @ 0.4µm) | EN1822 (MPPS) | Old ASHRAE 52. Dust Spot Efficiency (discontinued standard) | Arrestance Per ASHRAE Standard 52.2-2007 |
|---|---|---|---|---|---|
| EU1 | 1 | G1 | | <20 | <65 |
| EU2 | 2 | G2 | | <20 | ≥65 |
| EU2 | 3 | | | <20 | ≥70 |
| EU2 | 4 | | | <20 | ≥75 |
| EU3 | 5 | G3 | | 20 | 80 |
| EU3 | 6 | | | 20-25 | 85 |
| EU4 | 8 | G4 | | 30-35 | 92 |
| EU5 | 9 | F5 | | 40-45 | 95 |
| EU6 | 11 | F6 | | 60-65 | 97 |
| EU7 | 13 | F7 | | 80-85 | 98 |
| EU8 | 14 | F8 | | 90-95 | 99 |
| EU9 | 15 | F9 | | ≤95 | 99 |
| EU10 | 16 | H10 | >85 | 99 | 100 |
| EU11 | | H11 | >95 | | |
| EU12 | | H12 | 99.5 | | |
| EU13 | | H13 | >99.95 | | |
| EU14 | | H14 | >99.995 | | |
| EU15 | | H15 | >99.9995 | | |
| EU16 | | H16 | >99.99995 | | |
| EU17 | | H17 | > 99.999995 | | |

## استانداردهای فیلترهای راندمان بالا:

| Year | Reference | Type of test | | Classification |
|---|---|---|---|---|
| 1956 | MIL STD 282 | DOP | 0.3 µm | - |
| 1972 | AFNOR NF X 44.011 | Uranine | 0.15 µm | - |
| 1976 | EUROVENT 4/4 | NaCl | 0.65 µm | EU10 to EU14 |
| 1995 | CEN EN 1822 | MPPS | 0.1 to 0.2 µm | HEPA: H10 to H14<br>ULPA: U15 to U17 |

### کلاسه بندی استاندارد EN 1822:

| | | MPPS integral values | | | MPPS local values | | |
|---|---|---|---|---|---|---|---|
| Filter group | Filter class | Minimum efficiency (%) | Maximum penetration (%) | Minimum P.C. | Minimum efficiency (%) | Maximum penetration (%) | Minimum P.C. |
| HEPA (H) | H10 | 85 | 15 | 6.7 | - | - | - |
| | H11 | 95 | 5 | 20 | - | - | - |
| | H12 | 99.5 | 0.5 | 200 | - | - | - |
| | H13 | 99.95 | 0.05 | 2.000 | 99.75 | 0.25 | 400 |
| | H14 | 99.995 | 0.005 | 20,000 | 99.975 | 0.025 | 4.000 |
| ULPA (U) | U15 | 99.9995 | 0.0005 | 200,000 | 99.9975 | 0.0025 | 40,000 |
| | U16 | 99.99995 | 0.00005 | 2.000,000 | 99.99975 | 0.00025 | 400,000 |
| | U17 | 99.999995 | 0.000005 | 20,000,000 | 99.9999 | 0.0001 | 1.000,000 |

HEPA : High Efficiency Particulate Air (filter)
ULPA : Ultra Low Penetration Air (filter)
P.C. : Purification Coefficient

## استانداردهای اتاق تمیز:

### کلاسه بندی جهت تولید محصولات استریل و دارویی:

| | Maximum number of particles per $m^3$ of a size greater than or equal to | | | | Max. nbr: of µorganisms per $m^3$ (active) |
|---|---|---|---|---|---|
| | 0.5 µm | 5 µm | 0.5 µm | 5 µm | |
| | inactive (b) | | active | | |
| A | 3.500 | 0 | 3.500 | 0 | < 1 |
| B | 3.500 | 0 | 350,000 | 2.000 | 10 |
| C | 350,000 | 2.000 | 3.500,000 | 20,000 | 100 |
| D | 3.500,000 | 20,000 | not defined (c) | not defined (c) | 200 |

### مقایسه استانداردهای بین المللی اتاق تمیز:

| Nbr of part 0.5 µm/ $m^3$ (approx.) | US Fed. Std 209 E 1992 | | EN ISO 14644-1 1996 | France AFNOR NF X 44.101 1981 | European Union Pharma industry Guide GMP 1989 | Nbr of part 0.1 µm/ $m^3$ (approx.) |
|---|---|---|---|---|---|---|
| - | - | - | ISO 1 | - | - | 10 |
| 1 | - | - | - | - | - | 35 |
| 4 | - | - | ISO 2 | - | - | 100 |
| 10 | M 1 | - | - | - | - | 350 |
| 35 | M 1.5 | 1 | ISO 3 | - | - | 1,000 |
| 100 | M 2 | - | - | - | - | 3,500 |
| 353 | M 2.5 | 10 | ISO 4 | - | - | 10,000 |
| 1,000 | M 3 | - | - | - | - | 35,000 |
| 3,530 | M 3.5 | 100 | ISO 5 | 4,000 | A and B | 100,000 |
| 10,000 | M 4 | - | - | - | - | 350,000 |
| 35,300 | M 4.5 | 1.000 | ISO 6 | - | - | 1.000,000 |
| 100,000 | M 5 | - | - | - | - | - |
| 353,000 | M 5.5 | 10,000 | ISO 7 | 400,000 | C | - |
| 1.000,000 | M 6 | - | - | - | - | - |
| 3.530,000 | M 6.5 | 100,000 | ISO 8 | 4.000,000 | D | - |
| 10,000,000 | M 7 | - | - | - | - | - |
| 35.000,000 | - | - | ISO 9 | - | - | - |

### سطوح مجاز پارتیکل در کلاس های مختلف اتاق تمیز:

| ISO classification CD 14644-1 (1996) | Maximum permissible concentrations (particles/$m^3$ of air) of particles of a size greater than or equal to the size shown below | | | | | |
|---|---|---|---|---|---|---|
| | 0.1 µm | 0.2 µm | 0.3 µm | 0.5 µm | 1 µm | 5 µm |
| ISO 1 | 10 | 2 | - | - | - | - |
| ISO 2 | 100 | 24 | 10 | 4 | x | - |
| ISO 3 | 1,000 | 237 | 102 | 35 | 8 | - |
| ISO 4 | 10,000 | 2,370 | 1,020 | 352 | 83 | - |
| ISO 5 | 100,000 | 23,700 | 10,200 | 3,520 | 832 | 29 |
| ISO 6 | 1.000,000 | 237,000 | 102,000 | 35,200 | 8,320 | 293 |
| ISO 7 | - | - | - | 352,000 | 83,200 | 2,930 |
| ISO 8 | - | - | - | 3.520,000 | 832,000 | 29,300 |
| ISO 9 | - | - | - | 35.200,000 | 8.320,000 | 293,000 |

C = 10N(0.1/D)2.08 part / m3

### کلاسه بندی ۲۰۹ فدرال آمریکا US Fed Std 209 E(1992):

| Class Name | | Class Limits | | | | |
|---|---|---|---|---|---|---|
| | | 0.1 µm | 0.2 µm | 0.3 µm | 0.5 µm | 5 µm |
| | | Volume Units | Volume Units | Volume Units | Volume Units | Volume Units |
| S1 | English | m3 | m3 | m3 | $m^3$ | $m^3$ |
| M 1 | - | 350 | 75.7 | 30.9 | 10.0 | - |
| M 1.5 | 1 | 1,240 | 265 | 106 | 35.3 | - |
| M 2 | - | 3,500 | 757 | 309 | 100 | - |
| M 2.5 | 10 | 12,400 | 2,650 | 1,060 | 353 | - |
| M 3 | - | 35,000 | 7,570 | 3,090 | 1,000 | - |
| M 3.5 | 100 | - | 26,500 | 10,600 | 3,530 | - |
| M 4 | - | - | 75,700 | 30,900 | 10,000 | - |
| M 4.5 | 1000 | - | - | - | 35,300 | 247 |
| M 5 | - | - | - | - | 100,000 | 618 |
| M 5.5 | 10,000 | - | - | - | 353,000 | 2,470 |
| M 6 | - | - | - | - | 1.000,000 | 6,180 |
| M 6.5 | 100,000 | - | - | - | 3.530,000 | 24,700 |
| M 7 | - | - | - | - | 10,000,000 | 61,800 |

particles / m3 = 10M(0.5/d)2 . 2
particles / ft3 = Nc(0.5/d)2 . 2

## استانداردهای تهویه مطبوع:

| | Regulatory aspect | Recommendations |
|---|---|---|
| | Labour code / Circular of application of decrees 84/1093-1094 dated 7/12/1984 | UNICLIMA Air-conditioning & Health guide (1993) |
| Fresh air | Labour code Art. R235.2.6 Minimum arrestance efficiency 90% (G4 according to EN 779:2002) | Air-conditioning system inlet: 85% opacimetric (F7 according to EN 779:2002) Air-conditioning system outlet: 90% opacimetric (F8 according to EN 779:2002) |
| Recycled air | Labour code Art. R232.5.4 Minimum opacimetric efficiency 50% (F5 according to EN 779:2002) | 85% opacimetric (F7 according to EN 779:2002) |

## استانداردهای تهویه صنعتی:

| Year | Reference | Type of test | Classification |
|---|---|---|---|
| 1968 | ASHRAE | ARRESTANCE EFFICIENCY | |
| 1980 | EUROVENT 4/5 | ARRESTANCE EFFICIENCY | EU1 to EU4 - EU5 to EU9 |
| 1982 | AFNOR NF X 44.012 | ARRESTANCE EFFICIENCY | |
| 1993 | CEN EN 779 | ARRESTANCE EFFICIENCY | G1 to G4 - F5 to F9 |
| 2003 | CEN EN 779:2002 | ARRESTANCE EFFICIENCY | G1 to G4 - F5 to F9 |

### کلاسه بندی استاندارد EN 779:2002:

| EN 779:2002 standard | | Average arrestance Am (%) | Average efficiency Em (%) | EUROVENT 4/5 equivalent |
|---|---|---|---|---|
| Filter group | Filter class | Filter class limits | | Filter class |
| Coarse (G)* | G2 | 65 ≤Am < 80 | - | EU 2 |
| | G3 | 80 ≤Am < 90 | - | EU 3 |
| | G4 | 90 ≤Am | - | EU 4 |
| Fine (F) ** | F5 | - | 40 ≤Em < 60 | EU 5 |
| | F6 | - | 60 ≤Em < 80 | EU 6 |
| | F7 | - | 80 ≤Em < 90 | EU 7 |
| | F8 | - | 90 ≤Em < 95 | EU 8 |
| | F9 | - | 95 ≤Em | EU 9 |

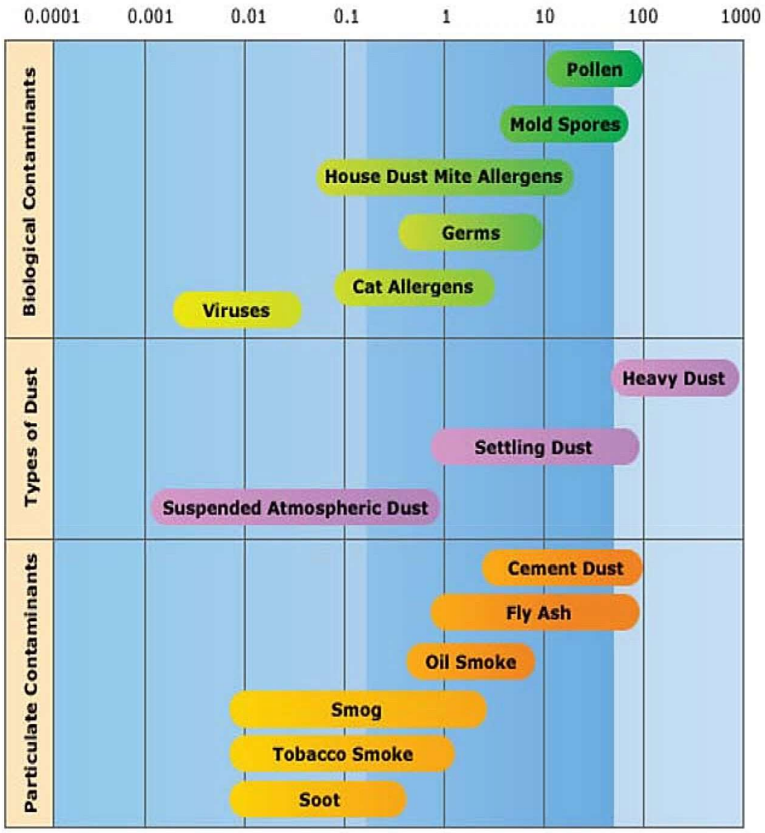
Initial efficiency (Ea) : * Ea < 20% ; ** Ea ≥20%
Final pressure drop: * 250 Pa ; ** 450 Pa

## اصطلاحات و مخفف های متداول در فیلتراسیون:

| | |
|---|---|
| ASHRAE | American Society of Heating, Refrigerating and Air-conditioning Engineers (USA) |
| CEN | European standardisation body |
| CETIAT | Technical centre for air handing and thermal industries (France) |
| EUROVENT | European Committee of Manufacturers of Air Handing Equipment |
| VOC | Volatile Organic Compounds |
| HEPA | High Efficiency Particulate Air (filter) |
| ISO | International Standards Organisation |
| MPPS | Most Penetrating Particle Size |
| Opa | Opacimetric efficiency |
| ULPA | Ultra Low Penetration Air (filter) |
| dP | Pressure drop |
| VTT | Technical research centre (Finland) |

# Air Particles Chart

## جدول قطر ذرات موجود در هوا




| ذرات موجود در هوا | قطر ذرات (بر حسب میکرون) |
|---|---|
| کودهای شیمیایی و مواد آهکی | ۱۰-۱۰۰۰ |
| گرد و خاک | ۱-۲۰۰ |
| بخار روغن | ۰/۰۴-۱ |
| گرد ذغال سنگ | ۱-۱۰۰ |
| دود سیگار | ۰/۰۱-۱ |
| دوده و قیوم فلزی | ۰/۰۰۱-۱۰۰ |
| گرد سیمان | ۳-۱۰۰ |
| ماسه ساحل در یا | ۹۰-۱۰۰۰ |
| ذرات نمک موجود در دریا | ۰/۰۳-۰/۶ |
| کربن | ۳-۵۰۰ |
| دوده | ۰/۰۱-۰/۳ |
| مواد رنگی | ۰/۱-۵ |
| پودر شیر | ۰/۱-۱۰ |
| میکروب ها | ۱۰-۶۰ |
| گرده | ۱۰-۱۰۰ |
| غبار آلرژی زا | ۰/۵-۵ |
| غبار موجود در هوا | ۰/۰۰۱-۳۰ |
| موی انسان | ۳۰-۲۰۰ |
| باکتری | ۰/۴-۳۰ |
| ویروس | ۰/۰۰۳-۰/۰۵ |

### برای انتخاب فیلتر مناسب باید موارد زیر را در نظر گرفت:

۱. سطح فیلتراسیون مورد نیاز
۲. انتخاب کلاس مورد نظر در فیلتراسیون بر اساس نوع کاربری
۳. راندمان جذب ثابت فیلتر در طول عمر آن
۴. ظرفیت ذخیره غبار با حداقل افت فشار: ذراتی که در پشت فیلتر باقی می‌مانند به مرور زمان و با استفاده مداوم از فیلتر بیش‌تر می‌شوند که این مسئله می‌تواند باعث مسدود شدن روزنه‌های فیلتر شود. بنابر این در هنگام طراحی مراحل فیلتراسیون اولا باید از پیش فیلتر های چند مرحله ای استفاده کرد و ثانیا سطح مقطع و عمق فیلترها را طوری در نظر گرفت که فیلترهای اصلی عمر طولانی تری کنند.
۵. به صرفه بودن فیلتر از نظر هزینه با توجه به در نظر گرفتن کارایی و طول عمر فیلتر
۶. محاسبه درست سطح مقطع فیلتر مطابق با دبی هوای مورد نظر
۷. در نظر گرفتن افت فشار هر مرحله فیلتر

### مواردی که باید پس از انتخاب فیلتر به آن توجه داشت:

۱. جریان هوا باید به طور یکنواخت با کل سطح فیلتر برخورد کند
۲. برای استفاده از فیلتر های با راندمان بالا حتما باید از چند مرحله پیش فیلتر استفاده کرد
۳. برای تشخیص زمان تعویض فیلتر بهتر است از گیج اختلاف فشار استفاده کرد
۴. محفظه فیلتر باید طوری طراحی گردد تا دسترسی کافی به فیلتر جهت سرویس و یا تعویض به سهولت وجود داشته باشد

# Quick Selection Guide

راهنمای انتخاب فیلتر:

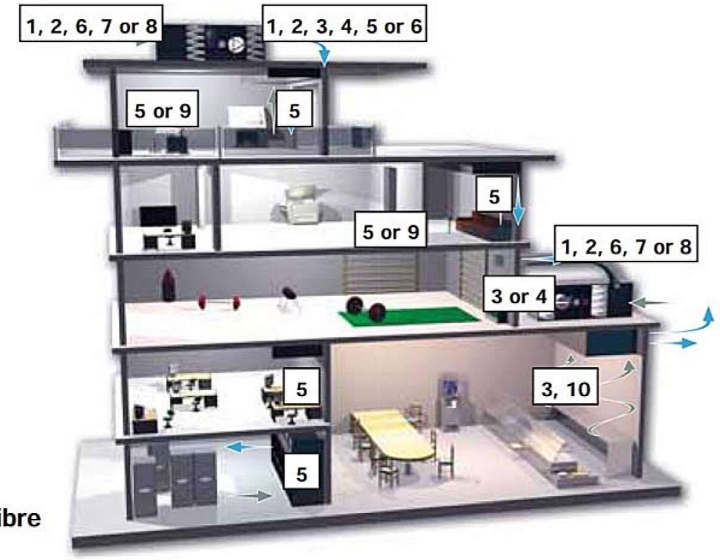
| Filter Grade | | | Air Filter Selection | |
|---|---|---|---|---|
| Primary Filtration | Medium Efficiency | Primary Filters | EN 779:2002 | **Primary Filters**<br>G2 ≥ 65%<br>G3 ≥ 80%<br>G4 ≥ 90%<br>EN 779:2002 Average Arrestance |
| Filtration for Air Conditioning Systems. Pre-Filtration for HEPA/ ULPA Filters | High Efficiency | Fine Filters (EUROVENT CERTIFIED PERFORMANCE) | EN 779:2002 | **Fine Filters**<br>F5 ≥ 40%<br>F6 ≥ 60%<br>F7 ≥ 80%<br>F8 ≥ 90%<br>F9 ≥ 95%<br>EN 779:2002 Average Efficiency |
| Final Filters / Clean Room Filters (Class according to Fed. Std 209 E: 10 000 / 100 to 1000 / 1 to 10 / 100 000) | Very High Efficiency | HEPA<br>ULPA | EN 1822 | DOP 0,3 um (MPPS Most Penetrating Particle Size)<br>H10 ≥ 85%<br>H11 ≥ 95%<br>H12 ≥ 99,5%<br>H13 ≥ 99,95%<br>H14 ≥ 99,995%<br>U15 ≥ 99,9995%<br>U16 ≥ 99,99995%<br>U17 ≥ 99,999995% |
| Molecular | | | | CityFlo, CitySorb, CityCarb, Camcarb |
| Filter Holding Frames and Casings | | | | Filter Housings, Camseal, FC Casings, Type 8 Frames etc. |

## Public Buildings

## کاربرد فیلتراسیون هوا در ساختمان های عمومی:

محیط زیست سالم: امروزه یکی از مهمترین نگرانی ها در سطح بین الملل سلامتی محیط زیست می باشد. جهان صنعتی امروز در قیاس با ۵۰ سال گذشته کاملا متفاوت است و یکی از تفاوت های اصلی آن در آلودگی هواست، هوایی که ما امروزه خصوصا در شهر های بزرگ تنفس می کنیم بسیار سنگین و آلوده تر از هر زمان دیگری در گذشته است و از طرفی روز به روز به درصد این آلودگی ها افزوده می شود. آلودگی های طبیعی از یک طرف و آلودگی های ناشی از صنایع ساخت دست بشر از طرف دیگر باعث افزایش توده های آلودگی در جو شده است. امروزه ده ها هزار نوع ماده مضر شیمیایی با نرخ سالیانه یک میلیارد تن در سال توسط دست بشر تولید می شود که هیچ کدام در طبیعت یافت نمی شود. بنابر این، این مواد شیمیایی و آلودگی های محیطی خواه ناخواه جزء لاینفک زندگی ما هستند.

