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***Professional HVAC Fan  
& Motors Manufacturer***

—— Filter Element

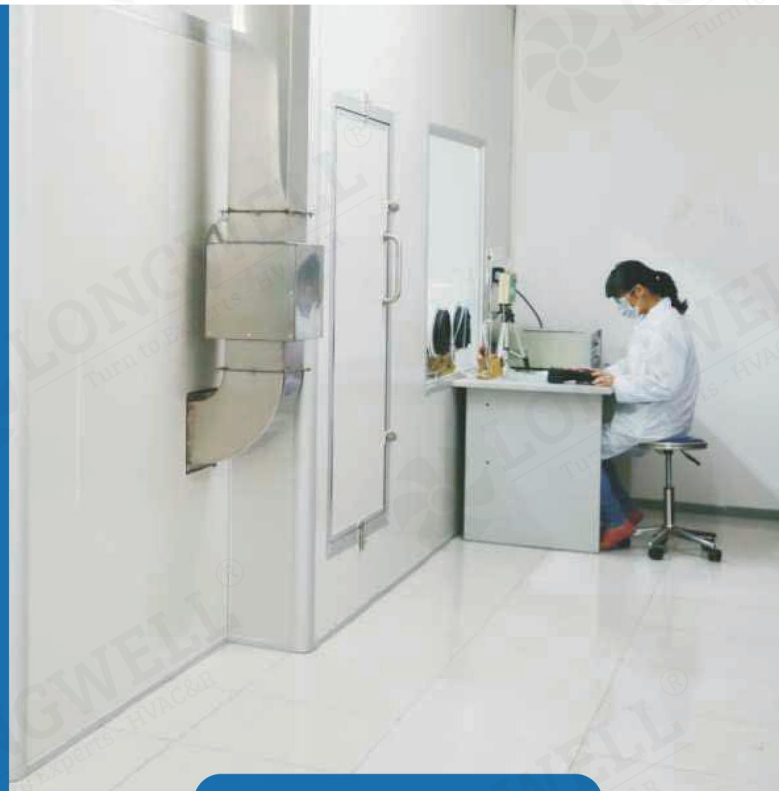
**Ningbo Longwell Electric Technology CO, LTD**

## CADR Test Chamber

## Filter Resistance And Efficiency Testing Laboratory



VOC CADR Laboratory



Particle CADR Testing Laboratory



Filter Resistance And Efficiency Testing Laboratory

30m<sup>3</sup> CADR test chamber is established according to GB/T18801-2015 standard, equipped with highly precise tester from America, such as TSI3340 (Resolution: within 5% at 0.1μm diameter, Particle Size Range: 0.09 to 7.5μm optical size (PSL equivalent), Maximum Concentration: 3000p/s) and TSI8530 Resolution: ±0.1% of reading of 0.001mg/m<sup>3</sup>, Particle Size Range: 0.3-10μm, Detective Range: 0.001-400mg/m<sup>3</sup>)

The filter resistance and efficiency test laboratory is developed according to the American Standard ashrae52.2 and est-rp-ccoo7.2. Its principle is to measure and evaluate the resistance and filtration efficiency of the filter under rated air volume in the test system by simulating the actual working state of the tested sample.



