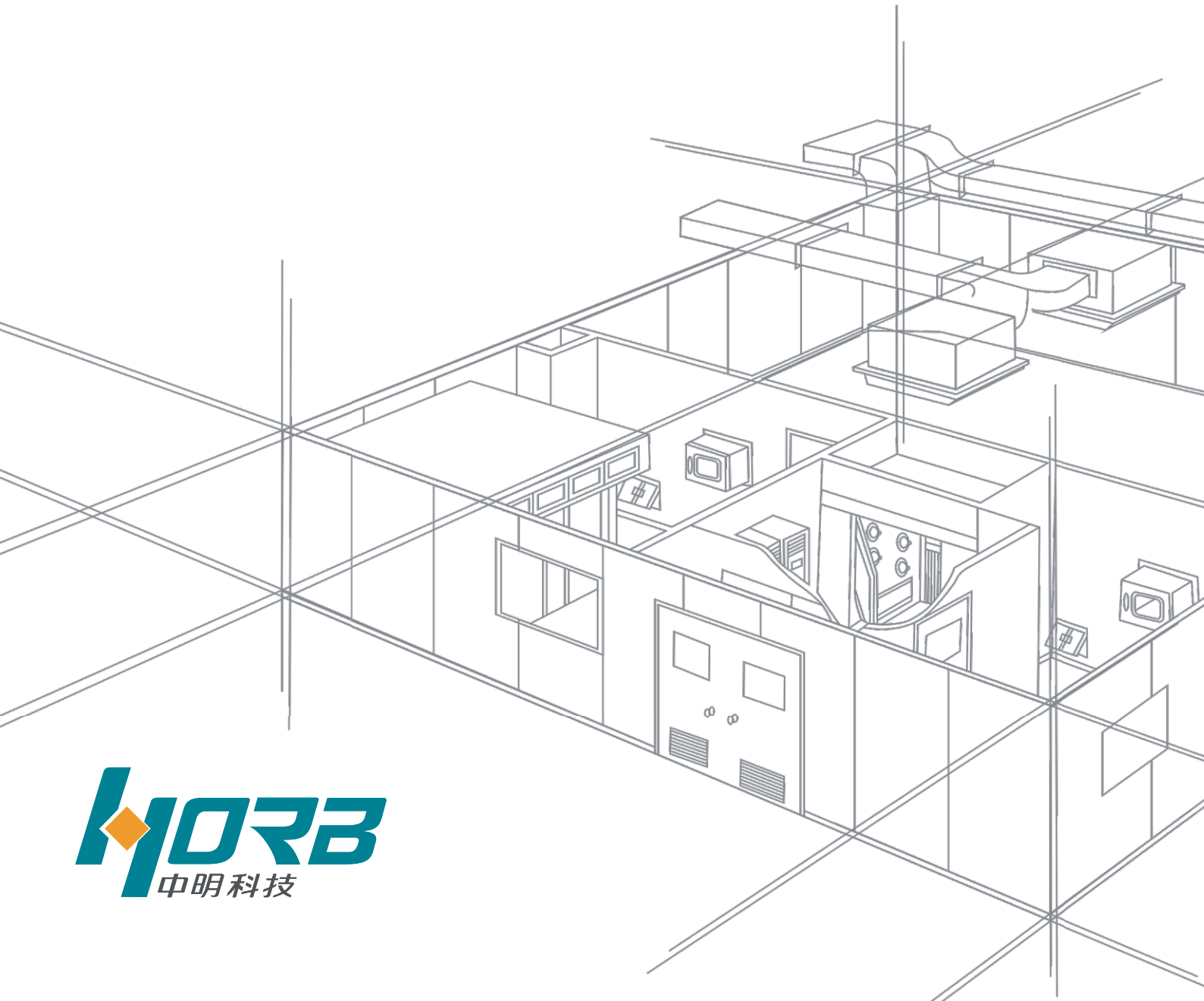


HORB CLEANROOM ENGINEERING

中/明/净/化/工/程/



资/质/及/证/书/



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洗手(刷手)池

IF YOU WOULD LIKE TO KNOW MORE INFORMATION OF HORB TECHNOLOGY OR WANT TO SEE THE BOOK OF OUR PRODUCTS, PLEASE FEEL FREE TO CONTACT US, THANK YOU.
您需要了解中明科技更多相关信息、资料及画册，请联系我们，谢谢！

COMPANY PROFILE

公司简介

深圳市中明科技股份有限公司（以下简称：中明科技）成立于2001年，总部设在深圳市宝安区，2017年在全国股转系统挂牌（股票代码：870762），国家高新技术企业、广东省“守合同重信用”企业。长期致力于打造防静电与洁净技术领域的产品研发、生产、销售、工程设计、施工、运维、技术推广及咨询顾问为一体的综合服务平台和系统解决方案提供商。是深圳市洁净行业协会理事单位、上海防静电协会副理事长单位、中国电子行业协会防静电装备分会会员单位、美国ESDA协会会员单位。

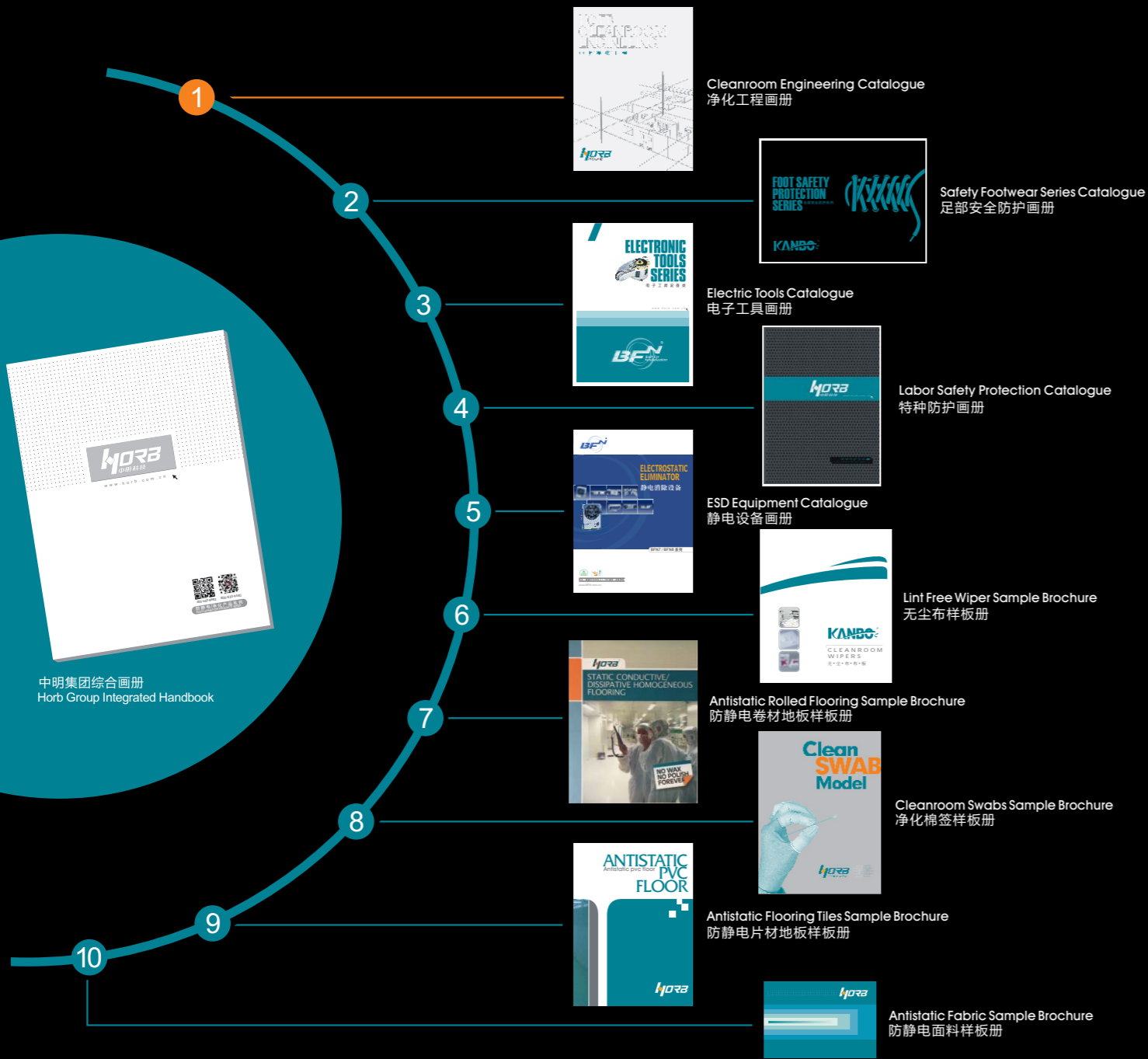
中明科技旗下博瑞思是中国首批专注于ESD防护技术与洁净技术研究和推广的专业机构，是深圳高职院校的产学研签约合作单位、美国INARTE授权ESD工程师中国区考试中心、多个机构与企业的资深顾问，截止于2018年底培训咨询服务的企业已达5000多家，培训的专业人员已突破30000人，还在继续努力为国家输送更多的行业优秀专业技术人才。

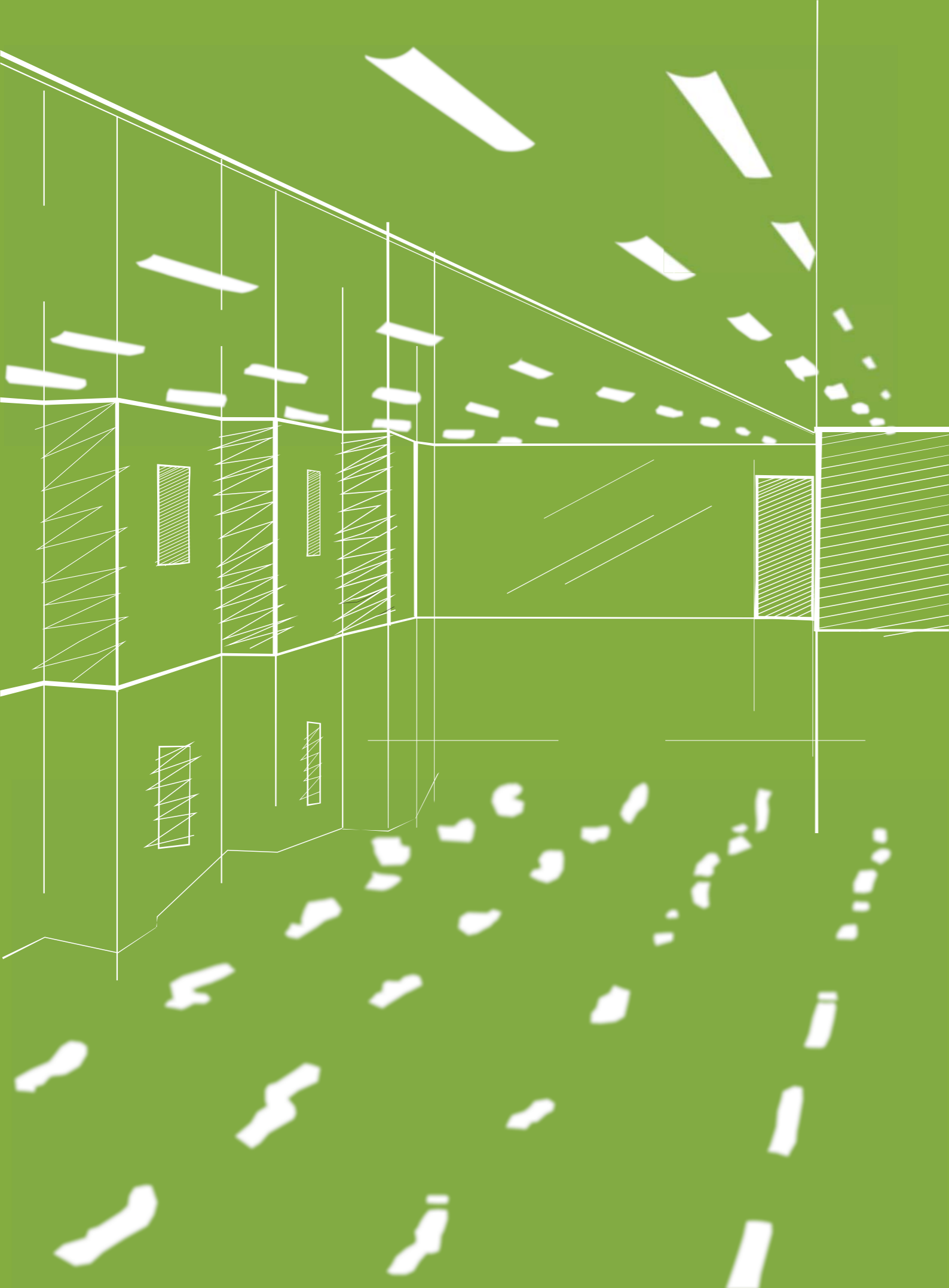
公司拥有250余人的团队，研发人员占比17%，并聘请高校教授、国内外行业专家为企业长期技术顾问，潜心打造IMMP系统平台，“RTS系统”、“EGS系统”、“CMS系统”、“THS系统”已经为大量客户在防静电和洁净管理方面提供了智能服务。目前，公司已申请获得8项发明专利、24项实用新型专利、10项PCT国际专利、4项软件著作权，21项商标，30余项产品已获得CE认证，并已获得全国工业产品生产许可证、ISO9001、ISO14001、OHSAS18001三证一体体系认证、LA认证证书、深圳市创新性企业证书，等多项荣誉资质证书。

十八年来，中明人不忘初心，始终坚持为客户提供高品质的产品和服务，已在北京、烟台、青岛、苏州、重庆、成都设立办事处、并在泰国、越南、菲律宾、印度、德国开设子公司，中明的足迹和品牌已遍布海内外。

公司秉承着“客户为先、诚信开放、专业精进、共创共享”的价值观，实现“让安全防护与洁净控制走进每一个企业和家庭，使客户感动、员工幸福、合伙人满意”的企业使命，不断提升企业竞争力，目前已树立 **HORB** **博瑞思** **Eco** **KANBO** **易洁良行** 等自有品牌，逐步形成更大的核心技术和品牌优势，并与国内外众多品牌企业，如：华为、OPPO、京东方、富士康、伟创力、三星、WD、希捷、SONY等建立了密切的合作关系，不仅仅是产品和系统的提供商，同时还提供了专业人才的培养和体系建设的顾问服务。

Company Profile: Shenzhen Horb Technology Corp.Ltd. (hereinafter referred to as "Horb") was established in 2001, headquarter located in Baoan District of Shenzhen City, listed in the National stock transfer system in 2017 (stock code: 870762), a national high-tech enterprise, Guangdong province "abide by the contract and credit" enterprise. Long-term commitment to create ESD and cleanroom technology in the field of product research and development, production, sales, engineering design, construction, operation and maintenance, technical promotion and consulting as one of the integrated service platform and system solutions provider. HORB is the director of Shenzhen clean industry association, the vice president of Shanghai ESD Association, the member of Anti-static equipment of China Electronic Instruments Industry Association, and the member of ESDA Association of the United States. Best Resource, owned by HORB, is the first professional organization in China focus on the research and promotion of ESD protection technology and clean technology, and is the industry-university-research contractual cooperation of Shenzhen higher Vocational College, is also the INARTE authorized China Regional examination center of ESD Engineers of United States. By the end of 2018, more than 5000 enterprises had trained consulting services, and more than 30000 professionals had been trained, and continued efforts were being made to deliver more outstanding professional and technical personnel to the country. Our company has a team of more than 250 people, with R&D personnel proportion is 17%, and hired university professors, domestic and foreign industry experts as long-term technical consultants to the enterprise, dedicated to building the IMMP system platform, RTS, EGS, CMS, THS have provided intelligent services to a large number of customers in ESD and cleanroom management. At present, our company has applied for 8 invention patents, 24 utility model patents, 10 PCT international patents, 4 software copyrights, 21 trademarks, more than 30 products have been certified by CE, and has obtained the national license for the production of industrial, ISO9001, ISO4001, OHSAS18001 certification of "three certificates in one system", LA authentication certificate, Shenzhen innovative enterprise certificate, and many other honorary qualification certificates. Over the past 18 years, HORB people do not forget the original ideal and ambition, always insists on providing customers with high-quality products and services and have set up offices in Beijing, Yantai, Qingdao, Suzhou, Chongqing, Chengdu cities and also have set up Thailand, Vietnam, Philippines, India, and Germany subsidiary companies. Horb's footprints and brands have spread all over the world. The company is adhering to the value of "customer first, honest and open, professional and advanced, create and share with each other", to achieve "let safety protection and cleanliness control enter every enterprise and family, to make customers moved, employee happiness, partner satisfaction" business mission, constantly improve the competitiveness of the enterprise, has been set up own brands: **HORB** **博瑞思** **Eco** **KANBO** **易洁良行**. Our own brands have gradually formed greater core technology and brand advantages, and have established close cooperative relations with many domestic and foreign brand enterprises, such as Huawei, oppo, BOE, Foxconn, Flextronics, Samsung, WD, Seagate, Sony and so on. Horb is not only a provider of products and systems, but also providing consulting service for the training of professionals and the system construction.