با توجه به این که افراد بر روی محیط خارج کنترل چندانی ندارند این نگرانی بیشتر بر روی هوای موجود در داخل فضاهای بسته متمرکز شده. انسانها ۸۰٪ عمر خود را در فضا های بسته می گذرانند، بنابراین تمیز بودن هوای فضاهای بسته می تواند در سلامتی عمومی مردم تاثیر مستقیم داشته باشد.




**Bag Filters Glass Fibre**

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**IAQ recommendations**

**1. Bag Filter Glass Fibre**

**2. Compact Filter**

**3. Compact Carbon Filter**

**4. Carbon Bag Filter**

**5. Hepa Panel**

**6. Bag Filter Synthetic Media**

**7. Primary Bag Filter**

**8. Pleated Filter**

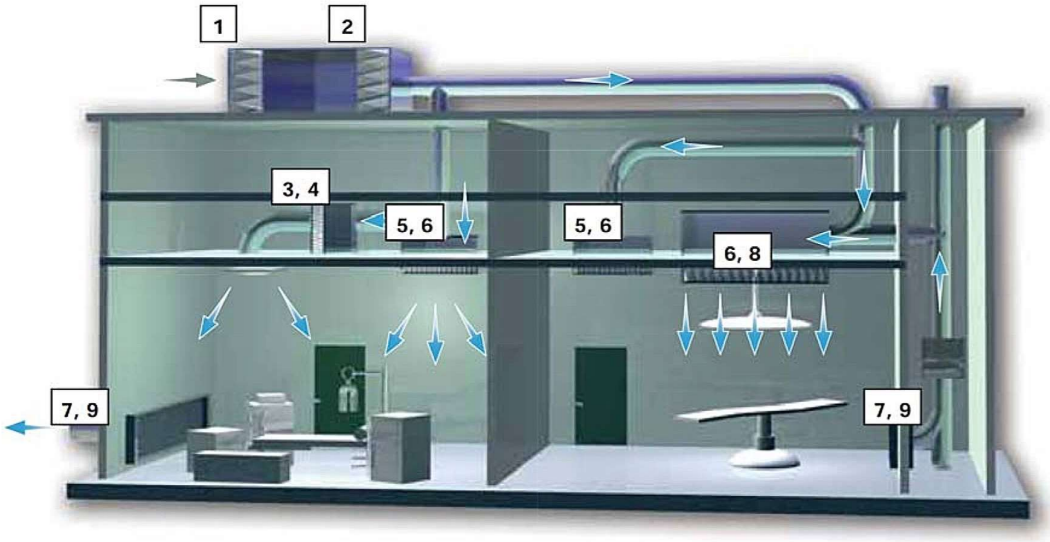
**9. Fan Coil Filter**

**10. Metal Panel**

## Hospitals and Healthcare

## کاربرد فیلتراسیون هوا در بیمارستان ها و مراکز درمانی:

فیلتراسیون هوا در بخش های مختلف بیمارستانها و مراکز درمانی شامل: اتاق های عمل جراحی، CCU، ICU، اتاق های ایزوله و عفونی، اتاق های استراحت بیماران، آزمایشگاه ها و غیره کاملا ضروری است. اتاق عمل جراحی مغز و اعصاب به قدری حساس است که در تمام بیمارستان های دنیا از فیلتراسیون هوا با کلاس اتاق تمیز A و B استفاده می شود چون هر گونه پارتیکل در حین عمل جراحی می تواند بر روی قسمت های مختلف مغز و اعصاب بنشیند و مشکلات جدیی را بعد از عمل برای بیمار ایجاد کند. در محیط های عمومی بیمارستان نیز فیلراسیون هوا می تواند از بسیاری بیماری ها جلوگیری کند. شرکت وی سی صنعت راهبردی قابل استفاده ای را در رابطه با هر کدام از قسمت های بیمارستان یا مراکز درمانی ارائه می دهد تا هر کدام از قسمت ها طبق استاندارد های بیمارستان های پیشرته دنیا از کیفیت هوای مطلوبی بهره مند شوند.




**Hospital and Healthcare recommendations**

**1. Bag Filter Glass Fibre**

**2. Compact Filter**

**3. Hepa Filter H13**

**4. Filter Housing**

**5. FFU, Fan Filter Unit**

**6. Hepa/Ulpa Panel**

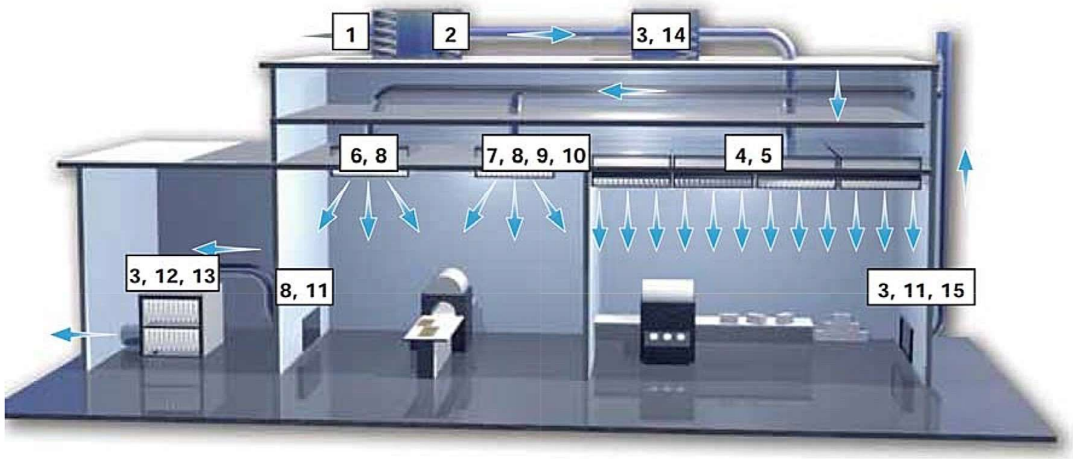
**7. Hepa Panel**

**8. Hospital Diffuser**
details on request

**9. Exhaust Damper**

## Pharmaceutical Industry

کاربرد فیلتراسیون هوا در صنایع دارویی و سرم سازی:




**Pharmaceutical Industry recommendations**

1. Bag Filter Glass Fibre

2. Compact Filter

3. Hepa Filter H13

4. Grid Cam

5. Hepa/Ulpa Panel

6. Hepa Filter

7. Diffuser

8. Hepa Panel

9. Compact FFU

10. Hepa/Ulpa Panel

11. Exhaust Damper

12. Filter Cabin

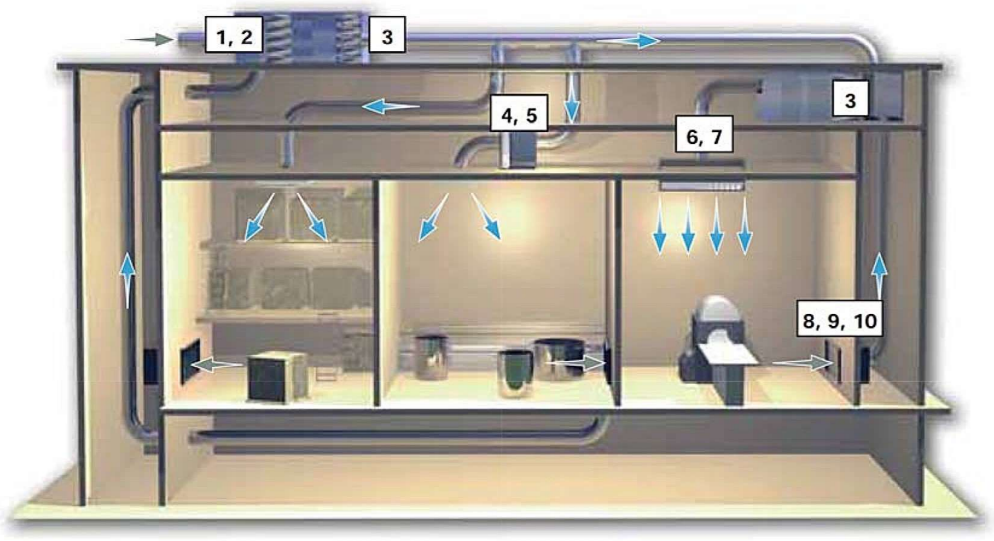
13. Pleated Compact Filter

14. FC - Filter Casing

15. Hepa Panel

## Food Industry

## کاربرد فیلتراسیون هوا در صنایع غذایی:




**Food Industry recommendations**

1. Bag Filter Glass Fibre

2. Synthetic Bag Filter F7

3. Compact Filter

4. Hepa Filter H13

5. FC - Filter Casing

6. FFU, Fan Filter Unit

7. Hepa/Ulpa Panel

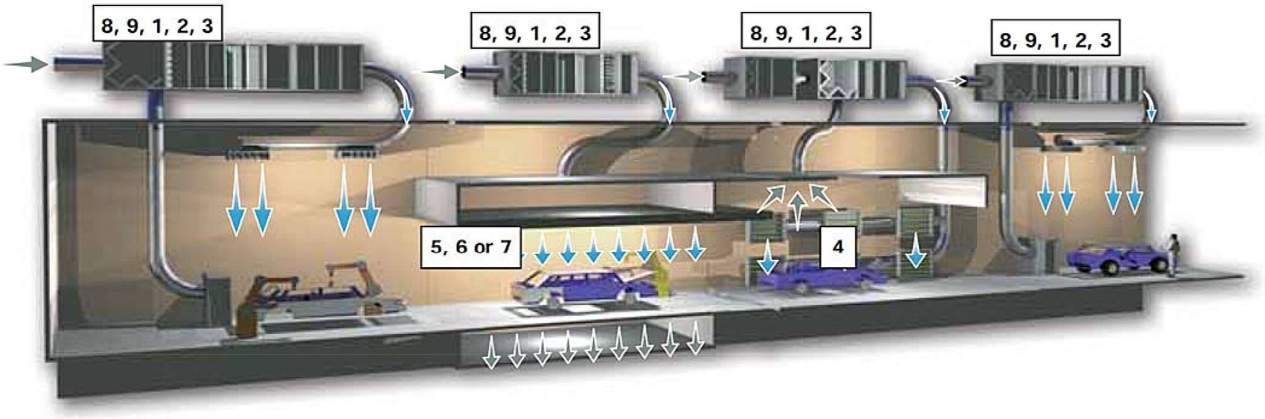
8. Exhaust Damper

9. Pleated Filter

10. Hepa/Ulpa Panel

## Automotive Industry

کاربرد فیلتراسیون هوا در صنایع اتوموبیل سازی:




**Automotive Industry recommendations**

1. Bag Filter Glass Fibre

2. Primary Bag Filter

3. Compact Filter

4. Pleated Compact Filter

5. Media Roll

6. Hepa Panel

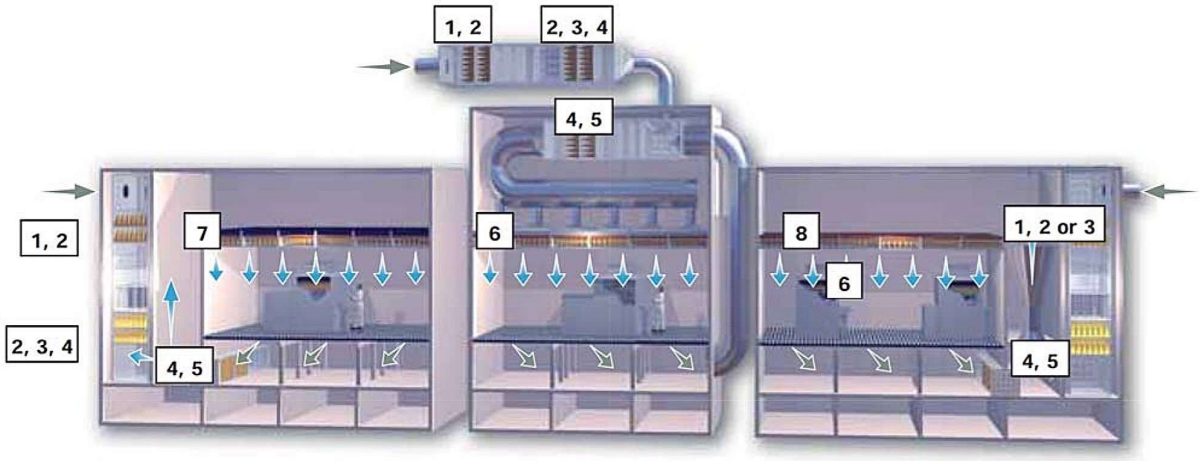
7. Diffuser

8. Pleated Filter

9. Carbon Bag Filter

## Microelectronic Industry

کاربرد فیلتراسیون هوا در صنایع میکروالکترونیک و مخابراتی:




**Microelectronic Industry recommendations**

1. Bag Filter Glass Fibre

2. Compact Filter

3. Carbon Cylinders

4. Hepa Filter H13/H14

5. Pleated Filter

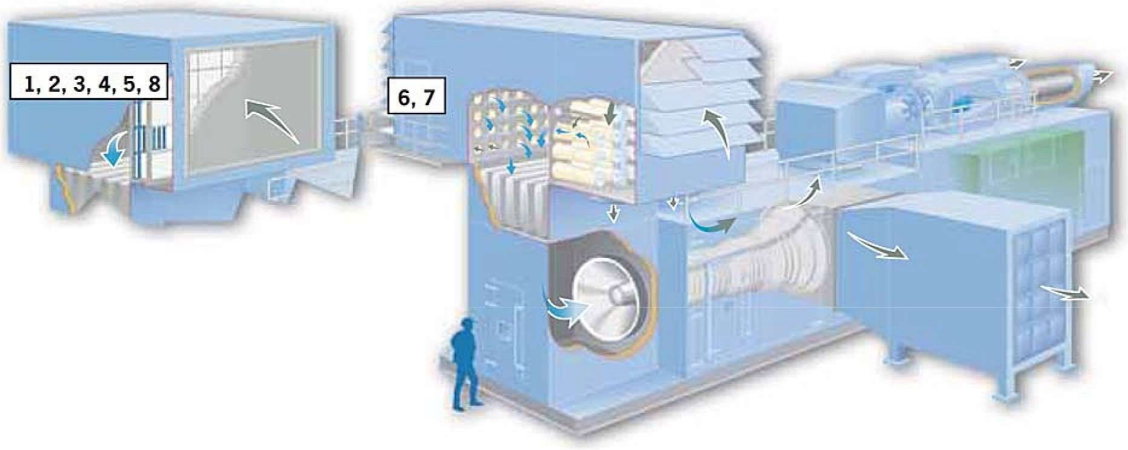
6. Silent Hood

7. Compact Pleated Filter

8. Hepa/Ulpa Panel

## Gas Turbines, Air Filters and Systems

## کاربرد فیلتراسیون هوا در توربین های گازی:




**Gas Turbine, Air Filters and System recommendations**

**1. Pleated Filter**

**2. Bag Filter Glass Fibre**

**3. Primary Bag Filter**

**4. Hepa Panel**

**5. Compact Filter**

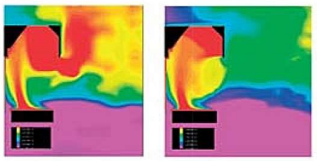
**6. Puls Filter, Gas Turbines**

**7. Bag Filter and Cage**
details on request

**8. Compact Pleated Filter**

## Resturants

کاربرد فیلتراسیون هوا در رستوران ها و تالارها:

**Resturants recommendations**

1. Bag Filter Glass Fibre

2. Compact Filter

3. Carbon Cylinders

4. Hepa Filter H13/H14

5. Hepa/Ulpa Panel

6. Silent Hood

7. Compact Pleated Panel

8. Pleated Filter

## Summary Pre-Filtration, Class G3 to F5

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## Pleated Filters

## فیلتر چین خورده


ENERGY & AIR QUALITY RATING

### Advantages

- Moisture resistant cardboard frame
- Comprehensive range of standard and non standard sizes
- Fully supported media bonded onto a wire support grid
- Bonded into case to eliminate air by-pass
- Robust construction

**Application:** Pre filter for comfort air conditioning applications.
**Type:** Disposable pleated panel filter.
**Case:** Moisture resistant cardboard.
**Media:** Mixture of cotton and synthetic fibre.
**Gravimetric efficiency:** 92%.
**EN 779:2002 efficiency:** G4.
**Eurovent 4/5 efficiency:** EU4.
**Recommended final pressure drop:** 250 Pa.
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Air flow/pressure drop $m^3/hr/Pa$ | Media area $m^2$ | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|
| PP12122NOM | Aeropleat PP | PP12122NOM | 305x305x50 | G4 | 820/70 | 0,26 | 0,20 | 0,01 | G |
| PP12242NOM | Aeropleat PP | PP12242NOM | 305x610x50 | G4 | 1620/70 | 0,53 | 0,35 | 0,01 | G |
| PP16202NOM | Aeropleat PP | PP16202NOM | 406x508x50 | G4 | 1830/70 | 0,63 | 0,40 | 0,01 | G |
| PP16252NOM | Aeropleat PP | PP16252NOM | 406x635x50 | G4 | 2300/70 | 0,79 | 0,50 | 0,02 | G |
| PP20202NOM | Aeropleat PP | PP20202NOM | 508x508x50 | G4 | 2290/70 | 0,75 | 0,50 | 0,02 | G |
| PP20242NOM | Aeropleat PP | PP20242NOM | 508x610x50 | G4 | 2750/70 | 0,91 | 0,55 | 0,02 | G |
| PP20252NOM | Aeropleat PP | PP20252NOM | 508x635x50 | G4 | 2880/70 | 0,95 | 0,60 | 0,02 | G |
| PP24242NOM | Aeropleat PP | PP24242NOM | 610x610x50 | G4 | 3240/70 | 1,10 | 0,65 | 0,02 | G |
| PP12244NOM | Aeropleat PP | PP12244NOM | 305x610x100 | G4 | 1640/55 | 0,85 | 0,65 | 0,02 | G |
| PP16204NOM | Aeropleat PP | PP16204NOM | 406x508x100 | G4 | 1830/55 | 0,96 | 0,75 | 0,02 | G |
| PP16254NOM | Aeropleat PP | PP16254NOM | 406x635x100 | G4 | 2300/55 | 1,20 | 0,90 | 0,04 | G |
| PP20204NOM | Aeropleat PP | PP20204NOM | 508x508x100 | G4 | 2290/55 | 1,15 | 0,90 | 0,04 | G |
| PP20244NOM | Aeropleat PP | PP20244NOM | 508x610x100 | G4 | 2750/55 | 1,38 | 1,05 | 0,04 | G |
| PP20254NOM | Aeropleat PP | PP20254NOM | 508x635x100 | G4 | 2880/55 | 1,44 | 1,10 | 0,04 | G |
| PP24244NOM | Aeropleat PP | PP24244NOM | 610x610x100 | G4 | 3240/55 | 1,70 | 1,20 | 0,04 | G |
| PP12241NOM | Aeropleat PP | PP12241NOM | 305x610x25 | G4 | 1310/75 | 0,28 | 0,25 | 0,01 | G |
| PP16201NOM | Aeropleat PP | PP16201NOM | 406x508x25 | G4 | 1460/75 | 0,31 | 0,25 | 0,01 | G |
| PP16251NOM | Aeropleat PP | PP16251NOM | 406x635x25 | G4 | 1840/75 | 0,39 | 0,30 | 0,01 | G |
| PP20201NOM | Aeropleat PP | PP20201NOM | 508x508x25 | G4 | 1800/75 | 0,38 | 0,30 | 0,01 | G |
| PP20241NOM | Aeropleat PP | PP20241NOM | 508x610x25 | G4 | 2200/75 | 0,46 | 0,35 | 0,01 | G |
| PP20251NOM | Aeropleat PP | PP20251NOM | 508x635x25 | G4 | 2300/75 | 0,48 | 0,40 | 0,01 | G |
| PP24241NOM | Aeropleat PP | PP24241NOM | 610x610x25 | G4 | 2600/75 | 0,55 | 0,45 | 0,01 | G |

Other sizes are available on request - All dimensions are nominal.