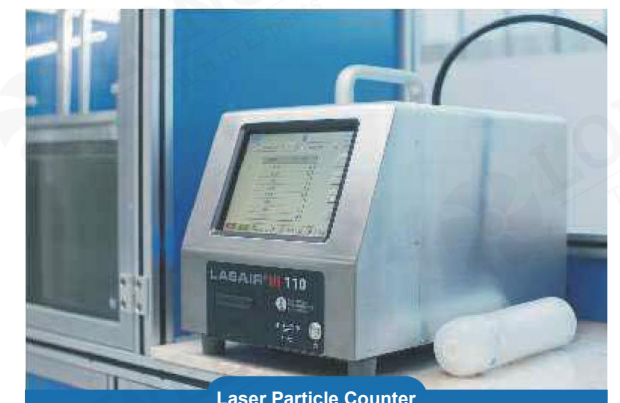
TSI 3340



TSI 8530



Filter Resistance and Efficiency Testing Bench



Laser Particle Counter

## Testing Equipment



**Touch Screen Laser  
Dust Particle Counter**



**Touch Screen Laser  
Dust Particle Counter**



**Filter Material Dust  
Capacity Test Bench**



**Semi-auto Cabin Air Filter  
Side-gluing Machine**



**Cabin Filter Trimming Machine**



**Particulate Matter Filtration  
Efficiency Test Bench**



**Filter Material Test Bed**



**Full-auto Paper Frame Gluing Machine**



**Knife Paper Pleating Machine**



**Automatic Reciprocating Origami Production Line**



**Automatic Paper Frame Dispensing Machine**



**Semi Automatic Air Conditioner Side Bonding Machine**



**Full Automatic PP Intermittent Gluing and Knife Folding Wave Receiving Production Line**



**Irregular Filter Element Trimming Machine**



**PU Pack Trimming Machine**



**Full-auto PP Intermittent Gluing Production Line**



**Ash Filter Glue Injection Machine**



**Full-auto High Speed CNC Knife Paper Pleating Production Line**

## HEPA+Anti-bacterial Allergy Filter

The compound filter screen is a high-efficiency adsorption filter material formed by orderly process combination of carbon sandwiched between non-woven fabrics, which efficiently filters tiny particles in air and adsorbs harmful gases.

**Filter Material:** Carbon-core cloth

**Frame:** Black cardboard frame, color cardboard frame, hard paper, frame, aluminum frame, galvanized frame, stainless steel frame.

**Sealing Strip:** EPDM (high rebound), EVA (high rebound), PU (high density) Highly effective filtration of harmful gases such as PM2.5, secondhand smoke, formaldehyde, toluene, TOVC, etc., inhibiting bacteria and mold.

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, medical purifiers, car purifiers, air heaters, vacuum cleaners, air conditioners and other environments that require high air filtration efficiency.



### Technical Parameters

| Weight (g/m²)          | Carbon Content | Filtration Grade            | Thickness (mm) | Product Thickness (mm) | Wind Resistance (Pa) | Dust Holding Capacity |
|------------------------|----------------|-----------------------------|----------------|------------------------|----------------------|-----------------------|
| 600±40g/m²             | 240±50g/m²     | H12                         | 1.4±0.2        | 25-60                  | 19                   | 240g/m²               |
| Antibacterial Property | Deodorization  | Degradation of Formaldehyde | TVOC           |                        |                      |                       |
| ≥99.8%                 | ≥99.8%         | ≥98%                        | ≥98%           |                        |                      |                       |

Note: customizable according to the customer's requirements

## Activated Allergy Filter

**Filter Material:** High iodine column carbon, coconut shell carbon, modified activated carbon, etc. honeycomb, plastic honeycomb, paper honeycomb.

**Base Material:** Aluminum honeycomb, plastic honeycomb, paper honeycomb.

**Frame:** Black cardboard frame, color cardboard frame, hard paper frame, aluminum frame, galvanized frame, stainless steel frame.

**Sealing Strip:** PDM (high rebound), EVA (high rebound), PU (high density)

**Structure:** Optional activated carbon+high-strength frame+sealing strip(optional)+handle (optional)

**Function:** Absorb peculiar smell, formaldehyde, toluene, TOVC and other harmful gases, effectively purify the environment.

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, medical purifiers, car purifiers, air heaters, vacuum cleaners, air conditioners and other environments that require high air filtration efficiency.



