



Help customers improve yield and ensure safety.
Survive by quality & service, seek development through collaboration & innovation.

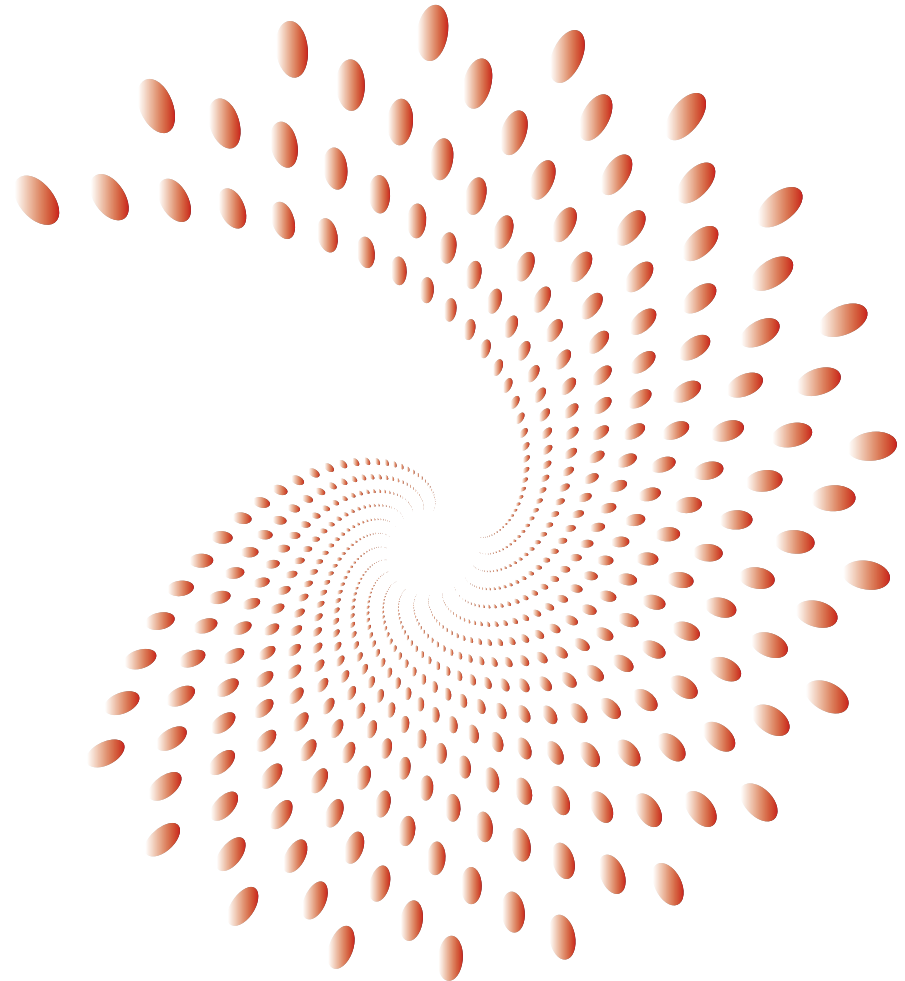
KESD 防静电设备制造商



SAFE
ESD SOLUTION

CATALOGUE FOR
STATIC ELIMINATOR
靜電消除器手冊

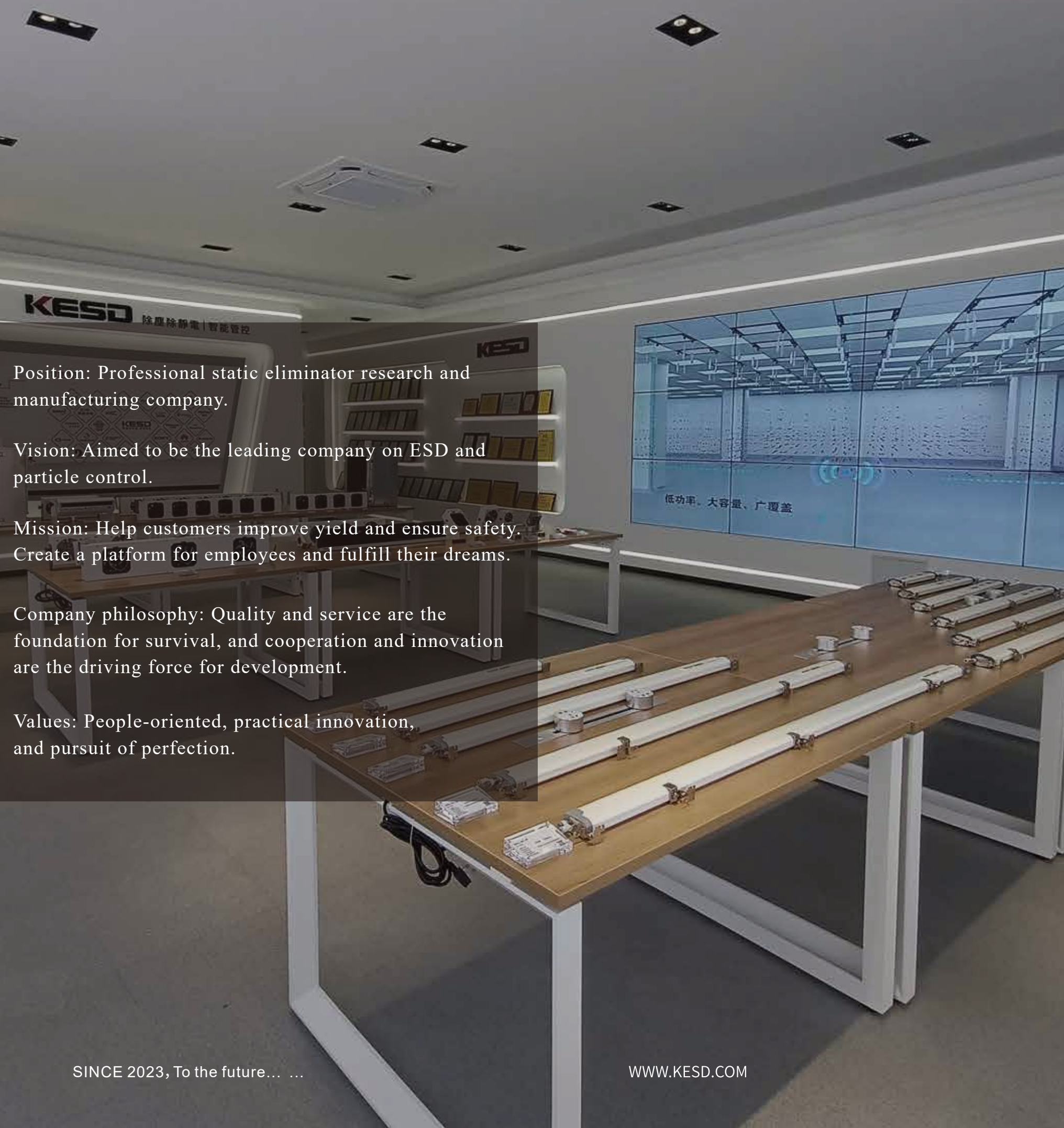
ION BALANCE
SMART



400-858-8138 www.kesd.com	400-888-9280 www.kesd-ions.com
ShenzhenKESD Technology Co., Ltd	Suzhou KESD Technology Co., Ltd
Tel:86(755)2322 6066	Tel:86(512)6805 1118
Address:No.90 Dayang Road,Bao'an District, ShenzhenChina	Address:No.7 Longshan South Road, Wuzhong District, Suzhou City



www.kesd.com



Position: Professional static eliminator research and manufacturing company.

Vision: Aimed to be the leading company on ESD and particle control.

Mission: Help customers improve yield and ensure safety. Create a platform for employees and fulfill their dreams.

Company philosophy: Quality and service are the foundation for survival, and cooperation and innovation are the driving force for development.

Values: People-oriented, practical innovation, and pursuit of perfection.

COMPANY PROFILE

KESD was established in 2003 and is a professional manufacturer of static eliminators. For many years, KESD has been fully committed to the research, design, production, and sales of various static eliminator devices such as ionizing air blower, ionizing air nozzle, ionizing air bar, space dust removal and static elimination, static sensor, and fan filter unit (FFU).

KESD is a national high-tech enterprise with two major operating centers in Shenzhen and Suzhou. It has an independent and self-owned brand: KESD. Its products are widely used in various manufacturing industries such as semiconductor, optoelectronic, precision electronic, new energy, LCD display, communication, and automation. The company highly values the integration of customer needs and product innovation and has obtained nearly 100 domestic and foreign patents. It strictly implements the ISO quality management system and strives for excellence in every link of the product. After more than 22 years of hard work, its products have been widely distributed in many countries and areas and have gained deep praise from the industry and customers.

Adhering to the mission of "Helping customers improve yield and protect navigation," and practicing the spirit of "Service Endless, Innovation Nonstop," the company continuously develops high-precision products to serve customers and contribute to the development of smart manufacturing.



■ QUALIFICATION CERTIFICATE

KESD holds trademark rights in Japan, India, Germany and other countries, including some trademarks and certificates of quality.