Engineering

工程篇



CLEAN ROOM

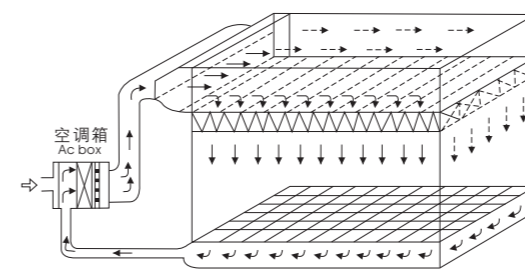
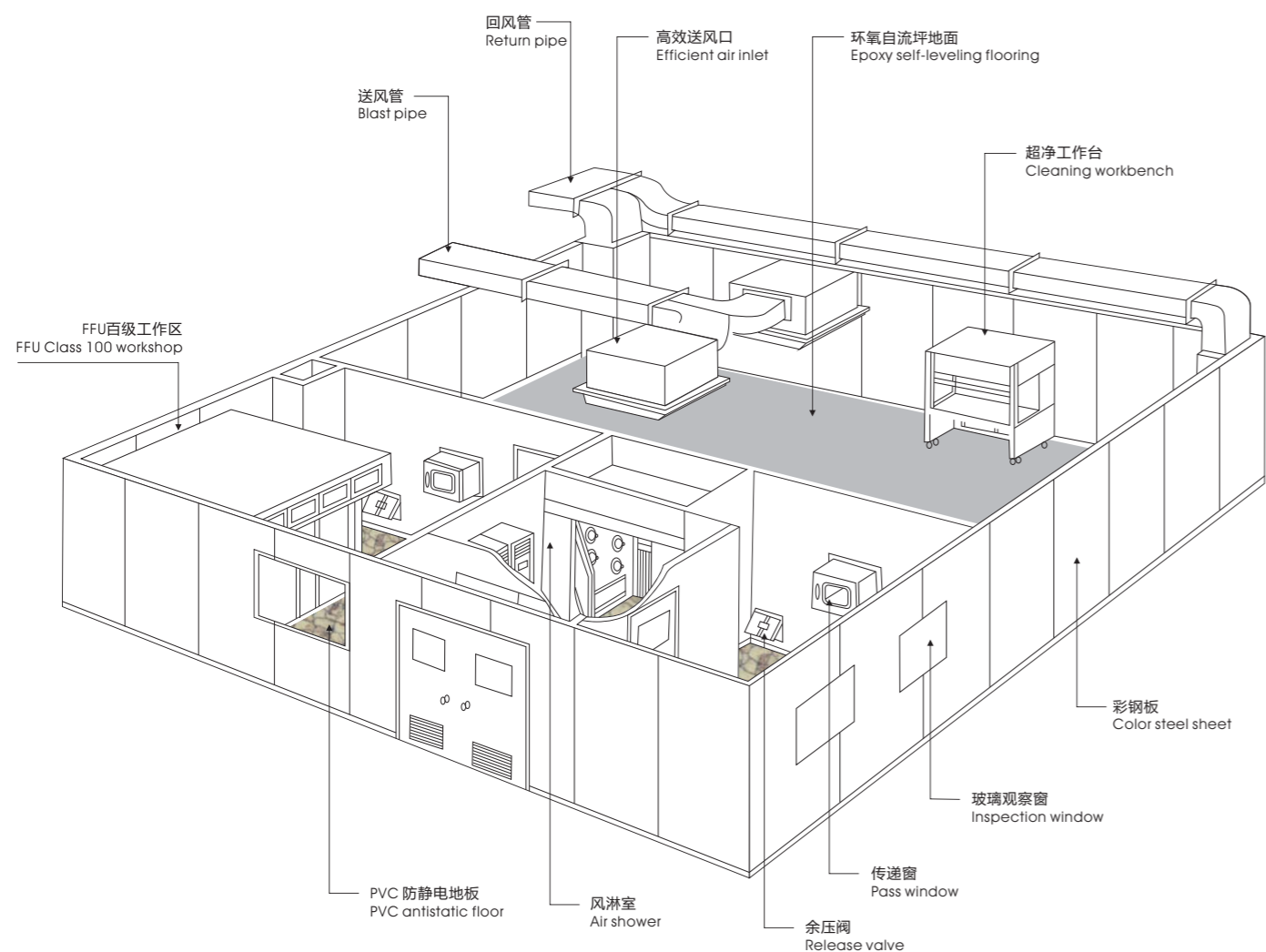
[洁 净 室]

将室内的空气做温度、湿度、气流、气压及微尘粒子的控制，并配合室内照明及不产生建材合成一体的工程，称之为洁净室。

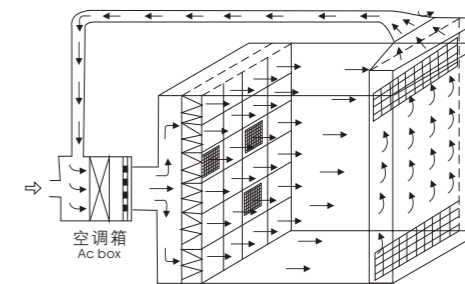
洁净室按气流形式分为层流洁净室、乱流洁净室。层流按其气流方向又分为垂直层流与水平层流两种。垂直层流多用于局部保护和层流工作台。水平层流多用于洁净室的全面洁净控制。各种不同洁净室气流及高效过滤器、送、回风口布局如图所示。

The Clean Room is a kind of construction built with dustless materials and equipped with proper lighting system in order to control the temperature, humidity, pressure and micro-dust particles of the air indoors.

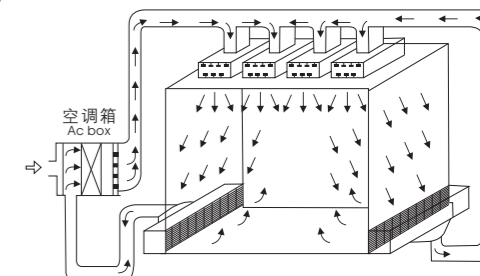
There are two types of Clean Rooms according to the form of airflow, namely Laminar Flow Clean Room and turbulence clean room. The Laminar flow can be divided into vertical laminar flow and horizontal laminar flow. Usually the vertical laminar flow is used in partial purifying and laminar flow clean-bench. The horizontal laminar flow is usually used in the complete clean control of clean Room. The layout of air flows, hi-efficiency filter and ventilator in different clean rooms is as following.



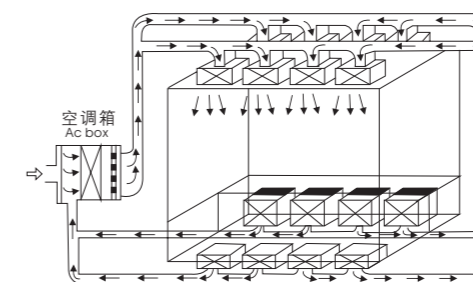
(1)垂直层流方式
Vertical Laminar Flow



(2)水平层流方式
Horizontal Laminar Flow



(3)非层流方式
None-Laminar Flow



(4)隧道方式
Tunnel

各种不同洁净室气流及高效过滤器、送、回风口布局，如图所示
The layout of air flows, hi-efficiency filter and ventilator in different clean rooms is as following.



1000 class clean room
千级无尘室





10000 class clean room
万级无尘室



Clean room return air outlet
无尘室回风口

CLEAN ROOM

[洁 净 室]

CLASS 100 PURIFYING OPERATING WORKSHOP 百级洁净手术室

验收测试数据

- 温度：22±2℃
- 震动：≤0.5μm
- 噪音：≤50db
- 细菌最大平均浓度：0.2个 / 30min.Φ90皿
- CLASS100净化面积：360m²
- 施工期为28天

Testing data in check and accept Procedure

- Temperature: 22±2℃
- Vibration: ≤0.5 μ m
- Noise: ≤50db
- Max bacterial concentration: 0.2/30 mins at φ 90mm utensil
- CLASS100 Purifying area: 360m²
- Construction period: 28 Day



PCB WORKSHOP OF 10000-CLASS

万级线路板净化生产车间

验收测试数据

- 温度：22±1℃
- 湿度：50±5%
- 噪音：≤56db
- 黄光照度：>400lux
- 电阻值：1X104~106Ω/m²
- CLASS10000净化面积：800m²
- 施工期为25天

Testing data in check and accept procedure

- Temperature: 22±1℃
- Humidity: 50±5%
- Noise: ≤56db
- Yellow light intensity: >400lux
- Electricity resistance: 1X104~106 Ω/m²
- CLASS10000 Purifying area: 800m²
- Construction period: 25 Day



CLEAN PHOTOELECTRONIC SWORKSHOP OF 1000-CLASS 千级光电净化生产车间

验收测试数据

- 温度：22±1℃
- 湿度：50±3%
- 噪音：≤56db
- 照度：>250lux
- 电阻值：1X104~106Ω/m²
- CLASS1000净化面积：2600m²
- 施工期为35天

Testing data in check and accept procedure

- Temperature: 22±1℃
- Humidity: 50±3%
- Noise: ≤56db
- Illumination : >250lux
- Electricity resistance: 1X104~106 Ω/m²
- CLASS1000 Purifying area: 2600m²
- Construction period: 35 Day



FOOD WORKSHOP OF 100000-CLASS

十万级食品净化生产车间

验收测试数据

- 温度：25±3℃
- 湿度：50~60%
- 噪音：≤56db
- CLASS100000净化面积：1200m²
- 施工期为25天

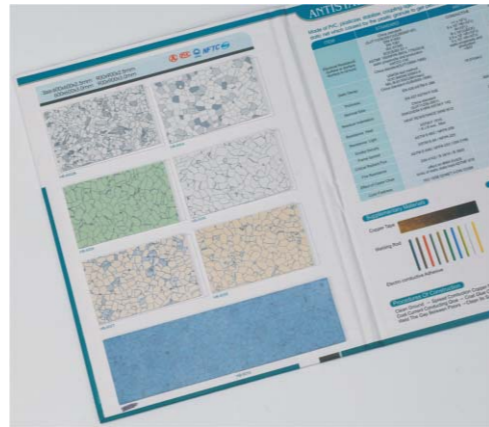
Testing data in check and accept procedure

- Temperature: 25±3℃
- Humidity: 50~60%
- Noise: ≤56db
- CLASS100000 Purifying area: 1200m²
- Construction period: 25 Day



ANTI-STATIC PVC TILES FLOOR

[防静电PVC片材地板]



Characteristic

电性能

导电性满足于UL779&NFPA99 表面电阻值： $10^4 \sim 10^6 \Omega$ 静电衰减时间：从5000Volt到0Volt, 0.25秒

稳定性

抗磨，防水、防腐：可防各种化学药剂，酸，碱和酒精的腐蚀
规格统一，图案精美，颜色持久

抗压

可经受机器，车床和搬运工具的碾压

永久导电

由于贴面夹层中含有分布均匀的导电材料，所以贴面具有永久的导电性能

防污染

PVC贴面保持零伏的静电压，不会产生静电对灰尘的吸附作用，所以清洁房间时不用对灰尘进行清理

防火阻燃

符合美国消防安全协会的防火阻燃标准

性能特点

Conductivity

It satisfies the electric resistance requirement of UL 779& NFPA99. Surface electric resistance: $10^4 \sim 10^6 \Omega$ Static decay time: 5000volt to 0volt, 0.25sec

Durability

Excellent anti-wear, anti-water, and anti-chemical properties

Uniform gauge and color maintenance

Anti-load property

There is no problem with machine movement, carrier vehicles or beds.

Permanent conductivity

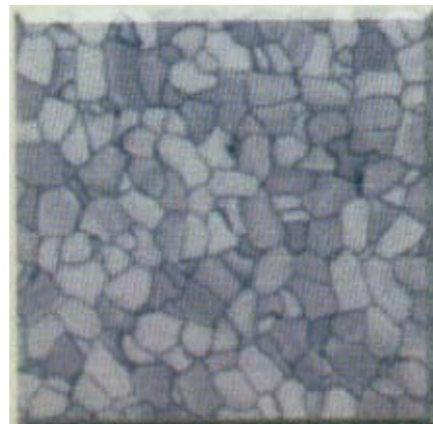
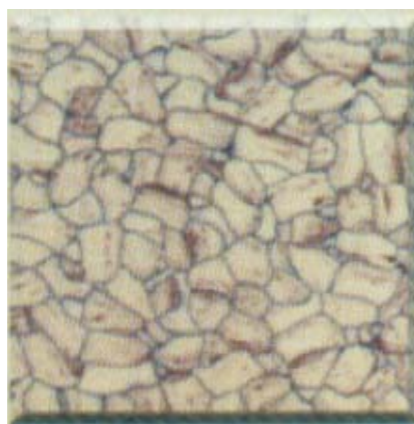
Conductive material is distributed evenly in entire tiles so that it has permanent conductivity.

Non-flammable

0volt static can be retained by pvc tile, don't Produce Sorption of static to dust, So we needn't clean out dust in cleanroom.

Fireproofing

Acording with U.S.A. Fire control securify union' s fireproofing standard.