### Technical Parameters

| Material                  | Iodine Value | Particles               | Characteristic                                                                                                                                                                         |
|---------------------------|--------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Columnar activated carbon | ≥1000        | Φ2-4mm                  | It comes from ancient deep carbon, with developed pore size and stronger adsorption performance than general activated carbon.                                                         |
| Coconut shell charcoal    | ≥1000        | Mesh of 6-12            | Use coconut shells as materials, with more developed aperture ratio than coal carbon.                                                                                                  |
| Modified activated carbon | ≥1000        | Φ2-4mm                  | The activated carbon has been modified to dredge the blocked activated carbon pores, increase the number of activated carbon pores and strengthen the ability to adsorb harmful gases. |
| Activated carbon sponge   | ≥900         | Activated carbon powder | It has better gas dynamics performance, small volume density, large specific surface area, high adsorption efficiency and small wind resistance coefficient.                           |

Note: customizable according to the customer's requirements

## HEPA Allergy Filter

**Filter Material:** PP, PP+ PET glass fiber filter paper.

**Outer Frames:** Paper frame, non-woven fabric frame, aluminum frame, galvanized frame, stainless steel frame.  
HEPA mainly filters dust particles larger than or equal to 0.3 micron, with the highest efficiency up to 99.97%.

**Combined HEPA Filter Screen:** HEPA and honeycomb activated carbon filter are combined to effectively remove peculiar smell toluene, oil mist and other harmful substances. HEPA is matched with antibacterial filter screen, primary filter cotton, nylon net, activated carbon sponge, etc to increase antibacterial effect.

**Sealing Strip:** EPDM (high rebound), EVA (high rebound), PU (high density)

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, medical purifiers, car purifiers, air heaters, vacuum cleaners, air conditioners and other environments that require high air filtration efficiency.



### Technical Parameters

| Material    | Filtration Grade | Filtration Efficiency | Wind Resistance(Pa) | Thickness (mm) | Weight (g/m²) |
|-------------|------------------|-----------------------|---------------------|----------------|---------------|
| PP, PP+PET  | H10              | 95%                   | 12                  | 7-60           | 90±10         |
| PP, PP+PET  | H11              | 98%                   | 13                  | 7-60           | 90±10         |
| PP, PP+PET  | H12              | 99.5%                 | 20                  | 7-60           | 90±10         |
| PP, PP+PET  | H13              | 99.97%                | 30                  | 7-60           | 110±10        |
| PP, PP+PET  | H14              | 99.99%                | 45                  | 7-60           | 110±10        |
| Glass fiber | H14              | 99.99%                | 12                  | 25-300         | /             |

Note: customizable according to the customer's requirements

## Primary Allergy Filter

Antibacterial framework cloth, carbonized framework cloth, non-woven fabric fiber cotton, activated carbon fiber cotton, etc.

**Frame:** Black cardboard frame, color cardboard frame, hard paper frame aluminum frame, galvanized frame, stainless steel frame.

**Sealing Strip:** EPDM (high rebound), EVA (high rebound), PU (high density)

**Structure:** Optional filter material+side edge sealing+high-strength frame +sealing strip(optional)+handle(optional)  
The product can be used as pre-filtration or primary filtration, and the filtering material has the characteristics of good stiffness, low wind resistance, good tensile strength, high air permeability, etc.

**Function:** Filter large particle dust, prevent mildew and bacteria, absorb peculiar smell, filter formaldehyde and other harmful gases, cooperate with efficient filtering equipment to prolong its service life.

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, medical purifiers, car purifiers, air heaters, vacuum cleaners, air conditioners and other environments that require high air filtration efficiency.



### Technical Parameters

| Material                      | Filtration Grade | Air Permeability (L/m².s) | Wind Resistance (Pa) | Thickness (mm) | Weight (g/m²) |
|-------------------------------|------------------|---------------------------|----------------------|----------------|---------------|
| Antibacterial framework cloth | G4               | 1400-5800%                | /                    | 0.2-0.4        | 60-100        |
| Carbonized framework cloth    | G4               | 1500-2300%                | /                    | 0.2-0.5        | 80-95         |
| Non-woven fabric fiber cotton | G4               | /                         | 20-45                | 3-25           | 125-300       |
| Activated carbon fiber cotton | G4               | /                         | 30-45                | 3-5            | /             |

Note: customizable according to the customer's requirements

## Deep-pleat High Efficiency Filter Speciality

**Outer Frame:** Aluminum frame, galvanized frame, stainless steel outer frame.

**Filter Material:** Superfine glass fiber filter paper, high dust content, low resistance. Special aluminum foil or paper spacing can be used, double-sided protective screen available, to protect the filter material, with good strength.