High-tech Enterprise Certificate



Ionizing air blower
CE certificate



Ionizing air bar
CE certificate



Japan - Electrostatic
eliminator certificate



Japan-Rotating wind
nozzle certificate



Japan – Ionizing air
gun certificate



German KESD
trademark certificate



ISO certificate



Indian KESD
trademark certificate



KESD trademark
certificate



KESD Trademark
Certificate



Japan KESD
trademark certificate



Germany-Ionizer
certificate



Germany – Ionizing
air gun certificate

With over 100 patents in China, Japan, and Germany; The first company to launch ESD FFU in China; Breakthrough innovation, opening up a new track; 10 software copyrights, 60 national patents, 11 invention patents, ISO9001 certification, etc.



Providing **ESD** solutions for various application fields

◀ Collaborating with well-known enterprises

and have thousands of successful cases ▶

Semiconductor
industry

New energy
industry

LCD display
industry

3C digital
products

More
industries

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Ionizing Air Nozzle Series

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Small size ionizing air nozzle KZ-10A

Sensor type ionizing air nozzle
KZ-10A-SY-HPJ

Nozzle accessories

Application cases

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Ionizing Air Blower Series

Mini Electrostatic Eliminator KS-10

High frequency ionizing air blower KF-06WR
(Fan speed adjustable)

High frequency ionizing air blower KF-10AW
(Adjustable air volume)

Ionizing air blower KF-19PL

High frequency ionizing air blower KF-21AW-6P

High frequency ionizing air blower KF-21F

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Smart ionizing fan KF-95AT-TH

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Static sensor KS-15CH

Fan filter unit FFU

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Ionizing Air Bar Series

High-frequency AC type ionizing air bar KE-36X

High-frequency AC type ionizing air bar KE-60X

Pulse AC type ionizing air bar KE-60H

Ion bar KE-200E

Ionizing air knife KN-30XL

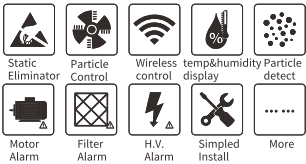
Application cases

P59~P62

ESD Digital Monitoring System

Multiport Grounding Alarm KL-10

Static Eliminator
Particle Control
Fan Filter Unit
KU-50N



Technical Parameters

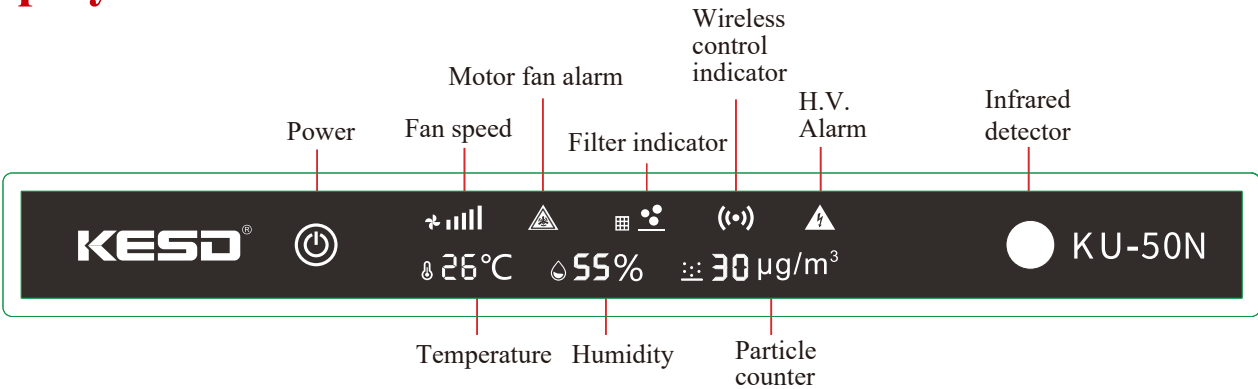
Model	KU-50N	Noise	≤65dB
Input Voltage	220 VAC, 50/60 Hz	Typical Watt	≤76W
Output Voltage	0~20 KVDC/Negative & positive adjustable	Material	SUS304/Cold-rolled plate
Control	Parameters adjustable by remote control	Filter Material	Super fine fiber
Portal	220V Plug	Impeller material	Aluminum
Output adjust	Ions output and ion balance can be adjusted by each emitter	Filter Efficiency	99.995% H14(filter element can be customized)
Emitter material	Silicon,Titanium(Optional)	Control Method	RS 485
Ion Generator	Decay time<60S,ion balance≤±100V	Working Status	Power indicator,running,malfunction indicator,fan speed indicator,temperature and humidity,dust indicator
Eliminate Area	Cover 1.6m ² based on install height 0.5~2.5m	Motor Protect	Motor overload,overheat protect
Wireless monitor	LoRa	Presser Sensor	100~1000Pa
Temp&humidity sensor	Temperature: -40~125°C±0.3°C Humidity: 0%~100%RH±1.5%RH	Particle Sensor	1~500µg/m ³ ≤±15µg/m ³
Purification	ISO 14644-1:2015	Motor Speed	1000rpm(MAX)
Alarm	HV abnormal alarm;motor abnormal alarm	Filter Size	491*461*95mm
Ozone	≤0.1ppm(distance 50mm)	Package Size	575*575*279mm
Control environment	Humidity tange 15%~75%; Temperature 0~40°C	Fan Speed	0.4~0.9±20%
		Weight	21.5kg

*Can be customized according to customer's requirement No cover in 30cm of the emitter.