ANTI-STATIC PVC ROLLS FLOOR

[防静电PVC卷材地板]



TECHNICAL DATA		CONDUCTIVE	DISSIPATIVE
Total thickness	EN 428	2~3mm	2~3mm
Total width	EN 426	2M	2M
Total length	EN426	15~20M	15~20M
Standard/Product specification		EN 649	EN 649
Electrical resistance	EN 1081	$10^4 \leq R \leq 10^6 \Omega$	$10^6 \leq R \leq 10^9 \Omega$
	IEC 61340-4-1	$R \leq 10^9 \Omega$	$10^6 \leq R \leq 10^9 \Omega$
	ANSI / ESD S7.1	$2.5 \times 10^4 \leq R \leq 10^6 \Omega$	$10^6 \leq R \leq 10^9 \Omega$
Static electrical charge	EN 1081	<2 kv	<2 kv
Dimensional stability	EN 434	$\leq 0.4\%$	$\leq 0.4\%$
Wear group classification	EN 600-2	Thickness loss	Group P: $\leq 0.15\text{mm}$
		Volume loss	Group P: $\leq 4.0 \text{ mm}^3$
Residual indentation	EN 433	Approx: $\leq 0.1 \text{ mm}$	Approx: $\leq 0.1 \text{ mm}$
Castors chair test	EN 425	Suitable	Suitable
Underfloor heating		Suitable - max. 27° C	Suitable - max. 27° C
Impact sound reduction	EN ISO 717-2	Approx. +2 dB	Approx. +2 dB
Reaction to fire	EN ISO 13501-1	Class B _s 1	Class B _s 1
	EN ISO 9239-1	$\geq 8 \text{ kw/m}^2$	$\geq 8 \text{ kw/m}^2$
	EN ISO 11925-2	Pass	Pass
Color fastness	EN ISO 105-B02	$\geq \text{Level 6}$	$\geq \text{Level 6}$
Chemical resistance	EN 423	Good	Good
Toxic test	GB 18586-2001	Pass	Pass
Slip resistance	DIN 51130	R9	R9
	EN13893	≥ 0.3	≥ 0.3
Surfact treatment		PUR	PUR
Color number		8	8

ANTI-STATIC ALUMINIUM ALLOY MOVABLE FLOOR

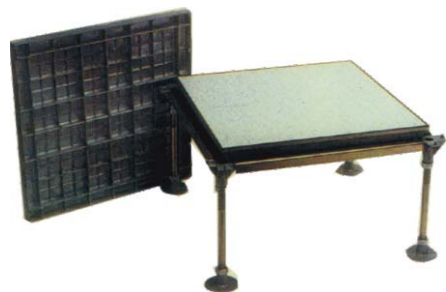
[防静电铝合金活动地板]

USE/用途

- 防静电铝金活动地板用于铺设各类电子计算机机房、程控机房和控制室、净化场地。
- The Antistatic Aluminium Alloy Movable Floor is used to pave the ground of Various computer rooms, Programme-controlled computer rooms, control rooms and purified.

CHARACTERISTIC/性能特点

- 铝合金铸造，强度高、阻燃、变形小、防腐蚀、防磁、表面粘有防静电贴面，美观、行走舒适，防静电性能永不衰减。
- 组装方便，易于拆装改装，地板高度可任意选择和调节。
- Aluminium alloy cast, high strength, anti burning, little deformation, anti corrosion, antimagnetic having permanently antistatic furring tile stick on the surface, pleasing to the eye, comfortable to walk on.
- Convenient to assemble, easy to disassemble or refit, the floor high may be fixed in accordance with the requirement of the consumer and is adjustable.



High Pressure Die cast Antistatic Aluminium Alloy Floor
高压压铸防静电铝合金地板



EPOXY FLOOR

[环氧地板]

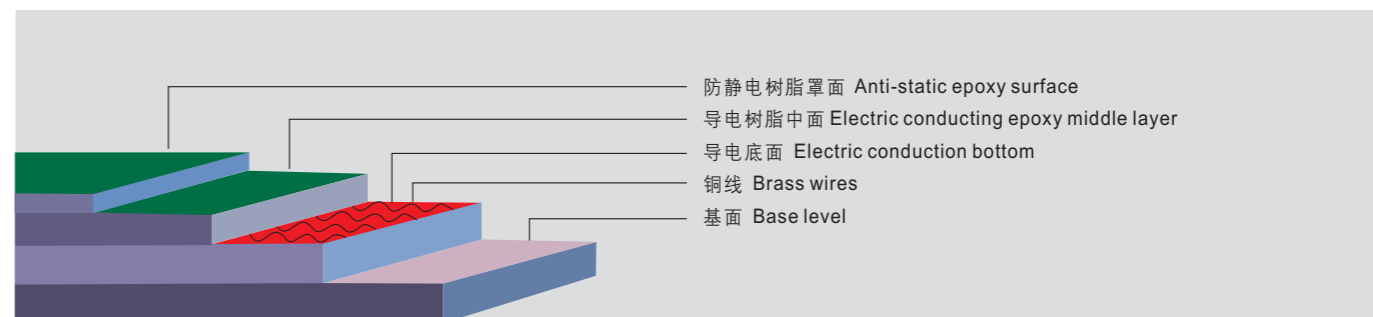
环氧地板是一种高强度、耐磨损、美观的地板，具有无缝、质地坚实、耐药品性佳、防腐、防尘、保养方便、维护费用低廉等优点。可根据客户的要求设计多种方案，如薄层涂装、1-5mm厚的自流平地面、防滑耐磨涂装、砂浆型涂装、防静电、防腐蚀涂装等。产品适用于各种场地，如：厂房、机房、仓库、实验室、病房、手术室、车间等。

Wear-resisting, durable and attractive, the Epoxy Flooring features as seamless, stability, chemical resistance, erode-resisting, dustproof, convenient maintenance and low maintaining cost, Various designs are available according to the customers' requirements, such as Lmella smearing, Automatic flow ground with 1-5mm thickness, Slide-proof wear-resisting smearing, Sand slurry smearing, Anti-static and erode-resisting smearing etc. Which can be widely used in all kinds of places, like: Plants, Machine Houses, Warehouses, Laboratories, Sick berths, Operation rooms, and workshops etc.



CHARACTERISTIC / 性能特点

- Durable anti-static effect;
- Strong adhesion
- Wear-resisting and erode-resisting
- Smooth surface and easiness of clean
- 抗静电效力持久
- 附着性好
- 耐磨，耐腐蚀
- 表面光洁平整，易清洁





Equipments

设备篇



AIR SHOWER

[风/货淋室]

风货淋室是人/货进出洁净室所必须的通道，它同时起到气闸室密闭洁净室的作用，是进行人身/货物净化和防止室外空气污染洁净区的有效设备。

为了减少由于人/货进出所带来的大量尘埃粒子，经高效过滤器过滤后的洁净空气由可旋转喷嘴从各个方向喷射至人/货上，有效而迅速清除尘埃粒子，清除后的尘埃粒子再经初、高效过滤器后重新循环到风淋区。可以按照实际需要拼装成各种长度的风淋尺寸。

Air shower is of a necessary pass way for cleaning people/goods in and out to prevent from outdoor air in pollution of indoor clean area.

In order to decrease the dust from people/goods in and out, the cleanest air from high-effective filter can wind people and goods at all directions and then the air may filter again to be used. The air shower is of different sizes according to its use.



风/货淋室特点 /

- 系统自动控制运行，双门电子互锁，并设有光电感应器。
- 整体冷轧钢板制作，外表面静电喷塑处理。
- 门、底板、喷嘴均采用不锈钢制造，美观大方。
- 采用模块化设计方案，组装运输极为方便。
- 风淋时间0~99秒可调并可显示已风淋的时间。
- 采用初、高效两级过滤系统。
- 喷嘴出风风速高达20M/S，吹到人/货上风速18M/S以上。
- 采用EVA密封材料，密闭性能高。

THE FEATURES OF AIR SHOWER HOUSE

- It operates by auto-control with double-door electronic locks and has photoelectric sensor.
- It is made of cold-rolled steel with electrostatic spray plastic painting.
- The door, floor and sprayer are made of stainless steel and very beautiful.
- It is designed by the form of moulds to be easily put together and transport.
- The wind time is about 0-99 second and it can be adjusted shows the time winded.
- It adopts primary and high effective filter systems.
- The wind speed from sprayers is 20m/s. while to the people/goods 18m/s.
- Adopted EVA material is good at seal.

可选配件

- 光电感应自动移门
- 超高效过滤器
- 全不锈钢风淋室/电解钢板风淋室
- 底板无门槛配置，可方便货车出入
- 黄光灯/紫外线杀菌灯
- 除静电离子系统

SPARE PARTS ARE FREELY CHOSEN

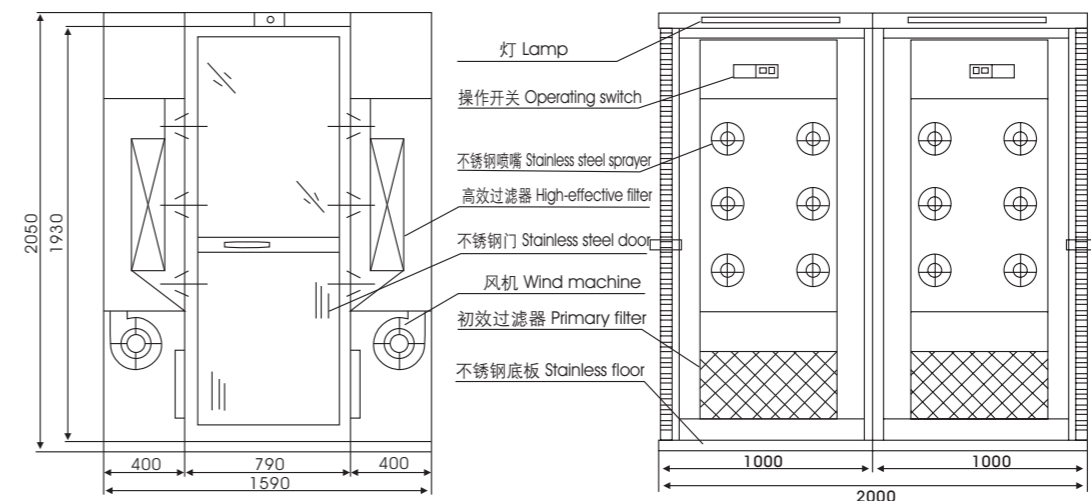
- Photoelectric-sense moving door
- High effective filter
- Whole-stainless wind shower house and electrolytic steel plate wind shower house
- There is no knock to be easily in and out.
- Yellow lamp and ultraviolet lamp to be chosen.
- De-electrostatic ionic system

风淋室主要技术参数 MAIN TECH PARAMETER

规格型号 Type	AS-1S-1290	AS-1D-1590	AS-2D-1590	AS-3D-1590
外形尺寸 Size (L×W×Hmm)	1290x1000x2050	1590x1000x2050	1590x2000x2050	1590x3000x2050
风淋区尺寸 Size winded (L×W×Hmm)	790x910x1930	790x910x1930	790x1910x1930	790x2910x1930
风速 Wind speed	18~20M/S			
喷嘴数量 Quantity of sprayers	6只(单侧 one side)	12只(两侧 two sides)	24只(两侧 two sides)	36只(两侧 two sides)
风淋时间 Wind time	0~99s (可调 Adjustable)			
过滤器效率 Filter effect	≥99.99% (指 ≥0.5 μm 粒径的尘埃 particle diameter is ≥0.5 μm)			
箱体主材 Main material the house	1.5mm厚冷轧钢板，表面静电喷塑处理，哑光白 1.5mm thick cold rolled steel plate, surface electrostatic spray treatment, matter white			
门材质及数量 Material and quantity	不锈钢单开门 Stainless steel single door			
门互锁方式 Method of mutual locks	风淋时双门闭锁，平时双门电子互锁，只可以打开其中一扇 The two doors are locked during air shower and in electronic interlocking at normal time, only one of them can be opened.			
电源 Electricity source	3N 380V 50HZ			
功率 Power	0.75KW	1.5KW	3KW	4.5KW
重量 Weight	~360KG	~420KG	~840KG	~1260KG
适用人数 Quantity for people	1~2人	1~2人	2~4人	3~6人

- 注：(1) 多段连结可组成风淋通道。(2) 可根据客户要求做成三门形式，以便于90度方向进出。
Note: (1) Several sections connected can make a wind shower pass.
(2) According to the requirements of clients it can be made with 3 doors to easily turn out.

AAS-2D-1590结构图 STRUCTURE OF AS-2D-1590



AUTO AIR SHOWER

[全自动风淋室]

风/货淋室是生物洁净室(BCR), 工业洁净室(ICR)的理想配套设备风淋室不仅可以清除人身和物品表面附着的尘埃, 减少带入洁净空气的灰尘量, 同时兼有闸室(Airlock)功能, 可防止不清洁空气由门侵入。以配合洁净空调系统确保洁净室达到所需洁净度。

Air shower pass box is ideal accessory equipment for biological clean room (BCR) and industrial clean room (ICR). It not only removes dust on person or article to keep it from being brought into the clean room, but prevents outside dirty airflow from entering as well. It helps make the clean room secure and clean.



■ 订购详情 ORDERING INFORMATION

Product Name	Size尺寸/产品名称	Description说明
单人单吹风淋室 Single Air shower	外尺寸 Exterior size: L1290*W1000*H2050MM 风淋尺寸 Shower size: 790*860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
单人双吹风淋室 Single Double Air shower	外尺寸 Exterior size: L1240*W1000*H2180MM 风淋尺寸 Shower size: 790*860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
单人双吹风淋室 Single Double Air shower	外尺寸 Exterior size: L1590*W1000*H2050MM 风淋尺寸 Shower size: 790*860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
双人单吹风淋室 Double Single Air shower	外尺寸 Exterior size: L1290*W2000*H2050MM 风淋尺寸 Shower size: 790*1860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
双人双吹风淋室 Double air shower	外尺寸 Exterior size: W1240*L2000*H2180MM 风淋尺寸 Shower size: 790*1860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
双人双吹风淋室 Double air shower	外尺寸 Exterior size: L1590*W2000*H2050MM 风淋尺寸 Shower size: 790*1860*1885MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 活动底板为0.4MM厚201不锈钢材质。3. 不锈钢喷嘴; 不锈钢单开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. Moveable bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
货淋室 Goods Air shower	外尺寸 Exterior size: L2300*W2000*H2050MM 风淋尺寸 Shower size: 1500*1860*1980MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 无底板。3. 不锈钢喷嘴; 不锈钢双开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. No bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).
货淋室 Goods Air shower	外尺寸 Exterior size: L2000*W2000*H2050MM 风淋尺寸 Shower size: 1200*1860*1980MM	1. 箱体和内壁为1.1MM厚冷板喷塑(亚光白)。2. 无底板。3. 不锈钢喷嘴; 不锈钢双开门(门框为0.9MM厚304不锈钢板/门封板为0.55MM厚304不锈钢/门芯为40*60的0.95MM厚度的201不锈钢方通) 1. Shower case and inner wall material: 1.1mm thickness cold rolled-plate with plastic coating (dull white). 2. No bottom plate: 0.4mm 201# stainless steel sheet. 3. Stainless steel air nozzle and stainless steel single open door (Door frame: 0.9mm #304 stainless steel; door-sealing: 0.55mm #304 stainless steel; Core board of door: 40x60mm, 0.95mm #201 stainless steel bar).

