

Air Filter

Advanced Filtration Technology



LENGE PURIFICATION

*25 years of experience in purification solution.
Innovative purification technology - yesterday,
today and in the future.*

SINCE 1995



LENGE purification equipment are the manufacturer of over 25 years of experience, expertise and research in air and liquid filtration. We offer innovative purification solutions that set standards and help factories to improve the quality of production.

Air filter series are superior products in LENGE. LENGE imported TOPAS ALF114 air filter detection line and AFS150 HEPA filter detection line from Germany to guarantee product quality. ALF114 can carry out tests on the medium efficiency filter according to EN779 and ASHRAE52.2, including air volume resistance, initial efficiency, dust holding capacity average efficiency etc. AFS150 can carry out test on HEPA filter according to EN1822, including air volume resistance, local efficiency, overall efficiency. V-bank filters can also be tested by AFS 150 etc.

With many of you, we have a long history: a reliable foundation on which to build our common future, which gives us the necessary confidence to do the right thing at the right time and equips each of us to meet the challenges of tomorrow.

We will continue to focus on partnership and proximity to our customers, far into the future. For innovative solutions that help to make industrial processes more efficient and sustainable to improve the quality of products.



ISO 45001:2018
Occupational Health and Safety
Management System
Certification



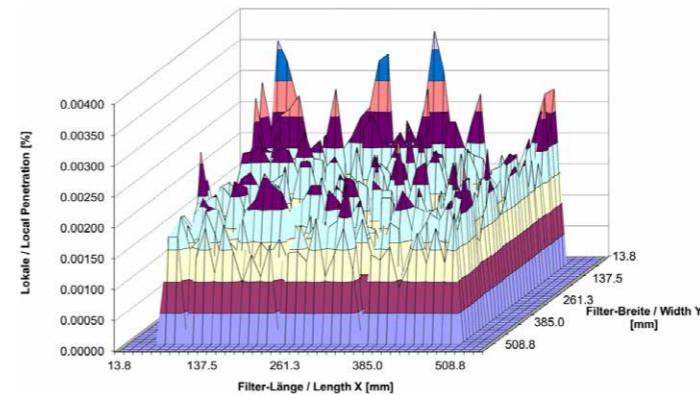
Halal Foundation Center
Halal Certification



Advantages of Air Filters



- ◆ The first owner of German TOPAS-AFS150 HEPA testing line in China, which can test HEPA according to EN1822-4.
- ◆ TOPAS-ALF114 testing line, which can test prefilter and fine filter according to EN779 and ASHRAE52.2.
- ◆ Five production lines imported from South Korea.



Raw Material Testing

AFS153 can be connected with ALF114 to test material of resistance, initial efficiency for pre-filter and fine filter. And can also connected with AFS150 to test material of resistance, efficiency and MPPS for HEPA filter. (MPPS: Most Penetrating Particle Size)

Production Equipments

- German ultrasonic welding machine.
- Filter paper folding machine.
- LENGE owns 5 imported paper pleated machines, 2 separator paper pleated machines, and 3 compact HEPA paper pleated machines, one of them is ultra deep pleat separator paper pleated machine.

Product Qualified Card

- Unique encoding.
- In three copies.
- In accordance with GMP.

LENGE PURIFICATION	Air Filter	LENGE PURIFICATION	LENGE PURIFICATION
Serial number:19042908702001	↑ Air flow direction	Serial number:19042908702001	Serial number:19042908702001
Size:410*410*93		Size:410*410*93	Size:410*410*93
Air rate flow:500m³/h		Air rate flow:500m³/h	Air rate flow:500m³/h
Resistance:<220Pa		Resistance:<220Pa	Resistance:<220Pa
Efficiency:>99.995%@MPPS		Efficiency:>99.995%@MPPS	Efficiency:>99.995%@MPPS
Inspector:Inspector 7 2019 / 5 / 3		Inspector:Inspector 7 2019 / 5 / 3	Inspector:Inspector 7 2019 / 5 / 3