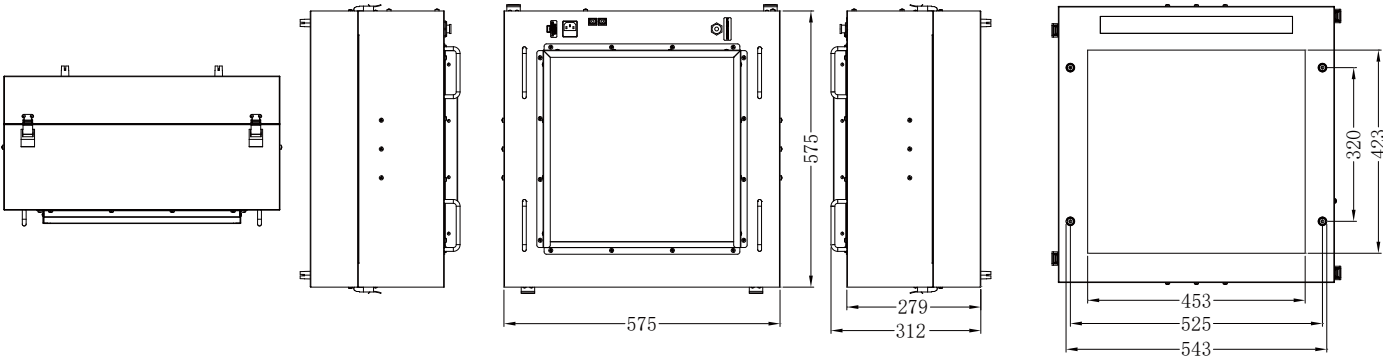
Features

- 01 Motor normal running and abnormal running indicator
- 02 Static eliminator and particle control function
- 03 HV normal and HV abnormal indicator
- 04 Wireless monitoring function
- 05 Filter normal running indicator,clean reminder and replacement alarm
- 06 Temp,humidity and particle indicator and test function

Display



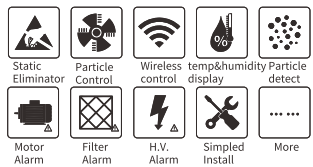
Product Structure



Applications



Static Eliminator Particle Control Fan Filter Unit KU-1175N



Technical Parameters

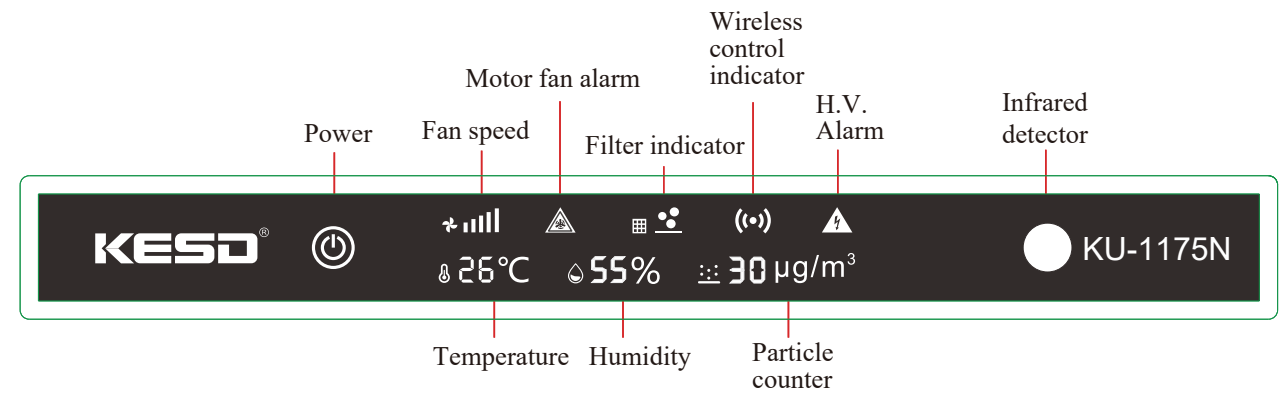
Model	KU-1175N	Noise	≤65dB
Input Voltage	220 VAC, 50/60 Hz	Typical Watt	≤260W
Output Voltage	0~20 KVDC/Negative & positive adjustable	Material	SUS304/Cold-rolled plate
Control	Parameters adjustable by remote control	Filter Material	Super fine fiber
Portal	220V Plug	Impeller material	Aluminum
Output adjust	Ions output and ion balance can be adjusted by each emitter	Filter Efficiency	99.995% H14(filter element can be customized)
Emitter material	Silicon,Titanium(Optional)	Control Method	RS 485
Ion Generator	Decay time<60S,ion balance≤±100V	Working Status	Power indicator,running,malfuction indicator,fan speed indicator,temperature and humidity,dust indicator
Eliminate Area	Cover 1.6m² based on install height 0.5~2.5m	Motor Protect	Motor overload,overheat protect
Wireless monitor	LoRa	Presser Sensor	100~1000Pa
Temp&humidity sensor	Temperature: -40~125℃±0.3℃ Humidity: 0%~100%RH±1.5%RH	Particle Sensor	1~500μg/m³ ≤±15μg/m³
Purification	ISO 14644-1:2015	Motor Speed	1050rpm(MAX)
Alarm	HV abnormal alarm;motor abnormal alarm	Filter Size	1051*479*95mm
Ozone	≤0.1ppm(distance 50mm)	Package Size	1175*575*330mm
Control environment	Humidity tange 15%~75%; Temperature 0~40℃	Fan Speed	0.4~0.9±20%
		Weight	40kg