● 除以上规格外,均可按客户要求制作不同规格 Custom specification available



AIR SHOWER PASS BOX

[落地式风淋传递箱]

风淋式传递窗具有闸及门锁的双重作用, 因此较普通传递窗防止内外气流贯穿的性能更好, 而且被传递物品须经内淋后, 才能进入洁净室, 所以能更有效地防止传递物品携入灰尘或细菌。Air shower pass box features gate and lock that prevent convection of inside and outside airflows better than traditional pass box. All materials are treated with air shower to remove any dust and kill any bacteria before entering clean room.

特点 Features:

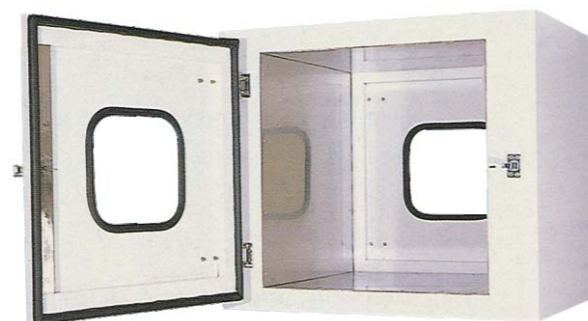
- 采用无隔板高效过滤器有效地减少风机阻力和设备噪音。
An efficient filter without division plate is used to reduce resistance to Airflow and noise.
- 采用低噪音可调风量式风机系统, 使传递窗风速保持在理想的工作范围内, 以确保洁净度能长期保持在技术指标范围内。
A low-noise adjustable blower is used to keep the pass box under perfect conditions, Ensuring the clean room under control.

MECHANICAL (ELECTROMAGNETISM) INTERLOCK/AIR SHOWER TYPE PASS BOXES

[机械(电磁)互锁传递窗/
风淋式传递窗]

该装置是洁净室的一种辅助设备,主要用于洁净区与洁净区之间或洁净区之间或洁净区与非洁净区之间的小件物品的传递,以减少洁净室的开门次数,把对洁净区的污染降到最低程度。

This is accessory equipment for clean room which facilitates small articles passed between clean areas or between clean and unclean areas to decrease times of door opening and minimize contamination in the clean room.



特点 FEATURES

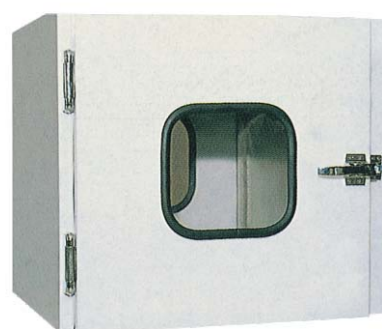
- 内胆不锈钢,平整光洁,外壳优质钢板静电喷塑,美观大方。
- 机械互锁或电子互锁装置,确保两侧门不能同时打开。
- 箱体两边装有开门信号灯,可知道对面门的开启情况。
- 传递窗装有门密封条,确保气密性。
- Inside is made of smooth stainless steel, while outside of quality steel treated with electrostatic spray coating.
- Mechanical or electronic interlock ensures two doors can't open at the same time.
- Indicator light turns on when another door on the back side is opened.
- Sealing strips are used to ensure air tightness.

可选配件 OPTIONAL ACCESSORIES

- 室内灯或紫外线杀菌灯 Inside light or ultraviolet light for sterilization
- 声光报警系统 Audible and visual alarm system
- 制成全不锈钢传递窗 Full stainless steel pass box

订购详情 ORDERING INFORMATION

Product Name产品名称	Size尺寸 L x W x Hmm	Description说明
机械互锁传递箱 Mechanical interlock pass box	外 / Outer size: 780 x 600 x 690 工作区 / Working area: 600 x 600 x 600	机械互锁; 箱体主材: 优技冷轧钢板, 表面静电喷塑处理, 哑光白色 Mechanical interlock; Case main material: excellent technology cold rolled steel plate, surface electrostatic spray treatment, matter white
电磁互锁传递箱 Electromagnetic interlock pass box	外 / Outer size: 780 x 600 x 690 工作区 / Working area: 600 x 600 x 600	机械互锁; 箱体主材: 优技冷轧钢板, 表面静电喷塑处理, 哑光白色 Mechanical interlock; Case main material: excellent technology cold rolled steel plate, surface electrostatic spray treatment, matter white
落地式机械互锁传递箱 Floor type mechanical interlock pass box	外 / Outer size: 1185 x 1000 x 1045 工作区 / Working area: 1000 x 1000 x 1000	机械互锁; 箱体主材: 优技冷轧钢板, 表面静电喷塑处理, 哑光白色 Mechanical interlock; Case main material: excellent technology cold rolled steel plate, surface electrostatic spray treatment, matter white
风淋式机械互锁传递箱 Air shower mechanical interlocking pass box	外 / Outer size: 980 x 700 x 1800 工作区 / Working area: 600 x 700 x 600	机械互锁; 箱体主材: 优技冷轧钢板, 表面静电喷塑处理, 哑光白色; 风速: 22m/s以上; 喷嘴数量4个; 风淋周期: 0-35S可调; 380V/50HZ, 三相电源; 0.75KW功率 Mechanical interlock; Case main material: excellent technology cold rolled steel plate, surface electrostatic spray treatment, matter white; air speed: above 22m/s; 4 pcs spray nozzles; shower period: 0-35s adjustable; 380V/50HZ, 3 phases power; 0.75KW capacity



CLEAN BENCH [净化工作台]



主要特点 Characteristic

- 风机采用德国原产直驱式高效离心风机, 具有寿命长、噪音低、免维护、震动小、可无级调速等特点。可在高效过滤器终阻力的状态下保持风量不变。
- 可多台连接形成100级流水装配线。
- 装有进口压力表, 明确指示高效过滤器两侧的压差, 能及时提醒更换高效过滤器。
- 铝合金制成的风门可任意调节过滤进风量。
- The German original direct centrifugal wind machine of high effect is characterized by long life use, low noise, no maintenance, Weak shake and classless regulations of speed. Under the condition of the resistance at the filter end it keeps no change of the wind quantity.
- Several machines can be put together to 100-grade production line. The imported manometer clearly shows the pressure difference on the both sides of the filter to replace high effective filter in time.
- The Al alloy wind door can freely adjust the filtered wind-in.

可选配件 Spare parts are freely chosen

- 超高效过滤器
- 防水板桌面/不锈钢孔板桌面
- 不锈钢搁物架
- 除静电离子系统
- Super effective filter
- Waterproof tabletop and holed stainless tabletop
- Stainless case
- De-electrostatic ionic system

洁净工作台是造成局部洁净度的专用装置, 广泛应用于局部洁净度要求较高的区域, 如: 实验室、生物制药、光电产业、微电子、硬盘制造等领域。洁净工作台具有高洁净度、可连成装配生产线、低噪声、可移动性等优点。

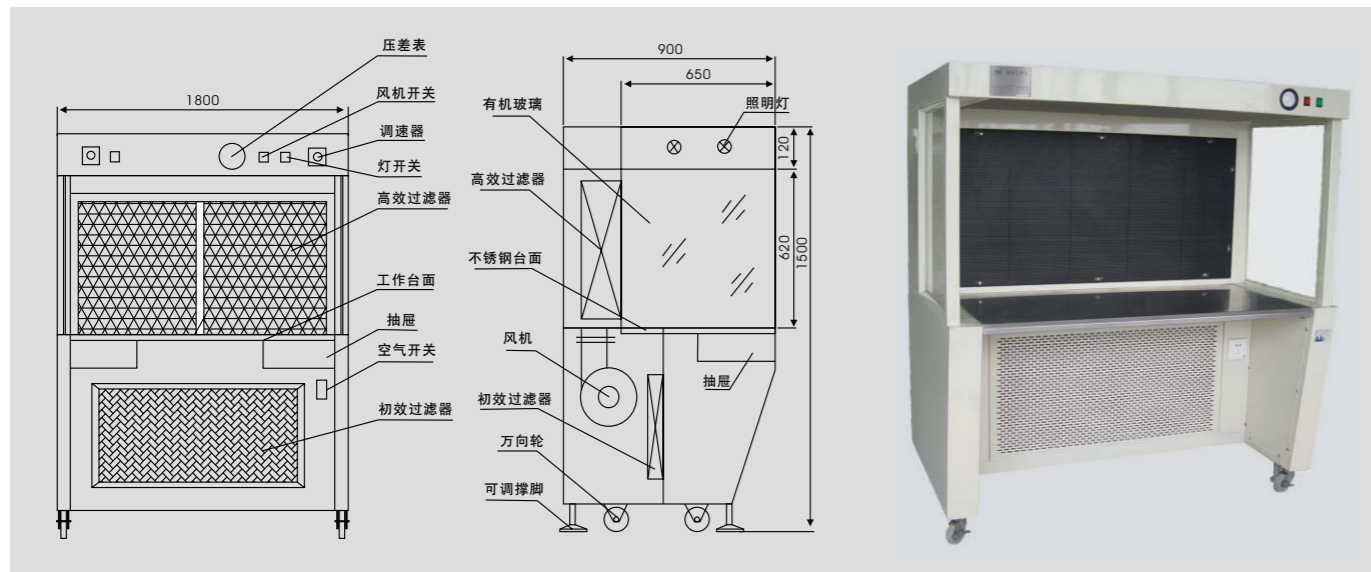
洁净工作台根据气流方向可分为水平流洁净工作台和垂直流洁净工作台, 也可根据结构分为单边操作和双边操作两种形式。

Clean bench is of a special fit for cleanliness and widely used for higher clear requirements, such as lab, bio-medicine, photoelectric industry, microelectronics, disc making, etc. It is characterized by high cleanliness and may be put together a production line with low noise and easy move as well.

According to the direction of air flow it is divided into horizontal and vertical working platforms on one side or both sides to work.

HORIZONTAL CLEAN BENCH

[水平流净化工作台]



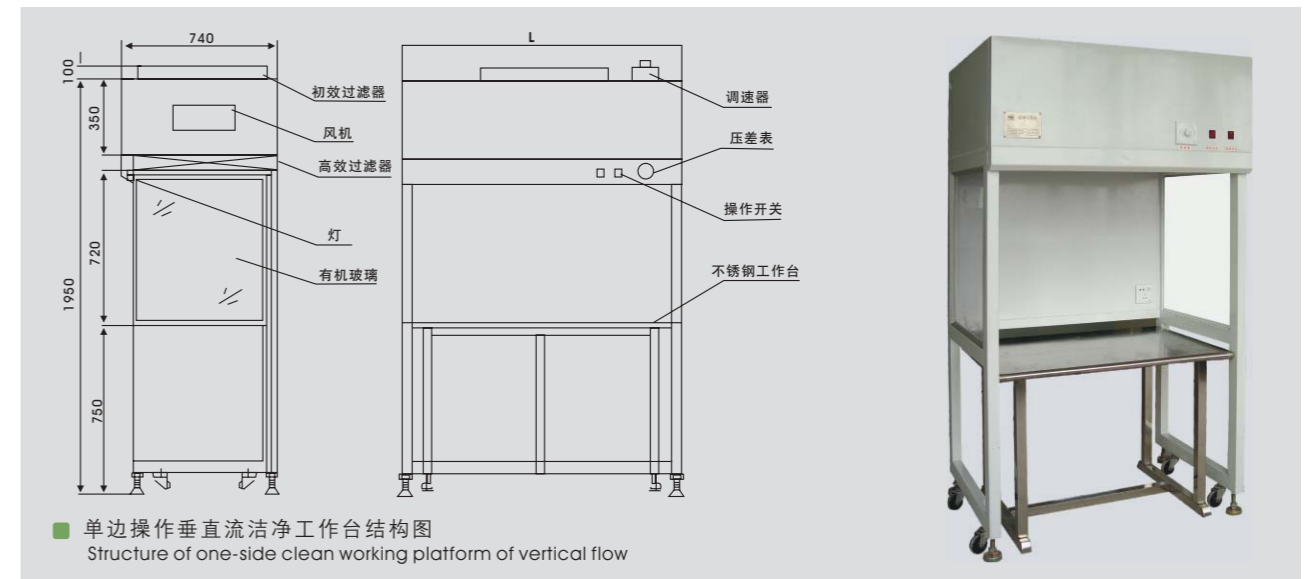
水平流洁净工作台产品参数 Parameter of the product

规格型号 Type	CB-H-1340	CB-H-1950
外形尺寸 Size(W x D x H)mm	1200x900x1500	1800x900x1500
工作区尺寸 Working space(W x D x H)mm	1100x 650x620	1700x 650x620
风量 Wind quantity (M ³ /h)	1000	2000
风速 Wind speed (M ³ /s)	平均0.45m/s ± 20%(可调)	average 0.45m/s±20% (adjustable)
净化级别 Filtered level	100级(美国联邦标准209E)	Class 100 (United States federal standard 209E)
高效过滤器效率 Efficiency of high effective filter	99.999%@0.3 μm	
高效过滤器尺寸 Size of high effective filter	915x610x69	850x610x69
高效过滤器数量 Quantity of effective filters	1	2
工作台材质 Materials of working platform	表面: 砂光不锈钢, 背面: 密度板喷漆防水处理 Surface: Sanded stainless steel, back: spray paint waterproof treatment of density plate	
噪声 Noise	<60dB	<62dB
电源 Electric source	220V 50HZ	
功率 Power	0.36KW	0.72KW
适用人数 Number of applicable	1人	2人

■ Note: According to the requirements clean working platforms can be made in various sizes and patterns. 注: 可按用户要求订做各种型号及款式的洁净工作台

VERTICAL FLOW CLEAN BENCH

[垂直流净化工作台]



■ 单边操作垂直流洁净工作台结构图
Structure of one-side clean working platform of vertical flow

垂直流洁净工作台产品参数 Parameter of the product

规格型号 Type	CB-V-1340	CB-V-1640	CB-V-1950
外形尺寸 Size(W x D x H)mm	1340x740x2050	1640x740x2050	1950x740x2050
工作区尺寸 Working space(W x D x H)mm	1260x 655x850	1560x 655x850	1870x 655x850
风量 Wind quantity (M ³ /h)	1205	1510	1810
风速 Wind speed (M ³ /s)	平均0.45m/s ± 20%(可调) average 0.45m/s±20% (adjustable)		
净化级别 Filtered level	100级(美国联邦标准209E) Class 100 (United States federal standard 209E)		
高效过滤器效率 Efficiency of high effective filter	99.999%@0.3 μm		
高效过滤器尺寸 Size of high effective filter	1220x610x70	915x610x70/610x610x70	915x610x70
高效过滤器数量 Quantity of effective filters	1	1/1	2
工作台震动半峰值 Semi-peak value	工作台和整体框架为分离式, 无震动影响 The worktable and the whole frame are separated and have no vibration effect.		
工作台材质 Materials of working platform	表面: 砂光不锈钢, 背面: 密度板喷漆防水处理 Surface: Sanded stainless steel, back: spray paint waterproof treatment of density plate		
噪声 Noise	<58dB	<60dB	<62dB
电源 Electric source	220V 50HZ		
功率 Power	0.18KW	0.25KW	0.36KW
适用人数 Number of applicable	1~2人	2~3人	3~4人