German TOPAS-ALF150 testing line



German TOPAS-ALF114 testing line



Raw material testing set



Korean HEPA paper folding machine

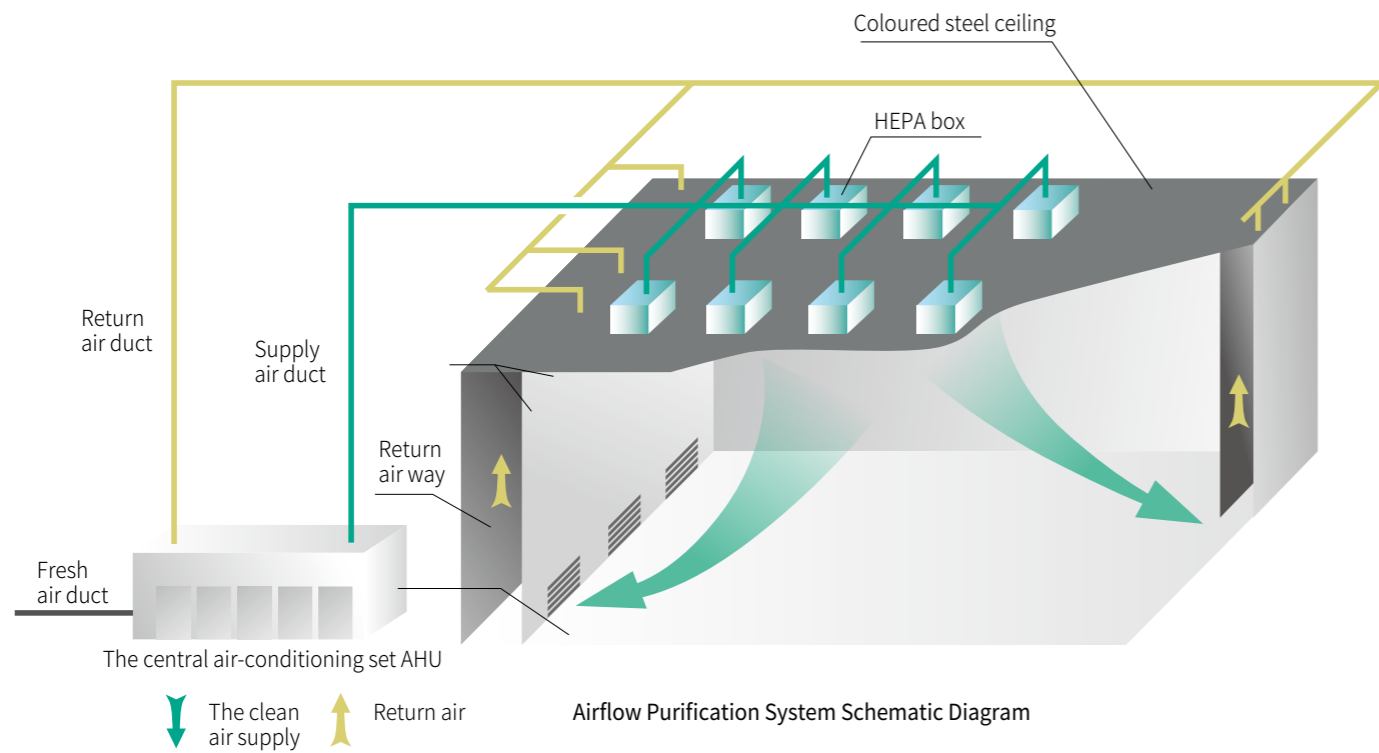


Deep pleat filter paper folding machine



German ultrasonic filter bag welding machine

Application of Air Filter



Microelectronics

Advanced production processes often require very clean air, and in many cases these requirements are certain to increase. LENGE is recognized as the leading supplier of high efficiency filtration products for the microelectronics industry. HEPA/ULPA filters are produced within controlled environments in our ISO 9001-certified plants.



Food and Beverage

Food and beverage protecting human health is a major concern for governments throughout the world. To prevent the air conditioning system from becoming a microbe nest, temperature and humidity must be controlled and accumulated organic matter removed, as clogged exchangers provide good support for the development of microorganisms.



Life Science

For the past twenty years we have been a leading supplier of air filtration products and services to the Bio-Pharma Industry. LENGE is viewed by many of the largest Pharmaceutical manufacturers as a partner and well positioned to support their air filtration demands.



Overview of Filter Classes

If you are looking for the ISO 16890, please note that it is not possible to directly transfer ISO 16890 onto the current EN 779 filter classes. This is due to their different methods of evaluation. We would be pleased to provide you with further information in a personal consultation.

