BPT

Clean Air Solutions

Bag - In Bag - Out Safety Housing

BPT E&T CORP. SUPPLY PRODUCTS, SERVICES, CLEAN AIR SOLUTIONS FOR INDUSTRIAL FACTORY, HOSPITAL AND INDOOR AIR QUALITY FOR OFFICE BUILDINGS. THE MAIN PRODUCT AS:

- Pre-filter and fine filter for AHU and HVAC system.
- HEPA, high temperature HEPA for clean room and hospital.
- FFU, filter housings, frames & louvers.
- Air purifier for health care, comfort, hotels, offices & laboratories.
- Activated carbon filter, wet scrubber, ozone generator, hydroxyl generator for odor control, gas treatment.
- Dust, oil, mist collector, central vacuum system and cartridge filters.
- Air filter for life science, microelectronic, hospital, automotive, food industries.
- Air contamination treatment solution and carbon filters.
- Accessories and fan, vacuum pump.

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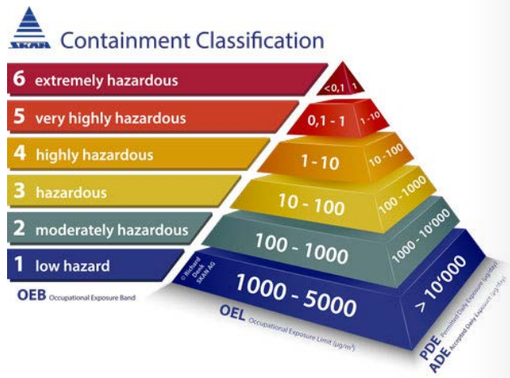
CONTAINMENT CLASSIFICATION

Active Pharmaceutical Ingredients_ Pharmacy application

"Chemicals are used in manufacturing of pharmaceutical drug and harmful for people working with them. Every harmful chemical has an occupational exposure limit that should be followed in industries".



Considering the number of hour's worker has to spend administering medicine they are at a higher risk of illness from toxicity. The health specialist should have enough knowledge of how their health may be affected by exposure to the high levels of toxic compounds. It is important to put into consideration the amount of time they spend at work. Due to the need to want to protect the health practitioners the occupational exposure band for pharmaceutical drugs was set up.

The occupational exposure band classifies chemicals into groups based on the occupational exposure limit. The occupational exposure band cares about how long workers may by exposed to the high-level concentration of compounds. This exposure may cause a number of health challenges namely, skin corrosion, eye damage, germ cell mutagenicity and skin sensitization

The occupational exposure band set out the OEL (Occupational exposure limit) that sets to give a precise limit under which workers may still be safe working under. There are certain levels of airborne concentration for a specific time that workers may remain healthy. The standards are important as well as the occupational exposure set limits. The limits help by protecting workers who are in the environment of harmful chemicals from getting occupational diseases.

Occupational exposure band (OEBs) – Classification		
1,000 -5,000 µg/m3	**OEB 1**	Not harmful, not irritating, low pharmacological activity e.g. predicted therapeutic dose >100mg/day, Example-many excipients.
100 - 1,000 µg/m3	**OEB 2**	Harmful, may by irritant, moderate pharmacological activity, predicted therapeutic dose >10-100mg/day. Example-Loratadine.
10 – 100 µg/m3	**OEB 3**	Moderate toxic and/or high pharmacological activity, predicted therapeutic dose >1-10mg/day. Respiratory sensitizers and potent dermal sensitizers, severe irritants and corrosives, also default category. Example-many penicillin & cephalosporin antibiotics
1 – 10 µg/m3	**OEB 4**	Toxic serious irreversible effects, carcinogens, mutagens, reproductive and developmental toxins, potent respiratory sensitizers, predicted therapeutic dose <1mg/day. Examples-corticosteroids some oncology drugs.
< 1 µg/m3	**OEB 5**	Extremely toxic and/or extremely high pharmacological activity predicted therapeutic dose ≤0.1 mg/day. Serious irreversible effects, potent carcinogens, mutagens, reproductive and developmental toxins. Example-potent hormones or hormone effectors, select anti-cancer drugs.