■ Note: According to the requirements clean working platforms can be made in various sizes and patterns. 注: 可按用户要求订做各种型号及款式的洁净工作台

BIOLOGICAL SAFE

[生物安全柜]

性能特点

- 在工作区域气流为垂直单向流形式，既保证样本不受室内空气污染，也保证样品之间不会发生交叉感染。操作口处的气幕使内外空气隔离，形成了严格的保护屏障。安全柜开口处向内的高速气流使室内空气只能向安全柜吸风口流动，柜内的污染空气不会向外溢出，以保证操作人员和环境不受侵害；
- 本生物安全柜为智能型全自动控制，配有声/光气流报警系统（先进的速报警系统、玻璃门开口位置报警系统、过滤压差报警系统）能随时监控安全柜的各项性能参数，全部的控制仪器都采用进口产品；使安全柜始终处于良好的工作状态，避免人为的疏忽造成不安全因素，确保操作人员不受感染，使您的工作更安全、更放心；
- 提供满足洁净度ISO Class5级（相当于209E的100级），送/排风过滤器效率 > 99.99% (0.3微米DOP粒子)；及提供满足洁净度ISO Class4级（相当于209E的10级），送/排风过滤器效率 > 99.99% (0.1微米DOP粒子)；
- 采用先进的德国风机，噪声低、寿命长；保证了工作环境噪声低于65dB(A)；
- 玻璃窗开口最大高度为600毫米，方便您放置大型的实验器材，且结构简单，易于清洗；

Characteristic

- Within the working area the airflow is of vertical and mono-direction, which is a guarantee for protection of samples from air pollution and cross infection. At the operating window there is a strict air screen to separate the air of indoor and outdoor. The room airflow with high speed at the opening of the safe only goes to the way-out of the safe and harmful air in the safe does not hurt the operators and environment.
- The biological safe is of intellectual auto-control with voice-photo airflow alarm systems (advanced speed alarm, glass door alarm and filtering pressure difference alarm), which show various parameters of the safe at any time. All the controlling instruments are imported to keep fine working condition and guarantee no infection of operators.
- The safe gives cleanliness of ISO Class 5 (equal to Class100 of 209e), wind feeding and exhausting efficiency of 99.99% (DOP ion of 0.3 micron), cleanliness of ISO Class 4 (equal to Class 10 of 209e) and wind feeding and exhausting efficiency of 99.99% (DOP ion of 0,1 micro).
- Advanced German wind machine adopted is characterized by low noise and long use life to guarantee the noise of the working environment is lower than that of 65db (a).
- The glass window most opens 600mm to make it possible to put in large experimental instruments. Its structure is very simple to easily clean.

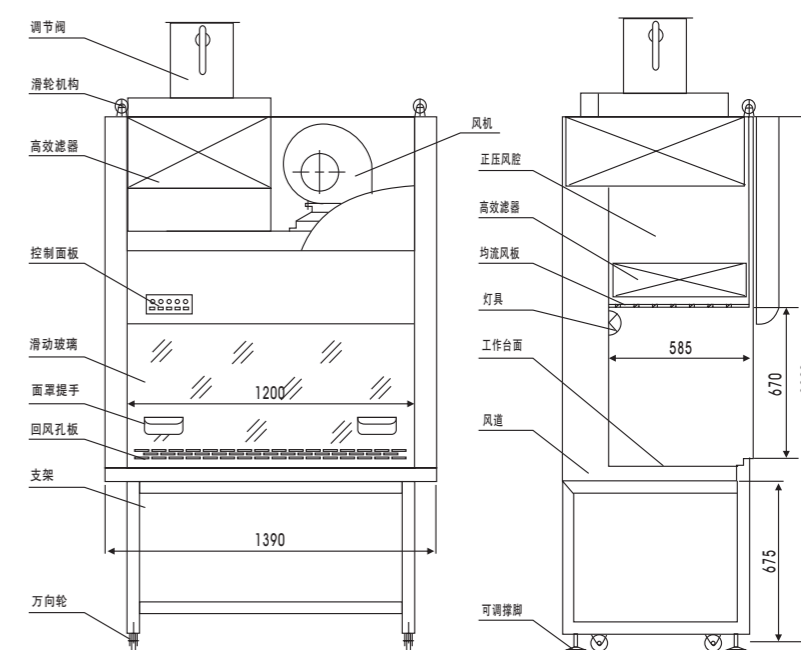


用途

生物柜具有对样品，操作人员和环境三重保护功能，主要用于基因工程、细胞融合、酶工程、血液检测、国际传染疾病和流行性疾病研究、分子生物和生理检测、军事生化研究以及卫生防疫、海关对生物入侵检查等。

USE

This biological safe can protect samples, operators and environment, mainly used in gene engineering, cell mixture, enzyme engineering, blood test, research of world infectious and epidemic diseases, molecular biology and physical test, research of military biochemistry and sanitation and anti-epidemic work, examination of biological incursion for customs.



II A / II B2 / II B3全自动生物安全柜技术参数: Fully-automatic biological safe of II a / II b2 / II b3

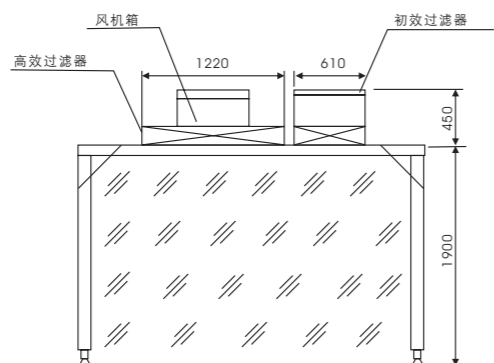
型号 Type	IA (单人)	IIA (双人)	IB3 (单人)	II B3 (双人)
外形尺寸 Size	W1390×D800×H2200	W2000×D800×H2200	W1390×D800×H2200	W2000×D800×H2200
工作区尺寸 Working space	1200x585x670	1800x585x670	1200x585x670	1800x585x670
电源 Power source	220V/50HZ, 0.45KW	220V/50HZ, 0.7KW	220V/50HZ, 0.45KW	220V/50HZ, 0.7KW
适用范围 Suitable scope	适用于低到中等危险生物剂、没有挥发性的有毒化学及有放射核毒素的操作。 Suitable for low-grade and low-risk biological agents, and has no volatile toxic chemical and the operation of radionuclear toxin		适用于传染性大、毒力强、难以防治的、没有完全认识的新原体的研究及有毒化学品和挥发性放射核毒素的操作。 Suitable for the study of new chlamydia which is infectious, virulent and difficult to control, and the operation of toxic chemicals and volatile radioactive nuclear toxins	
控制方式 Control measure	自动控制（带风速报警系统、玻璃门开口位置报警系统、过滤器压差报警系统） Automatic control (with wind speed alarm system, glass door opening position alarm system, filter differential pressure alarm system).			
洁净等级 Clean class	ISO Class5级（相当于209E的100级）及ISO Class4级（相当于209E的10级） ISO class 5 (equivalent to 209E) and ISO class 4 (equivalent to 209E)			
风速 Wind speed	风速可显示，送风平均风速0.35米/秒（低于0.3米/秒报警），排风平均风速0.35米/秒（低于0.4米/秒报警） Wind speed can be shown, the average wind speed of supply air is 0.35 m / s (less than 0.3 m / s alarm), and the average wind speed of exhaust wind is 0.35 m / s (less than 0.4 m / s alarm).			

CLEAN BOOTH

[洁净棚]

将层流罩放置在钢结构支架上，使洁净棚内达到10级~10万级的洁净等级。层流罩放置标准模数的高效无隔板过滤器。支架用不锈钢或普通通喷塑。根据支架的尺寸，可做成整体焊接或螺栓固定的可拆卸式。

Put laminar flow cover on steel supports to make inner shed reach cleanliness of Class10100,000. The quality standard of laminar flow cover to put up depends on high effects without division-plate filter. The supports are made of either stainless steel or common steel with plastic painting. According to their sizes, they are either welded together or fixed by screws for easy dismount.



特点 Characteristic

- 模块化，组装式设计，施工简便，可大大缩短在现场的施工时间。
- 相对于土建式洁净室，造价费用低。
- 适用于建造小面积的洁净区域。
- Mould and assemble design make it easy build to shorten the time of construction.
- In comparison with civil engineering for a clean house, it costs much lower.
- It is suitable to build a small area of clean house.

名称 Name	型号 type	JJP-01
洁净等级 Clean class		100级@ $\geq 0.5 \mu m$
风速 Wind speed		0.3-0.8m/s
噪声 Noise		$\leq 65dBA$
电源 Power source		220V, 50HZ

■ Note: It can be customized by the requirements of clients.
注：可按客户具体要求定做。

可选用配件 Optional Accessories

- 透明/网格防静电围帘
- 超高效过滤器
- 粘尘地板
- 德国EBM直流风机
- 圆形风管接头
- 压差表
- Transparent-grid electrostatic proof curtain
- Supper high effective filter
- Adhesion-dust floor
- DC wind machine of German EBM
- Round joint of wind pipe
- Pressure difference manometer

FAN FILTER UNIT

[层流罩]

本系列产品是一种空气自净装置，可用于室内吊顶安装，或放置在支架上，使局部净化级别达到百级。也可用于洁净室末端送风。该产品设有初、高效两级过滤装置。风机从顶部将空气吸入并经初、高效过滤器过滤，过滤后的洁净空气在整个出风口以0.45m/s \pm 20%的风速送出。

层流罩有风机内接和风机外接两种，安装方式有悬挂式和落地支架式两种。

This serious of products are of air auto-cleaning equipment, which can be hoisted in the ceiling or put on supports to make part of the air clean in the house or feed terminal wind in the house. It is equipped with primary and high effective filters. Wind machine draws the air from the top and then the filters make it fresh. The air filtered blows out from the window at the speed of 0.45m/s \pm 20%.

主要特点 Characteristic

- 风机采用德国原产直驱式高效离心风机，具有长寿命、低噪音、免维护、震动小、可作无级调速等特点。
- 适合于组装成超净生产线，可根据工艺布置为单台使用，也可将多台串联形成100级流水装配线。
- 机体结构采用进口钢板静电喷塑，美观大方。
- The German original direct centrifugal wind machine of high effect is characterized by long life use, low noise, no maintenance, weak shake and classless regulations of speed.
- It is suitable to assemble super clean production line. According to the technological arrangement, it may be used singly or be series connected to form production line of 100 class.
- The machine body is made from imported steel plate with plastic painting and looks beautiful.

可选用配件

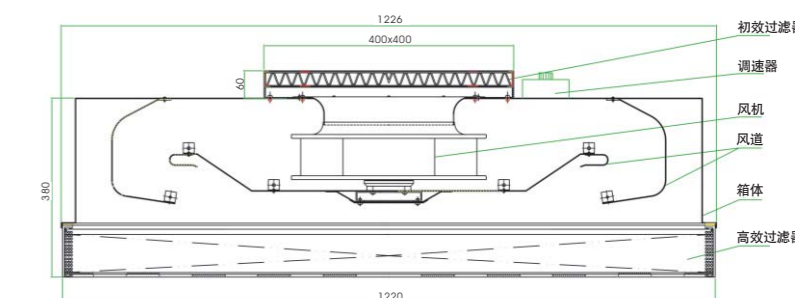
- 超高效过滤器
- 不锈钢结构/铝合金结构
- 可按要求装配调速器、压差表等
- 圆形风管接头

Optional Accessories

- Super effective filter
- Stainless steel structure and AL alloy structure
- According to the requirements to install speed regulator and pressure difference manometer
- Round joint of windpipe



型号 Type	CLZ-1	CLZ-1
外形尺寸 Size (LxWxH)mm	1226x616x380	1176x576x380
风量 Wind force	2000m ³ /h	1500m ³ /h
洁净度 Clean degree	100级 (美国联邦标准209E)	
高效过滤器 High effective filter	99.999% @ 0.3 μm	
噪音 Noise	< 59DB, 测试点距离下方1m, 风速0.45m/s \pm 20%	
箱体材料 Material of the body	钢板、不锈钢、铝合金等	
电源 Power source	220V, 50HZ, 单相	
功率 Power	0.25KW	0.17KW
净重 Net weight	25KW	20KG



EFFICIENT AIR INLET

[高效送风口]



高效送风口可作为终端高效过滤装置直接安装在洁净室顶棚等处，具有投资少、密封性能可靠、通用性强、安装方便、维护简单等特点。

Efficient air inlet may be used as terminal high efficient filter equipment to fix in the ceiling of the purified room, which is characterized by low cost, good seal, common use and easy repair.

特点

- 由静压箱、高效过滤器和散流板三部分组成。
- 箱体采用冷轧钢板制作，表面静电喷塑处理。
- 与风管的接口可为顶接或侧接，接口为圆形或矩形。

可选用配件

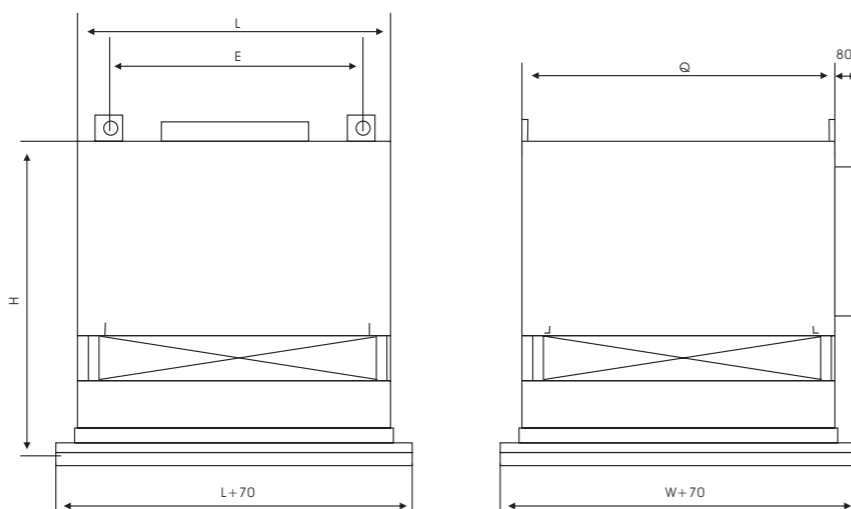
- 不锈钢送风口/不锈钢散流板
- 内壁保温层
- 压力差计和检漏连接口
- 进风管可根据要求配备不同风阀

Characteristic

- It consists of electrostatic box, efficient filter and flowing panel.
- The box body is made of cold rolling steel plate with surface electrostatic painting.
- The joint of windpipe, which joint is round or rectangle, can be connected either at the top or at the side.

Optional Accessories

- Stainless blowing-out window and flowing panel
- Inner heat keeping layer
- Joints of pressure difference manometer and leak checking
- Blowing pipe needs different wind valves according to the requirements.