## Panel Filters

## پنل فیلتر


## Advantages

- **Robust construction**
- **Comprehensive range of standard and non standard sizes**
- **Moisture resistant cardboard frame**
- **Gradual density media to improve dust holding capacity**

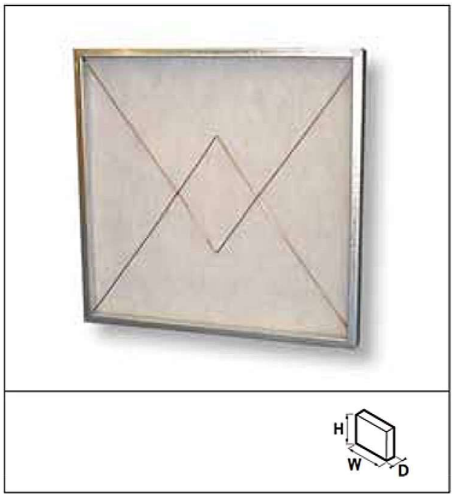
**Application:** Pre filter for comfort air conditioning applications.
**Type:** Disposable panel filter.
**Case:** Moisture resistant cardboard.
**Media:** Glass fibre.
**EN 779:2002 efficiency:** G2, G3.
**Gravimetric efficiency:** 75% - 85%.
**Eurovent 4/5 efficiency:** EU2, EU3.
**Recommended final pressure drop:** 250 Pa.
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN779:2002 | Media area $m^2$ | Air flow / pressure drop $m^3$/hr/Pa | Unit volume $m^3$ | Unit weight kg |
|---|---|---|---|---|---|---|---|---|
| GP12242NOM | Camglass GP | GP12242NOM | 305x610x50 | G3 | 0.19 | 1200/50 | 0.01 | 0.20 |
| GP15152NOM | Camglass GP | GP15152NOM | 381x381x50 | G3 | 0.15 | 990/50 | 0.01 | 0.15 |
| GP15202NOM | Camglass GP | GP15202NOM | 381x508x50 | G3 | 0.19 | 1315/50 | 0.01 | 0.20 |
| GP16202NOM | Camglass GP | GP16202NOM | 406x508x50 | G3 | 0.21 | 1400/50 | 0.01 | 0.20 |
| GP16252NOM | Camglass GP | GP16252NOM | 406x635x50 | G3 | 0.26 | 1750/50 | 0.02 | 0.25 |
| GP18182NOM | Camglass GP | GP18182NOM | 457x457x50 | G3 | 0.21 | 1400/50 | 0.02 | 0.20 |
| GP20202NOM | Camglass GP | GP20202NOM | 508x508x50 | G3 | 0.26 | 1750/50 | 0.02 | 0.25 |
| GP20242NOM | Camglass GP | GP20242NOM | 508x610x50 | G3 | 0.31 | 1460/50 | 0.02 | 0.30 |
| GP20252NOM | Camglass GP | GP20252NOM | 508x635x50 | G3 | 0.32 | 2100/50 | 0.02 | 0.35 |
| GP24242NOM | Camglass GP | GP24242NOM | 610x610x50 | G3 | 0.37 | 2400/50 | 0.02 | 0.40 |
| GP12241NOM | Camglass GP | GP12241NOM | 305x610x25 | G2 | 0.19 | 1200/45 | 0.01 | 0.20 |
| GP15151NOM | Camglass GP | GP15151NOM | 381x381x25 | G2 | 0.15 | 990/45 | 0.01 | 0.15 |
| GP15201NOM | Camglass GP | GP15201NOM | 381x508x25 | G2 | 0.19 | 1315/45 | 0.01 | 0.20 |
| GP16201NOM | Camglass GP | GP16201NOM | 406x508x25 | G2 | 0.21 | 1400/45 | 0.01 | 0.20 |
| GP16251NOM | Camglass GP | GP16251NOM | 406x635x25 | G2 | 0.26 | 1750/45 | 0.01 | 0.25 |
| GP18181NOM | Camglass GP | GP18181NOM | 457x457x25 | G2 | 0.21 | 1400/45 | 0.01 | 0.20 |
| GP20201NOM | Camglass GP | GP20201NOM | 508x508x25 | G2 | 0.26 | 1750/45 | 0.01 | 0.25 |
| GP20241NOM | Camglass GP | GP20241NOM | 508x610x25 | G2 | 0.31 | 1460/45 | 0.01 | 0.30 |
| GP20251NOM | Camglass GP | GP20251NOM | 508x635x25 | G2 | 0.32 | 2100/45 | 0.01 | 0.35 |
| GP24241NOM | Camglass GP | GP24241NOM | 610x610x25 | G2 | 0.37 | 2400/45 | 0.01 | 0.40 |

Other sizes are available on request. All dimensions are nominal.

## Pad Filters

## پد فیلتر




### Advantages

- Robust construction
- Replaceable filter media
- Support mesh downstream
- Retaining wire for media pad
- Suitable for commercial and industrial applications

**Application:** Pre filtration in air conditioning or industrial processing systems.
**Type:** Coarse grade filter.
**Frame:** Standard galvanised mild steel.
**Media:** Synthetic / glass fibre.
**EN 779:2002 efficiency:** G2, G3, G4.
**Arrestance efficiency:** 65% - 90%.
**Eurovent 4/5 efficiency:** EU2, EU3, EU4.
**Temperature:** 80°C maximum in continuous service.
**Humidity:** 100% RH.
**Optional:** Alternative frame materials available on request.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Air flow/pressure drop $m^3$/hr/Pa | Media area $m^2$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| AMZ24242 NOM | PHF-2S | 2" POLY | 597x597x45 | G3 / G4 | 3240/109 | 0,36 | 1,2 | 0,016 |
| AMZ20242 NOM | PHF-2S | 2" POLY | 495x597x45 | G3 / G4 | 2700/109 | 0,30 | 1,0 | 0,013 |
| AMZ12242 NOM | PHF-2S | 2" POLY | 292x597x45 | G3 / G4 | 1620/109 | 0,18 | 0,6 | 0,007 |
| AMZ24241 NOM | PHF-1S | T15-350 | 597x597x25 | G3 / G4 | 1924/25 | 0,36 | 1,0 | 0,007 |
| AMZ20241 NOM | PHF-1S | T15-350 | 495x597x25 | G3 / G4 | 1595/25 | 0,30 | 0,9 | 0,005 |
| AMZ12241 NOM | PHF-1S | T15-350 | 292x597x25 | G3 / G4 | 941/25 | 0,18 | 0,6 | 0,003 |
| AMZ24242 NOM | PHF-2G | 2" GLASS | 597x597x45 | G3 | 3240/60 | 0,36 | 1,2 | 0,016 |
| AMZ20242 NOM | PHF-2G | 2" GLASS | 495x597x45 | G3 | 2700/60 | 0,30 | 1,0 | 0,013 |
| AMZ12242 NOM | PHF-2G | 2" GLASS | 292x597x45 | G3 | 1620/60 | 0,18 | 0,6 | 0,007 |
| AMZ24241 NOM | PHF-1G | 1" GLASS | 597x597x25 | G2 | 3240/50 | 0,36 | 1,0 | 0,007 |
| AMZ20241 NOM | PHF-1G | 1" GLASS | 495x597x25 | G2 | 2700/50 | 0,30 | 0,9 | 0,005 |
| AMZ12241 NOM | PHF-1G | 1" GLASS | 292x597x25 | G2 | 1620/50 | 0,18 | 0,6 | 0,003 |

Other sizes available on request - Alternative constructions also available.

## Metal Panels

## فیلتر فلزی


### Advantages

- Totally washable
- Low pressure drop
- Support mesh on both sides
- High mechanical strength
- Suitable for high air flow conditions

**Application:** Kitchen extract systems, Pre filtration within air conditioning systems.
**Type:** Grease elimination or coarse dust removal.
**Frame:** Galvanised Mild Steel.
**Media:** Knitted or multilayer pad.
**EN 779:2002 efficiency:** G2, G3.
**Arrestance efficiency:** 65% - 80%.
**Eurovent 4/5 efficiency:** EU2, EU3.
**Temperature:** 100°C maximum in continuous service.
**Humidity:** 100% RH.
**Accessories:** Handles and drain holes.
**Optional:** Alternate materials available on request e.g. Stainless Steel.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions WxHxD (mm) | Filter classification EN 779:2002 | Air flow/pressure drop ($m^3$/hr/Pa) | Media area ($m^2$) | Unit weight (kg) | Unit volume ($m^3$) |
|---|---|---|---|---|---|---|---|---|
| GFP12122NOM | EcoFlo | GFP12122NOM | 292x292x45 | G2 | 810/30 | 0,09 | 1,2 | 0,004 |
| GFP12242NOM | EcoFlo | GFP12242NOM | 292x596x45 | G2 | 1620/30 | 0,18 | 2,3 | 0,005 |
| GFP20202NOM | EcoFlo | GFP20202NOM | 495x495x45 | G2 | 2250/30 | 0,25 | 3,4 | 0,011 |
| GFP20242NOM | EcoFlo | GFP20242NOM | 495x596x45 | G2 | 2700/30 | 0,30 | 4,0 | 0,013 |
| GFP24242NOM | EcoFlo | GFP24242NOM | 596x596x45 | G2 | 3240/30 | 0,36 | 4,5 | 0,016 |
| MMP12122NOM | EcoFlo | MMP12122NOM | 292x292x45 | G3 | 810/40 | 0,09 | 1,2 | 0,004 |
| MMP12242NOM | EcoFlo | MMP12242NOM | 292x596x45 | G3 | 1620/40 | 0,18 | 2,3 | 0,005 |
| MMP20202NOM | EcoFlo | MMP20202NOM | 495x495x45 | G3 | 2250/40 | 0,25 | 3,4 | 0,011 |
| MMP20242NOM | EcoFlo | MMP20242NOM | 495x596x45 | G3 | 2700/40 | 0,30 | 4,0 | 0,013 |
| MMP24242NOM | EcoFlo | MMP24242NOM | 596x596x45 | G3 | 3240/40 | 0,36 | 4,5 | 0,016 |

Other dimensions available on request - Alternative constructions also available.

Media Rolls

# Cam Glass Media

مدیا فیلتر رولی

## Advantages

- Continous filament glass fibres, resin bonded
- Smooth airflow through booths
- Full depth particle collection
- Economical

**Application:** For use as a pre filter in air conditioning, and spraybooth extract systems.
**Media:** Glass Fibre.
**EN 779:2002 efficiency:** G2 / G3.
**Arrestance efficiency:** 75% - 85%.
**Eurovent 4/5 efficiency:** EU2 / EU3.
**Temperature:** 120°C maximum in continuous service.
**Humidity:** 100% RH.

| Reference | Type | Model | Dimensions (meters) | Filter classification EN 779:2002 | Media area $m^2$ | Velocity/pressure drop m/s/Pa | Dust holding g/$m^2$ | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| PR5071020 | 50 mm | PR 50 | 0.710 x 20 | G2 | 14.20 | 1.8 / 30 | 600 | 0.71 |
| PR5071040 | 50 mm | PR 50 | 0.710 x 40 | G2 | 28.40 | 1.8 / 30 | 600 | 1.42 |
| PR50120 | 50 mm | PR 50 | 1.0 x 20 | G2 | 20.00 | 1.8 / 30 | 600 | 1.00 |
| PR50140 | 50 mm | PR 50 | 1.0 x 40 | G2 | 40.00 | 1.8 / 30 | 600 | 2.00 |
| PR50150020 | 50 mm | PR 50 | 1.5 x 20 | G2 | 30.00 | 1.8 / 30 | 600 | 1.5 |
| PR50150040 | 50 mm | PR 50 | 1.5 x 40 | G2 | 60.00 | 1.8 / 30 | 600 | 3.00 |
| PR50182920 | 50 mm | PR 50 | 1.829 x 20 | G2 | 36.58 | 1.8 / 30 | 600 | 1.829 |
| PR50220 | 50 mm | PR 50 | 2.0 x 20 | G2 | 40.00 | 1.8 / 30 | 600 | 2.00 |
| PR50230 | 50 mm | PR 50 | 2.0 x 30 | G2 | 60.00 | 1.8 / 30 | 600 | 3.00 |
| PR7571040 | 75 mm | PR 75 | 0.710 x 40 | G2 | 28.40 | 1.8 / 35 | 750 | 2.13 |
| PR10076220 | 100 mm | PR 100 | 0.762 x 20 | G2 | 15.24 | 1.8 / 40 | 900 | 1.524 |
| PR100120 | 100 mm | PR 100 | 1.0 x 20 | G2 | 20.00 | 1.8 / 40 | 900 | 2.00 |
| PR100140 | 100 mm | PR 100 | 1.0 x 40 | G2 | 40.00 | 1.8 / 40 | 900 | 4.00 |
| PR100152420 | 100 mm | PR 100 | 1.524 x 20 | G2 | 30.48 | 1.8 / 40 | 900 | 3.048 |
| PR100152440 | 100 mm | PR 100 | 1.524 x 40 | G2 | 60.96 | 1.8 / 40 | 900 | 6.096 |
| PR100182920 | 100 mm | PR 100 | 1.829 x 20 | G2 | 36.58 | 1.8 / 40 | 900 | 3.658 |
| GR5061040 | 50 mm | GR50 | 0.610x40 | G3 | 24.4 | 1.8 / 35 | 700 | 1.25 |

Other sizes and cut pads available on request.

## Fan Coil Filters

## فیلتر فن کوئل


### Advantages

- Available in a wide variety of sizes
- Economical
- Low pressure drop
- Light and robust

**Application:** Prevention of dust and dirt build up on heating/cooling coils within ventilation systems.
**Type:** Coarse dust removal.
**Frame:** Metal with downstream support.
**Media:** Synthetic.
**EN 779:2002 efficiency:** G2.
**Arrestance efficiency:** 65%.
**Eurovent 4/5 efficiency:** EU2.
**Temperature:** 70°C maximum in continuous service.
**Humidity:** 100% RH.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 |
|---|---|---|---|---|
| CircaSyn (size mm) | T15-150 pad | CircaSyn | as required | G2 |
| CircaFoam (size mm) | 20PPI foam | CircaFoam | as required | G2 |

Alternative filter materials also available - Other dimensions available on request - Alternative constructions also available.

## Primary Bag Filters

## فیلتر کیسه ای اولیه


ENERGY & AIR QUALITY RATING

### Advantages

- Rigid self supporting pockets
- Welded pocket construction
- Robust metal header frame
- High mechanical strength

**Application:** Comfort air conditioning applications, pre filter applications.
**Type:** Multi pocket bag filter.
**Case:** Galvanised steel.
**Media:** Synthetic fibres.
**EN 779:2002 efficiency:** G3, G4, F5.
**Eurovent 4/5 efficiency:** EU3, EU4, EU5
**Recommended final pressure drop:** 250 Pa.
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Number of pockets | Media area m2 | Air flow / pressure drop m3/hr/ Pa | Unit volume m3 | Unit weight kg | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|---|
| 2415630P25* | Hi-Cap 30P | 24/15/6/30P/25* | 592x592x380 | G3 | 6 | 2.7 | 3400/35 | 0.05 | 2.2 | F |
| 2015530P25* | Hi-Cap 30P | 20/15/5/30P/25* | 490x592x380 | G3 | 5 | 2.3 | 2800/35 | 0.05 | 2.0 | F |
| 1215330P25* | Hi-Cap 30P | 12/15/3/30P/25* | 287x592x380 | G3 | 3 | 1.4 | 1700/35 | 0.03 | 1.4 | F |
| 2420630P25* | Hi-Cap 30P | 24/20/6/30P/25* | 592x592x500 | G3 | 6 | 3.6 | 3400/30 | 0.05 | 2.7 | F |
| 2020530P25* | Hi-Cap 30P | 20/20/5/30P/25* | 490x592x500 | G3 | 5 | 3.0 | 2800/30 | 0.05 | 2.5 | F |
| 1220330P25* | Hi-Cap 30P | 12/20/3/30P/25* | 287x592x500 | G3 | 3 | 1.8 | 1700/30 | 0.03 | 1.6 | F |
| 2415640P25* | Hi-Cap 40P | 24/15/6/40P/25* | 592x592x380 | G4 | 6 | 2.7 | 3400/40 | 0.05 | 2.2 | F |
| 2015540P25* | Hi-Cap 40P | 20/15/5/40P/25* | 490x592x380 | G4 | 5 | 2.3 | 2800/40 | 0.05 | 2.0 | F |
| 1215340P25* | Hi-Cap 40P | 12/15/3/40P/25* | 287x592x380 | G4 | 3 | 1.4 | 1700/40 | 0.03 | 1.4 | F |
| 2420640P25* | Hi-Cap 40P | 24/20/6/40P/25* | 592x592x500 | G4 | 6 | 3.6 | 3400/35 | 0.05 | 2.7 | F |
| 2020540P25* | Hi-Cap 40P | 20/20/5/40P/25* | 490x592x500 | G4 | 5 | 3.0 | 2800/35 | 0.05 | 2.5 | F |
| 1220340P25* | Hi-Cap 40P | 12/20/3/40P/25* | 287x592x500 | G4 | 3 | 1.8 | 1700/35 | 0.03 | 1.6 | F |
| 2415650P25* | Hi-Cap 50P | 24/15/6/50P/25* | 592x592x380 | F5 | 6 | 2.7 | 3400/80 | 0.05 | 2.4 | F |
| 2015550P25* | Hi-Cap 50P | 20/15/5/50P/25* | 490x592x380 | F5 | 5 | 2.3 | 2800/80 | 0.05 | 2.2 | F |
| 1215350P25* | Hi-Cap 50P | 12/15/3/50P/25* | 287x592x380 | F5 | 3 | 1.4 | 1700/80 | 0.03 | 1.6 | F |
| 2420650P25* | Hi-Cap 50P | 24/20/6/50P/25* | 592x592x500 | F5 | 6 | 3.6 | 3400/75 | 0.05 | 3.0 | F |
| 2020550P25* | Hi-Cap 50P | 20/20/5/50P/25* | 490x592x500 | F5 | 5 | 3.0 | 2800/75 | 0.05 | 2.8 | F |
| 1220350P25* | Hi-Cap 50P | 12/20/3/50P/25* | 287x592x500 | F5 | 3 | 1.8 | 1700/75 | 0.03 | 1.8 | F |

Other sizes are available on request - 25* denotes a 25 mm header frame, if a 20 mm header frame is required please specify 20*.