INFECTIOUS DISEASES AND ISOLATION IN HEALTHCARE FACILITY

Healthcare workers (HCWs) are occupationally exposed to a variety of infectious diseases during the performance of their duties. The delivery of healthcare services requires a broad range of workers, such as physicians, nurses, technicians, clinical laboratory workers, first responders, building maintenance, security and administrative personnel, social workers, food service, housekeeping, and mortuary personnel. Moreover, these workers can be found in a variety of workplace settings, including hospitals, nursing care facilities, outpatient clinics (e.g., medical and dental offices, and occupational health clinics), ambulatory care centers, and emergency response settings. The diversity among HCWs and their workplaces makes occupational exposure to infectious diseases especially challenging.

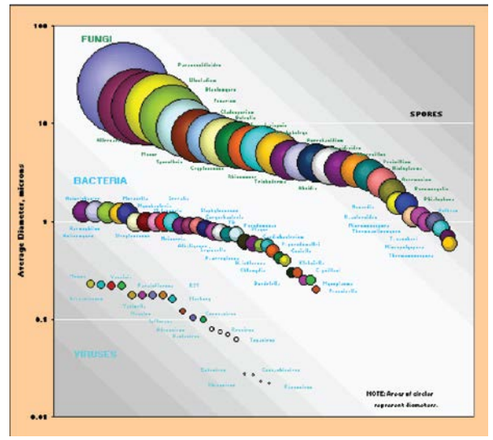
Four types of infectious disease transmission can occur:

(1) Contact transmission can be sub-divided into direct and indirect contact.

(2) Droplets containing infectious agents are generated when an infected person coughs, sneezes, or talks, or during certain medical procedures, such as suctioning or endotracheal intubation.

(3) Airborne transmission occurs through very small particles or droplet nuclei that contain infectious agents and can remain suspended in air for extended periods of time.

(4) Vector transmission, which is spread through insects or animals.



High contagious

Rubeola virus (measles), Varicella virus (chickenpox), Mycobacterium tuberculosis SARS-CoV.

BAG-IN/BAG-OUT ISOLATION TECHNOLOGY

Bag-in/Bag-out: the safest and quickest way to keep confinement while changing filters on a glove-box

Operator remains protected and external environment remains clean while removing contaminants stopped inside the old filter (HEPA) wrapped and secured inside the bag and ready for disposal after the process…

Allows working staff to change filter without getting in direct contact with contaminants (e.g. toxic powders, radioactive dust, viable organism, carcinogens…). Used filters are easily removed from the isolator structure wrapped inside a barrier material (containment bag) and external atmosphere remains un-contamined. Bag-in/bag-out filter replacing method can be available for filters with different shape and size. Different filters are available on the market according to the required air flow: can be cylindrical, square or rectangular, available in different sizes.

Some Importance Zone Necessary Need Airborne Isolation

- Nuclear power plants and fuel processing facilities
- Animal disease laboratories
- Food facilities (make up chemical subject)
- Hospitals and other healthcare facilities
- Electronics manufacturing (cleanrooms)
- Toxic waste isolation plants
- Industrial, research, and military facilities handling chemical, biological, radiological, or carcinogenic materials
- Biomedical research and genetic engineering facilities…

BIBO SAFETY HOUSING

WITH HIGH SAFETY FEATURE

1. STRENGTH PROFIE FOR AIRTIGHT

Four walls and access doors are made by stainless steel 304 with 2.0mm thickness and folded to angle. Continuously welding for complete tightness, Modules are tested with pressure between 5.000 to 6.000 Pascal.

2. GASKET/KNIFE FRAM

Very rigid gasket/ gel frame by angle profile. Four frames are placed on a plane and four corners will be fully welded. Gasket frame apply for DIN gasket filter type and knife frame as option for gel filter type.

3. FILTER CLAMPING

Z-clamping frame fully contact at four edge of filter. Press force impact on z-clamping at corners by 2 eccentric wheels.