*Can be customized according to customer's requirement No cover in 30cm of the emitter.

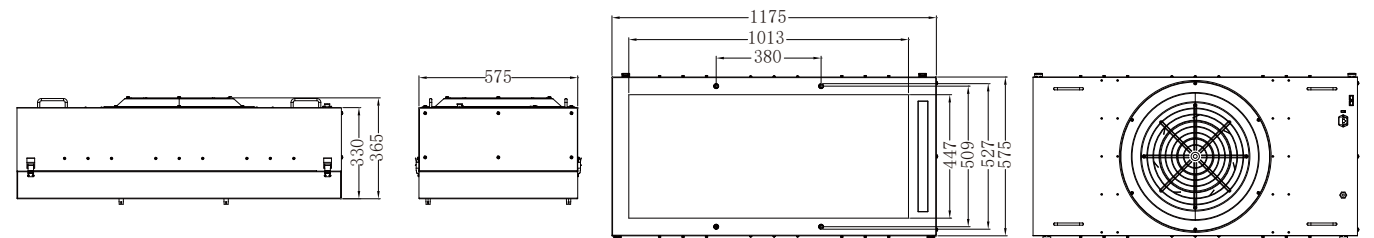
Features

- 01 Motor normal running and abnormal running indicator
- 02 Static eliminator and particle control function
- 03 HV normal and HV abnormal indicator
- 04 Wireless monitoring function
- 05 Filter normal running indicator, clean reminder and replacement alarm
- 06 Temp, humidity and particle indicator and test function

Display



Product Structure



Applications



Ceiling ion bar

KJ-40



Technical Parameters

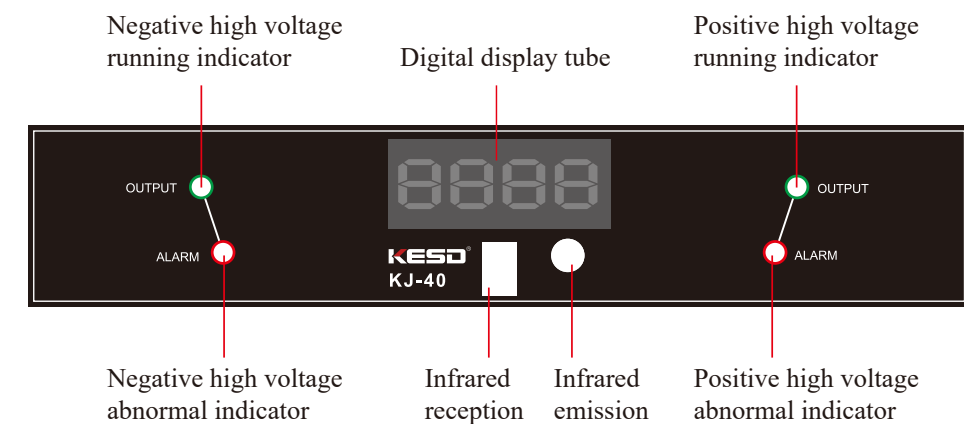
Current	220mA~400mA (Work shock current 1A)	Remote control	Remote control power on and ions adjustment
Power	10W(MAX)	Output precision control	Level adjustable
Start current	1A	Performance requirement	(1) Distance: High voltage below 120cm, within 180cm (2) Coverage: 1m ² ~1.6m ² (3) Decay time: ≤60S (4) Ion balance: ±150V
Working humidity	20~65%RH	LED display contents	(1) Indicate running time in normal status (0~999h clean time can be set) (2) Left HV indicator light on green in normal running (3) Right HV indicator light on green in normal running
Working temp	0~40°C	Alarm	(1)Left HV indicator light E-01 when alarm and light on red (2)Right HV indicator light E-02 when alarm and light on red (3)Alarm red light on when dismantle any emitter (4)LED flicker when clean reminder time arrive, but it's still normal running,don't power off
Input voltage	DC 24V		
Input protect current	1.5mA		
Emitter material	Titanium/Silicon		
Display	LED display		
Voltage waveform	DC interval ion generate		
Applied voltage/KV	0~20KV(Adjustable manual)		
Ion balance	Positive & Negtive ion adjustable		
Wireless monitor	LORA		
Memory function	Ionizer has memory function,recover power on status		