高效送风口结构图
Structure of efficient blowing-in window

高效送风口产品参数 PARAMETER OF EFFECTIVE BLOWING-OUT WINDOW

规格型号		静压箱 外形尺寸 (LxWxH) mm	高效 过滤器尺寸 (长x宽x高) mm	额定 风量 m ³ /h	进风管 尺寸 AxBmm	风管连 接尺寸 Cx D	装配尺寸 (TxSxRxG) mm	吊杆间距 ExF
侧面进风	顶部进风							
K-320	K-320D	370x370x520	320x320x220	500	200x200	250x250	380x380	340x340
K-484	K-484D	534x534x520	484x484x220	1000	320x200	370x250	544x544	505x505
K-610	K-610D	660x660x495	610x610x150		320x250	370x300	670x670	630x630
K-820	K-820D	870x650x495	820x600x150	1200	320x250	370x300	880x660	840x620
K-630	K-630D	680x680x570	630x630x220	1500	320x250	370x300	786x544	650x650
K-726	K-726D	776x534x520	726x484x220		400x200	450x250	975x670	750x505
K-915	K-915D	965x660x495	915x610x150		500x250	550x300	1028x544	935x630
K-968	K-968D	1018x534x520	968x484x220	2000	500x200	550x250	1028x544	990x505
K-1220	K-1220D	1270x660x495	1220x610x150		500x200	550x250	1280x670	1240x630
K-945	K-945D	995x680x570	945x630x220	2200	500x250	550x300	1005x690	965x650
K-1260	K-1260D	1310x680x570	1260x630x220	3000	600x250	650x300	1320x690	1280x650

FILTER

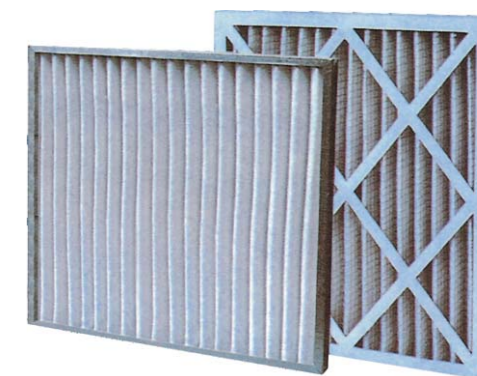
[过滤器]

初效空气过滤器

- 用于捕捉5μm以上的颗粒灰尘及各种悬浮物。
- 多用于净化系统的初级保护。
- 采用铝合金、镀锌板、纸制外框；过滤材料有无纺布、尼龙网、活性炭滤材、金属孔网等。
- 效率稳定、阻力低、使用寿命长。
- 本系列产品有板式、折叠式和袋式

Primary effective air filters

- It is used to catch dust above 5μm.
- The floating to initially protect purified system.
- Its outer frame is made from Al alloy, zinc-plating board and paper while filter materials are adopted, such as adhesive-bonded fabric, nylon net, active carbon, metal net, etc.
- It is good at effect stability, low resistance and long use life.
- It has 2 types, namely plate and folding.



型号 Type	外形尺寸 Size (宽x高x深) mm	效率 Efficiency %	初阻力 Initial resistance Pa	材料 Materials		
				外框 outline border	滤芯 filter element	防护网 protective screening
CX-B (板式) (Plate type)	592x292x21	计量法 metric method 40%	<25	铝合金 aluminium alloy	尼龙网 Nylon mesh	
	592x292x21	计量法 metric method 85% (G3)	<30	纸板、铝合金 Paper board, aluminum alloy	无纺布 non-woven fabrics	双面喷塑铁丝 Double-sided spraying plastic metal wire
	592x292x21	计量法 metric method 90% (G4)	<45	纸、铝合金、镀锌板 Paper, aluminum alloy, galvanized sheet	无纺布 non-woven fabrics	双面镀锌铁丝网 Double-sided galvanized barbed wire mesh
CX-Z (折叠) (Foldable)	592x592x46	计量法 metric method 90% (G4)	<45	纸、铝合金、镀锌板 Paper, aluminum alloy, galvanized sheet	无纺布 non-woven fabrics	双面镀锌铁丝网 Double-sided galvanized barbed wire mesh
CX-D (袋式) (Bag-type)	492x492x610	计量法 metric method 90% (G4)	<45	铝合金、镀锌板 aluminum alloy, galvanized sheet	无纺布 non-woven fabrics	

注：可按客户要求制作各种型号的过滤器
Note: Various filters can be customized by the requirements of clients.

FILTER

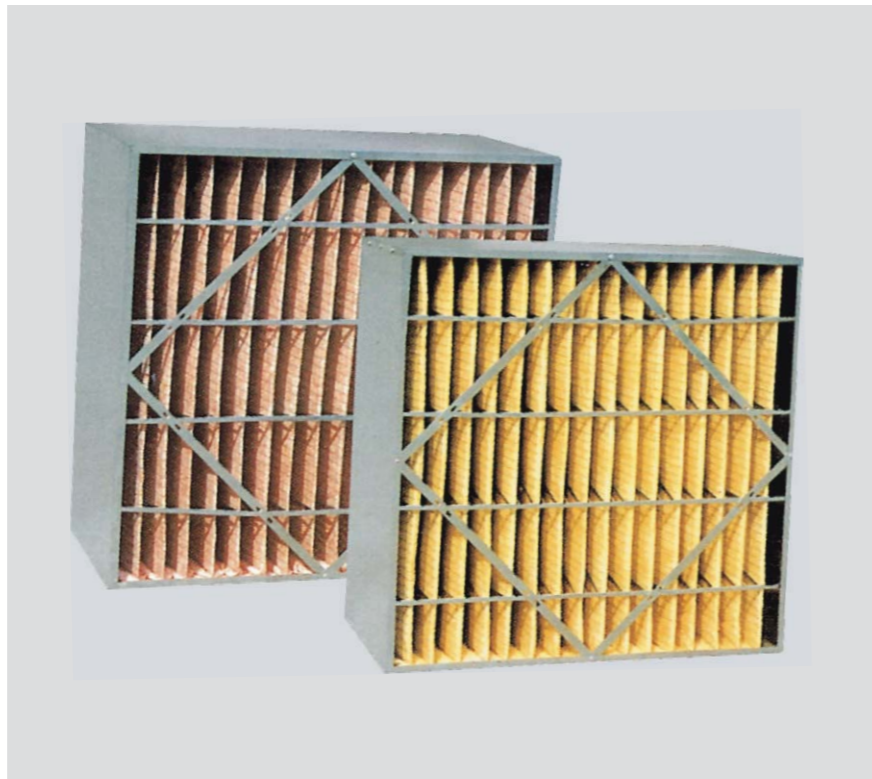
[过滤器]

中效空气过滤器

- 用于捕捉1~5μm以上的颗粒灰尘及各种悬浮物。
- 多用于净化系统的中级保护。
- 采用铝合金、镀锌钢板外框、也可做成无框的，过滤材料以无纺布、玻纤为主。
- 本系列产品有框式、袋式和组合式。
- 效率稳定、阻力小、风量大、使用寿命长等特点。

Intermediate effective filters

- It is used to catch dust above 1-- 5 μ m .
- the floating to initially protect purifying system.
- Its outer frame is made from AL alloy and zinc-plating board and may be without frame. Filter materials are adopted, such as adhesive-bonded fabric, glass fiber.
- It has 3 types, namely frame, sag and assemble.
- It is good at effect stability, low resistance and long use life.



型号 Type	外形尺寸 Size (宽x高x深) mm	袋数 Bag number	额定风量 Rated wind force m³/h	初阻力 Initial resistance Pa	效率 Efficiency %	材料 Materials	
						外框 Outer frame	滤芯 Filtering wick
X-1	592x592x600	8	3200	<100	85	铝合金、镀锌板 外框宽度 Aluminum alloy, galvanized sheet, outer frame width 21, 46	玻纤、无纺布 glass fiber, non-woven fabric
X-2	592x290x600	4	1600	<100	85		
X-3	592x592x760	8	4000	<100	85		
X-4	592x290x760	4	2000	<100	85		
X-5	592x592x600	5	2500	<120	85		

■ 注：可按客户要求制作各种型号的过滤器
Note: Various filters can be customized by the requirements of clients.

有隔板玻璃纤维高效空气过滤器

- 用于捕捉0.3 μ m-0.5 μ m以上的微粒。
- 多用于净化系统的末端过滤。
- 过滤面积大、阻力低、使用寿命长。
- 滤芯采用高效玻纤滤纸；分隔板采用胶板纸、铝箔，外框有夹层木板、镀锌钢板、不锈钢板及铝合金板。
- 公司接各种尺寸的耐高温过滤器定做。

Efficient air filter with glass fiber plate

- It is used to catch dust above 0.3 μ m--0.5 μ m .
- It is commonly used terminal filtering of purifying system.
- The purifying area is large with small resistance long use life.
- Filtering wick is of efficient filtering paper of glass fiber while the plates are offset paper, AL foil while the outer frame is of double layered block, zinc-plating steel board, stainless steel plate and Al alloy block.
- Our company makes heat resistant filters of different sizes.



型号 Type	外形尺寸 Size (宽x高x深) mm	额定风量 Rated wind force m³/h	初阻力 Initial resistance Pa	效率 Efficiency %	材料 Materials			
					滤芯 Filtering wick	外框 Outer frame	隔板 Plate	密封胶 Sealing glue
GX	320x320x220	400	<220	≥99.99	玻纤 滤纸 Glass fiber Filtering paper	夹层木板 镀锌钢板 不锈钢板 铝合金板 铝合金型材 Double layered block Zinc-plating steel plate Stainless steel plate Al alloy plate Al alloy shape	铜板纸 胶板纸 铝箔 Art paper Offset paper Al foil	聚氨脂 组合胶 -hane Compo -und glue
	484x484x220	1000						
	610x610x150	1000						
	820x600x150	1200						
	915x610x150	1500						
	1220x610x150	2000						
	610x610x220	1400						
	726x484x220	1500						
	630x630x220	1500						
	968x484x220	2000						
945x630x220	2200							

■ 注：可按客户要求制作各种型号的过滤器
Note: Various filters can be customized by the requirements of clients.

MEDICAL PENDANT UNIT

[医用吊塔]

医用吊塔是以配合医疗为目的而研发的。主要用于医院手术室及ICU，是一种悬挂或悬吊在天花板上或墙身上的医用辅助装置。用于将电源线、气体管道及各种信号线从高位直接送到设备使用位置，并可以将中小型医用设备放置于吊塔上，便于医护人员操作。

Medical Hanging Tower is designed to support medical treatment. It is mainly used in operation rooms and ICUs. It is a device hanging in or mounting on ceiling or walls. It is to send power wires and various signal wires to various device from high space, in addition, it can be used to install medium and small-sized medical device, for easiness of device operation by doctors and nurses.



吊塔参数 Tower parameter

型号 Model	名称 Product name	主要应用场所 Main application site
06-001	双层直臂手动旋转吊塔 Double-layer straight arm manual rotating tower	手术室 operating room
06-002	双层手动单摇臂吊塔 Double-layer manual single-rocker boom tower	手术室 operating room
06-003	叁层手动单摇臂吊塔 Three-layer manual single rocker tower	手术室、ICU operating room, ICU
06-004	单臂电动升降吊塔 Single-arm electric lifting and lifting tower	手术室 operating room
06-005	双臂吊塔（单摇臂/单摇臂组合） Double-arm lifting tower (single rocker/ single rocker arm combination)	ICU、手术室 ICU, operating room
06-006	双臂吊塔（单摇臂/单臂电动升降） Double-arm lifting tower (single-arm/ single-arm electric lifting)	ICU、手术室 ICU, operating room

- 均采用高强度刚性结构，确保具有足够的强度；
- 每个旋转部位均可以0-340° 范围内调节；
- 在旋转范围内，均可以任意停留在所指定到达的位置，不飘移；
- 层板数目可选择：单层、双层、叁层；
- 配英标BS5682-1998气体终端，多功能电源插座，可选配电话、网络端口；
- 设备箱承重可根据需求选择：50kg、100kg、150kg。
- The high-strength steel structure is used to ensure sufficient strength
- Each rotating part can be adjusted within the range of 0 < 340 degrees
- In the range of rotation, you can stay anywhere in the position you specified and do not drift
- The number of laminates is optional: single layer, double layer, three layers
- Equipped with British standard bs5682-1998 gas terminal, multifunctional power outlet, optional telephone, network port
- 50kg, 100kg, 150kg: Load bearing of equipment box can be selected according to requirements: 50kg, 100kg, 150kg

ICU BRIDGE

[ICU 桥架]

ICU桥架是ICU辅助设施。其固定在病床头部，横跨病床，用于将气源、电源引到指定位置及利于监护仪等仪器的摆放；同时还配有输液导杆。它由桥架主体及设备支架组成。

ICU bridge is applying to ICU assistance cure, it is fixed on the head of bed, goes through across the bed, leads the air source and power supply to defined positions which make for equipments' placement. e.g. Monitor ect. It includes the guide pole to transfusion. It is consist of bridge body and floor frame to equipments.



ICU bridge Features:

- 设备支架均能旋转340度；
- 所有电、气信号线均引至设备架，更利于操作；
- 每个桥架均配两个设备层架，干湿分开处理；
- 可配短距离旋转臂调节工作范围区域；
- Floor frame to equipments can be rotated 340 degree.
- All cables are led to floor frame that it is good for operating.
- Each bridge has two floor frames; it is good for dry/wet handling over.
- Use the short-distance arm to adjust the working area if appropriate.



LAMINAR FLOW CEILING

[净化层流送风天花]

净化层流送风天花是洁净手术室、层流病房的净化送风末端。它兼有高效过滤器、均流及气流补偿作用。其优越的性能，独特的双层DPP均流网，能使气流均匀送到工作区域；而中央气流补偿装置，能有效地去除尘人员及设备发热而产生上升气流对层流的影响。

层流净化送风天花依净化级别分为：I、II、III、IV层流净化送风天花，及烧伤病房层流天花，血液病房层流天花等。

Clean Laminar Flow Air-Supply Ceiling is the clean air-supply terminal of clean operation room and laminar wards. It works as HEPA filter, air-flow equalizer and air compensator. Its excellent performance, unique double-layer DDP air-equalizing net allow the air to be equally supplied to every working area; besides, it has a central air compensation unit, which can remove the influence of the ascending air current arising of the heat generated from staff members and device.

Clean Laminar Flow Air-Supply Ceiling is divided into Level I, II, III, IV Clean Laminar Flow Air-Supply Ceiling, burn ward Clean Laminar Flow Air-Supply Ceiling, hematology ward Clean Laminar Flow Air-Supply Ceiling.