FILTER APPLICATION		PARTICULATE AIR FILTERS FOR GENERAL VENTILATION							EPA, HEPA AND ULPA					
TEST		EN 779: 2012 EVALUATION OF FILTER PERFORMANCE @3400 m³/h (OR NOMINAL AIR FLOW)							EN1822-1 EVALUATION OF FILTER PERFORMANCE AT NOMINAL AIR FLOW					
SUITABLE FOR	GROUP DESIGNATION	FILTER CLASSES	TEST DUST	TEST AEROSOL	FINAL PRESSURE DROP [Pa]	AVERAGE ARRESTANCE (A _m) [%]	AVERAGE EFFICIENCY (E _m) @0.4 µm [%]	MINIMUM EFFICIENCY @0.4 µm [%]	FILTER CLASSES	TEST AEROSOL	INTEGRAL VALUE OF EFFICIENCY IN THE MPPS [%]	INTEGRAL VALUE OF PENETRATION IN THE MPPS [%]	LOCAL VALUE OF EFFICIENCY IN THE MPPS [%]	LOCAL VALUE OF PENETRATION IN THE MPPS [%]
Coarse dust	G	G1	ASHRAE dust		250	50 ≤ A _m < 65		-						
		G2			250	65 ≤ A _m < 80		-						
		G3			250	80 ≤ A _m < 90		-						
		G4			250	90 ≤ A _m		-						
Fine dust	M	M5	ASHRAE dust	DEHS (Di-Ethyl-Hexyl-Sebacate) 0.2–3.0 µm	450	-	40 ≤ E _m < 60	-						
		M6			450	-	60 ≤ E _m < 80	-						
	F	F7			450	-	80 ≤ E _m < 90	35						
		F8			450	-	90 ≤ E _m < 95	55						
		F9			450	-	95 ≤ E _m	75						
Suspended dust	E	EPA: Efficient Particulate Air filter							E10	DEHS (Di-Ethyl-Hexyl-Sebacate) MPPS 0.1–0.3 µm	≥ 85	< 15	-	-
									E11		≥ 95	< 5	-	-
									E12		≥ 99.5	< 0.5	-	-
	H	HEPA: High Efficiency Particulate Air filter							H13		≥ 99.95	< 0.05	≥ 99.75	< 0.25
									H14		≥ 99.995	< 0.005	≥ 99.975	< 0.025
	U	ULPA: Ultra Low Penetration Air filter							U15		≥ 99.9995	< 0.0005	≥ 99.9975	< 0.0025
									U16		≥ 99.99995	< 0.00005	≥ 99.99975	< 0.00025
							U17	≥ 99.999995	< 0.000005	≥ 99.9999	< 0.0001			


Panel Air Filter

- Compact structure and smaller volume.
- Folding and dual rack frame.
- Generally for the primary filters, also available in comfort filters.

Material and Application

 **Frame**
Galvanized Iron/Aluminum/Cardboard frame

 **Filter Media**
PP/PET complex fibre


 **Operation Condition**
Max 100%RH, 60°C





Bag Filter

- Bag structure to increase the filter area.
- German ultrasonic filter bag production line, a variety of welding procedures to meet the welding requirements of different filter materials.
- Filter bag linear welding, high strength, prevent leakage risk.
- High consistency of filter bag parameters to improve product stability.

Material and Application

 **Frame**
Galvanized steel/Aluminum

 **Filter Media**
PP/PET complex fibre

 **Operation Condition**
Max 100%RH, 60°C



Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m³/h)	Initial Pressure Drop (Pa)	
			Efficiency G4 90%≤A	Efficiency M5@0.4µm 40%≤E<60%
BAN592.592-46	592×592×46	3400		
BAN287.592-46	287×592×46	1700	40	60
BAN492.492-46	492×492×46	2200		

Note: We can also produce non-standard filters of 150≤L≤1184, 150≤W≤600, 10≤D≤100.