## Summary Bag and Compact Filters, Class F5 to F9

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## Bag Filters Glass Fibre

## فیلتر کیسه ای فایبر گلاس


ENERGY & AIR QUALITY RATING

### Advantages

- Large surface area
- Rubust construction
- Controlled media spacing (CMS)
- Comprehensive range of standard sizes
- Low pressure drop
- Certified performance

**Application:** Air conditioning applications.
**Type:** Extended surface multi pocket bag filter.
**Case:** Galvanised steel.
**Media:** Glass Fibre.
**EN 779:2002 efficiency:** F6 (55-65%), F7 (80-85%), F8/9 (90-95%).
**Eurovent 4/5 efficiency:** EU6, EU7, EU8.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 250 Pa).
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) | Filter classification EN 779:2002 | Number of pockets | Media area $m^2$ | Air flow/pressure drop $m^3$/hr/Pa | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|---|
| 535027A1 | Hi-Flo | P6 | 592x592x534 | F6 | 10 | 6.5 | 3400/70 | 2.9 | 0.05 | B |
| 535005A1 | Hi-Flo | Q6 | 490x592x534 | F6 | 8 | 5.2 | 2700/70 | 2.4 | 0.05 | B |
| 535028A1 | Hi-Flo | R6 | 287x592x534 | F6 | 5 | 3.2 | 2100/95 | 1.6 | 0.03 | B |
| 535027A2 | Hi-Flo | P7 | 592x592x534 | F7 | 10 | 6.5 | 3400/105 | 2.6 | 0.05 | B |
| 535005A2 | Hi-Flo | Q7 | 490x592x534 | F7 | 8 | 5.2 | 2700/105 | 2.4 | 0.05 | B |
| 535028A2 | Hi-Flo | R7 | 287x592x534 | F7 | 5 | 3.2 | 1700/105 | 1.6 | 0.03 | B |
| 535027A3 | Hi-Flo | P9 | 592x592x534 | F8 | 10 | 6.5 | 3400/150 | 2.4 | 0.05 | B |
| 535005A3 | Hi-Flo | Q9 | 490x592x534 | F8 | 8 | 5.2 | 2700/150 | 2.4 | 0.05 | B |
| 535028A3 | Hi-Flo | R9 | 287x592x534 | F8 | 5 | 3.2 | 1700/150 | 1.6 | 0.03 | B |
| 536004A1 | Hi-Flo | PL6 | 592x892x534 | F6 | 10 | 9.7 | 5100/70 | 4.4 | 0.10 | B |
| 536005A1 | Hi-Flo | QL6 | 490x892x534 | F6 | 8 | 7.8 | 4200/70 | 4.0 | 0.11 | B |
| 536006A1 | Hi-Flo | RL6 | 287x892x534 | F6 | 5 | 4.8 | 2550/70 | 2.6 | 0.05 | B |
| 536004A2 | Hi-Flo | PL7 | 592x892x534 | F7 | 10 | 9.7 | 5100/110 | 3.8 | 0.11 | B |
| 536005A2 | Hi-Flo | QL7 | 490x892x534 | F7 | 8 | 7.8 | 4200/110 | 3.6 | 0.11 | B |
| 536006A2 | Hi-Flo | RL7 | 287x892x534 | F7 | 5 | 4.8 | 2550/110 | 2.2 | 0.05 | B |
| 536004A3 | Hi-Flo | PL9 | 592x892x534 | F8/9 | 10 | 9.7 | 5100/153 | 4.1 | 0.11 | B |
| 536005A3 | Hi-Flo | QL9 | 490x892x534 | F8/9 | 8 | 7.8 | 4200/154 | 3.7 | 0.11 | B |
| 536006A3 | Hi-Flo | RL9 | 287x892x534 | F8/9 | 5 | 4.8 | 2550/151 | 2.5 | 0.05 | B |

Other sizes are available on request - *Supplied with a 25mm header as standard. 20mm header available on request.

## Bag Filters Glass Fibre

## فیلتر کیسه ای فایبر گلاس


ENERGY & AIR QUALITY RATING

### Advantages

- Large surface area
- Comprehensive range of standard sizes
- Rubust construction
- Controlled media spacing (CMS)
- High dust holding capacity
- Certified performance

**Application:** Comfort air conditioning applications, pre filter applications.
**Type:** Multi pocket bag filter.
**Case:** Galvanised steel.
**Media:** Glass Fibre.
**EN 779:2002 efficiency:** F5 (40-50%), F6 (55-65%), F7 (80-85%), F8 (90-95%).
**Eurovent 4/5 efficiency:** EU5, EU6, EU7, EU8.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 250 Pa).
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) | Filter classification EN 779:2002 | Number of pockets | Media area $m^2$ | Air flow/pressure drop $m^3$/hr/Pa | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|---|
| *35606060U | Hi-Flo | *3U-4050/6060/60 | 592x592x600 | F5 | 8 | 6.0 | 3400/50 | 2.8 | 0.05 | C |
| *35606038U | Hi-Flo | *3U-4050/6060/38 | 592x592x380 | F5 | 8 | 3.8 | 2700/75 | 2.3 | 0.05 | C |
| *35506060U | Hi-Flo | *3U-4050/5060/60 | 490x592x600 | F5 | 6 | 4.6 | 2800/55 | 2.4 | 0.05 | C |
| *35506038U | Hi-Flo | *3U-4050/5060/38 | 490x592x380 | F5 | 6 | 2.9 | 2250/80 | 1.9 | 0.05 | C |
| *35306060U | Hi-Flo | *3U-4050/3060/60 | 287x592x600 | F5 | 4 | 3.0 | 1700/50 | 1.6 | 0.03 | C |
| *35306038U | Hi-Flo | *3U-4050/3060/38 | 287x592x380 | F5 | 4 | 1.9 | 1350/75 | 1.4 | 0.03 | C |
| *36606060U | Hi-Flo | *3U-65/6060/60 | 592x592x600 | F6 | 8 | 6.0 | 3400/80 | 2.8 | 0.05 | B |
| *36606038U | Hi-Flo | *3U-65/6060/38 | 592x592x380 | F6 | 8 | 3.8 | 2700/95 | 2.3 | 0.05 | B |
| *36506060U | Hi-Flo | *3U-65/5060/60 | 490x592x600 | F6 | 6 | 4.6 | 2600/80 | 2.4 | 0.05 | B |
| *36506038U | Hi-Flo | *3U-65/5060/38 | 490x592x380 | F6 | 6 | 2.9 | 2250/100 | 1.9 | 0.05 | B |
| *36306060U | Hi-Flo | *3U-65/3060/60 | 287x592x600 | F6 | 4 | 3.0 | 1700/80 | 1.6 | 0.03 | B |
| *36306038U | Hi-Flo | *3U-65/3060/38 | 287x592x380 | F6 | 4 | 1.9 | 1350/95 | 1.4 | 0.03 | B |
| *37606060U | Hi-Flo | *3U-85/6060/60 | 592x592x600 | F7 | 8 | 6.0 | 3400/125 | 2.8 | 0.05 | B |
| *37606038U | Hi-Flo | *3U-85/6060/38 | 592x592x380 | F7 | 8 | 3.8 | 2700/150 | 2.3 | 0.05 | B |
| *37506060U | Hi-Flo | *3U-85/5060/60 | 490x592x600 | F7 | 6 | 4.6 | 2600/125 | 2.4 | 0.05 | B |
| *37506038U | Hi-Flo | *3U-85/5060/38 | 490x592x380 | F7 | 6 | 2.9 | 2250/165 | 1.9 | 0.05 | B |
| *37306060U | Hi-Flo | *3U-85/3060/60 | 287x592x600 | F7 | 4 | 3.0 | 1700/125 | 1.6 | 0.03 | B |
| *37306038U | Hi-Flo | *3U-85/3060/38 | 287x592x380 | F7 | 4 | 1.9 | 1350/150 | 1.4 | 0.03 | B |
| *38606060U | Hi-Flo | *3U-95/6060/60 | 592x592x600 | F8 | 8 | 6.0 | 3400/185 | 2.8 | 0.05 | B |
| *38606038U | Hi-Flo | *3U-95/6060/38 | 592x592x380 | F8 | 8 | 3.8 | 2700/195 | 2.3 | 0.05 | B |
| *38506060U | Hi-Flo | *3U-95/5060/60 | 490x592x600 | F8 | 6 | 4.6 | 2600/185 | 2.4 | 0.05 | B |
| *38506038U | Hi-Flo | *3U-95/5060/38 | 490x592x380 | F8 | 6 | 2.9 | 2250/200 | 1.9 | 0.05 | B |
| *38306060U | Hi-Flo | *3U-95/3060/60 | 287x592x600 | F8 | 4 | 3.0 | 1700/185 | 1.6 | 0.03 | B |
| *38306038U | Hi-Flo | *3U-95/3060/38 | 287x592x380 | F8 | 4 | 1.9 | 1350/195 | 1.4 | 0.03 | B |

Other sizes are available on request - *3 denotes a 25mm header frame, if a 20mm header frame is required please specify *2.

## Bag Filters Glass Fibre

## فیلتر کیسه ای فایبر گلاس


ENERGY & AIR QUALITY RATING

### Advantages

- High dust holding capacity
- Controlled media spacing (CMS)
- Robust construction
- Comprehensive range of standard sizes

**Application:** Comfort air conditioning applications, pre filter applications.
**Type:** Multi pocket bag filter.
**Case:** Galvanised steel.
**Media:** Glass Fibre.
**EN 779:2002 efficiency:** F5 (40-50%), F6 (55-65%), F7 (80-85%), F8 (90-95%).
**Eurovent 4/5 efficiency:** EU5, EU6, EU7, EU8.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 250 Pa).
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) | Filter classification EN 779:2002 | Number of pockets | Media surface $m^2$ | Air flow/pressure drop $m^3$/hr/Pa | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|---|
| *35606060A | Hi-Flo | *3A-4050/6060/60 | 592x592x600 | F5 | 6 | 4.7 | 3400/70 | 2.4 | 0.05 | D |
| *35606038A | Hi-Flo | *3A-4050/6060/38 | 592x592x380 | F5 | 6 | 2.9 | 2700/70 | 2.0 | 0.05 | D |
| *35506060A | Hi-Flo | *3A-4050/5060/60 | 490x592x600 | F5 | 5 | 3.9 | 2800/70 | 2.1 | 0.05 | D |
| *35506038A | Hi-Flo | *3A-4050/5060/38 | 490x592x380 | F5 | 5 | 2.4 | 2250/75 | 1.8 | 0.05 | D |
| *35306060A | Hi-Flo | *3A-4050/3060/60 | 287x592x600 | F5 | 3 | 2.3 | 1700/70 | 1.5 | 0.03 | D |
| *35306038A | Hi-Flo | *3A-4050/3060/38 | 287x592x380 | F5 | 3 | 1.5 | 1350/70 | 1.3 | 0.03 | D |
| *36606060A | Hi-Flo | *3A-65/6060/60 | 592x592x600 | F6 | 6 | 4.7 | 3400/70 | 2.4 | 0.05 | B |
| *36606038A | Hi-Flo | *3A-65/6060/38 | 592x592x380 | F6 | 6 | 2.9 | 2700/95 | 2.0 | 0.05 | B |
| *36506060A | Hi-Flo | *3A-65/5060/60 | 490x592x600 | F6 | 5 | 3.9 | 2800/75 | 2.1 | 0.05 | B |
| *36506038A | Hi-Flo | *3A-65/5060/38 | 490x592x380 | F6 | 5 | 2.4 | 2250/100 | 1.8 | 0.05 | B |
| *36306060A | Hi-Flo | *3A-65/3060/60 | 287x592x600 | F6 | 3 | 2.3 | 1700/70 | 1.5 | 0.03 | B |
| *36306038A | Hi-Flo | *3A-65/3060/38 | 287x592x380 | F6 | 3 | 1.5 | 1350/95 | 1.3 | 0.03 | B |
| *37606060A | Hi-Flo | *3A-85/6060/60 | 592x592x600 | F7 | 6 | 4.7 | 2700/105 | 2.4 | 0.05 | C |
| *37606038A | Hi-Flo | *3A-85/6060/38 | 592x592x380 | F7 | 6 | 2.9 | 2150/135 | 2.0 | 0.05 | C |
| *37506060A | Hi-Flo | *3A-85/5060/60 | 490x592x600 | F7 | 5 | 3.9 | 2250/100 | 2.1 | 0.05 | C |
| *37506038A | Hi-Flo | *3A-85/5060/38 | 490x592x380 | F7 | 5 | 2.4 | 1800/130 | 1.8 | 0.05 | C |
| *37306060A | Hi-Flo | *3A-85/3060/60 | 287x592x600 | F7 | 3 | 2.3 | 1350/115 | 1.5 | 0.03 | C |
| *37306038A | Hi-Flo | *3A-85/3060/38 | 287x592x380 | F7 | 3 | 1.5 | 1100/145 | 1.3 | 0.03 | C |
| *38606060A | Hi-Flo | *3A-95/6060/60 | 592x592x600 | F8 | 6 | 4.7 | 2700/175 | 2.4 | 0.05 | C |
| *38606038A | Hi-Flo | *3A-95/6060/38 | 592x592x380 | F8 | 6 | 2.9 | 2150/220 | 2.0 | 0.05 | C |
| *38506060A | Hi-Flo | *3A-95/5060/60 | 490x592x600 | F8 | 5 | 3.9 | 2250/180 | 2.1 | 0.05 | C |
| *38506038A | Hi-Flo | *3A-95/5060/38 | 490x592x380 | F8 | 5 | 2.4 | 1800/225 | 1.8 | 0.05 | C |
| *38306060A | Hi-Flo | *3A-95/3060/60 | 287x592x600 | F8 | 3 | 2.3 | 1350/170 | 1.5 | 0.03 | C |
| *38306038A | Hi-Flo | *3A-95/3060/38 | 287x592x380 | F8 | 3 | 1.5 | 1100/215 | 1.3 | 0.03 | C |

Other sizes are available on request - *3 denotes a 25mm header frame, if a 20mm header frame is required please specify *2.

## فیلتر کیسه ای ترکیبی


ENERGY & AIR QUALITY RATING

## Advantages

- Multi-pocket bag filter
- Comprehensive range of standard sizes
- Robust metal header frame
- Unique pocket design
- Large surface area
- Controlled media spacing (CMS)

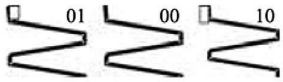
**Application:** Air conditioning applications.
**Type:** Extended surface multi pocket bag filter.
**Case:** Galvanised steel.
**Media:** Synthetic Fibres.
**EN 779:2002 efficiency:** F6 (55-65%), F7 (80-85%), F8 (90-95%).
**Eurovent 4/5 efficiency:** EU6, EU7, EU8.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 250 Pa).
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L, and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Air flow/pressure drop $m^3/hr/Pa$ | Number of pockets | Media area $m^2$ | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|---|
| *35606060UW | S-Flo-W | *UF5 | 592x592x600 | F5 | 3400/46 | 8 | 6 | 2,8 | 0,05 | F |
| *35606038UW | S-Flo-W | *UF5/38 | 592x592x380 | F5 | 2550/33 | 8 | 3,8 | 2,3 | 0,05 | F |
| *35506060UW | S-Flo-W | *UG5 | 490x592x600 | F5 | 2800/46 | 6 | 4,6 | 2,4 | 0,05 | F |
| *35506038UW | S-Flo-W | *UG5/38 | 490x592x380 | F5 | 2100/33 | 6 | 2,9 | 1,9 | 0,05 | F |
| *35306060UW | S-Flo-W | *UH5 | 287x592x600 | F5 | 1700/46 | 4 | 3 | 1,6 | 0,03 | F |
| *35306038UW | S-Flo-W | *UH5/38 | 287x592x380 | F5 | 1275/33 | 4 | 1,9 | 1,4 | 0,03 | F |
| *36606060UW | S-Flo-W | *UF6 | 592x592x600 | F6 | 3400/50 | 8 | 6 | 2,8 | 0,05 | E |
| *36606038UW | S-Flo-W | *UF6/38 | 592x592x380 | F6 | 2550/37 | 8 | 3,8 | 2,3 | 0,05 | E |
| *36506060UW | S-Flo-W | *UG6 | 490x592x600 | F6 | 2800/50 | 6 | 4,6 | 2,4 | 0,05 | E |
| *36506038UW | S-Flo-W | *UG6/38 | 490x592x380 | F6 | 2100/37 | 6 | 2,9 | 1,9 | 0,05 | E |
| *36306060UW | S-Flo-W | *UH6 | 287x592x600 | F6 | 1700/50 | 4 | 3 | 1,6 | 0,03 | E |
| *36306038UW | S-Flo-W | *UH6/38 | 287x592x380 | F6 | 1275/37 | 4 | 1,9 | 1,4 | 0,03 | E |
| *37606060UW | S-Flo-W | *UF7 | 592x592x600 | F7 | 3400/60 | 8 | 6 | 2,8 | 0,05 | E |
| *37606038UW | S-Flo-W | *UF7/38 | 592x592x380 | F7 | 2550/61 | 8 | 3,8 | 2,3 | 0,05 | E |
| *37506060UW | S-Flo-W | *UG7 | 490x592x600 | F7 | 2800/60 | 6 | 4,6 | 2,4 | 0,05 | E |
| *37506038UW | S-Flo-W | *UG7/38 | 490x592x380 | F7 | 2100/61 | 6 | 2,9 | 1,9 | 0,05 | E |
| *37306060UW | S-Flo-W | *UH7 | 287x592x600 | F7 | 1700/60 | 4 | 3 | 1,6 | 0,03 | E |
| *37306038UW | S-Flo-W | *UH7/38 | 287x592x380 | F7 | 1275/61 | 4 | 1,9 | 1,4 | 0,03 | E |
| *38606060UW | S-Flo-W | *UF8 | 592x592x600 | F8 | 3400/80 | 8 | 6 | 2,8 | 0,05 | E |
| *38606038UW | S-Flo-W | *UF8/38 | 592x592x380 | F8 | 3400/140 | 8 | 3,8 | 2,3 | 0,05 | E |
| *38506060UW | S-Flo-W | *UG8 | 490x592x600 | F8 | 2800/80 | 6 | 4,6 | 2,4 | 0,05 | E |
| *38506038UW | S-Flo-W | *UG8/38 | 490x592x380 | F8 | 2800/140 | 6 | 2,9 | 1,9 | 0,05 | E |
| *38306060UW | S-Flo-W | *UH8 | 287x592x600 | F8 | 1700/80 | 4 | 3 | 1,6 | 0,03 | E |
| *38306038UW | S-Flo-W | *UH8/38 | 287x592x380 | F8 | 1700/140 | 4 | 1,9 | 1,4 | 0,03 | E |

Other sizes are available on request - *Supplied with a 25mm header frame, if a 20mm header frame is required please specify *2.