### Applications

1. End filtration of commercial and industrial ventilation and air conditioning system for clean room
2. Air purification systems for electronics, biopharmaceuticals, mechanical instruments, petrochemical light industry, etc.



### Technical Parameters

| Dimensions (mm) | Filtering Area (m²) |                 | Rated Air Flow (m³/h) |                 | Initial Resistance |     |     | Final Resistance |
|-----------------|---------------------|-----------------|-----------------------|-----------------|--------------------|-----|-----|------------------|
|                 | Standard            | High Air Volume | Standard              | High Air Volume | H10                | H13 | H14 |                  |
| 320×320×220     | 4.2                 | 6.1             | 350                   | 525             | 90                 | 130 | 140 | 450              |
| 484×484×220     | 9.5                 | 14.4            | 1000                  | 1500            | 90                 | 130 | 140 | 450              |
| 726×484×220     | 14.5                | 22              | 1500                  | 2250            | 90                 | 130 | 140 | 450              |
| 968×484×220     | 19                  | 29              | 2000                  | 3000            | 90                 | 130 | 140 | 450              |
| 315×630×220     | 8                   | 12              | 750                   | 1200            | 90                 | 130 | 140 | 450              |
| 630×630×220     | 16.5                | 24.5            | 1500                  | 2250            | 90                 | 130 | 140 | 450              |
| 945×630×220     | 25                  | 37              | 2200                  | 3300            | 90                 | 130 | 140 | 450              |
| 1260×630×220    | 33                  | 50              | 3000                  | 4500            | 90                 | 130 | 140 | 450              |
| 305×305×150     | 2.5                 | 3.6             | 250                   | 375             | 90                 | 130 | 140 | 450              |
| 305×610×150     | 5                   | 7.5             | 500                   | 750             | 90                 | 130 | 140 | 450              |
| 610×610×150     | 10                  | 15.2            | 1000                  | 1500            | 90                 | 130 | 140 | 450              |
| 915×610×150     | 15.5                | 23              | 1500                  | 2250            | 90                 | 130 | 140 | 450              |
| 1220×610×150    | 20.5                | 31              | 2000                  | 3000            | 90                 | 130 | 140 | 450              |
| 305×610×292     | 10                  | 15              | 1000                  | 1500            | 90                 | 130 | 140 | 450              |
| 610×610×292     | 21                  | 31.5            | 2000                  | 3000            | 90                 | 130 | 140 | 450              |

Note: customizable according to the customer's requirements

## Mini-pleat HEPA Filter

**Outer Frame:** Aluminum Frame

**Filter Material:** Ultrafine glass fiber filter paper, high dust capacity, low resistance. Light and thin, compact structure, with double-sided mesh, protection of filter material, good strength.

### Applications

1. End filtration of commercial and industrial ventilation and air conditioning system for clean room;
2. Air purification systems for electronics, biopharmaceuticals, mechanical instruments, petrochemical light industry, etc.