Standard Size and Parameter






Model	Overall Size L×W×D(mm)	Nominal Air Flow (m³/h)	Initial Pressure Drop (Pa)				
			Arrestance G4 90%≤A	Efficiency M6 60%≤E<80%	Efficiency F7 85%≤E<90%	Efficiency F8 90%≤E<95%	Efficiency F9 95%≤E
6DAI592.592-380	592×592×380×6	2400					
3DAI287.592-380	287×592×380×3	1200					
6DAI592.592-480	592×592×480×6	3000					
3DAI287.592-480	287×592×480×3	1500					
6DAI592.592-560	592×592×560×6	3400					
3DAI287.592-560	287×592×560×3	1700	40	60	100	120	140
8DAI592.592-560	592×592×560×8	4500					
4DAI278.592-560	287×592×560×4	2250					
8DAI592.592-760	592×592×760×8	5000					
8DAI592.592-940	592×592×940×8	6000					
6DAI492.492-560	492×492×560×6	2500					

Note: We can also produce non-standard filters of 150≤L≤1184, 150≤W≤600, 300≤D≤940.

V-bank Filter

- Box type or V-bank type.
- Large filter area, suitable for large volume of air.
- F7-H14 are available.

Material and Application






-  **Frame**
ABS/Galvanized Iron/
Aluminum/Stainless steel
-  **Gasket**
PU seal strip
-  **Spacers**
EVA
-  **Filter Media**
Glass fibre
-  **Operation Condition**
Max 80%, 80°C

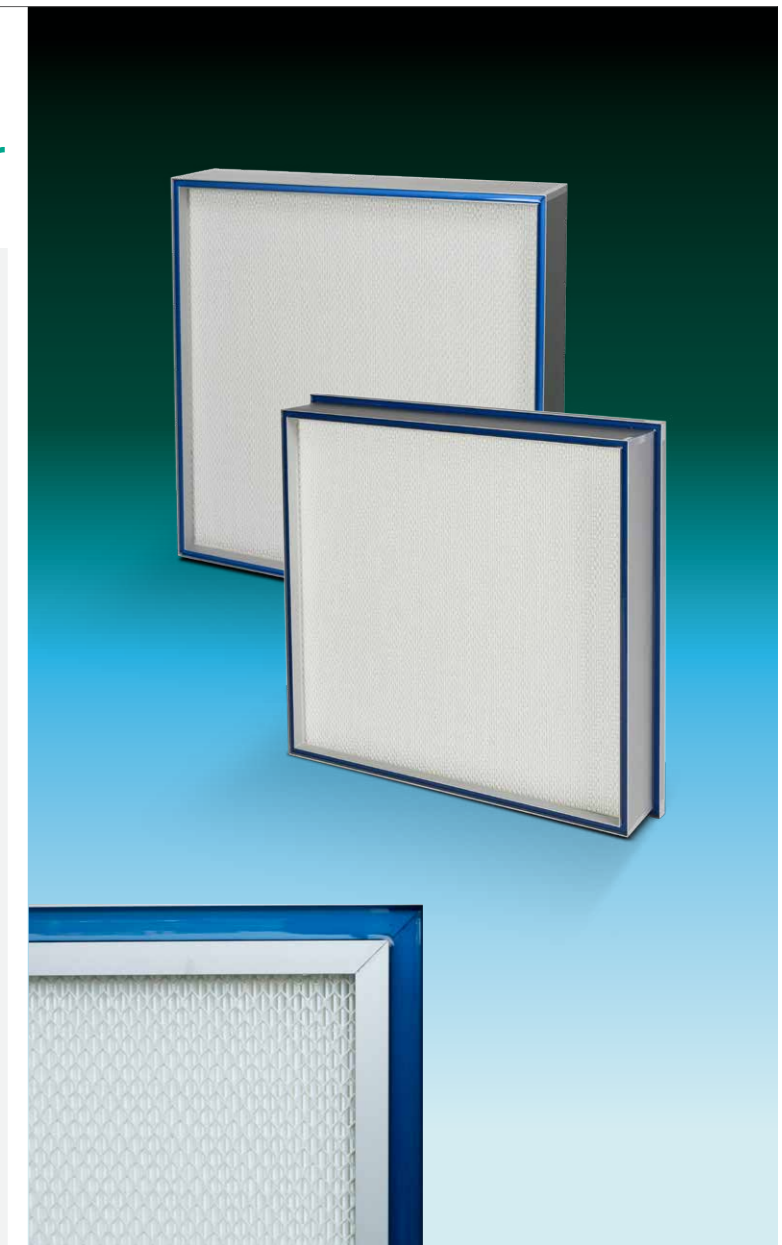


Gel sealed Mini-pleat HEPA filter

- Clean room or purification equipment supply.
- Peripheral gel seals or top gel seals.
- Reliable sealing effect.
- Polyurethane gel has good resilience and can be disassembled for many times.