## Compact Filter

### فیلتر فشرده F9 و F6


ENERGY & AIR QUALITY RATING

## Advantages

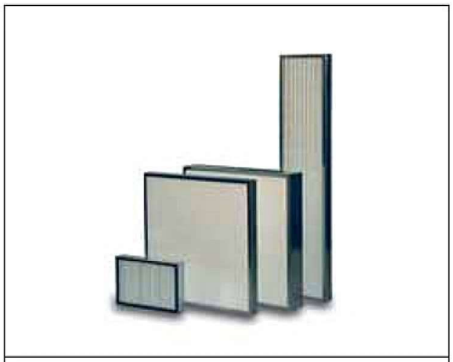
- Less frequent changes
- Long operating life
- Light and robust
- Large surface area
- Certified performance optimised for LCC

**Application:** Air conditioning applications and preparatory filtration in clean rooms.
**Type:** High efficiency, incinerable filter.
**Frame:** 25mm thick flange, polypropylene and ABS.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**Sealant:** Polyurethane.
**EN 779:2002 efficiency:** F6, F7, F8, F9.
**Opacimetric efficiency:** 65, 85, 95, 98%.
**EUROVENT 4/5 efficiency:** EU6, EU7, EU8, EU9.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 350 Pa).
**Temperature:** 70°C maximum in continuous service.
**Mounting system:** Front and side access housing and frames are available, Type 8, Type L and FC housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Media area $m^2$ | Air flow/pressure drop $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|
| 1511.11.50 | OPAKFIL-G -65 | 3OPGHF-242412-60 | 592x592x290 | F6 | 19.0 | 4250/100 | 5 | 0.11 | B |
| 1511.21.50 | OPAKFIL-G -65 | 3OPGHF-242012-60 | 592x490x290 | F6 | 15.0 | 3400/100 | 4 | 0.09 | B |
| 1511.51.50 | OPAKFIL-G -65 | 3OPGHF-241212-60 | 592x287x290 | F6 | 9.0 | 2125/100 | 3 | 0.05 | B |
| 1511.12.50 | OPAKFIL-G -85 | 3OPGHF-242412-90 | 592x592x290 | F7 | 19.0 | 4250/110 | 5 | 0.11 | A |
| 1511.22.50 | OPAKFIL-G -85 | 3OPGHF-242012-90 | 592x490x290 | F7 | 15.0 | 3400/110 | 4 | 0.09 | A |
| 1511.52.50 | OPAKFIL-G -85 | 3OPGHF-241212-90 | 592x287x290 | F7 | 9.0 | 2125/135 | 3 | 0.05 | A |
| 1511.13.50 | OPAKFIL-G -95 | 3OPGHF-242412-95 | 592x592x290 | F8 | 19.0 | 4250/130 | 5 | 0.11 | A |
| 1511.23.50 | OPAKFIL-G -95 | 3OPGHF-242012-95 | 592x490x290 | F8 | 15.0 | 3400/130 | 4 | 0.09 | A |
| 1511.53.50 | OPAKFIL-G -95 | 3OPGHF-241212-95 | 592x287x290 | F8 | 9.0 | 2125/150 | 3 | 0.05 | A |
| 1511.17.50 | OPAKFIL-G-98 | 3OPGHF-242412-98 | 592x592x290 | F9 | 19.0 | 4250/160 | 5 | 0.11 | B |
| 1511.24.50 | OPAKFIL-G-98 | 3OPGHF-242012-98 | 592x490x290 | F9 | 15.0 | 3400/160 | 4 | 0.09 | B |
| 1511.57.50 | OPAKFIL-G-98 | 3OPGHF-241212-98 | 592x287x290 | F9 | 9.0 | 2125/160 | 3 | 0.05 | B |

## High Efficiency Panel

## پنل فیلتر F7 و F6




ENERGY & AIR QUALITY RATING

### Advantages

- Large surface area
- Savings in operating costs
- 10 times more filtration surface
- Ultra compact
- High dust holding capacity
- Less frequent changes

**Application:** Air conditioning or industrial processing systems and for mini air conditioning systems, individual modules.
**Type:** High efficiency compact filter.
**Frame:** Galvanised steel.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**EN 779:2002 efficiency:** F6, F7.
**Opacimetric efficiency:** 65, 85%.
**Eurovent 4/5 efficiency:** EU6, EU7.
**Recommended final pressure drop: Ecopleat:** 350 Pa - Ecopleat MCTA: 250 Pa.
**Temperature:** 70°C maximum in continuous service.

| Reference | Type | Model | Dimensions (WxHxD) | Filter classification EN 779:2002 | Media area $m^2$ | Air flow/pressure drop at 0.45 m/s $m^3$/h/Pa | Unit weight kg | Unit volume $m^3$ | Energy Rating |
|---|---|---|---|---|---|---|---|---|---|
| 1020.07.00 | ECOPLEAT | Ecopleat F6 | 287x592x48 | F6 | 2.85 | 1500/105 | 2 | 0.01 | D |
| 1020.08.00 | ECOPLEAT | Ecopleat F6 | 592x592x48 | F6 | 5.89 | 3000/100 | 3 | 0.02 | D |
| 1020.05.00 | ECOPLEAT | Ecopleat F6 | 305x610x48 | F6 | 3.13 | 1700/110 | 2 | 0.01 | D |
| 1020.06.00 | ECOPLEAT | Ecopleat F6 | 610x610x48 | F6 | 6.25 | 3400/110 | 3 | 0.02 | D |
| 1020.16.00 | ECOPLEAT | Ecopleat F6 | 610x610x98 | F6 | 14.1 | 4000/85 | 4 | 0.04 | D |
| 1020.80.02 | ECOPLEAT | Ecopleat F6 | 560x190x48 | F6 | 1.8 | 715/65 | 1.5 | 0.01 | D |
| 1020.80.03 | ECOPLEAT | Ecopleat F6 | 255x480x48 | F6 | 2.1 | 665/55 | 1.5 | 0.01 | D |
| 1020.80.04 | ECOPLEAT | Ecopleat F6 | 255x830x48 | F6 | 3.6 | 1100/45 | 2 | 0.01 | D |
| 1020.80.05 | ECOPLEAT | Ecopleat F6 | 255x1130x48 | F6 | 4.8 | 1570/50 | 3 | 0.01 | D |
| 1021.07.00 | ECOPLEAT | Ecopleat F7 | 287x592x48 | F7 | 2.85 | 1500/175 | 2 | 0.01 | B |
| 1021.08.00 | ECOPLEAT | Ecopleat F7 | 592x592x48 | F7 | 5.89 | 3000/160 | 3 | 0.02 | B |
| 1021.05.00 | ECOPLEAT | Ecopleat F7 | 305x610x48 | F7 | 3.13 | 1700/175 | 2 | 0.01 | B |
| 1021.06.00 | ECOPLEAT | Ecopleat F7 | 610x610x48 | F7 | 6.25 | 3400/175 | 3 | 0.02 | B |
| 1021.16.00 | ECOPLEAT | Ecopleat F7 | 610x610x98 | F7 | 14.1 | 4000/120 | 4 | 0.04 | B |
| 1020.80.01 | ECOPLEAT | MCTA | 352x225x48 | F6 | 1.3 | 350/38 | 1 | 0.01 | D |
| 1020.80.10 | ECOPLEAT | MCTA | 400x240x48 | F6 | 1.6 | 340/25 | 1.2 | 0.01 | D |
| 1020.80.11 | ECOPLEAT | MCTA | 470x240x48 | F6 | 1.9 | 680/50 | 1.3 | 0.01 | D |
| 1020.80.12 | ECOPLEAT | MCTA | 550x240x48 | F6 | 2.2 | 680/42 | 1.4 | 0.01 | D |

Other dimensions available - Other models available, contact us - Also available in incinerable version: Ecopleat Green.

## Pleated Compact Filter

## فیلتر چین خورده فشرده


### Advantages

- Range of standard sizes
- Rigid design concept
- High efficiency
- Suitable for turbulent airflow

**Application:** Air conditioning applications.
**Type:** Rigid pleated filter.
**Case:** Galvanised steel.
**Media:** Glass fibre.
**EN 779:2002 efficiency:** F5 (40-45%), F6 (55-65%), F7 (80-85%), F8 (90-95%).
**Eurovent 4/5 efficiency:** EU5, EU6, EU7, EU8.
**Recommended final pressure drop:** 450 Pa (suggested economical change point 250 Pa).
**Temperature:** 70°C maximum in continuous service.
**Holding frames:** Front and side access housings and frames are available.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Media surface $m^2$ | Air flow/presure drop at $m^3$/h/Pa | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 060558-007 | Riga Flo | Riga Flo 10 | 594x594x292 | F5 | 5.4 | 3420/65 | 7.70 | 0.11 |
| 060558-012 | Riga Flo | Riga Flo 10 | 492x594x292 | F5 | 4.4 | 2790/65 | 5.77 | 0.11 |
| 060558-008 | Riga Flo | Riga Flo 10 | 289x594x292 | F5 | 2.6 | 1710/65 | 4.55 | 0.06 |
| 078367-007 | Riga Flo | Riga Flo 10 | 594x594x152 | F5 | 2.7 | 2070/55 | 3.42 | 0.06 |
| 078367-016 | Riga Flo | Riga Flo 10 | 492x594x152 | F5 | 2.2 | 1710/55 | 2.57 | 0.06 |
| 078367-008 | Riga Flo | Riga Flo 10 | 289x594x152 | F5 | 1.3 | 990/55 | 2.21 | 0.03 |
| 060558-001 | Riga Flo | Riga Flo 15 | 594x594x292 | F6 | 5.4 | 3420/70 | 7.70 | 0.11 |
| 060558-009 | Riga Flo | Riga Flo 15 | 492x594x292 | F6 | 4.4 | 2790/70 | 5.77 | 0.11 |
| 060558-004 | Riga Flo | Riga Flo 15 | 289x594x292 | F6 | 2.6 | 1710/70 | 4.55 | 0.06 |
| 078367-001 | Riga Flo | Riga Flo 15 | 594x594x152 | F6 | 2.7 | 2070/65 | 3.42 | 0.06 |
| 078367-013 | Riga Flo | Riga Flo 15 | 492x594x152 | F6 | 2.2 | 1710/65 | 2.57 | 0.06 |
| 078367-004 | Riga Flo | Riga Flo 15 | 289x594x152 | F6 | 1.3 | 990/65 | 2.21 | 0.03 |
| 060558-002 | Riga Flo | Riga Flo 100 | 594x594x292 | F7 | 5.4 | 3420/90 | 7.70 | 0.11 |
| 060558-010 | Riga Flo | Riga Flo 100 | 492x594x292 | F7 | 4.4 | 2790/90 | 5.77 | 0.11 |
| 060558-005 | Riga Flo | Riga Flo 100 | 289x594x292 | F7 | 2.6 | 1710/90 | 4.55 | 0.06 |
| 078367-002 | Riga Flo | Riga Flo 100 | 594x594x152 | F7 | 2.7 | 2070/90 | 3.42 | 0.06 |
| 078367-014 | Riga Flo | Riga Flo 100 | 492x594x152 | F7 | 2.2 | 1710/90 | 2.57 | 0.06 |
| 078367-005 | Riga Flo | Riga Flo 100 | 289x594x152 | F7 | 1.3 | 990/90 | 2.21 | 0.03 |
| 060558-003 | Riga Flo | Riga Flo 200 | 594x594x292 | F8 | 5.4 | 3420/130 | 7.70 | 0.11 |
| 060558-011 | Riga Flo | Riga Flo 200 | 492x594x292 | F8 | 4.4 | 2790/130 | 5.77 | 0.11 |
| 060558-006 | Riga Flo | Riga Flo 200 | 289x594x292 | F8 | 2.6 | 1710/130 | 4.55 | 0.06 |
| 078367-003 | Riga Flo | Riga Flo 200 | 594x594x152 | F8 | 2.7 | 2070/175 | 3.42 | 0.06 |
| 078367-015 | Riga Flo | Riga Flo 200 | 492x594x152 | F8 | 2.2 | 1710/175 | 2.57 | 0.06 |
| 078367-006 | Riga Flo | Riga Flo 200 | 289x594x152 | F8 | 1.3 | 990/175 | 2.21 | 0.03 |

Other sizes are available on request - PH version also available (with header frame)

## Summary HEPA / ULPA Filters, Class H10 to U17

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**Filters for High Efficiency**
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**HEPA/ULPA Hood Diffuser**
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**HEPA/ULPA Panels**
پنل قابدار و سیل هپا و اولپا
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## فیلتر هپا H14 و H10


## Advantages

- High air flow rates, up to 5000 $m^3$/hr
- Tested in accordance with EN 1822
- New ergonomic handle to assist with filter changes
- Low pressure drop

**Application:** Very high efficiency final filtration in air conditioning systems, housings and diffusers.
**Type:** High air flow HEPA filter.
**Frame:** Galvanised steel.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**Sealant:** Polyurethane.
**Gasket:** One piece half round continuous gasket.
**EN 1822 efficiency:** H10, H12, H13, and H14.
**MPPS efficiency:** H10:>85%, H12:>99.5%, H13:>99.95%, H14:> 99.995%.
**Recommended final pressure drop:** 600 Pa.
**Maximum air flow rate:** See table, use nominal values otherwise a reduction in efficiency may occur.
**Temperature:** 80°C maximum in continuous service.
**Mounting systems:** Front and side access filter frames, FC Housings, terminal housings and safe change systems.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 1822 | Media area $m^3$ | Air flow/preassure drop $m^3$/h/Pa | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 1575.02.00 | Sofilair H10 | SFR-E-2000-H10 | 305x610x292 | H10 | 14 | 2000/230 | 8 | 0,06 |
| 1573.02.00 | Sofilair H10 | SFR-E-4000-H10 | 610x610x292 | H10 | 21 | 4000/230 | 13 | 0,11 |
| 1570.01.00 | Sofilair H10 | SFR-E-5000-H10 | 610x610x292 | H10 | 35 | 5000/230 | 16,5 | 0,11 |
| 1585.01.00 | Sofilair H12 | SFR-E-1500-H12 | 305x610x292 | H12 | 16 | 1500/250 | 8,5 | 0,06 |
| 1580.01.00 | Sofilair H12 | SFR-E-3400-H12 | 610x610x292 | H12 | 33 | 3400/250 | 16,5 | 0,11 |
| 1580.02.00 | Sofilair H12 | SFR-E-4000-H12 | 610x610x292 | H12 | 40 | 4000/250 | 16,5 | 0,11 |
| 1568.01.00 | Sofilair H13 | SFR-E-1300-H13 | 289x595x292 | H13 | 16 | 1300/250 | 8,5 | 0,06 |
| 1565.01.00 | Sofilair H13 | SFR-E-1500-H13 | 305x610x292 | H13 | 16 | 1500/250 | 8,5 | 0,06 |
| 1567.01.00 | Sofilair H13 | SFR-E-3200-H13 | 595x595x292 | H13 | 38 | 3200/250 | 15,5 | 0,11 |
| 1560.01.00 | Sofilair H13 | SFR-E-3400-H13 | 610x610x292 | H13 | 33 | 3400/250 | 16,5 | 0,11 |
| 1560.02.00 | Sofilair H13 | SFR-E-4000-H13 | 610x610x292 | H13 | 40 | 4000/250 | 16,5 | 0,11 |
| 1560.02.20 | Sofilair H13 | SFR-E-5000-H13 | 610x610x292 | H13 | 40 | 5000/400 | 16,5 | 0,11 |
| 1565.01.02 | Sofilair H14 | SFR-E-1400-H14 | 610x305x292 | H14 | 16 | 1400/280<br>1500/310* | 8,5 | 0,06 |
| 1560.02.06 | Sofilair H14 | SFR-E-3500-H14 | 610x610x292 | H14 | 40 | 3500/270<br>4000/310* | 16,5 | 0,11 |

*Maximum airflow

## فیلتر فشرده هپا H10


## Advantages

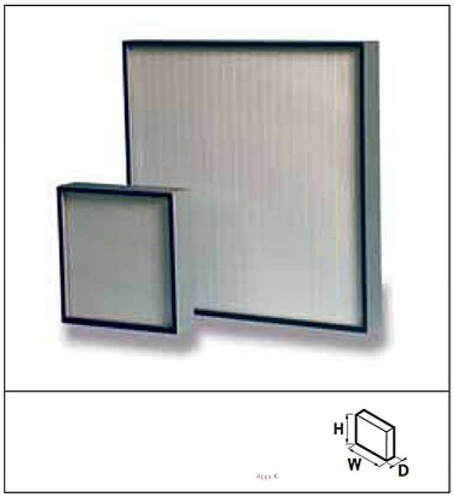
- Easy to install
- Incinerable
- Up to 4000 $m^3$/hr air flow

**Application:** Final filtration in air conditioning systems, industrial processes.
**Type:** Very high efficiency, incinerable, compact filter.
**Frame:** 25 mm thick flange, polypropylene and ABS.
**Gasket:** Half round continuous expanded polyurethane. Position: 01- rear, 10- front.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**Sealant:** Polyurethane.
**EN 1822 efficiency:** H10.
**MPPS efficiency:** ≥ 85%.
**Recommended final pressure drop:** 450 Pa.
**Maximum flow rate:** See table, use nominal values otherwise a reduction in efficiency may occur.
**Temperature:** 70°C maximum in continuous service.
**Holding Frames:** Front and side access housings and frames are available. Type 8, Type L and FC housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 1822 | Media area $m^2$ | Air flow / pressure drop $m^3$/hr/Pa | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 1511.36.51 | 70PGHF-241212 | Opakfil-G Micretain | 592x287x290-01 | H10 | 9.0 | 1700/250 | 3 | 0.06 |
| 1511.35.51 | 70PGHF-242412 | Opakfil-G Micretain | 592x592x290-01 | H10 | 19.0 | 4000/250 | 6 | 0.11 |
| 1511.36.52 | 70PGHF-241212 | Opakfil-G Micretain | 592x287x290-10 | H10 | 9.0 | 1700/250 | 3 | 0.06 |
| 1511.35.52 | 70PGHF-242412 | Opakfil-G Micretain | 592x592x290-10 | H10 | 19.0 | 4000/250 | 6 | 0.11 |