Please contact our sales representative for any updates

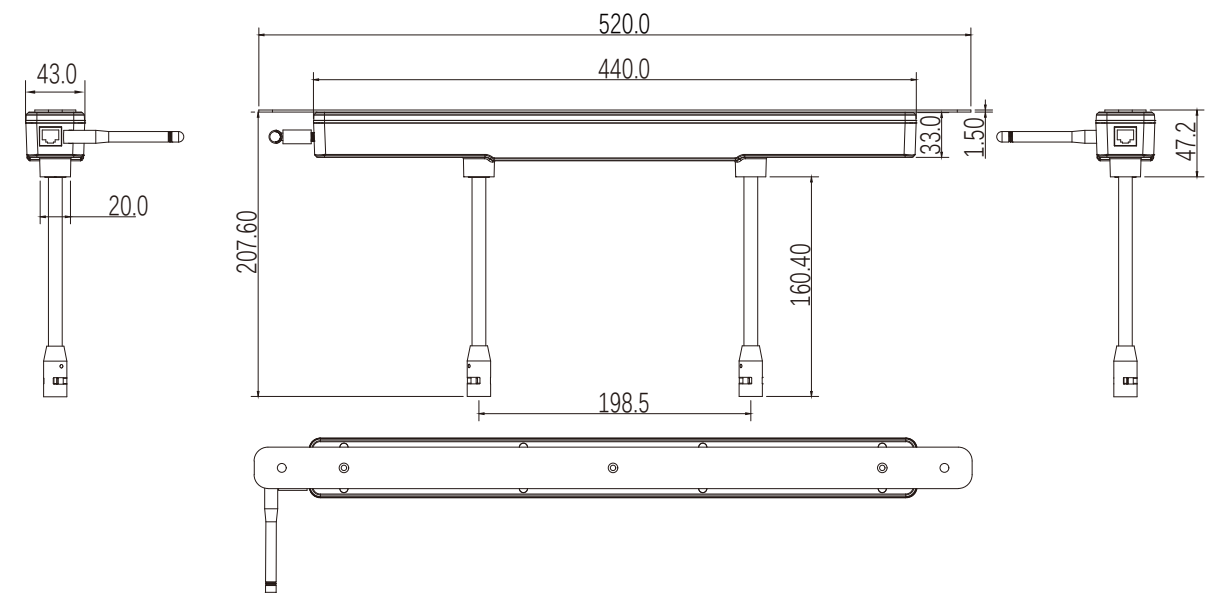
Features

- 01 Each product comes with an independent mounting bracket for easy installation.
- 02 The high-voltage rod is easy to disassemble and can be repositioned as needed.
- 03 The connecting rod of the emission module can be selected in different lengths according to the actual installation environment.
- 04 The infrared remote control for each emission module can adjust the output voltage of each emission needle.
- 05 Positive and negative ions are adjustable, with adjustment values displayed as codes on the display panel.
- 06 Convenient power access with an input voltage of 24VDC, allowing for the series connection of multiple units.
- 07 Supports multiple distributed points in space, LORA antenna interface, compatible with the KESD monitoring system, facilitating product cluster monitoring.
- 08 The product features RJ45 parallel output at both ends, facilitating the series connection of multiple KJ-40 units for lightning protection and ensuring RS485 communication.