Material and Application

-  **Frame**
Aluminum
-  **Gasket**
Gel
-  **Spacers**
EVA
-  **Filter Media**
Glass fibre
-  **Operation Condition**
≤80%/100% RH, 40°C



Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m³/h)	Initial Pressure Drop (Pa)						
			Efficiency F7 @0.4µm	Efficiency F8 @0.4µm	Efficiency E10 @MPPS	Efficiency E12 @MPPS	Efficiency H13 @MPPS		
			80%≤E<90%	90%≤E<95%	85%≤E<95%	99.5%≤E<99.95%	99.95%≤E<99.995%		
5VWGB592.592-292	592×592×292	3000							
4VWGB592.592-292	592×592×292	2400							
4VWGB287.592-292	287×592×292	1200							
6VXWGB610.610-292	610×610×292	3400	60	70	110	160	220		
5VXWGB610.610-292	610×610×292	3000							
4VXWGB610.610-292	610×610×292	2400							
4VXWGB305.610-292	305×610×292	1200							

Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m³/h)	Initial Pressure Drop (Pa)	Final Pressure Drop (Pa)	Efficiency @MPPS
YWGB410.410-93H14	410×410×93	500			
YWGB550.550-93H14	550×550×93	1000			
YWGB650.650-93H14	650×650×93	1500			
YWGB750.750-93H14	750×750×93	2000	220	450	99.995%≤E<99.9995%
YWGB370.370-93H14D	370×370×104	500			
YWGB510.510-93H14D	510×510×104	1000			
YWGB610.610-93H14D	610×610×104	1500			
YWGB710.710-93H14D	710×710×104	2000			

Compact HEPA filter for Laminar Flow



- One-way flow (laminar flow) air supply, mostly used for purification equipment.
- Wind speed 0.36-0.54m/s.
- Generally choose gel seal form.

Material and Application

- Frame**
Aluminum
- Spacers**
EVA
- Filter Media**
Glass fibre
- Gasket**
PU gel/PU foam seal/CR seal strip
- Operation Condition**
≤80%/100%RH, 40°C/80°C

Separator HEPA Filter



- The most traditional filter form.
- The thickness of separator filter is universal≥150mm.
- Use wavy aluminum foil or paper as a spacer to separate the filter paper.

Material and Application

- Frame**
Galvanized Iron/Stainless steel
- Spacers**
Aluminum foil/Offset paper
- Filter Media**
Glass fibre
- Gasket**
PU foam seal/CR seal strip
- Operation Condition**
<80%/100%RH, <80°C

Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Rated Air Velocity (m ³ /h)	Nominal Air Flow (m ³ /h)	Initial Resistance (Pa)	Terminal Resistance (Pa)	Efficiency @MPPS
WGB610.610-93H14	610×610×93	0.45	600	110	250	99.995%≤E<99.9995%
WGB800.600-93H14	800×600×93		800			
WGB1220.610-93H14	1220×610×93		1200			
WGB1220.1220-93H14	1220×1220×93		2400			
WGB1170.570-90H14	1170×570×90		1100			
WGB1170.870-90H14	1170×870×90		1700			
WGB1170.570-70H14	1170×570×70		1100			
WGB1170.870-70H14	1170×870×70		1700			
WGB1170.1170-70H14	1170×1170×70		2200			






Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m ³ /h)	Initial Pressure Drop (Pa)					
			Efficiency F7 @0.4μm 80%≤E<90%	Efficiency F8 @0.4μm 90%≤E<95%	Efficiency E10 @MPPS 85%≤E<95%	Efficiency E12 @MPPS 99.5%≤E<99.95%	Efficiency H13 @MPPS 99.95%≤E<99.995%	Efficiency H14 @MPPS 99.995%≤E<99.9995%
GB610.610-150	610×610×150	1000	60	70	110	160	200	250
GB762.610-150	762×610×150	1250						
GB820.610-150	820×610×150	1350						
GB320.320-220	320×320×220	400						
GB484.484-220	484×484×220	1000						
GB630.630-220	630×630×220	1500						
GB1260.630-220	1260×630×220	3000						
GB592.592-292	592×592×292	1850						
GB610.610-292	610×610×292	2000						