## HEPA/ULPA Panels

### پنل هپا و اولپا H14 و H10






## Advantages

- Low pressure drop
- Protection via 2 grids
- Guaranteed performance

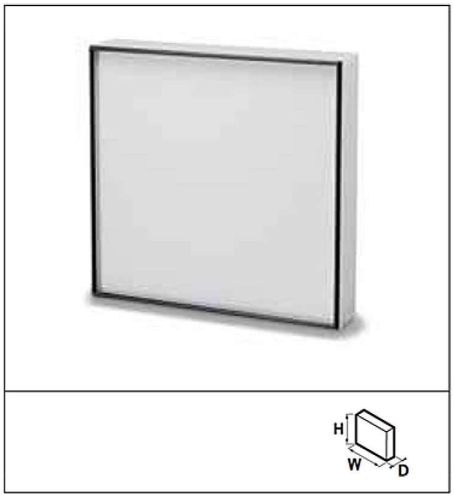
**Application:** Final or return filtration for clean rooms with turbulent flow.
**Type:** HEPA filtering panel with seal for mechanical clamping mounting systems.
**Frame:** Extruded and anodised aluminium.
**Gasket:** Half round continuous expanded polyurethane.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**Sealant:** Polyurethane.
**Grid:** Mild steel painted grille upstream and downstream.
**EN 1822 efficiency:** H10 / H14.
**MPPS efficiency:** H10: ≥ 85%, H14: ≥99.995%.
**DOP efficiency:** H10: ≥ 95%, H14: ≥ 99.999%.
**Recommended final pressure drop:** 600 Pa.
**Maximum flow rate:** See table, use nominal values otherwise a reduction in efficiency may occur.
**Temperature:** 70°C maximum in continuous service.
**Test:** : 100% individually scanned to EN 1822.
**Mounting system:** Mechanical clamping structure, Terminal housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 1822 | Media area $m^2$ | Air flow / pressure drop at 0.45 m/s $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 3401.61.11 | MEGALAM MDM | 3P6 | 305x610x66 | H10 | 4.6 | 300/70 | 2.0 | 0.02 |
| 3401.62.08 | MEGALAM MDM | 6P6 | 610x610x66 | H10 | 9.3 | 600/70 | 4.0 | 0.03 |
| 3401.63.01 | MEGALAM MDM | 9P6 | 915x610x66 | H10 | 14.0 | 900/70 | 6.0 | 0.05 |
| 3401.64.07 | MEGALAM MDM | 12P6 | 1220x610x66 | H10 | 18.5 | 1200/70 | 9.0 | 0.07 |
| 3423.00.10 | MEGALAM MDA | 3P3 | 305x305x66 | H14 | 2.4 | 150/140 | 1.0 | 0.01 |
| 3423.00.20 | MEGALAM MDA | 3P6 | 305x610x66 | H14 | 4.8 | 300/130 | 3.0 | 0.02 |
| 3423.00.30 | MEGALAM MDA | 6P6 | 610x610x66 | H14 | 10.0 | 600/120 | 5.0 | 0.03 |
| 3423.00.90 | MEGALAM MDA | 7P6 | 762x610x66 | H14 | 12.3 | 750/120 | 5.0 | 0.04 |
| 3423.00.40 | MEGALAM MDA | 9P6 | 915x610x66 | H14 | 14.8 | 900/120 | 6.0 | 0.05 |
| 3423.00.50 | MEGALAM MDA | 12P6 | 1220x610x66 | H14 | 19.8 | 1200/120 | 9.0 | 0.07 |
| 3423.00.60 | MEGALAM MDA | 15P6 | 1525x610x66 | H14 | 24.9 | 1500/120 | 10.0 | 0.07 |
| 3423.01.00 | MEGALAM MDA | 9P7 | 915x762x66 | H14 | 18.6 | 1125/120 | 7.5 | 0.06 |
| 3423.01.10 | MEGALAM MDA | 12P7 | 1220x762x66 | H14 | 24.9 | 1500/120 | 10.0 | 0.07 |
| 3423.01.20 | MEGALAM MDA | 15P7 | 1525x762x66 | H14 | 31.0 | 1875/120 | 12.5 | 0.09 |
| 3423.01.30 | MEGALAM MDA | 18P7 | 1830x762x66 | H14 | 37.2 | 2250/120 | 12.5 | 0.12 |
| 3423.01.40 | MEGALAM MDA | 3P9 | 305x915x66 | H14 | 7.4 | 450/120 | 3.0 | 0.03 |
| 3423.01.50 | MEGALAM MDA | 9P9 | 915x915x66 | H14 | 22.3 | 1350/120 | 9.0 | 0.06 |
| 3423.01.60 | MEGALAM MDA | 12P9 | 1220x915x66 | H14 | 30.0 | 1800/120 | 12.0 | 0.08 |

Other dimensions available on request

## HEPA/ULPA Panels

### پنل هپا و اولپا U16 و U15




## Advantages

- Laminarity better than +/- 20%
- 100% individual scanning test according to standard EN 1822
- Integrated laminator screen
- ULPA U15 and U16

**Application:** Final filtration for clean rooms, clean devices and units with laminar flow.
**Type:** ULPA filtering panel with laminator and gasket for mechanical clamping systems.
**Frame:** Extruded and anodised aluminium.
**Gasket:** Half round continuous expanded polyurethane.
**Media:** Glass fibre paper.
**Separator:** Hot-melt beads.
**Sealant:** Polyurethane.
**Laminator:** Screen bonded downstream for laminar diffusion.
**Grid:** Mild steel painted grille placed upstream.
**EN 1822 efficiency:** U15 / U16.
**MPPS efficiency:** U15: ≥99.9995%, U16: ≥99.99995%.
**Recommended final pressure drop:** 600 Pa.
**Maximum flow rate:** See table, use nominal values otherwise a reduction in efficiency may occur.
**Temperature:** 70°C maximum in continuous service.
**Test:** 100% individually scanned to EN 1822.
**Mounting system:** Mechanical clamping structure, Terminal housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 1822 | Media area m² | Air flow/pressure drop m³/h/Pa | Unit weight kg | Unit volume m³ |
|---|---|---|---|---|---|---|---|---|
| 3449.20.40 | MEGALAM MDLGS | 9P6-01 | 915x610x66 | U15 | 16.9 | 900/150 | 6.0 | 0.05 |
| 3449.00.40 | MEGALAM MDLGS | 9P6-10 | 915x610x66 | U15 | 16.9 | 900/150 | 6.0 | 0.05 |
| 3449.20.50 | MEGALAM MDLGS | 12P6-01 | 1220x610x66 | U15 | 22.5 | 1200/150 | 8.0 | 0.07 |
| 3449.00.50 | MEGALAM MDLGS | 12P6-10 | 1220x610x66 | U15 | 22.5 | 1200/150 | 8.0 | 0.07 |
| 3450.20.40 | MEGALAM MDLSGS | 9P6-01 | 915x610x66 | U16 | 18.4 | 900/165 | 6.0 | 0.05 |
| 3450.00.40 | MEGALAM MDLSGS | 9P6-10 | 915x610x66 | U16 | 18.4 | 900/165 | 6.0 | 0.05 |
| 3450.00.50 | MEGALAM MDLSGS | 12P6-01 | 1220x610x66 | U16 | 24.5 | 1200/165 | 8.0 | 0.07 |
| 3450.20.50 | MEGALAM MDLSGS | 12P6-01 | 1220x610x66 | U16 | 24.5 | 1200/165 | 8.0 | 0.07 |
| 3425.20.30 | MEGALAM MXLGS | 6P6-01 | 610x610x90 | U15 | 15.4 | 600/120 | 5.6 | 0.05 |
| 3425.00.30 | MEGALAM MXLGS | 6P6-10 | 610x610x90 | U15 | 15.4 | 600/120 | 5.6 | 0.05 |

Other dimensions available on request

## HEPA/ULPA Panels

## دریچه هود هپا و اولپا

### Advantages

- H14 compact filter-diffuser for clean room
- Ready to install
- Quiet: LW = 35 dB
- Laminarity +/- 20%

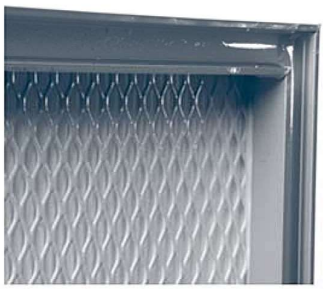
**Application:** Final filtration for clean rooms.
**Type:** Ready to install HEPA/ULPA filter diffuser.
**Frame:** Extruded and anodised aluminium, galvanised steel cover.
**Gasket:** 10x5mm neoprene, self adhesive ready for installation.
**Media:** Glass fibre paper.
**Separator:** Hot melt beads.
**Sealant:** Polyurethane.
**Connection:** Spigot with outer dia. 315mm or 250mm depending on the model.
**Grid:** Downstream in painted mild steel.
**EN 1822 efficiency:** H14.
**MPPS efficiency:** ≥99.995%.
**Recommended final pressure drop:** 600 Pa.
**Maximum flow rate:** See table, use nominal values otherwise a reduction in efficiency may occur.
**Temperature:** 70°C maximum in continuous service.
**Test:** 100% individually scanned in accordance with EN 1822.
**Mounting system:** Mechanical clamping structures.

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 1822 | media area $m^2$ | Air flow/nominal pressure drop $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 5970.00.21 | Silent Hood | MDSHA RF1 | 300x600x116/250 | H14 | 4.2 | 300/140 | 10 | 0.03 |
| 5975.00.31 | Silent Hood | MDSHA RF1 | 600x600x116/315 | H14 | 9.2 | 600/140 | 13 | 0.06 |
| 5975.00.41 | Silent Hood | MDSHA RF | 905x600x116/335 | H14 | 14 | 900/140 | 16 | 0.09 |
| 5975.00.51 | Silent Hood | MDSHA RF1 | 1210x600x116/315 | H14 | 19 | 1200/140 | 19 | 0.13 |
| 5975.00.20 | Silent Hood | MDSHA RF1 | 305x610x116/250 | H14 | 4.3 | 300/140 | 10 | 0.03 |
| 5975.00.30 | Silent Hood | MDSHA RF1 | 610x610x116/315 | H14 | 9.4 | 600/140 | 13 | 0.06 |
| 5975.00.40 | Silent Hood | MDSHA RF | 915x610x116/315 | H14 | 14.6 | 900/140 | 16 | 0.09 |
| 5975.00.50 | Silent Hood | MDSHA RF | 1220x610x116/315 | H14 | 19.5 | 1200/140 | 19 | 0.13 |

Other dimensions available on request. Available in other grades and with a laminator

## HEPA/ULPA Panels

## پنل قابدار و سیل هپا و اولپا U15 و H14




### Advantages

- Leaktightness by means of gel
- 100% individual control
- Can be assembled without clamping

**Application:** Final filtration for clean rooms and housings.
**Type:** HEPA/ULPA filter with gel seal.
**Frame:** Anodized aluminium.
**Gasket:** PU gel.
**Media:** Glass fibre paper.
**Separator:** Hot melt beads.
**Sealant:** Polyurethane.
**Grid:** Mild steel white epoxy paint upstream and downstream.
**EN 1822 efficiency:** H14 and U15.
**MPPS efficiency:** H14 = 99.995%, U15 = 99.9995%.
**Temperature:** 70°C maximum in continuous service.
**Test:** 100% individually scanned in accordance with EN 1822.

| Reference | Type | Filter classification EN 1822 | Dimensions (WxHxD)mm | Media area m² | Air flow/pressure drop m³/h/Pa | Air flow / pressure drop max m³/h/Pa | Unit volume m³ | Unit weight kg |
|---|---|---|---|---|---|---|---|---|
| 3413.08.96 | MEGALAM MDA U | H14 | 305x305x78 | 2.4 | 150/120 | 250/200 | 0.01 | 2.0 |
| 3413.08.89 | MEGALAM MDA U | H14 | 305x610x78 | 4.8 | 300/120 | 300/200 | 0.02 | 4.0 |
| 3413.08.79 | MEGALAM MDA U | H14 | 610x610x78 | 10.0 | 600/120 | 1000/200 | 0.03 | 6.0 |
| 3413.08.87 | MEGALAM MDA U | H14 | 915x610x78 | 14.8 | 900/120 | 1500/200 | 0.05 | 8.0 |
| 3413.08.90 | MEGALAM MDA U | H14 | 1220x610x78 | 19.8 | 1200/120 | 2000/200 | 0.06 | 11.0 |
| 3413.08.97 | MEGALAM MDA U | H14 | 305x762x78 | 6.1 | 375/120 | 625/200 | 0.02 | 4.5 |
| 3413.08.98 | MEGALAM MDA U | H14 | 915x762x78 | 18.6 | 1125/120 | 1875/200 | 0.05 | 9.0 |
| 3413.08.91 | MEGALAM MDA U | H14 | 1220x762x78 | 24.9 | 1500/120 | 2500/200 | 0.07 | 13.0 |
| 3413.08.88 | MEGALAM MDA U | H14 | 915x915x78 | 22.3 | 1350/120 | 2250/200 | 0.06 | 12.0 |
| 3413.08.95 | MEGALAM MDA U | H14 | 1220x915x78 | 29.0 | 1800/120 | 3000/200 | 0.08 | 15.0 |
| 3413.08.82 | MEGALAM MDGS U | U15 | 762x610x78 | 14.0 | 750/140 | - | 0.04 | 6.5 |
| 3413.08.81 | MEGALAM MDGS U | U15 | 915x610x78 | 16.9 | 900/140 | - | 0.05 | 8.0 |
| 3413.18.02 | MEGALAM MDGS U | U15 | 915x762x78 | 21.1 | 1125/140 | - | 0.05 | 9.0 |
| 3413.08.84 | MEGALAM MDGS U | U15 | 1220x762x78 | 28.3 | 1500/140 | - | 0.07 | 13.0 |
| 3413.08.80 | MEGALAM MDGS U | U15 | 915x915x78 | 25.3 | 1350/140 | - | 0.06 | 12.0 |

Other dimensions available on request.

## Summary Carbon and Chemical Filters

**Compact 2 in 1 solution**
فیلتر کیسه ای کربن اکتیو
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**Compact Carbon Filter**
فیلتر فشرده کربن اکتیو
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**Carbon Cylinders**
فیلتر سیلندری کربن اکتیو
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**Carbon Cylinders**
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**Bonded and Loose Filled Carbon Panels**
پنل فیلتر کربن اکتیو
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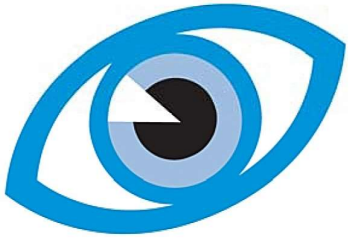
# Adsorption index of activated carbon



## Key:

4. A very high level of adsorption, in the order of 20 - 40% by weight of dry carbon.
3. Good index with a capacity of 10 - 20%.
2. Mediocre index that may require a particularly long contact time, requires case by case study.
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 Menthol | 4 Perchloroethylene |
| 3 Acetone | 4 Chlorobenzene | 3 Ethylene oxide | 4 Mercaptan | 4 Perfumes, cosmetics |
| 1 Acetylene | 4 Chloroform | 2 Ethyl mercaptan | 1 Methane | 4 Perspiration |
| 3 Acids | 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 | 3 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 | 3 Cooking smells | 3 Film developing | 3 Methyl chloride | 4 Propanol |
| 4 Amines | 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 carcases | 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 | 3 Vinyl chloride |
| 4 Camphor | 4 Ethyl acrylate | 4 Isopropyl acetate | 4 Paint odours | 3 Wood alcohol |
| 4 Caprylic acid | 4 Ethyl alcohol | 4 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 | |

## Compact 2 in 1 solution

## فیلتر کیسه ای کربن اکتیو

EN 779:2002

H W D

ENERGY & AIR QUALITY RATING

## Advantages

- Double action: particle and odour 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
- Compact "2 in 1" solution

**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.
**EN 779:2002 efficiency:** F7 (80-85%).
**Temperature:** 50°C maximum in continuous service.
**Humidity:** 70% RH maximum.
**Holding frames:** Front and side access holding frames are available: Type 8, Type L and FC Housings.

| Reference | Type | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Number of pockets | Carbon mass kg | Air flow/pressure drop $m^3$/hr/Pa | Unit weight kg | Unit volume $m^3$ | Energy rating |
|---|---|---|---|---|---|---|---|---|---|
| 604001 | CITYFLO | 592x592x534 | F7 | 10 | 2 | 3400/140 | 6 | 1,2 | B |
| 604002 | CITYFLO | 287x592x534 | F7 | 5 | 1 | 1700/145 | 3,5 | 0,6 | B |
| 604003 | CITYFLO | 490x592x537 | F7 | 8 | 1.5 | 2550/140 | 4.6 | 0.9 | B |

## 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.

## High perfomance by using RAD

The RAD characteristics ensure effective collection of gases within a bag filter design. The carbon also provides high efficiency removal of ozone, a major pollutant in city environments.

## Service life

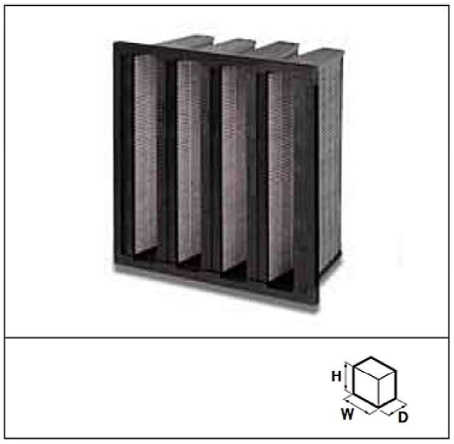
The filter can be replaced when pressure loss exceeds the maximum allowed value for the ventilation system or after a maximum of one year.