### Technical Parameters

| Dimensions (mm) | Filtering Area (m²) | Rated Air Flow (m³/h) | Rated Wind Speed (m/s) | Initial Resistance |      | Final Resistance |
|-----------------|---------------------|-----------------------|------------------------|--------------------|------|------------------|
|                 |                     |                       |                        | H13                | H14  |                  |
| 305×305×50      | 2.6                 | 150                   | 0.5                    | ≤190               | ≤250 | 450              |
| 305×610×50      | 3.3                 | 300                   | 0.5                    | ≤190               | ≤250 | 450              |
| 610×610×50      | 6.7                 | 600                   | 0.5                    | ≤190               | ≤250 | 450              |
| 915×610×50      | 10                  | 900                   | 0.5                    | ≤190               | ≤250 | 450              |
| 1220×610×50     | 13.5                | 1200                  | 0.5                    | ≤190               | ≤250 | 450              |
| 305×305×69      | 2.6                 | 250                   | 0.75                   | ≤190               | ≤250 | 450              |
| 305×610×69      | 5.4                 | 500                   | 0.75                   | ≤190               | ≤250 | 450              |
| 610×610×69      | 11.2                | 1000                  | 0.75                   | ≤190               | ≤250 | 450              |
| 915×610×69      | 17                  | 1500                  | 0.75                   | ≤190               | ≤250 | 450              |
| 1170×570×69     | 20                  | 1800                  | 0.75                   | ≤190               | ≤250 | 450              |
| 1220×610×69     | 22.6                | 2000                  | 0.75                   | ≤190               | ≤250 | 450              |
| 484×484×80      | 10                  | 280                   | 0.85                   | ≤190               | ≤250 | 450              |
| 610×610×80      | 13                  | 1100                  | 0.85                   | ≤190               | ≤250 | 450              |
| 630×630×80      | 14.5                | 1200                  | 0.85                   | ≤190               | ≤250 | 450              |
| 915×610×80      | 19                  | 1800                  | 0.85                   | ≤190               | ≤250 | 450              |
| 1220×610×80     | 25                  | 2200                  | 0.85                   | ≤190               | ≤250 | 450              |
| 484×484×90      | 13.2                | 350                   | 1                      | ≤190               | ≤250 | 450              |
| 610×610×90      | 15.4                | 1300                  | 1                      | ≤190               | ≤250 | 450              |
| 1220×610×90     | 31.1                | 2600                  | 1                      | ≤190               | ≤250 | 450              |

Note: customizable according to the customer's requirements

## Paper Frame Folding Filter

**Features:** Large filtering surface area, low initial resistance, high air volume and dust holding capacity, completely disposable type.

**Outer Frame:** High performance waterproof board. The waste paper frame filter can be incinerated without pollution, in compliance of the environmental protection requirements.

**Filter Material:** Flame retardant synthetic fiber, the air outlet surface of filter material covered with metal support with good strength.

**Applications:** Mainly used for pre-filtration of high efficiency filter and purification filtration of room ventilation system and public service places such as airport and large shopping mall.



### Technical Parameters

| Dimensions (mm) | External Dimension (m <sup>2</sup> ) | Rated Air Flow(m <sup>3</sup> /h) |                 | Resistance(Pa) |                 | Area (m <sup>2</sup> ) | Fold The Spacing(mm) |
|-----------------|--------------------------------------|-----------------------------------|-----------------|----------------|-----------------|------------------------|----------------------|
|                 |                                      | Standard                          | High Air Volume | Standard       | High Air Volume |                        |                      |
| 12×24×1         | 290×595×23                           | 600                               | 1200            | 20             | 63              | 0.4                    | 19                   |
| 20×14×1         | 493×341×23                           | 550                               | 1100            | 20             | 63              | 0.39                   | 19                   |
| 20×14×1         | 493×366×23                           | 625                               | 1250            | 20             | 63              | 0.43                   | 19                   |
| 20×16×1         | 493×391×23                           | 650                               | 1300            | 20             | 63              | 0.45                   | 19                   |
| 20×20×1         | 493×493×23                           | 800                               | 1600            | 20             | 63              | 0.56                   | 19                   |
| 14×20×2         | 341×493×46                           | 850                               | 1700            | 20             | 70              | 0.77                   | 20                   |
| 20×12×2         | 493×290×46                           | 700                               | 1400            | 20             | 70              | 0.7                    | 20                   |
| 20×16×2         | 493×391×46                           | 900                               | 1800            | 20             | 70              | 0.94                   | 20                   |
| 20×18×2         | 493×442×46                           | 1050                              | 2100            | 20             | 70              | 1.01                   | 20                   |
| 20×20×2         | 493×493×46                           | 1200                              | 2400            | 20             | 70              | 1.12                   | 20                   |
| 24×12×2         | 595×290×46                           | 850                               | 1700            | 20             | 70              | 0.79                   | 20                   |
| 24×18×2         | 595×442×46                           | 1300                              | 2600            | 20             | 70              | 1.24                   | 20                   |
| 20×16×4         | 493×391×96                           | 950                               | 1900            | 18             | 68              | 1.45                   | 28                   |
| 20×20×4         | 493×493×96                           | 1200                              | 2400            | 18             | 68              | 1.73                   | 28                   |
| 24×12×4         | 595×290×96                           | 850                               | 1700            | 18             | 68              | 1.28                   | 28                   |
| 24×18×4         | 595×442×96                           | 1300                              | 2600            | 18             | 68              | 1.91                   | 28                   |
| 24×20×4         | 595×493×96                           | 1400                              | 2800            | 18             | 68              | 2.09                   | 28                   |
| 24×24×4         | 595×595×96                           | 1700                              | 3400            | 18             | 68              | 2.55                   | 28                   |