Compact ULPA Filter

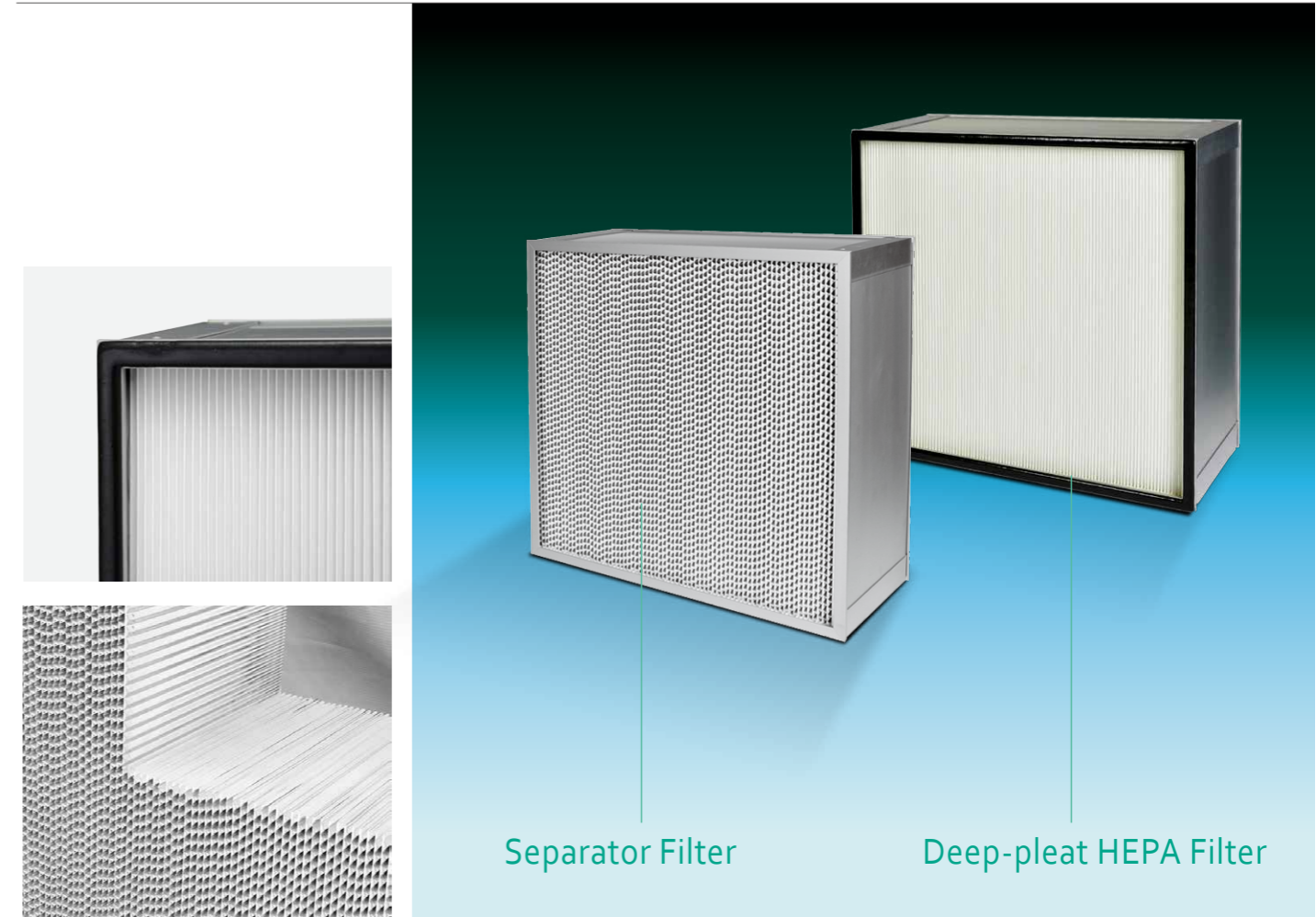
- Terminal air supply of clean room or purification equipment (ISO Class 5 or higher).
- U15-U17.
- HEPA filter should be pre-filtration.