## 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.

## Compact Carbon Filter

## فیلتر فشرده کربن اکتیو




### Advantages

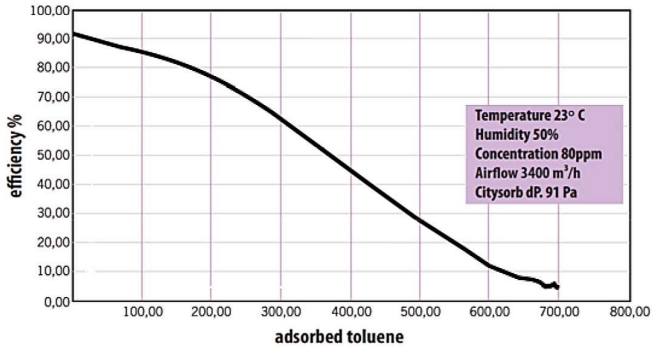
- Range of standard sizes
- High efficiency
- Rigid design concept
- Large air flow capacity

**Application:** Adsorption of odours and gasses in air conditioning applications.
**Type:** Rigid pleated filter.
**Case:** Polystyrene.
**Media:** Multilayer carbon media.
**Sealant:** Polyurethane.
**Separators:** Hot-melt.
**Gasket:** One piece PU gasket.
**Recommended temperature range:** 0-40°C.
**Recommended relative humidity:** < 70% RH.
**Holding frames:** Front and side access housings and frames are available, Type 8, Type L and FC Housings.

| Reference | Type | Model | Dimensions (WxHxD) mm | Media area $m^2$ | Air flow / pressure drop $m^3$/hr/Pa | Unit weight kg | Unit Volume $m^3$ |
|---|---|---|---|---|---|---|---|
| 5718522 | CITYSORB | OPKCS-242412-01 PU | 592x592x292 | 8.0 | 3400/80 | 10.8 | 0.02 |
| 5718532 | CITYSORB | OPKCS-242012-01 PU | 592x490x292 | 6.6 | 2800/80 | 9.2 | 0.04 |
| 5718542 | CITYSORB | OPKCS-241212-01 PU | 592x287x292 | 3.5 | 1500/80 | 5.4 | 0.02 |

**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 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.**

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



## Carbon Cylinders

## فیلتر سیلندری کربن اکتیو

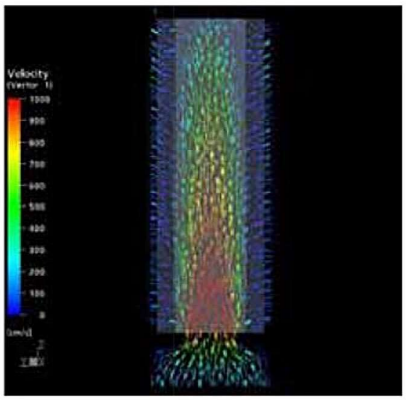
### Advantages

- Completely incinerable
- Low pressure drop
- Reduced weight
- Two integral moulded TPE gaskets
- Conical inlet
- 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 activated carbon cartridge in ABS and HDPE.
**Temperature:** 40°C maximum in continuous service.
**Mounting System:** Camcarb mounting frame, FC-CC housings.
**Cylinders:** ABS plastic.
**Carbon:** "Broad Spectrum" activated carbon, adsorption of odours, ozone and organic gases, impregnated activated carbon, adsorption of non-organic gases.
**Media:** Coconut shell carbon CM05.

| Reference | Type | Model | Dimensions (WxHxD) mm | Carbon thickness mm | Carbon weight kg | Carbon type | * Airflow/ pressure drop $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|---|
| 571750 | Camcarb Green | Cylinder 2600 | 147x93x450 | 26 | 2,3 | CM 05 | 80/30 | 2,7 | 0,007 |
| 571760 | Camcarb Green | Cylinder3500 | 147x93x600 | 26 | 3,1 | CM 05 | 100/30 | 3,7 | |

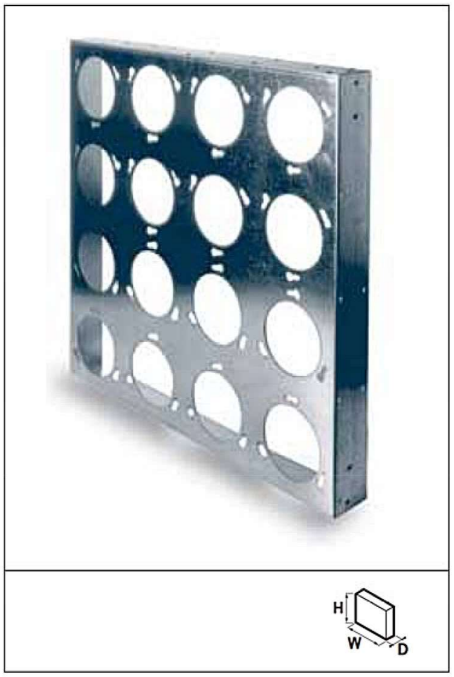
* Based on a contact time of 0.2 sec. Alternative models are also available.




Air flow and air distribution of CAMCARB Green

## Carbon Cylinders

## قاب فیلتر سیلندری




### Advantages

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

**Application:** Assembly of Camcarb activated carbon cylinders.
**Type:** Quick bayonet-mounted support frame for Camcarb cylinders.
**Design:** Galvanised steel or stainless steel.
**For filters:** Camcarb activated carbon cylinders.
**Mounting:** Bayonet locking.

| Reference | Type | Model | Dimensions (WxHxD) mm | Cylinder capacity | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|
| 1618.60.00 | Camcarb | Frame G8 | 305x610x70 | 8 | 3.0 | 0.02 |
| 1618.62.00 | Camcarb | Frame G16 | 610x610x70 | 16 | 4.8 | 0.04 |
| 1618.57.00 | Camcarb | Frame G8 SS | 305x610x70 | 8 | 4.0 | 0.02 |
| 1618.59.00 | Camcarb | Frame G16 SS | 610x610x70 | 16 | 5.0 | 0.04 |

## Bonded and Loose Filled Carbon Panels

## پنل فیلتر کربن اکتیو


### Advantages

- Range of standard and non standard sizes
- High performance
- Clean, dust free construction
- Suitable for a wide range of air volumes

**Application:** Adsorption of odours and gases in air conditioning applications.
**Type:** Bonded and granular carbon panels.
**Case:** Galvanised steel.
**Media:** Wide spectrum carbon.
**Temperature:** 40°C maximum in continuous service.
**Mounting systems:** Front and side access housings and frames are available.

| Reference | Type | Nominal size (WxHxD) mm | Air flow / pressure drop $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|
| CPB60060030NOM | Bonded Carbon Panel | 600x600x30 | 324/160 | 6.0 | 0.012 |
| CPB60030030NOM | Bonded Carbon Panel | 600x300x30 | 160/160 | 3.0 | 0.006 |
| CPG60060030NOM | Granular Carbon Panel | 600x600x30 | 324/127 | 6.0 | 0.012 |
| CPG60030030NOM | Granular Carbon Panel | 600x300x30 | 160/127 | 3.0 | 0.006 |

Air volume required to give a contact time of 0.1 second.

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

Also available with stainless steel case.

## Summary Housings, frames & special applications

**Filter Housing**
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**Filter Housing**
باکس فیلتر پنلی
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**Filter Housing**
باکس فیلتر کیسه ای
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**High Temperature Filters**
فیلتر برای دمای بالا
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**Painting Booth Filters**
فیلتر مخصوص کابین رنگ
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**Filters for Gas Turbines**
فیلتر مخصوص توربین های گازی
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**Jet Puls Dust Collector**
غبارگیر جت پالس
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**Shaker Type Dust Collector**
غبارگیر شیکر
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**Jet Puls Filter**
فیلتر سیلندری جت پالس
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**Fume Arm**
هود بازویی
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**Portable Fume Collector**
دستگاه تصفیه دود جوشکاری پرتابل
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**Bag Filter Dust Collector**
غبار گیر کیسه ای

## Other Filtration and Ventilation Products of VC SANAT Company

**Hygenic Unit Fan**
یونیت فن هایژنیک

**Filters for Gas Turbines**
کابینت فن بین کانالی

**Filters for Gas Turbines**
باکس فن بین کانالی

**Filters for Gas Turbines**
یونیت پلاگ فن

**Fan Filter Unit, FFU**
فن فیلتر یونیت

**Hygenic Unit Package**
پکیج هایژنیک

**Hygenic Air Handling**
هواساز هایژنیک

## Filter Housing

## باکس فیلتر سیلندری




### Advantages

- Easy to Install
- No tools needed to change filters
- Gasket to seal between door and filter housing
- Easy servicing
- Stable and secure design
- Modular construction

**Housing:** Galvanised steel.
**Filters:** Carbon cylinders 1000, 2000 or 2600.
**Carbon CM05:** For odours and VOC's.
**Carbon CM07:** For gases as H2S, SO2, NH3.
**Alternative:** Possibility to switch the housings 180° (flexibility to access from left or right side).
**Please note:** Stainless steel version is also available

| Reference | Type | Model | Exterior dimensions (WxHxD) mm | Interior dimension (WxH) mm | Number of cylinders | Unit volume $m^3$ | Unit weight kg |
|---|---|---|---|---|---|---|---|
| 607002020 | FCBL-CC 0510 | 05 10 | 399×744×750 | 309×610 | 8 | 0.23 | 25.5 |
| 607002040 | FCBL-CC 1005 | 10 05 | 704×439×750 | 614×309 | 8 | 0.24 | 25.5 |
| 607002050 | FCBL-CC 1010 | 10 10 | 704×744×750 | 614×614 | 16 | 0.4 | 33 |
| 607002060 | FCBL-CC 1015 | 10 15 | 704×1055×750 | 614×925 | 24 | 0.57 | 49.5 |
| 607002070 | FCBL-CC 1020 | 10 20 | 704×1360×750 | 614×1230 | 32 | 0.73 | 58.5 |
| 607002080 | FCBL-CC 1025 | 10 25 | 704×1670×750 | 614×1540 | 40 | 0.9 | 75 |
| 607002090 | FCBL-CC 1030 | 10 30 | 704×1975×750 | 614×1845 | 48 | 1.06 | 82.5 |
| 607002100 | FCBL-CC 1510 | 15 10 | 1013×744×750 | 923×614 | 24 | 0.58 | 45 |
| 607002110 | FCBL-CC 1520 | 15 20 | 1013×1360×750 | 923×1230 | 48 | 1.05 | 75 |
| 607002120 | FCBL-CC 1530 | 15 30 | 1013×1975×750 | 923×1845 | 72 | 1.53 | 110 |
| 607002130 | FCBL-CC 2010 | 20 10 | 1318×744×750 | 1228×614 | 32 | 0.75 | 53 |
| 607002140 | FCBL-CC 2015 | 20 15 | 1318×1055×750 | 1228×925 | 48 | 1.06 | 80.5 |
| 607002150 | FCBL-CC 2020 | 20 20 | 1318×1360×750 | 1228×1228 | 64 | 1.37 | 91.5 |
| 607002160 | FCBL-CC 2025 | 20 25 | 1318×1670×750 | 1228×1540 | 80 | 1.68 | 118 |
| 607002170 | FCBL-CC 2030 | 20 30 | 1318×1975×750 | 1228×1845 | 96 | 1.99 | 128.5 |
| 607002180 | FCBL-CC 2510 | 25 10 | 1677×744×750 | 1537×614 | 40 | 0.95 | 65 |
| 607002190 | FCBL-CC 2520 | 25 20 | 1677×1360×750 | 1537×1230 | 80 | 1.74 | 111 |
| 607002200 | FCBL-CC 2530 | 25 30 | 1677×1975×750 | 1537×1845 | 120 | 2.53 | 157.5 |
| 607002210 | FCBL-CC 3010 | 30 10 | 1982×744×750 | 1842×614 | 48 | 1.13 | 72.5 |
| 607002220 | FCBL-CC 3015 | 30 15 | 1982×1055×750 | 1842×925 | 72 | 1.6 | 111 |
| 607002230 | FCBL-CC 3020 | 30 20 | 1982×1360×750 | 1842×1230 | 96 | 2.06 | 124.5 |
| 607002240 | FCBL-CC 3025 | 30 25 | 1982×1670×750 | 1842×1540 | 120 | 2.53 | 161.5 |
| 607002250 | FCBL-CC 3030 | 30 30 | 1982×1975×750 | 1842×1842 | 144 | 2.99 | 175 |

Other dimensions and arrangements available on request

## Filter Housing

## باکس فیلتر پنلی


### Advantages

- Easy to Install
- Modular construction
- No tools needed to change filters
- Gasket to seal between door and filter housing
- Easy servicing
- Stable and secure design

**Housing:** Galvanised steel.
**Filter:** Bonded and Granular Carbon Panels.
**Standard Carbon:** For odours and VOC's.
**Impregnated Carbon:** For gases as H2S, SO2, NH3.
**Alternative:** Possibility to switch the housings to 180° (flexibility to access from left or right side).
**Please note:** Stainless steel version is also available.

| Reference | Type | Model | Exterior dimensions (WxHxD) mm | Interior dimensions (WxH) mm | Number of Carbon panels | Unit volume $m^3$ | Unit weight kg |
|---|---|---|---|---|---|---|---|
| 611002040 | FCBL-CS 1005 | 10 05 | 704x439x750 | 614x309 | 3 | 0.24 | 25.0 |
| 611002050 | FCBL-CS 1010 | 10 10 | 704x744x750 | 614x614 | 6 | 0.40 | 32.5 |
| 611002060 | FCBL-CS 1015 | 10 15 | 704x1055x750 | 614x925 | 9 | 0.57 | 51.5 |
| 611002070 | FCBL-CS 1020 | 10 20 | 704x1360x750 | 614x1230 | 12 | 0.73 | 57.5 |
| 611002080 | FCBL-CS 1025 | 10 25 | 704x1670x750 | 614x1540 | 15 | 0.90 | 73.5 |
| 611002090 | FCBL-CS 1030 | 10 30 | 704x1975x750 | 614x1845 | 18 | 1.06 | 85.0 |
| 611002130 | FCBL-CS 2010 | 20 10 | 1318x744x750 | 1228x614 | 12 | 0.75 | 51.5 |
| 611002140 | FCBL-CS 2015 | 20 15 | 1318x1055x750 | 1228x925 | 18 | 1.06 | 84.0 |
| 611002150 | FCBL-CS 2020 | 20 20 | 1318x1360x750 | 1228x1228 | 24 | 1.37 | 89.0 |
| 611002160 | FCBL-CS 2025 | 20 25 | 1318x1670x750 | 1228x1540 | 30 | 1.68 | 117.5 |
| 611002170 | FCBL-CS 2030 | 20 30 | 1318x1975x750 | 1228x1845 | 36 | 1.99 | 126.0 |
| 611002210 | FCBL-CS 3010 | 30 10 | 1982x744x750 | 1842x614 | 18 | 1.13 | 73.5 |
| 611002220 | FCBL-CS 3015 | 30 15 | 1982x1055x750 | 1842x925 | 21 | 1.60 | 111.0 |
| 611002230 | FCBL-CS 3020 | 30 20 | 1982x1360x750 | 1842x1230 | 36 | 2.06 | 121.5 |
| 611002240 | FCBL-CS 3025 | 30 25 | 1982x1670x750 | 1842x1540 | 45 | 2.53 | 162.0 |
| 611002250 | FCBL-CS 3030 | 30 30 | 1982x1975x750 | 1842x1845 | 54 | 2.99 | 172.0 |

Other dimensions and arrangements available on request

## Filter Housing

## باکس فیلتر کیسه ای


### Advantages

- Easy to Install
- Modular construction
- No tools needed to change filters
- Gasket to seal between door and filter housing
- Easy servicing
- Stable and secure design

**Housing:** Galvinised steel.
**Filter:** S-FLO-W, HI-FLO and HI-CAP.
**Alternative:** Possibility to switch the housings 180° (flexibility to access from left or right side).
**Please note:** Stainless steel version is also available.

| Reference | Type | Model | Exterior dimensions (WxHxD) mm | Interior dimensions (WxH) mm | Number of filter 592x592 mm | Number of filter 287x592 mm | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 613003020 | FCBL-HF 0510 | 05 10 | 399x744x750 | 309x614 | - | 1 | 25 | 0.23 |
| 613003040 | FCBL-HF 1005 | 10 05 | 704x439x750 | 614x309 | - | 1 | 25 | 0.24 |
| 613003050 | FCBL-HF 1010 | 10 10 | 704x744x750 | 614x614 | 1 | - | 32.5 | 0.4 |
| 613003060 | FCBL-HF 1015 | 10 15 | 704x1055x750 | 614x925 | 1 | 1 | 51.5 | 0.57 |
| 613003070 | FCBL-HF 1020 | 10 20 | 704x1360x750 | 614x1230 | 2 | - | 57.5 | 0.73 |
| 613003080 | FCBL-HF 1025 | 10 25 | 704x1670x750 | 614x1540 | 2 | 1 | 73.5 | 0.9 |
| 613003090 | FCBL-HF 1030 | 10 30 | 704x1975x750 | 614x1845 | 3 | - | 85 | 1.06 |
| 613003100 | FCBL-HF 1510 | 15 10 | 1013x744x750 | 923x614 | 1 | 1 | 45 | 0.58 |
| 613003110 | FCBL-HF 1520 | 15 20 | 1013x1360x750 | 923x1230 | 2 | 2 | 77.5 | 1.05 |
| 613003120 | FCBL-HF 1530 | 15 30 | 1013x1975x750 | 923x1845 | 3 | 3 | 110 | 1.53 |
| 613003130 | FCBL-HF 2010 | 20 10 | 1318x744x750 | 1228x614 | 2 | - | 51.5 | 0.75 |
| 613003140 | FCBL-HF 2015 | 20 15 | 1318x1055x750 | 1228x925 | 2 | 2 | 84 | 1.06 |
| 613003150 | FCBL-HF 2020 | 20 20 | 1318x1360x750 | 1228x1228 | 4 | - | 89 | 1.37 |
| 613003160 | FCBL-HF 2025 | 20 25 | 1318x1670x750 | 1228x1540 | 4 | 2 | 117.5 | 1.68 |
| 613003170 | FCBL-HF 2030 | 20 30 | 1318x1975x750 | 1228x1845 | 6 | - | 126 | 1.99 |
| 613003180 | FCBL-HF 2510 | 25 10 | 1677x744x750 | 1537x614 | 2 | 1 | 64 | 0.95 |
| 613003190 | FCBL-HF 2520 | 25 20 | 1677x1360x750 | 1537x1230 | 4 | 2 | 110 | 1.74 |
| 613003200 | FCBL-HF 2530 | 25 30 | 1677x1975x750 | 1537x1845 | 6 | 3 | 156 | 2.53 |
| 613003210 | FCBL-HF 3010 | 30 10 | 1982x744x750 | 1842x614 | 3 | - | 73.5 | 1.13 |
| 613003220 | FCBL-HF 3015 | 30 15 | 1982x1055x750 | 1842x925 | 3 | 3 | 111 | 1.6 |
| 613003230 | FCBL-HF 3020 | 30 20 | 1982x1360x750 | 1842x1230 | 6 | - | 121.5 | 2.06 |
| 613003240 | FCBL-HF 3025 | 30 25 | 1982x1670x750 | 1842x1540 | 6 | 3 | 162 | 2.53 |
| 613003250 | FCBL-HF 3030 | 30 30 | 1982x1975x750 | 1842x1842 | 9 | - | 172 | 2.99 |

Other dimensions and arrangements available on request.