4. CLAMPING-LOCK

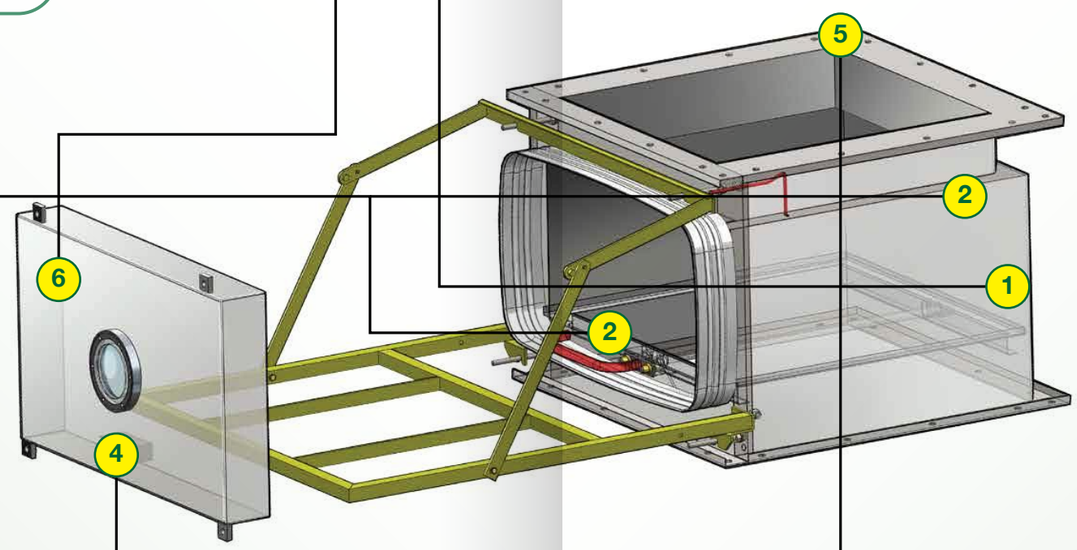
The clamping-lock dispose at behind door. It is impossible to close the door if the clamp shaft is not in the locked position.

5. DP TEST PORT

Quick connection and flexible tubes are applied normal environment. Thread connection, ball valve and brass tube for hazardous exhausted air.

6. STRONG CONNECTION FLANGE

Complete airtight between the units and collection plenums by silicon gasket. Flange wide 50mm for connecting each.



APPLICATION AREAS

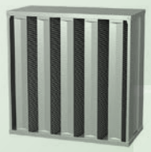
Hospital, Pharmaceutical, Safety laboratories, Industries chemical, Biotech, Biosafety, Animal facilities.
Hospital isolation rooms/wards and Intensive Care Units (ICUs) for the control of airborne pathogens, viral contaminants and infectious organisms.

PVC plastic bag

Pre-filter

Fine-filter

HEPA filter



Molecular filter

7. ACEESSES DOOR FIXATION

Each door only services to one filter-Easy maintenance. The rods which fasten the door to the housing are bolted outside the pressurized area.

8. PVC PLASTIC BAG

Make in USA or France.
The safety bag is designed to offer highest possible protection and convenience for the operator. It is made of an 200 micrometer (0,2 millimeter) thick plastic material, which makes it really strong and tear proof. It has an integrated O-ring for quick and easy mounting. And the safety bag also has a special sleeve function which securely removes any residue from the previous bag.

9. MANUAL SCAN TESTING DEVICE

Quickly connection ports are place for scanning HEPA/ULPA filter.
Upside: upstream aerosol concentration port
Downside: downstream scanning system.
Injection module is as option to mixing aerosol well.

10. ACCESSORIES & OPTIONS

- Glass window as inspection window
- Handling table
- Different pressure gauge or sensor
- Collection plenum to connect to ducting system
- Making material: CS with painting or SS304

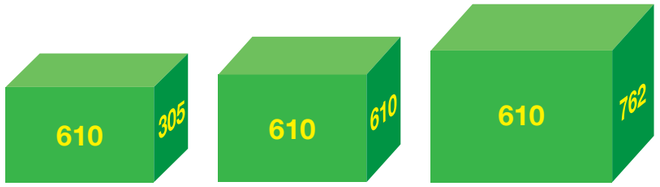
MODULE CONFIGURATION

1. TYPE

Bag-in Bag-out Safety Filter Housing_**Up-down Type**

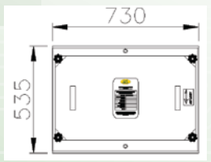
2. STANDARD SIZE

Size	Filter Size (mm)
305	305 x 610
610	610 x 610
762	760 x 610
610 is always on the door size	

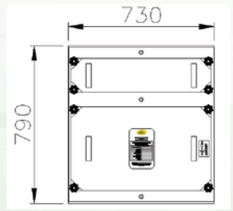


3. FILTER STAGES

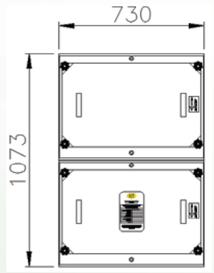
Size	Pre-filter Height: 50mm	Main filter Height: 292mm
F	--	01
PF + F	01	01
F + F		02
PF + F + F	01	02