Material and Application

-  **Frame**
Aluminum
-  **Spacers**
EVA
-  **Filter Media**
Glass fibre
-  **Gasket**
PU foam seal/CR seal strip
-  **Operation Condition**
<80%/100%RH, <80°C



Comparison of Separator Filter and Deep-pleat HEPA Filter



Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m ³ /h)	U15 Initial Pressure Drop (Pa)	Final Pressure Drop (Pa)	Efficiency @MPPS
UWGB610.610-70	610×610×70	600	150	450	≥99.9995%
UWGB1170.570-70	1170×570×70	1100			
UWGB1170.870-70	1170×870×70	1700			
UWGB1170.1170-70	1170×1170×70	2200			
UWGB610.610-90	610×610×90	750			
UWGB1170.570-90	1170×570×90	1300			
UWGB1170.870-90	1170×870×90	1950			
UWGB1170.1170-90	1170×1170×90	2600			

Taking two kinds of filters with the same size as an example, 480 x 480 x 220 x H13, rated air flow of separator is 1000m³/h and the rated air flow of deep-pleat HEPA air filter is 1250m³/h, here on the basis of 1000 m³/h for comparison:

Type	Nominal Air Flow (m ³ /h)	Initial Pressure Drop (Pa)	Filtering Area (M ²)
Separator Filter	1000	220	10
Deep-pleat HEPA Filter	1000	150	15

High Temperature-resistant Separator HEPA Filter

- Ambient air supply over 100°C and 250°C, 280°C are optional.
- Ultra-clean oven, tunnel sterilization and other purification equipment.
- High temperature filter paper, high temperature does not fall off the fiber, does not decompose.
- Aluminum foil spacing, silicone rubber seal, stainless steel frame, meet the temperature requirements.
- The reflexive border is equipped with stiffeners to meet the strength requirements.

Material and Application

-  **Frame**
Stainless steel
-  **Gasket**
High-temp resistant silica seal strip
-  **Spacers**
Aluminum foil
-  **Operation Condition**
Max 80%RH
-  **Filter Media**
Glass fibre



HEPA Box

Definition

- HEPA box is the terminal device in purified air supply system.

Operation Principle

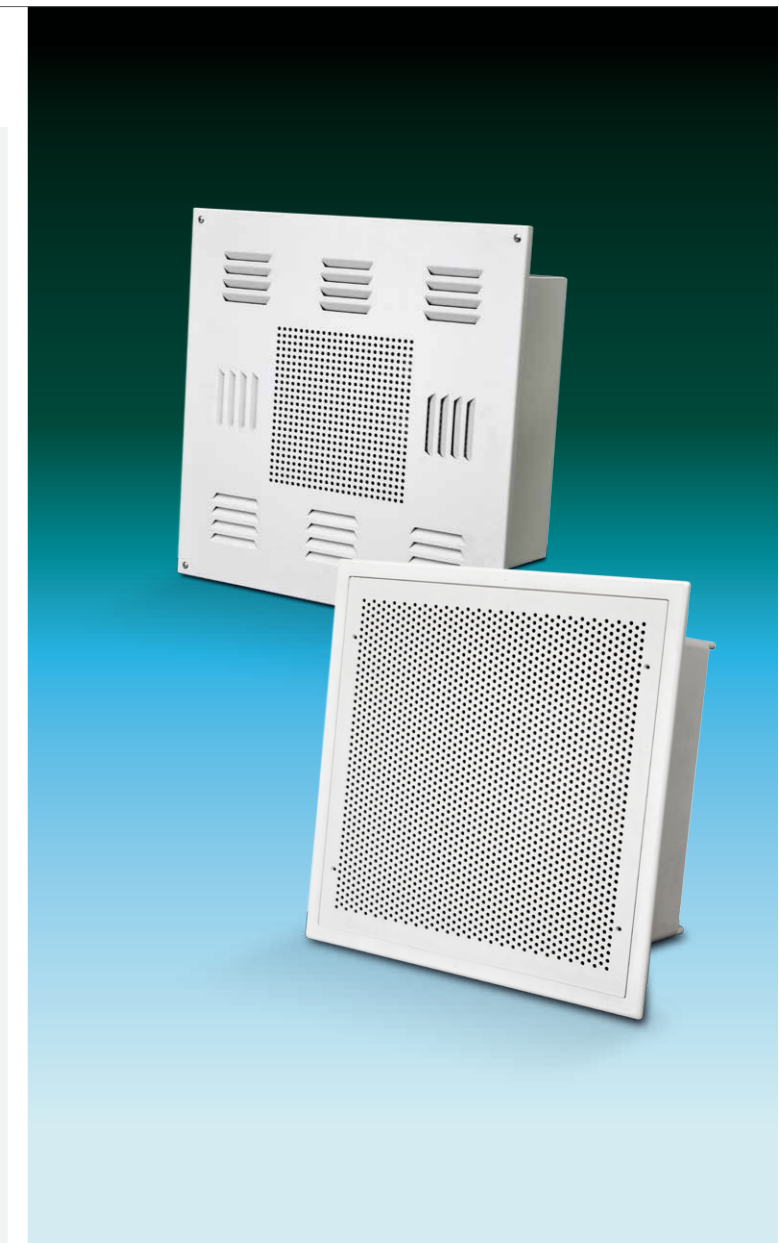
- The HEPA box requiring filed leak detection is provided with PAO dusty entry and upstream concentration detection mouth, and differential pressure detection mouth and lower damper based on customers' requirements.