送风天花参数 Air supply ceiling parameter

产品型号 Product model	天花类别 Ceiling type	天花规格 Ceiling specification (单位 Unit:mm)	高效规格 FFU specification (单位 Unit:mm)	高效数量 FFU quantity
01-001	I级层流送风天花 Class I laminar flow ceiling	2500x2850x500	610x305x292	8~10个
01-002	II级层流送风天花 Class II laminar flow ceiling	1800x2600x500	610x305x292	4~6个
01-003	III、IV级层流送风天花 III, IV class laminar ceiling	1400x2600x500	610x305x292	2~4个
01-004	烧伤病房层流天花 Burn ward laminar ceiling	1200x2400x450	610x305x292	2个
01-005	血液病房层流天花 Blood ward laminar ceiling	2800x2800x450	610x305x292	8~10个

INSTRUMENT CABINET/ DRUG CABINET/ ANAESTHESIA CABINET

[器械柜/药品柜/麻醉柜]

器械柜、药品柜、麻醉柜是医院常见的一种配套设施。

“A”型柜特点：

- 柜体：采用不锈钢板加工，带活动可调式层架，柜体上下结构，可依要求增加上、下两层的层板数目。
- 柜门：上、下层均为双掩门。门体四周铝型材包边，门体内侧为不锈钢板，外侧为贴膜钢板，中间发泡填充。同时贴膜钢板提供多种颜色选择，使手术室内颜色搭配加合理；四门开启更利于柜内清洁。

“B”型柜特点：

- 柜体、下层柜门均采用不锈钢板加工。
- 器械柜：上层为玻璃推拉门，下层为8个抽屉；
- 药品柜：上层为玻璃推拉门，下层为不锈钢双掩门，中间增加配药抽板；
- 麻醉柜：上层为玻璃推拉门，下层为不锈钢双掩门。



Instrument cabinet, medicine cabinet and anesthetist cabinet are the facilities widely used in hospital.

- Cabinet principal: made of stainless steel plate, with movable shelves, the cabinet consists of upper and lower parts, the decks can be added on demand. Cabinet door: both the upper and lower parts employ double swinging door.
- Door perimeter is clad with aluminum profile. Door liner is made of stainless steel plate, door cover is coating steel plate with foam filled in the middle. There are several colors of coating steel plates for your choice, allowing the door to better fit operation room. The four doors are opened to make it easier to clean inside of the cabinet.

- The cabinet principal and upper and lower cabinet doors are made of stainless steel plate.
- Instrument cabinet: the upper part employs glass sliding door, the lower part consists of 8 drawers.
- Medicine cabinet: the upper part employs glass sliding door, the lower part employs stainless steel double swinging door, with movable dispensing board in the middle.
- Anesthetist cabinet: the upper part employs glass sliding door, the lower part employs stainless steel double swinging door.

型号 Model	名称 Product name	箱体外形尺寸 Case outer dimension (W*H*D) mm	安装留孔尺寸 Installation hole size (W*H)mm	底部离地高mm The bottom is off the ground
02 A -001	器械柜 instrument cabine	900*1700*300	900*1700	200
02 B -001	器械柜 instrument cabine	900*1700*300	900*1700	200
02 A -002	药品柜 medical cupboard	900*1700*300	900*1700	200
02 B -002	药品柜 medical cupboard	900*1700*300	900*1700	200
02 A -003	麻醉柜 anesthetist cabinet	900*1700*300	900*1700	200
02 B -003	麻醉柜 anesthetist cabinet	900*1700*500	900*1700	200

■ 注明：可依客户要求适当调整尺寸；
Note: The size can be adjusted according to the customer's requirements

X RAY BOX

[观片箱]

观片箱是用来对X光胶片进行观察分析的设备。其要求光线均匀，光亮度满足观片要求，必要时能对光亮度进行调节。

观片箱依一次能同时观片X光胶片数量(14"x17")分为：双联、叁联、肆联，陆联，及捌联等5种。

X ray box is a equipment for viewing X film, it requests even for viewing X film, it requests even light ray, lightness is enough for viewing, the lightness can be adjusted if necessary, According to observation of quantity of X film(size:14" *17")at the same time, X ray box series have five kinds: dual-array, three-arry, four-array, six-array and nine-array. All are in embedded design.



观片箱参数 Viewing box parameters

型号 Model	名称 Product name	箱体外形尺寸(W*H*D)mm Case outer dimension	灯管规格与数量 Lamp specification and quantity	适用场所 Applicable place
03-001	双联观片箱 Double couplets viewing box	800*650*160	20WT8*6	IV级手术室观片较少的科室 class IV departments where there are fewer films in the operating room
03-002	叁联观片箱 Three couplets viewing box	1250*550*160	36WT8*3	III、IV级手术室或相关要求科室 Class III,IV Operating rooms or related requirements departments
03-003	肆联观片箱 Four couplets viewing box	800*1000*160	30WT8*6	II级或II级以下手术室或相关要求科室 Class II level or less than class II level operating room or related requirement department
03-004	陆联观片箱 Six couplets viewing box	1250*1000*160	36WT8*6	I级手术室、骨科手术室或相关要求科室 Class I operating room, orthopedic operating room or related requirements department
03-005	捌联观片箱 Eight couplets viewing box	1550*1000*160	56WT8*6	专家会诊室或I级手术室 Expert consultation room or class I level operating room

观片箱特点:

- 均为嵌入式结构，藏墙安装，更好利用空间；
- 不锈钢看片夹能调节夹紧胶片力度，可有效夹住胶片；
- 透光面材能使光线更加均匀；
- All are in embedded design, build-in installation.
- Stainless steel clip force can be adjusted, then catch the film effectively.
- Transparent surface material makes the light more even.



EMBEDDED WRITE TABLE

[内嵌式书写台]

- 内嵌式书写台是医院常见的一种配套设施。
- 书写台台面采用304不锈钢板加工，台板为双层贴膜钢板内发泡填充。带照明，开启台板时，照明自动打开，关上台板时自动关闭照明。
- 书写台周边处理：铝型材包边或不锈钢翻板包边，可根据客户意愿选择。

- Embedded desktop is a widely used facility in hospital.
- The desk top is made of 304# stainless steel plate, the desktop top is made of double-layer coating steel plates with foam filled in the middle. The desk is furnished with light, when the desktop is opened, the light will turn on automatically; when the desktop is closed, the light will turn off automatically.
- Perimeter of desktop: the perimeter of desktop can be clad with aluminum profile of stainless steel flap at clients' option.



书写台参数 Writing table parameters

型号 Model	名称 Name	书写台尺寸 Writing table dimension (W*H*D) mm	安装留孔尺寸 Mounting hole size (W*H) mm	底部离地高mm Bottom height
04-001	内嵌式书写台 Embedded writing table	700*400*250	700*400	1050

- 注明：可依客户要求适当调整尺寸；
Note: the size can be adjusted according to the customer's request.

AIR-SEALED SLIDING DOOR

[气密封趟门]

气密封趟门主要用于医院手术部、净化病房、ICU、实验室、隔离传染病房、净化厂房等场所。

根据用途可分为：普通型、防辐射型、电磁屏蔽型三种；

根据开启动力可分为：手动控制、电动控制两种。

Air-proof sliding door is mainly used in operation rooms, clean wards, ICUs, labs, isolated infectious wards, clean workshops, etc.

In terms of purpose, it is divided into three types, i.e.: ordinary, anti-radiation, electromagnetic shield.

In terms of power of the door, it is divided into two types, i.e.: auto and manual.



气密封趟门特点：

- 门体：采用优质岩棉夹芯，面材为镀锌板表面覆PVC膜。具有足够的强度，良好的防火性能，四周用专用铝型材包边，带不锈钢防撞带，门体上部设有观察窗。并可依照客户要求，采用防火板饰面、不锈钢饰面。
- 电动趟门采用微电脑控制，能人性化控制开、关门速度，开门停留时间，开关门力矩，并具有记忆功能，在开、关门过程中遇受阻能自动感知开门或关门，运行安全得到充分保证。可实现手控、红外线感应、脚控、微波等多种方式开门，并可与门禁系统、消防系统、防盗系统配合，对门体的开启实行有效控制。

- The door principal: with rock wool linen in the middle, the door is covered with galvanized steel plates clad with PVC film. It features high strength, good fire resistance. The perimeter is clad with aluminum profile. It is furnished with stainless steel collision avoidance belt, and watch window in the upper part. Besides, the door can be decorated with fire-proof board or stainless steel plate on clients' requirements.
- Power sliding door employs computer control, which can flexibly control the opening and closing speed of the door, delay time while in opening as well as torque of opening and closing doors. What's more, it has magical memory function like man, it can smartly sense the opening and closing actions when the door is blocked in swinging process, so as to ensure safety. It supports opening and closing the door in various modes, e.g. manual, IR induction, foot control, microwave, besides, it can realize precise control over the door opening in conjunction with door access system, fire system, anti-theft system.

列气密封趟门参数 Air-sealed Sliding Door parameter

型号 Model	类型 Style	名称 Name	门体规格 Door body specification (mm)		控制方式 Control mode
			门宽 Door width	门高 Door height	
05 A -001	普通型 Normal type	单开气密封趟门 Single open air seal door	800~1400	1900~2150	手动、电动可选 Manual, electric optional
05 B -001	防辐射型 Radiation protection type		或按要求 Or as required	或按要求 Or as required	
05 C -001	电磁屏蔽型 Electromagnetic shielding type		或按要求 Or as required	或按要求 Or as required	
05 A -002	普通型 Normal type	双开气密封趟门 Double open air sealed gate	1500~2400	1900~2150	手动、电动可选 Manual, electric optional
05 B -002	防辐射型 Radiation protection type		或按要求 Or as required	或按要求 Or as required	
05 C -002	电磁屏蔽型 Electromagnetic shielding type		或按要求 Or as required	或按要求 Or as required	

■ 注明：可依客户要求适当调整尺寸；
Note: the size can be adjusted according to the customer's request.

AIR-SLIDING DOOR

[气密门]

- 主要用于医院手术部、净化病房、实验室、洁净厂房等；
- 分为两大类：单开气密门、双开气密门
- It is mainly used in operation rooms, clean wards, ICUs, labs, isolated infectious wards, clean workshops, etc.
- It is divided into two types, i.e.: Single Swinging Air-proof Door, Double Swinging Air-proof Door.

气密门特点：

门体：采用优质岩棉夹芯，面材为镀锌板表面覆PVC膜。具有足够的强度，良好的防火性能，四周用专用铝型材包边，带不锈钢防撞带，门体上部设有观察窗。并可依照客户要求，采用防火板饰面、不锈钢饰面。



The door principal: with rock wool linen in the middle, the door is covered with galvanized steel plates clad with PVC film. It features high strength, good fire resistance. The perimeter is clad with aluminum profile. It is furnished with stainless steel collision avoidance belt, and watch window in the upper part. Besides, the door can be decorated with fire-proof board or stainless steel plate on clients' requirements.



VALVE ALARM BOX

[气体阀门报警箱]

气体阀门报警箱由阀门及报警两部分组成，阀门主要用来打开或切断供气气源，报警主要是用来对气源压力进行监控，在气压过高或过低时进行声光报警。

它依据阀门和报警是否分开设置分为：阀门箱、阀门报警箱、报警面板。

它依控制气体数量分为：1气、2气、3气、4气、5气、6气、7气，共7种。

因条件限制时，底部阀门面板可做成整体形式。

Valve alarm box has two parts, one is valve system, another is alarm system, Valve system is used for switch on/off the air source, Alarm system is used for monitoring the air pressure, it alarms with sound and light when the pressure is over and under.

According to the valve system and alarm system is part away or not, has three forms: valve system box, valve alarm box and alarm panel.

According to the quantity of air, has one/two/three/four/five/six/seven air in all.

The bottom of valve panel can be integrated of need.



阀门报警箱 / 阀门箱参数 Valve alarm box/valve box parameters

		尺寸(W*H*D140mm)						
型号 Size		08A-01	08A-02	08A-03	08A-04	08A-05	08A-06	08A-07
名称 Name		一气 one air	二气 two air	三气 three air	四气 four air	五气 five air	六气 six air	七气 seven air
阀门报警箱 Valve alarm box		450*435	450*585	450*735	450*885	450*1035	450*1185	450*1335
		尺寸(W*H*D140mm)						
型号 Size		08B-01	08B-02	08B-03	08B-04	08B-05	08B-06	08B-07
名称 Name		一气 one air	二气 two air	三气 three air	四气 four air	五气 five air	六气 six air	七气 seven air
阀门箱 Valve box		450*155	450*305	450*455	450*605	450*755	450*905	450*1055

说明：阀门尺寸应小于或等于φ35，如大于φ35，阀门单层高度需由150mm增加到200mm。
Note: The size of the valve shall be less than or equal to the height of the valve 35, if greater than the valve 35, and the height of the single layer of the valve shall be increased from 150 mm to 200 mm

AIR-SEALED LAMP TRAY

[气密封灯盘]

主要用于有气密封要求的场所，依用途分手术室用气密封灯带，扣板用密封灯盘，彩钢板天花用密封灯盘等。

依所采用灯管功率及数量，灯盘有以下4种规格：

Lamp tray is applicable to the area of which requests air-seal. According the function, it has O. T. Air-sealed lamp belt, clasped broad lamp tray and color steel plate air-sealed lamp tray. According to the power of lamp and quantity, the lamp tray has:

2X20W 2X40W 3X20W 3X40W



EQUIPMENT BELT

[床头设备带]

床头设备带主要用于病房、抢救室、麻醉准备室、复苏室、手术室等需要用气和用电的场所，一般安装气体终端、电源插座、呼叫、数据终端等。

Equipment belt is major for gas and power site-requested, e.g. Ward, rescuing room, anaesthetization prepare room, Operation Theater, so on. Generally, gas terminal unit, power socket, call, and data terminal unit on it.



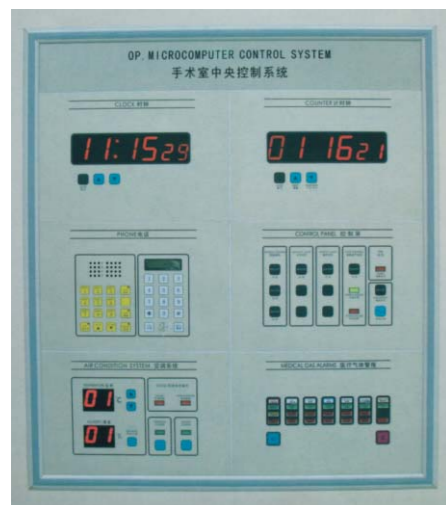
CENTRAL
CONTRTOL BOX

[中央控制箱]

手术室集中控制系统是对手术室内电气、照明、空调进行集中控制，由固定模块组成。集中控制模块包含时钟、计时钟、电话、主控屏、空调控制、医疗气体监控，共6个模块。可以对以上模块任意组合。

O. T. Central control system is focus on controlling of electrics, illumination, air conditioning, is consist of defined module.

Major controlling module includes clock, timer, telephone, main controlling monitor, air conditioning controlling, medical gas monitoring six modules in all. They are can be combined by less than 2 modules.