BIBO-F



BIBO-PF+F



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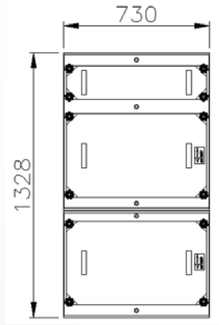


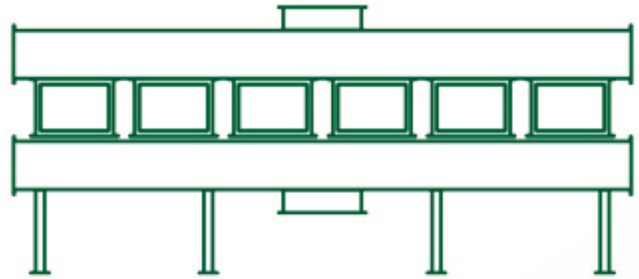
BIBO-PF+F+F

4. MATERIAL

- Carbon steel with powder painting
- Stainless steel SUS304

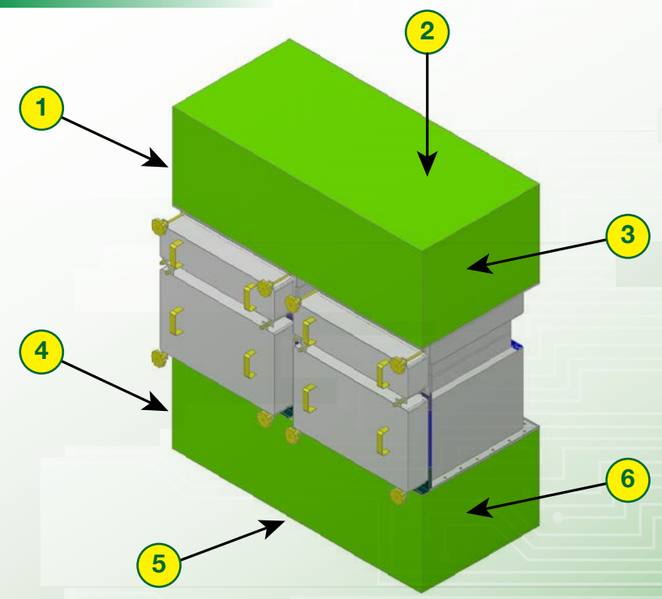
5. FLOW RATE/ BANK

Size/bank	1	2	3	4	5	6
305	2,000	4,000	6,000	8,000	10,000	12,000
610	4,000	8,000	12,000	16,000	20,000	24,000
762	6,000	12,000	18,000	24,000	30,000	36,000