Note: customizable according to the customer's requirements

## Metal Washable Filter

**Features:** Aluminum frame or stainless steel frame, which can reduce the frequency of cleaning and maintenance of the filter.

**Filter material:** Multilayer corrugated net with low initial resistance, high dust holding capacity and long service life. Compressed air flushing or cleaning solution can be used for cleaning and reusing for many times strong, and resistant to high temperature. All aluminum mesh and stainless steel mesh are safe, strong and resistant to high temperature, acid and alkali.

**Applications:** Widely used in office buildings, conference rooms, hospitals, shopping malls, stadiums, airports and other large civil building ventilation systems: centralized ventilation and air conditioning system of general factory primary filtration in clean room centralized ventilation and air conditioning system.



### Technical Parameters

| Dimensions (mm) | Rated Air Flow(m <sup>3</sup> /h) | Rated Wind Speed (m/s) | Filtering Area (m <sup>2</sup> ) | Frame                                                   |
|-----------------|-----------------------------------|------------------------|----------------------------------|---------------------------------------------------------|
| 595×594×15      | 3000                              | 8                      | 0.35                             | Aluminum alloy;<br>Galvanized sheet;<br>Stainless steel |
| 594×594×20      | 3000                              | 10                     | 0.35                             |                                                         |
| 594×594×25      | 3000                              | 12                     | 0.35                             |                                                         |
| 594×594×46      | 3000                              | 15                     | 0.35                             |                                                         |
| 594×594×50      | 3000                              | 18                     | 0.35                             |                                                         |
| 594×594×80      | 3000                              | 20                     | 0.35                             |                                                         |

Note: customizable according to the customer's requirements

## Photocatalyst Filter Screen

Photocatalyst filter screen is a kind of nanometer TiO<sub>2</sub>, which is deposited on honeycomb substrate. Under the irradiation of ultraviolet light, it has strong catalytic activity, can decompose pollutants and peculiar smell, has strong oxidation ability, can destroy the cell membrane of bacteria, and thus has sterilization function.

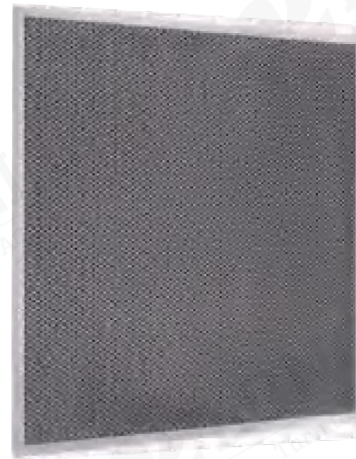
**Substrate:** Aluminum honeycomb, filter screen, stainless steel mesh, foam nickel, sponge.

**Frame:** Black cardboard frame, color cardboard frame, hard paper frame, aluminum frame, galvanized frame, stainless steel frame.