## Filters for High Temperature

## فیلتر برای دمای بالا


### Advantages

- 99.97% DOP
- High temperature resistant (up to 350°C)

**Application:** Protection of ultra-clean processes at high temperatures.
**Frame:** Stainless steel.
**Gasket:** Glass fibre.
**Media:** Glass fibre paper.
**Separator:** Aluminium.
**Sealant:** Ceramic, glass fibre.
**DOP efficiency:** 99.97% .
**Temperature:** 350°C in continuous service (400°C peak).

| Reference | Type | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Media area $m^2$ | Air flow/nominal pressure drop $m^3/h/Pa$ | Unit weight kg | Unit volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| 213612F2 | Absolute 1 FRK | 1FRK-220-10 | 305x610x150 | 99.97 | 5.1 | 580/250 | 6 | 0.04 |
| 213024F1 | Absolute 1 FRK | 1FRK-300-10 | 457x457x150 | 99.97 | 6.8 | 1125/250 | 8 | 0.05 |
| 213014F2 | Absolute 1 FRK | 1FRK-150-10 | 457x610x150 | 99.97 | 8.0 | 900/250 | 10 | 0.07 |
| 213017F2 | Absolute 1 FRK | 1FRK-600-10 | 610x610x150 | 99.97 | 11.0 | 1245/250 | 12 | 0.07 |
| 213019F2 | Absolute 1 FRK | 1FRK-980-01 | 914x610x150 | 99.97 | 16.8 | 1925/250 | 16 | 0.11 |
| 213003F2 | Absolute 1 FRK | 1FRK-450-01 | 305x610x150 | 99.97 | 10.4 | 950/250 | 9 | 0.06 |
| 213021F2 | Absolute 1 FRK | 1FRK-725-01 | 610x457x292 | 99.97 | 16.4 | 1500/250 | 13 | 0.08 |
| 213010F1 | Absolute 1 FRK | 1FRK-1250-01 | 762x610x292 | 99.97 | 28.4 | 2625/250 | 21 | 0.17 |
| 213008F2 | Absolute 1 FRK | 1FRK-1000-01 | 610x610x292 | 99.97 | 22.5 | 2050/250 | 17 | 0.12 |

Model 01 = seal on air inlet side - Model 02 = seal on air outlet side - Other dimensions available on request

## Filters for Painting Booths

## فیلتر مخصوص کابین رنگ


### Advantages

- **High efficiency**
- **High temperature**
- **Silicon free construction**
- **Compact design**

**Application:** Paint bake ovens.
**Type:** High efficiency, high temperature, silicon free compact filter.
**Frame:** Galvanised steel.
**Gasket:** Glass fibre.
**Media:** Glass fibre paper.
**Separator:** Corrugated aluminium.
**Sealant:** Glass fibre .
**Grid:** Galvanised steel grille upstream and downstream.
**EN 779:2002 efficiency:** F6, F8.
**Opacimetric efficiency:** > 60%, >90%.
**Recommended final pressure drop:** 300 Pa.
**Temperature:** 220°C maximum continuous, 250°C peak during 1 hour.

| Reference | Model | Dimensions (WxHxD) mm | Filter classification EN 779:2002 | Media surface $m^2$ | Air flow/nominal pressure drop $m^3/h/Pa$ | Unit weight kg | unit volume $m^3$ |
|---|---|---|---|---|---|---|---|
| 1519.77.03 | 3CPMHT-HF-242412-60 | 592x592x292 | F6 | 13.3 | 3600/110 | 9 | 0.10 |
| 1520.27.03 | 3CPMHT-HF-242412-90 | 592x592x292 | F8 | 13.3 | 3600/155 | 9 | 0.10 |

Other dimensions available on request.
Also available in version without flange, for more information please contact us.

## Filters for Gas Turbines

## فیلتر مخصوص توربین های گازی

### Advantages

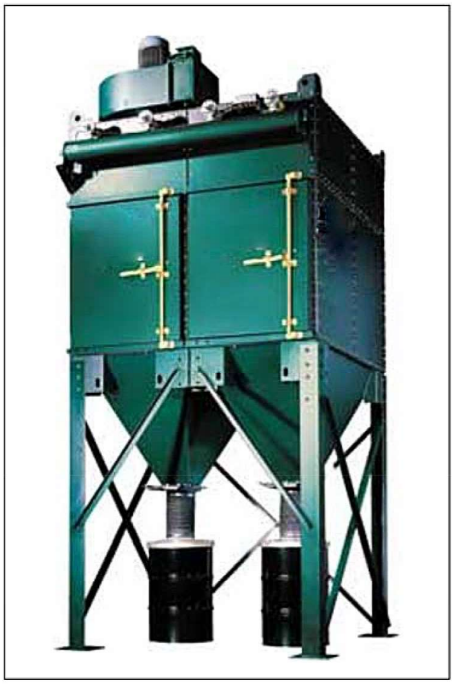
- Specially designed for very dusty environments
- Desert and arctic environments
- Air intake for gas turbines, compressors and large engines

**Type:** Single stage, high efficiency Pulse filter cartridge.
**End Caps:** Galvanised steel.
**Liners:** Expanded galvanised steel.
**Media:** Resin impregnated mixture of cellulose and synthetic fibres.
**Separator:** Hot melt beads.
**Seal:** Adhesive bonding layer.
**Gasket:** Closed cell neoprene or equivalent.
**Eurovent 4/9 efficiency:** F9.
**Recommended final pressure drop:** 1000 Pa.
**Recommended air flow per set of cartridges CY-2612/CO-2612:** 2500 $m^3$/h.
**Temperature:** 80°C max.
**Degradation pressure:** 10kPa.

| Model | Dimensions mm | | Media area | Air flow/Pressure drop $m^3$/h/Pa | Filter classification | Shipping data $m^3$ / Kg | |
|---|---|---|---|---|---|---|---|
| CY-2612 | 660 | 324 | 21.40 | 1062/211 | F9 | 0.076 | 7 |
| CO-2612 | 660 | 445/324 | 25.41 | 1261/211 | F9 | 0.142 | 9 |

## Dust Collector(jet puls)

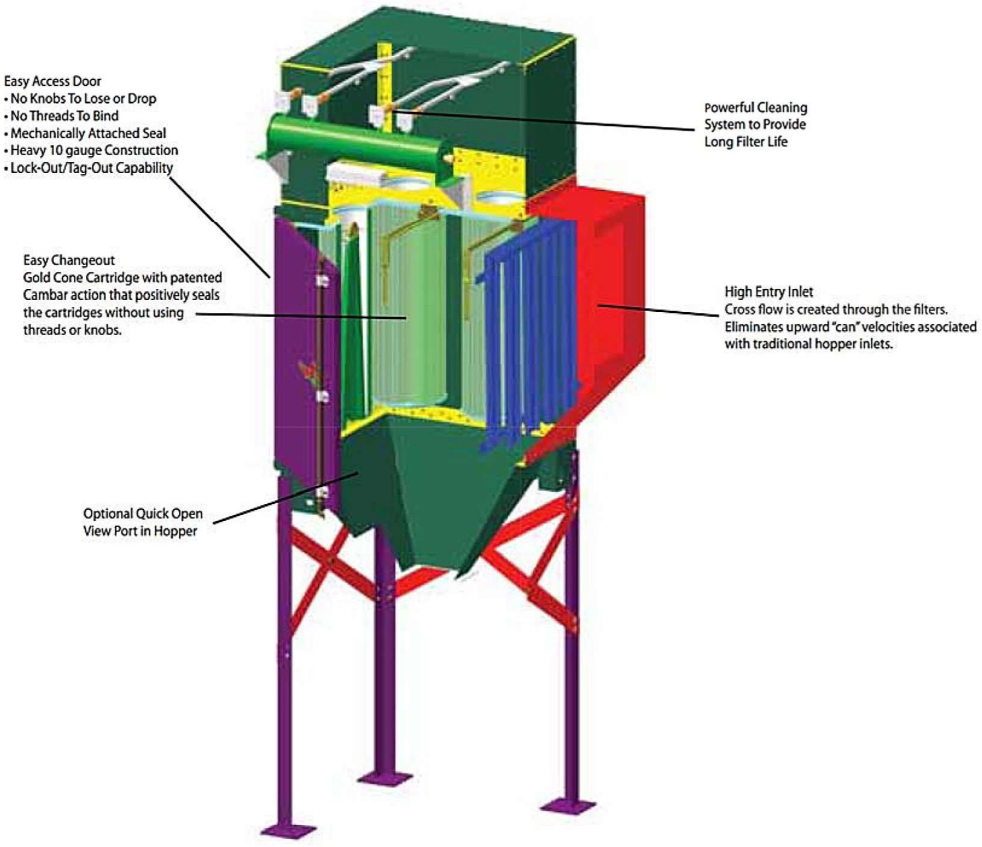
## غبارگیر جت پالس



### Advantages

- High collector efficiency using HemiPleat cartridges
- Up to 25% smaller
- Customised for Original Equipment Manufacturers (OEM)
- Modular design for optimum flexibility
- Easy to install and maintain
- Simple cartridge replacement using quick release cam bars

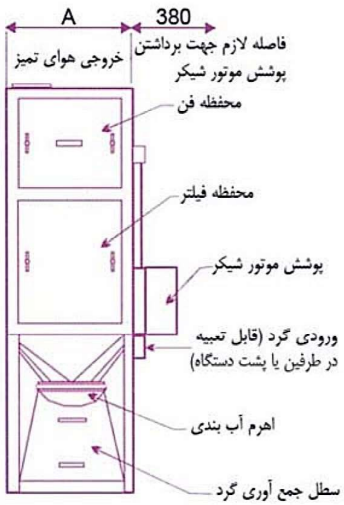
**Application:** Gold Series cartridge dust and fume collectors may be used for a wide range of pollution control and product recovery applications.
**Type:** Pulse cleaning, cartridge based dust collector with high performance filter elements. Cleaning is accomplished by pulse waves that emanate from the centre of the filter providing enhanced cleaning for a more efficient operation.
**Construction:** Strong modular construction using 4.5mm carbon steel for the frame and 3mm carbon steel for the doors, hopper and panels.
**Finish:** As standard in a green, durable, corrosion resistant powder coated finish. Alternative construction and colours are also available.
**Options:** A wide variety of options are available including: Explosion Venting, Special Inlet Designs, BIBO (bag in-bag out) for Pharmaceutical Applications, Custom Colours, Stainless Steel Construction, Alternative Hopper Designs etc. please contact us with your specific requirements.
**Cartridges:** Vertically mounted to shed dust readily for efficient cleaning and longer service life. High filtration efficiency meeting the 5 mg/m$^3$ or less emissions required to re-circulate the air back into the work place on non hazardous dusts.



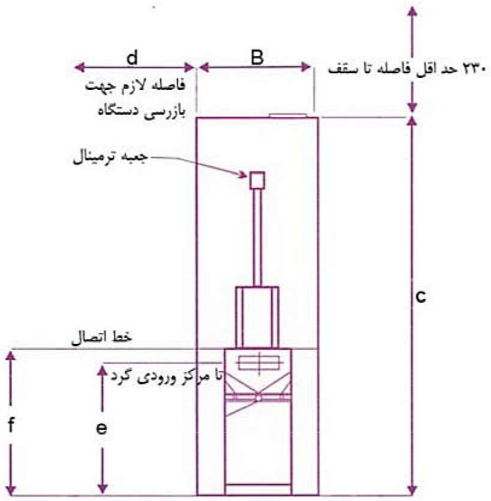
Dust Collector(Shaker type)

## غبارگیر شیکر

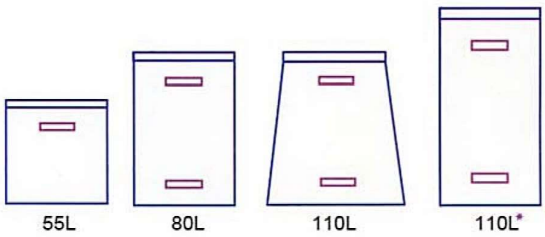
نمای جلو




نمای پهلو




| سطح جمع آوری گرد | | | |
|---|---|---|---|
| وزن (kg) | ارتفاع (mm) | قطر(mm) | گنجایش (L) |
| 5 | 400 | 420 | 55 |
| 7 | 630 | 420 | 80 |
| 8 | 630 | 555 | 110 |
| 8 | 805 | 420 | 110 |




*مخصوص استفاده با دستگاه اندازه SDC70

جدول ابعاد برای استفاده با سطل **55L**:

| مدل SDC | سطح فیلتر $M^2$ | ابعاد به میلیمتر | | | | | | ورودی هوا (ابعادداخلی) mm | حدود اندازه لوله هوا mm | نوع فن | قدرت موتور KW | وزن تقریبی KG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | C | d | e | f | | | | | |
| 70 | 6.23 | 575 | 575 | 1790 | 560 | 640 | 725 | 100×165 | 75-150 | F1-F2 | 0.75-1.5 | 165 |
| 100 | 9.29 | 765 | 575 | 1960 | 560 | 720 | 810 | 140×270 | 100-200 | F1-F2-F3 | 0.75-1.5-3 | 195 |
| 150 | 13.94 | 765 | 765 | 2015 | 760 | 720 | 810 | 140×270 | 100-225 | F1-F2-F3 | 0.75-1.5-3 | 210 |
| 250 | 22.67 | 1145 | 765 | 2225 | 760 | 915 | 1020 | 170×310 | 100-225 | F2-F3-F5 | 1.5-3-5.5 | 280 |

## Dust Collector Filter

## فیلتر سیلندری جت پالس

### Advantages

- High efficiency, 99.999% at 0.5µ and above
- Low pressure drop
- Reduced energy cost
- Long filter life
- Open pleat spacing to enhance cleaning cycle
- Easy to install using quick release cam bars
- Double seal gasket for added security

**Application:** HemiPleat cartridges may be used for a wide range of pollution control and product recovery applications.
**Type:** Pleated media cartridge with improved pleat spacing and media alignment.
**Construction:** Vertically mounted to shed dust readily for efficient cleaning and longer service life. Features a cone in the centre of the cartridge to distribute the air pulse and enhance the cleaning cycle.
**Media:** Several different types of filter media, pre-coat materials and over bags are available to suit specific operating conditions. Please contact us to make this selection.
**Efficiency:** 99.999% at 0.5µ and above.
**Options:** Filter cartridge options are available to suit specific operating conditions. These include Carbon Impregnated, Fire Retardant, Ultra High Efficiency, PTFE, and High Temperature. Please contact us to make this selection.

| Reference | Type | Model | Media Type | Dimensions (dia. x L) mm | Media area $m^2$ | Unit weight kg |
|---|---|---|---|---|---|---|
| 211497-001 | HemiPleat | HMPTS325 | PolyTech Standard | 380 x 1000 | 30.2 | 13.6 |
| 211497-002 | HemiPleat | HMPTC325 | PolyTech Carbon Impregnated | 380 x 1000 | 30.2 | 13.6 |
| 211497-004 | HemiPleat | HMPTF325 | PolyTech Fire Retardant | 380 x 1000 | 30.2 | 13.6 |
| 211497-005 | HemiPleat | HMPTU325 | Poly Tech Ultra High Efficiency | 380 x 1000 | 30.2 | 13.6 |
| 211497-006 | HemiPleat | HMPTUF325 | Poly Tech Ultra High Efficiency Fire Retardant | 380 x 1000 | 30.2 | 13.6 |

## Fume Arm

هود بازویی

Technical Data

## Advantages

- Leaktightness by means of gel
- 100% individual control
- Can be assembled without clamping

2 HYDROLIC CONECTIONS
ELECTRO STATIC PAINT
Arm Diameter: 100, 160, 200 mm
Arm Lengths: 2m, 3m

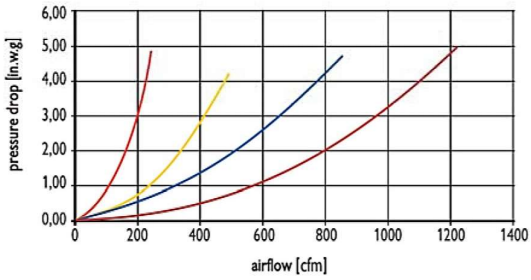
**Industrial strength in capturing:**

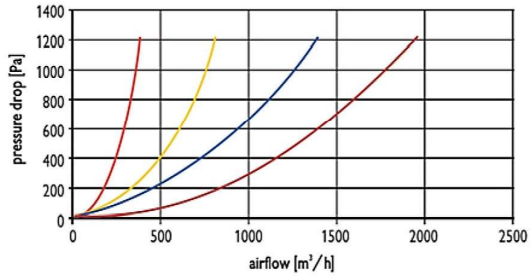
- **WELDING FUMES**
- **GRINDING DUSTS**
- **DRY DUSTS**
- **SOLDERING DUSTS**
- **POWDERS**

**and many more...**

| Model | Arm reach [feet]/[m] | Arm diameter [inch]/[mm] | Hood diameters [inch]/[mm] |
|---|---|---|---|
| 21015 | 7 / 2,0 | 4 / 100 | 6 / 150 |
| 21020 | 7 / 2,0 | 4 / 100 | 8 / 200 |
| 251020 | 8 / 2,5 | 4 / 100 | 8 / 200 |
| 21220 | 7 / 2,0 | 5 / 125 | 8 / 200 |
| 251220 | 8 / 2,5 | 5 / 125 | 8 / 200 |
| 31220 | 10 / 3,0 | 5 / 125 | 8 / 200 |
| 21620 | 7 / 2,0 | 6 / 160 | 8 / 200 |
| 31620 | 10 / 3,0 | 6 / 160 | 8 / 200 |
| 31630 | 10 / 3,0 | 6 / 160 | 12 / 300 |
| 22030 | 7 / 2,0 | 8 / 200 | 12 / 300 |
| 32030 | 10 / 3,0 | 8 / 200 | 12 / 300 |
| 32035 | 10 / 3,0 | 8 / 200 | 14 / 350 |

### Static Pressure & Air Flow




**All External Joints and Supports**

**HYDROLIC CONECTIONS**

**Air Diverter and Grab Handle**

# دستگاه تصفیه دود جوشکاری پرتابل

## Advantages

- Totally incinerable
- High air flow rates
- Light weight construction
- New ergonomic handle to assist with filter changes
- Corrosion resistant

## Technical Data

| RollOut | | |
|---|---|---|
| Airflow with arm* | [cfm] / [m³/h] | 615 / 1000 |
| Weight 1 (without arm) | [lb] / [kg] | 275 / 125 |
| Weight 2 (with arm 1630P) | [lb] / [kg] | 320 / 145 |
| Motor power supply (voltage) | [V] /ph/ [Hz] | 380 / 3 / 50 |
| Motor power | [HP] / [kW] | 2.0 / 1.5 |
| Waste drawer | [Gallons] / [l] | 2.23 / 10 |
| Filters: | | |
| Preliminary (metal) | [in] / [mm] | 21x17x0.8 / 540x440x20 |
| Cartridge | [in] / [mm] | 12.8x26 / 325x660 |
| Carbon at outlet | [in] / [mm] | 21x17x0.8 / 540x440x20 |

## Construction Features

- Heavy Duty welded construction
- Heavy Duty Wheels and Swivel Castors
- Full Width handle for ease of movement
- Easy access to the filters
- Low Center of Gravity to prevent tipping
- Built in Spark trap
- Vaccum gage
- 2,2kw Motor
- Multiple motor voltages available with Inverter
- Thermal overload for motor

## Performance Features

- Recomended optionaly supplied standard arm sizes
  Arm Option 1: 160mm x 2m
  Arm Option 2: 160mm x 3m
- 3 Stage filtration
  Stage 1: (2) Metal Mesh Filter - Granol Filter
  Stage 2: (1) Tested Hepa Cartridge Filter
  Stage 3: (1) Carbon after Filter - Alomina Activated Filter
- 99% @ 1micron Filter Efficiency
- 69dB(a) level @ 1m