Advantages of ABS HEPA Box

- One time injection, no leakage risk, smooth inner surface, dust-free and easy to clean.
- Acid, alkali and salt-resistant, formaldehyde-resistant, VHP and O₃ Sterilize.
- Flame-retardant: UL94-V0.
- Flame-retardant, corrosion resistance, high intensity and other features, SGS&BV certificated.

Advantages of Plastic-spry Steel Plate

- Full welding with mechanical welding machine, high efficiency.
- No leakage risk.
- The box is not easy to deform.
- The adhesive force of the plastic spraying layer is stronger after the phosphating treatment.



Standard Size and Parameter

Model	Overall Size L×W×D(mm)	Nominal Air Flow (m ³ /h)	Initial Resistance (Pa)	Final Resistance (Pa)	Efficiency @MPPS
NGB484.484-150H14	484×484×150	600			
NGB610.610-150H14	610×610×150	1000			
NGB610.610-180H14	610×610×180	1200			
NGB484.484-220H14	484×484×220	1000	220	450	99.995%≤E<99.9995%
NGB610.610-220H14	610×610×220	1500			
NGB610.610-292H14	610×610×292	2000			

Note: We can also produce non-standard filters of 150≤L≤1260, 150≤W≤740, 70≤D≤292.

Standard Size and Parameter

Model	HEPA Size (mm)	Size (mm)	Size of Interface (mm)	Air Volume (m ³ /h)	Hole Size (mm)
LHB5-046.046D	410×410×93	455×455×250	200×200	500	465×465
LHB10-060.060D	550×550×93	595×595×250	320×200	1000	605×605
LHB15-070.070D	650×650×93	695×695×250	320×250	1500	705×705
LHB20-060.110D	1060×550×93	1105×595×250	400×250	2000	1115×605
LHB23-070.100D	955×650×93	1000×695×250	500×250	2250	1010×705
LHB30-070.130D	1260×650×93	1305×695×250	500×320	3000	1315×705

Model	HEPA Size (mm)	Size (mm)	Size of Interface (mm)	Air Volume (m ³ /h)	Hole Size (mm)
LHB5-046.046C	410×410×93	455×455×380	200×200	500	465×465
LHB10-060.060C	550×550×93	595×595×380	320×200	1000	605×605
LHB15-070.070C	650×650×93	695×695×430	320×250	1500	705×705
LHB20-060.110C	1060×550×93	1105×595×430	400×250	2000	1115×605
LHB23-070.100C	955×650×93	1000×695×430	500×250	2250	1010×705
LHB30-070.130C	1260×650×93	1305×695×430	500×250	3000	1315×705

NOTE: For ABS box, the hole size should be 5mm larger than that in the list, for plastic-spry box with DOP outside, the hole size should be 5mm smaller than that in the list. We can also produce other sizes according to customer's requirements.

Please feel free to contact us for series of product catalogs.



LENGE PURIFICATION

LENGE Purification Equipment Co., Ltd.