**Sealing Strip:** EPDM (high rebound), EVA (high rebound), PU (high density).

**Function:** Under the action of ultraviolet lamp, formaldehyde, benzene, toluene, xylene, ammonia, TVOC and other toxic and harmful substances, odor, bacteria and other pollutants are oxidized and decomposed into harmless CO<sub>2</sub> and H<sub>2</sub>O.

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, air conditioners and other environments that require high medical purifiers, car purifiers, air heaters, vacuum cleaner air filtration efficiency.



## Cold Catalyst Filter

The cold catalyst filter screen decomposes a plurality of harmful odor gases into harmless and odorless substances at normal temperature and normal pressure, changes from simple physical adsorption to chemical adsorption, and decomposes while adsorption. In the catalytic reaction process, the cold catalyst itself does not directly participate in the reaction, and the cold catalyst does not change or lose after the reaction and can play a role for a long time. The service life of the filter screen is prolonged. The remarkable difference with photo catalyst is that the catalytic decomposition reaction does not need ultraviolet ray, high temperature and high pressure, and can be used under normal living environment.



**Substrate:** Aluminum honeycomb, filter screen, stainless steel mesh, foam nickel, sponge.

**Frame:** Black cardboard frame, color cardboard frame, hard paper frame, aluminum frame, galvanized frame, stainless steel frame.

**Sealing Strip:** EPDM (high rebound), EVA (high rebound), PU (high density).

**Structure:** Cold catalyst + Optional base material. high-strength frame sealing strip (optional), hand e (optional).

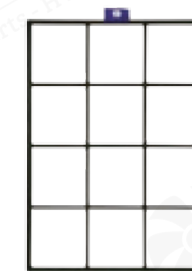
**Function:** Under the action of ultraviolet lamp, formaldehyde, benzene, toluene, xylene, ammonia, TVOC and other toxic and harmful substances, odor, bacteria and other pollutants are oxidized and decomposed into harmless CO<sub>2</sub> and H<sub>2</sub>O.

**Applications:** Widely used in air purifiers, fresh air systems, sweepers, air conditioners and other environments that require high medical purifiers, car purifiers, air heaters, vacuum cleaner air filtration efficiency.