功能介绍

● 时钟模块：

显示当前时间，可采用24小时制及12小时制时钟，具有同步时钟功能，通过RS485总线可以即时自动调节与主时钟同步，也可以通过调节本时钟板时间而改变整个系统的时钟。

● 计时钟模块：

主要用于手术计时及麻醉倒计时，通过RS485总线可以将计时间单传送到中央监控台，家属等候区等场所显示。

● 主控屏模块：

主要包含：普通照明（三组）、手术灯（二组主、副灯）、排风控制、麻醉废气排放控制、消防等，均可以通过中间继电器对以上功能进行控制。

● 空调控制：

用于对手术室等区域温湿度的控制，可以在限定范围内任意设定温度，可以设定多种运行模式，输出控制采用先进的自适应比例，积分调节算法，直接输出三相可控硅脉冲信号调节加热、加湿功率，以及0-10V电平信号调节风机频率，风阀开度和制冷，除湿功率，各控制输出设有一定的互补、互锁限制实现无超调及无欠调的优良恒温恒湿控制特性，可以通过RS485总线实现中央监控。

● 电话面板模块：

除具有普通电话功能外，还有分机来电显示。用于群呼时，有呼叫主机电话号码显示，播放背景音乐时，音质清晰纯净。具有强播功能，任何时间都可以即时收到中心播放的紧急通知。

● 气体监控模块：

提供6路气体监控，对气源超欠压进行声光报警。可以设置主副板，用RS485通讯线连接主、副板。

● Clock module:

Display the time, has 24-hour system and 12-hour system, synchronous clock. It auto synchronizes with main clock by Rs485 bus; it also can be tuned panel time to change the time of controlling system.

● Timer module:

Is major for operation time and count down of anaesthetization, the time data goes to central monitor panel, waiting area by Rs485 bus.

● Main controlling module:

Including general illumination (three group), operation lamp (two group, main lamp, side lamp), ventilation control, anesthetic gas discharge control, fireproof, they are all under the control via relay.

● Air conditioning:

Is for temperature and humidity controlling of O.T. Area. Set up wide range temperature and humidity. Output control is advanced selfadjust mode. Output three phase controllable pulse signal to manage temperature, humidity directly. 0-10V electric potential signal to adjust the frequency of wind motor, the open and cooling of wind valve. All output are in mutual-compensation, mutual-lock, Then it gets excellent constant temperature and humidity controlling feature.

● Telephone panel module:

Except general telephone function, it can display extension number. When in group-calling mode, display the main calling telephone number. It has good sound effect while broadcast background music. It is able to receive any emergency notice from central at any time; it means it has priority of broadcast.

● Gas monitor module:

It has sound and light alarm for six routes gas when the air source pressure is over and /or low. It was controlled by main-board and side-board when appropriate, connected by Rs485.

MEDICAL GAS
TERMINAL UNIT

[医用气体终端]

医用气体终端是医疗气体供应终端设备。

依安装方式不同分为：藏墙式、设备带安装式、吊塔安装式3种。

依气源种类分为：氧气、笑气、压缩空气、真空吸引、二氧化碳、氮气、氩气、废气排放9种。

Medical gas terminal is the end device to supply medical gas.

In terms of installation modes, it is divided into three types, i.e.: wall-mount, equipment belt installation, hanging tower installation.

In terms of gas source, it is divided into 9 types, i.e.: oxygen, nitrous oxide, compressed air, vacuum, CO₂, nitrogen, argon, waste gas exhaust.



技术参数:

- 接口标准采用英国BS5682标准；
- 进气接驳铜管尺寸为φ12；
- 底盒尺寸为86*86*50；

- The interface employs British standard Bs5682;
- The size of air inlet copper pipe is φ12;
- Dimensions of bottom box: 86*86*50;

操作方法:

将插头直接插入即可，拔出时用手按按钮，插头即弹出，气阀关闭。

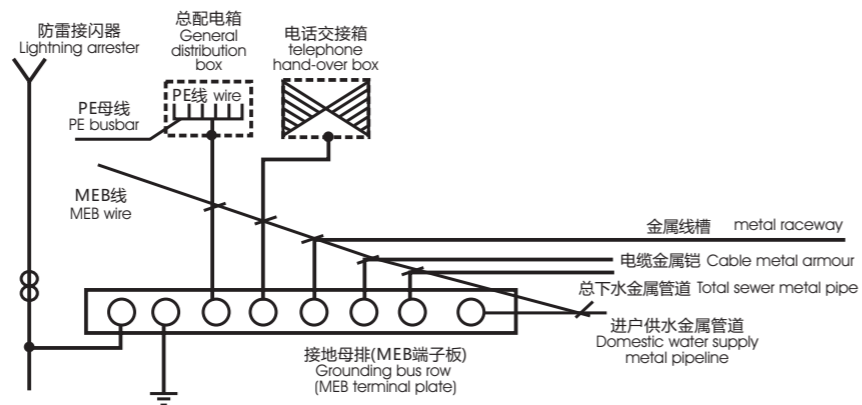
Directly insert the plug in, to pull it out, manually press the button, the plug will eject out, the gas valve will close.

EQUIPOTENTIAL TERMINAL BOX

[等电位端子箱]

等电位接地端子箱主要用来对手术室内各设施进行等电位接地，一般安装在中央控制箱底部位置。

Ground terminal box of equipotential is major for all equipment connecting to ground at Operation Theater; it is located at the bottom of central control box generally.



RECYCLIC VENTILATED OPENING WITH FILTER

[带过滤回风口]

带中效过滤器回风口主要用于净化手术室回风系列中，因手术室级别不同设置不同尺寸的回风口。回风口依最新国家标准 GB50332-2002要求而设计、生产。

Recyclic flow outlet with mid-efficiency filter is major for recyclic flow system of clean operation theatre, different size is based on different class of O. T. recyclic flow outlet is compliance latest national standard GB50332-2002.

回风口参数 Return air outlet parameter

型号 Model	规格尺寸 Specification	中效尺寸参数 Intermediate size parameter	适用场所 Applicable place
10-001	400WX350HX300D	390X270X69/F5	Ⅲ、Ⅳ级手术室 III, IV level operating room
10-002	600WX350HX300D	590X270X69/F5	Ⅱ手术室 II level operating room
10-003	900WX350HX300D	890X270X69/F5	Ⅰ级手术室 I level operating room

■ 说明: ①各手术室回风口数量: Ⅲ、Ⅳ级采用13-006型回风口4个; Ⅱ级采用13-007型回风口4个; Ⅰ级采用13-008型回风口8个。也可以依回风量多少进行合理选择, 要求回风口处风速小于1.5m/s为宜。 ②带竖式可调百叶。

Note: ① the number of every return air outlet: 4pcs of 13-006 type for III, IV level; 4pcs of 13-007 type for II level; 8pcs of 13-008 type for I level. The reasonable choice can also be made according to the amount of return air volume, and the wind speed at the return air outlet is required to be less than 1.5m/s. ②Adjustable louver with vertical type



CLEAN FLOW OUTLET

[净化排风口]

中效净化排风口是净化空调排风系统一部分，排风口是依手术室国家标准要求设计的适用于手术室排风系统的排风装置。

Mid-efficiency discharge outlet is a part of clean air-conditioning ventilation system. discharge outlet is compliance with national standard operational theater, applicable to O. T. Dept. Discharge system.

排风口参数 Vent parameter

型号 Model	规格 Specification	中效尺寸 Medium effect size	中效参数 Medium effect specification	适用场所 Applicable place
09-001	430X430X220	290X290X96/F5、F8	F5/3000m3/h@100pa F8/1600m3/h@160pa	Ⅱ、Ⅲ、Ⅳ级手术室排风系统 Class II, III, IV level operating room exhaust system
09-002	720X430X220	290X580X96/F5、F8	F5/3600m3/h@100pa F8/3600m3/h@160pa	Ⅰ级手术室排风系统 Class I level operating room exhaust system

- 注明: ①正负压切换手术室采用09-001、09-002各一件配套排风系统进行控制, 正压时采用09-001配套排风系统, 负压时二套排风系统同时启动。
- ②安装在手术室顶部, 靠病人头部一侧为宜。
- ③也可以用于走廊及各功能房、卫生间、消毒间等场所的排风。
- Note: 1.the positive and negative pressure switching operating room is controlled by a matching exhaust system of 09-001, 09-002, and the exhaust system of 09-001 is used at positive pressure, and the two exhaust systems are started at the same time at negative pressure.
- 2.Install at the top of the operating room, depending on the side of the patient's head
- 3.It can also be used for ventilation in corridors and functional rooms, bathrooms, disinfection rooms and other places.

ANTI-IMPACT BELT

[防撞带]

不锈钢防撞带尺寸为150X25, 防撞带两端均带塑料封堵, 防撞带安装中心高度一般为700~800mm。

Stainless steel anti-impacted belt is 150*25, both ends are covered by plastic. The height of installation center os general 700-800mm.



CLEANROOM UNIFORM LAUNDRY

[洁净服装清洗]

工业生产（如光电、半导体、精密加工、注塑、制药等）过程中，洁净室内存在许多潜在污染源，其中最大的威胁也是最易受到控制的即是人员污染因素，人在洁净室活动中会产生大量的尘粒，包括：

- 活性尘粒：如细菌和酵母等；
- 非活性尘粒：如头发、皮屑等；
- 化学物质：如钠、钾、氯化物和镁等。

目前最为有效的方法就是通过洁净室工作服隔离清洗来捕捉并带走尘粒，使污染物不散布到洁净室环境中，以减少人员对洁净室环境的污染。无尘服系统的管理在无尘室的污染控制中占有重要的地位。通常情况下，洁净工作服每周洗涤一次，有些要求高的洁净环境需要每天清洗，甚至每次进入洁净室都要更换洗净过的洁净工作服。作为污染控制的重要手段，洁净服的清洁程度要求是非常高的。因为在普通的环境下清洗，会附着灰尘和细菌，以及受到水及洗净剂的二次污染。同时，在包装和运送过程也会增加附着灰尘及微生物的危险，所以洁净工作服清洗必须采用特殊的清洗方法无尘隔离清洗。



In the industrial production course of photoelectric, semiconductor, precision process, molded, pharmacy, etc, there exists potential contamination source, however, the largest imperilment while the easiest being controlled is operators' contaminations. Operators' movements always generate particles; including the followings:

- Active particles: bacteria, yeast and so on.
- Inactive particles: hair, scurf and so forth.
- Chemical matter: natrium, kalium, magnesium, chloride, etc.

At the present time, the most efficient method is to clean working uniform in clean room to remove dust or particles. By doing this, can reduce contaminations caused by operators. The management of clean uniform plays a very important role in contamination control. Usually, clean uniform can be cleaned one time per week. But in some environments, they should be cleaned each day, even exchange clean uniform cleaned when he or she enter the clean room. Cleaning degree in clean room is very high. In common environments cleaning uniform can absorb dust and bacteria. The uniform may be contaminated by natural water or solvents secondly, In the meantime, hazards of absorbing dust and microbiology also exist in the course of package and transportation, so the uniform must be isolated and cleaned in special no dust cleaning method.

IEEST组织推荐洁净工衣清洗频率 Cleanroom uniform washing frequency

Class1/ISO 3	Class10/ISO 4	Class100/ISO 5
清洗频率: Clean frequency 每次进入 every time entering	清洗频率: Clean frequency 每次进入 every time entering	清洗频率: Clean frequency 1次/天 1 time/day
Class 1000/ISO 6	Class 10000/ISO 87	Class 10000/ISO 8
清洗频率: Clean frequency 2次/周 2 times/week	清洗频率: Clean frequency 2次/周 2 times/week	清洗频率: Clean frequency 1次/周 1 time/week

WASHING SINK

[洗手(刷牙)池]

洗手（刷牙）池主要用于对医护人员进行洗（刷）手消毒。依工作位数不同，分为：单位、双位、叁位、肆位洗手池。

Washing (brush) sink is major for medical-care people to wash (brush) hand for disinfection. According to the quantity of working station, it has two-station, three-station and four-station.



洗手池参数 Washing tank parameter

型号 Model	名称 Name	规格(L*H*D)mm Specification	水龙头控制 Tap control	可选配置 Optional configuration
07-001	单位洗手池 Single washing tank	750*950*550	感应 Induction	混水器、自动加皂器 自动出刷器 water mixer
07-002	双位洗手池 Double washing tank	1250*950*550	感应 Induction	
07-003	叁位洗手池 Triple washing tank	1850*950*550	感应 Induction	Automatic soap refilling dispenser
07-004	肆位洗手池 Four finger washing tank	2400*950*550	感应 Induction	Automatic brush outlet

Purifying standard for various fields
各行各业净化级别标准

行业分类 Professions Classification	Purifying degree 洁净度 用途	级 别 Grade					
		0.1 μ m级 0.5 μ m级	1,000 10	10,000 100	100,000 1,000	100,000 10,000	100,000 100,000
半导体工业 Semiconductor Industry	拉单晶 Crystal pulling						
	扩散 Diffusion						
	腐蚀/光刻/表面处理/金属蒸发						
	组装试验 Assemble test						
	原料 Raw materials						
	研磨 Abrading						
	包装 Packaging						
	半成品贮藏 Storage of semi-products						
激光工业 Laser industry	气体激光 Gas laser						
	固体激光 Solid laser						
	半导体激光/激光手术刀 Semiconductor laser, Laser scalpel						
光学仪器 Optical instruments	镜片研磨 Lens abrading						
	刻标/医用照像机加工/装配/镜头组装						
	胶片制造/干燥 Film developing and drying						
	缩微胶片/显像/干燥 Microfiche, developing and drying						
	组装 Assembling						
计时精密仪器 Concise timing instruments	涂漆 Coating paint						
	试验/检查 Test and check						
	电子表/零件组装/火箭零件加工/组装						
	人造卫星控制装置						
电子计算机 Computer	高可靠性部件/装置						
	微型轴承 Micro-bear						
	普通轴承 Common bear						
电子式测量机械 Electronic machinery Electric measurer	组装/检查 Assembling and testing						
	磁鼓/磁盘/磁带 Drum, and magnetic disk						
	加工/组装/试验/检查 加工/组装/试验/检查						
	显像管 Kinescope						
	高可靠管 Efficient tube						
	光导摄像管 Vidicon camera						
	印制板 Printing board						
	小型继电器 Small-sized relay						
	精密电器仪器 Concise electric instruments						
	零件/加工/组装/检查 Spare parts, processing, assembling and testing						

ISO14644-1 and GB50073-2001 Air Purity Degree Standard
ISO14644-1和GB50073-2001洁净度标准

ISO等级序数 ISO graded ordinal number	大于或等于表中粒径的最大浓度限值(PC/m ³) Be larger or be equal to the maximum concentration limited value(PC/m ³) of size of particl listed in the table.					
	0.1um	0.2um	0.3um	0.5um	1um	5um
ISO Class 1	10	2				
ISO Class 2	100	24	10	4		
ISO Class 3	1000	237	102	35	8	
ISO Class 4	10000	2370	1020	352	83	
ISO Class 5	100000	23700	10200	3520	832	29
ISO Class 6	1000000	237000	102000	35200	8320	293
ISO Class 7				352000	83200	2930
ISO Class 8				3520000	832000	29300
ISO Class 9				35200000	8320000	293000



深圳市中明科技股份有限公司 SHENZHEN HORB TECHNOLOGY CORP. LTD.

深圳市宝安区福永新田大道71-2号立新湖福宁高新产业园B栋
Block B, Funing Hi-tech Innovation Park, No.71-2Xintian Rd., Fuyong
Town, Bao'an District, Shenzhen China.

TEL:0086-755-29461997 29461335 FAX:0086-755-29461361

E-mail: Jack0026@horb.com.cn PC:518103

中国分支机构：苏州 / 成都 / 重庆 / 烟台 / 青岛 / 武汉

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