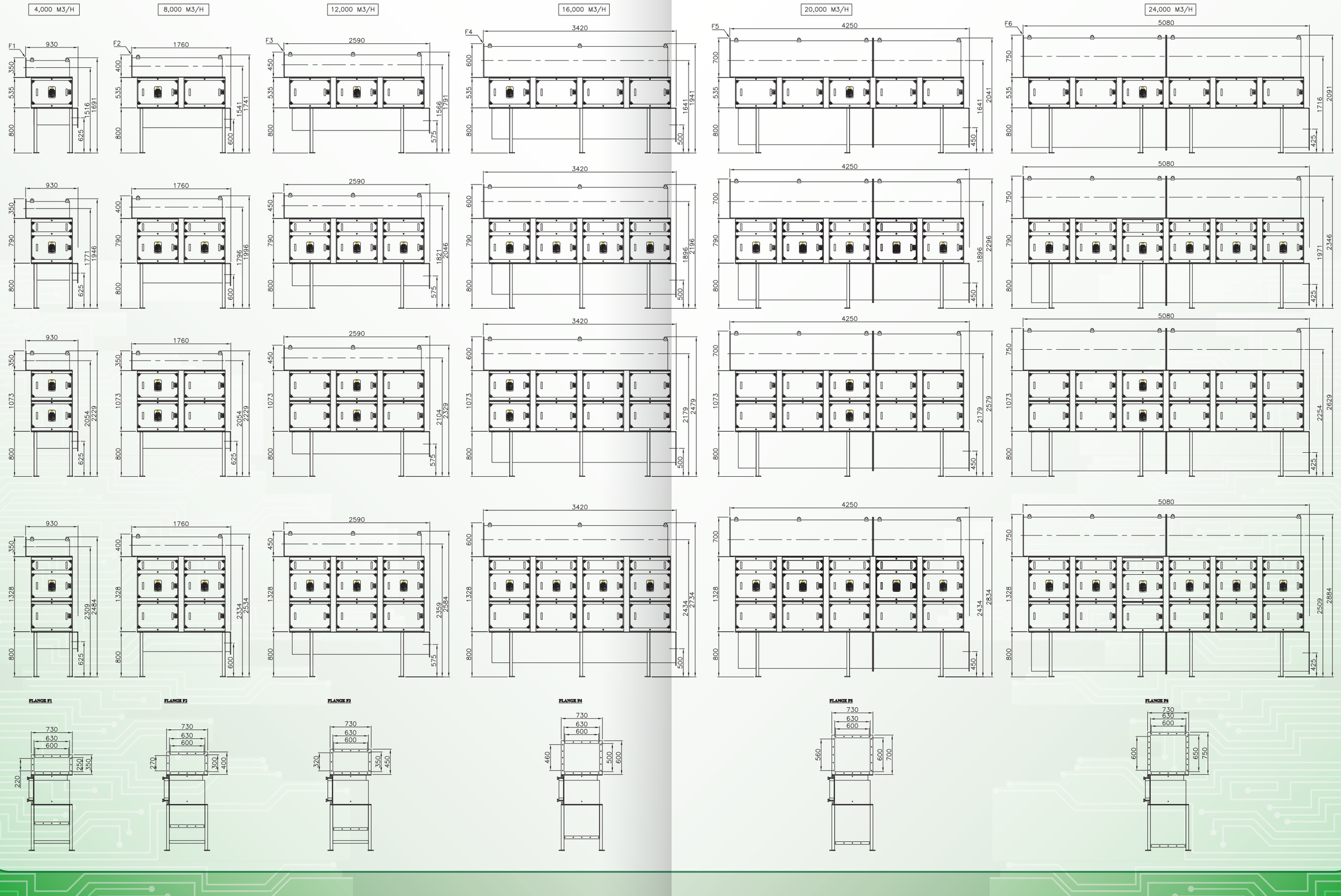


6. CONNECTION DUCTING

	Inlet Plenum
1	Top left side
2	Top central
3	Top right side
	Outlet Plenum
4	Bottom left side
5	Bottom central
6	Bottom right side



610 TYPE WITH STANDARD COLLECTION PLENUM



FILTER CELL DATA

PRE-FILTER



Name	Filter Class According To En 779	Size W x H x D (mm)	Media Surface (M^2)	Air Flow (M^3/h)	Pressure Drop (Pa)
AeroPleat HP	G4	305 x 610 x 50	0.6	1800	100
AeroPleat HP	G4	610 x 610 x 50	1.1	3600	100
AeroPleat HP	G4	762 x 610 x 50	1.7	5400	100
EcoPleat	F7	305 x 610 x 5	2.9	1450	120
EcoPleat	F7	610 x 610 x 50	5.89	2900	120
EcoPleat	F7	762 x 610 x 50	8.8	4350	120
Opakair Green 2	F9	305 x 610 x 292	9.6	1700	135
Opakair Green 2	F9	610 x 610 x 292	24.4	3400	135
Opakair Green 2	F9	762 x 610 x 292	34	5100	135

MAIN FILTER


Name	Filter Class According To En 1822	Size W x H x D (mm)	Media Surface (M^2)	Air Flow (M^3/h)	Pressure Drop (Pa)
Absolute DG	H14	305 x 610 x 292	19.0	1350	290
Absolute DG	H14	610 x 610 x 292	39.9	3200	290
Absolute DG	H14	762 x 610 x 292	50.1	4100	290
Absolute VGXL	H14	305 x 610 x 292	15.0	1500	310
Absolute VGXL	H14	610 x 610 x 292	38.0	4000	310
Absolute VGXL	H14	762 x 610 x 292	46.0	6000	380

MAIN FILTER

Name	Size Size W x H x D (mm)	Version	Active Carbon Volume (Liter)	Recommended Temp. (°c)	Recommended Relative Humidity (%)	Weight (kg)
Acticarb 4000	305 x 610 x 292	4 V version	32.5	0-40	30-70	45
Acticarb 4000	610 x 610 x 292	4 V version	65	0-40	30-70	82