## Air Filter Product



**Combination Filter Net**



**Primary Efficiency Filter**



**Compound Filter Net**



**Activated Carbon Filter**



**Activated Carbon Filter**



**XiaoMi Car Air Filter**



**XiaoMi Filter**



**XiaoMi Filter**



**Air Conditioner Filter Cotton**



**Robotic Vacuum Cleaner Accessories**



**Robotic Vacuum Cleaner Accessories**



**IQAIR Filtration**

Air Filter Product



Dyson Filter



DIY Air Purifier



Humidifier Filter



Medium Efficiency Filter



Charcoal Cloth Composite Filter Net



Da Jin Filter Mesh

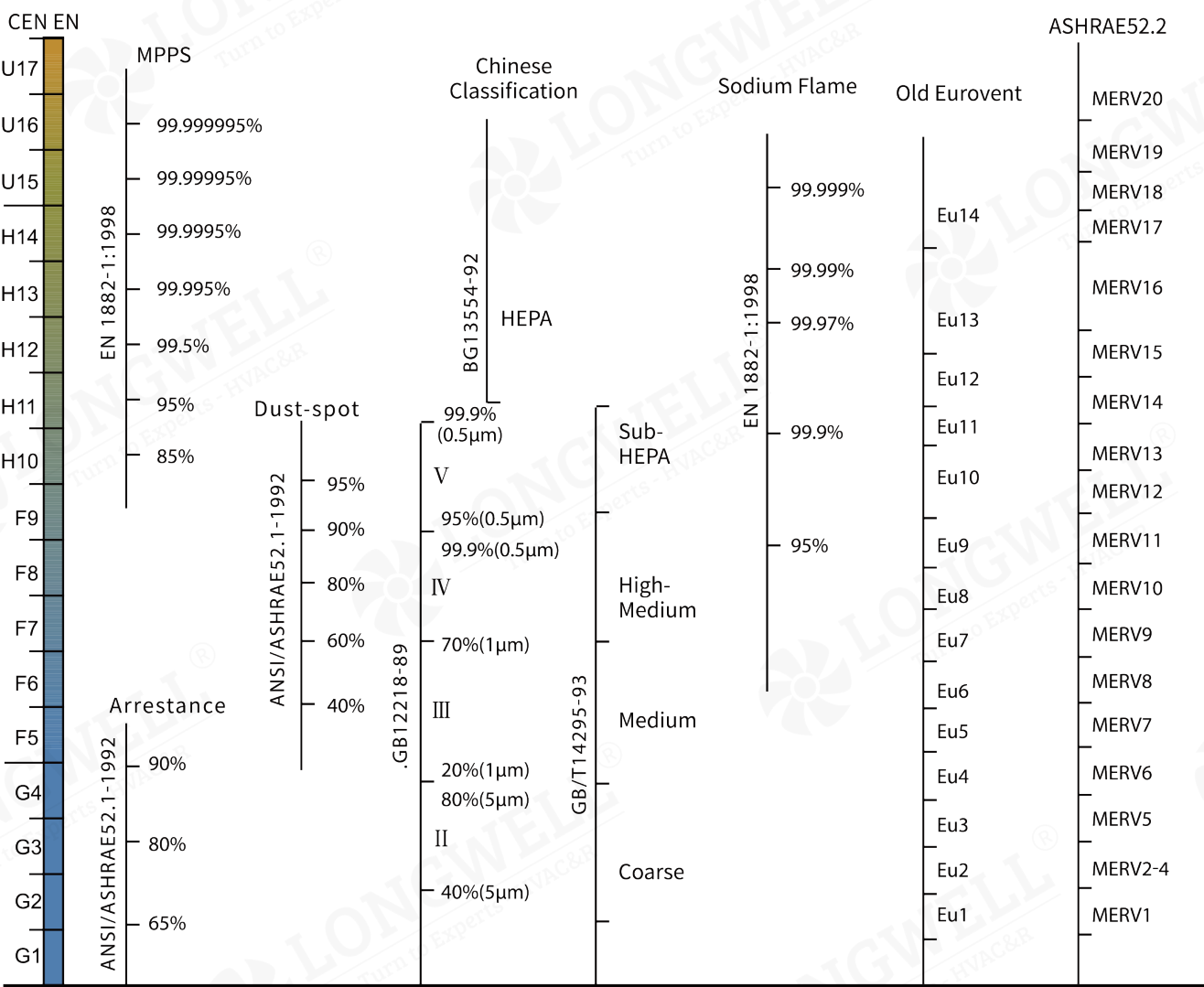


Cardboard Activated Carbon Filter Net



Plastic Frame Primary Efficiency Air Filter

Comparison Of Air Filter Efficiency Specifications



Efficiency Specification Approximate Control Chart

| GB/T14295           | Roughly |        |     |     |     | Medium Efficiency |     |     |     |     | High School Efficiency |     |     | Sub-high Efficiency |      |      | Efficient |      |      |        |  |
|---------------------|---------|--------|-----|-----|-----|-------------------|-----|-----|-----|-----|------------------------|-----|-----|---------------------|------|------|-----------|------|------|--------|--|
| ASHRAE (52.2P.1995) | C1      | C1,2,3 | L5  | L6  | L7  | L8                | M9  | M10 | M11 | M12 | M13                    | M14 | H15 | H15                 | H16  | H16  | H17       | H18  | H19  | H20    |  |
| CEN(EN779)          | G1      | G2     | G3  | G3  | G4  | G4                | F5  | F5  | F6  | F6  | F7                     | F8  | H9  | H10                 | H11  | H12  | H13       | H13  | H14  | H15-17 |  |
| EUROVENT            | EU1     | EU2    | EU3 | EU3 | EU4 | EU4               | EU5 | EU5 | EU6 | EU6 | EU7                    | EU8 | EU9 | EU9                 | EU10 | EU11 | EU12      | EU13 | EU14 | EU14   |  |