Display



Product Structure



Mini Electrostatic Eliminator

KS-10



Technical Parameters

類別/Category		參數/Parameters	類別/Category	參數/Parameters
Input voltage		DC5V	Decay time	Within 1S, distance 100mm
Ion generated method		Tungsten needle/DC positive and negative ion release	Ozone generation (PPM)	≤0.01ppm (measured distance 50mm)
LED display	High/low frequency	High-frequency green light always on, low-frequency green light flashes	Environmental temperature and humidity	Indoor 0-40℃ 15-75% RH (No condensation)
	Charging	Red light on when charging, and the green light is full	Power consumption	0.38W
Offset voltage		Within ±20V	Weight/g	88.6g

Test voltage	Distance	Decay time	Offset voltage (positive and negative)
±1000V	100mm	≤1S	≤±20V

Note: The data from the ME268 electrostatic comprehensive testing instrument may vary due to the testing environment

Features

- 01

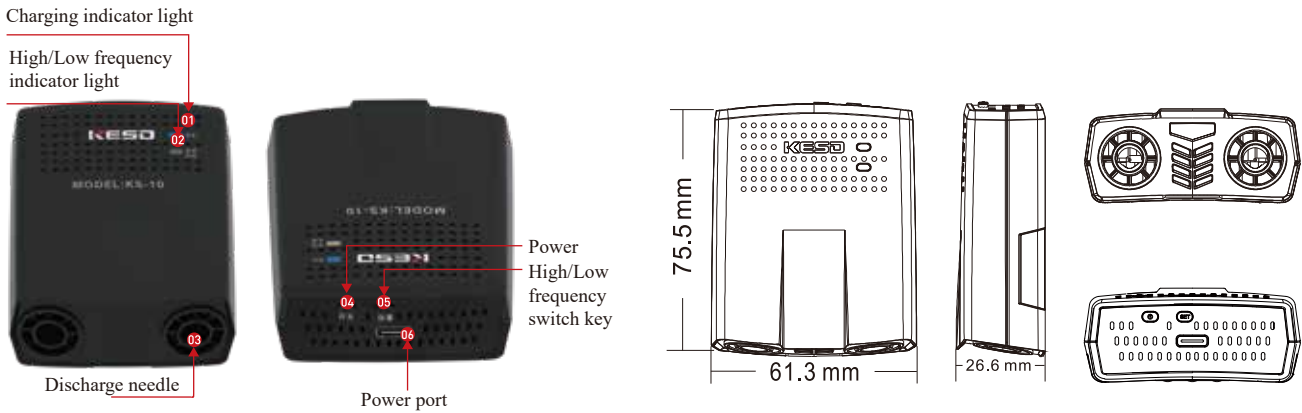
A super compact device with a small size and light weight.
- 02

Multi-mode operation, including high frequency mode for continuous static removal and low frequency mode for intermittent static removal.
- 03

Easy installation with a plug-and-play design or dedicated mounting bracket.
(the bracket can be purchased separately or customized)
- 04

Built-in lithium battery (3.7V/1000mA) for portable use and up to 12 hours of continuous operation.

Product Function



Applications



Low voltage and high frequency ionizing air blower

KF-06WR(constant air volume)



Technical Parameters

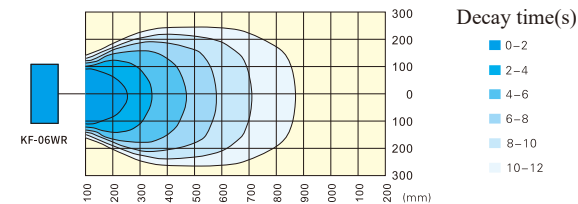
類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Weight	0.56kg (with bracket)
Decay time	≤2s	Ozone concentration	≤0.015ppm(distance 50mm)
Air volume	0.55~0.71m³/min	Working temperature	0~40°C
Ion balance	Automatic ion balance system 0±15V	Working humidity	15~75%RH(No condensation or water droplets)
Power consumption	≤10.5W	Noise	≤49db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance
200mm	1.3s~1.4s	0±15V
300mm	1.9s~2.0s	0±20V

Remark:

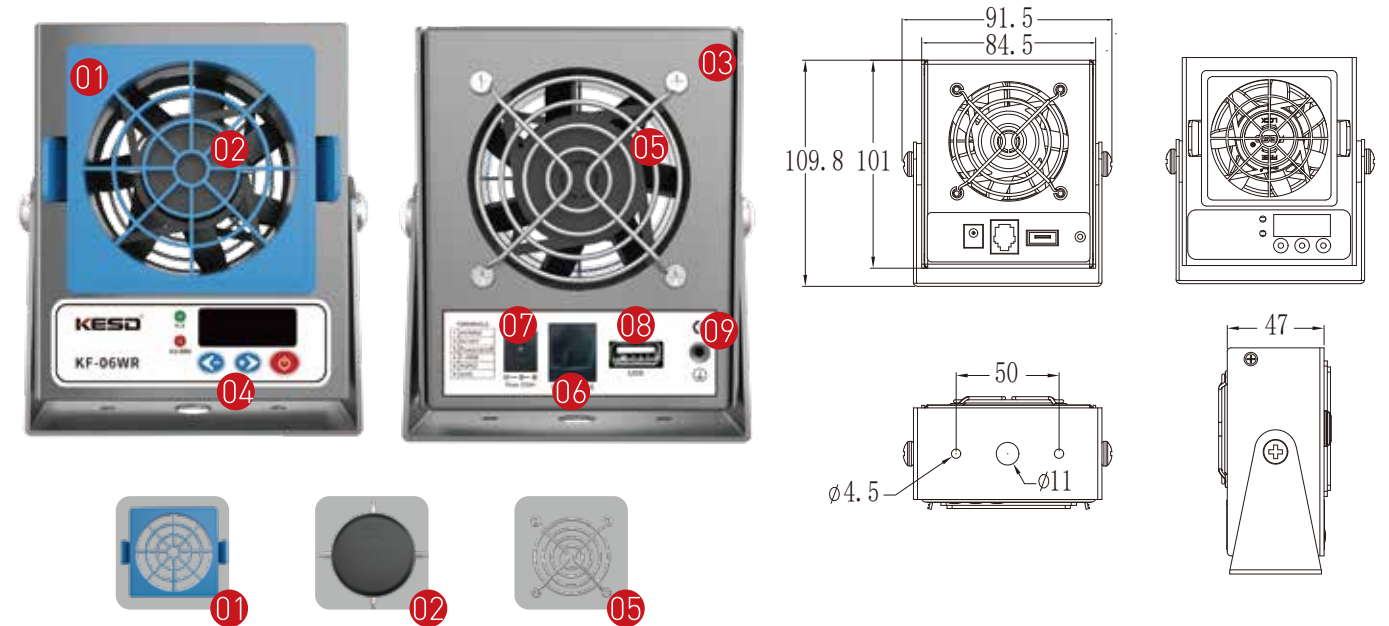
1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method.
2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume.
3. Test in the central area of the ionizer.



Features

- 01 Adjustable application of air volume ranging from 1 to 7.
- 02 Fan signal feedback, real-time monitoring of working status.
- 03 Removable discharge needle parts and the front window, convenient for cleaning, maintenance and replacement.
- 04 Special tungsten alloy discharge needle for longer service time.
- 05 Apply high frequency AC type to achieve excellent ion balance.
- 06 Unique appearance design and visual management of working performance.

Product Function



- 01 **Front windshield**
The linear grid type air window is used to make the blow wind linear, increase the static elimination effect, and can be flexibly disassembled for easy maintenance.
(Accessory can be purchased separately)
- 02 **Discharge needle**
Discharge needle parts can be disassembled for replacement and maintenance. Cleaning or maintenance outside the working area to avoid secondary pollution.
(Accessory can be purchased separately)
- 03 **Housing**
The outer casing is made of stainless steel, which is more suitable for use in clean rooms.
- 04 **Operation panel and function buttons**
Power switch button
1) Press the power switch after power on.
2) During normal operation, there is a memory function after power is cut off. After power is restored, no need to reset.

● Green lights on in normal working condition.
● Red lights on in abnormal operating condition.

● Air volume range 1~7
- 05 **Metal window mesh(60*60mm)**
(Accessory can be purchased separately)
- 06 **Network socket**
- 07 **Power socket**
- 08 **USB interface**
- 09 **Grounding port**
- 010 **Fan speed 1-7 levels increase button.**
Fan speed 1-7 levels decrease button.
Press "+" and "-" for more than 5s, the whole machine is locked automatically.
Press "+" and "-" again for more than 5s, the whole machine is unlocked automatically.

Low voltage and high frequency ionizing air blower

KF-10AW (adjustable air volume)



Technical Parameters

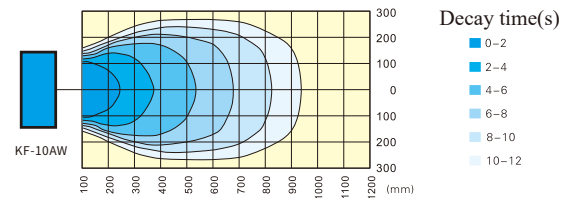
類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Air volume	0.85~1.21m³/min
Ion balance	Automatic ion balance system 0±10V	Ozone concentration	≤0.02ppm(distance 50mm)
Decay time	≤2s	Working temperature	0~40℃
Weight	0.6kg (including bracket)	Working humidity	15~75%RH(No condensation or water droplets)
Power consumption	≤10.5W	Noise	≤58db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23℃±2℃

Distance	Decay time	Ion balance
200mm	1.5s~1.8s	0±10V
300mm	2.0s~2.5s	0±10V

Remark:

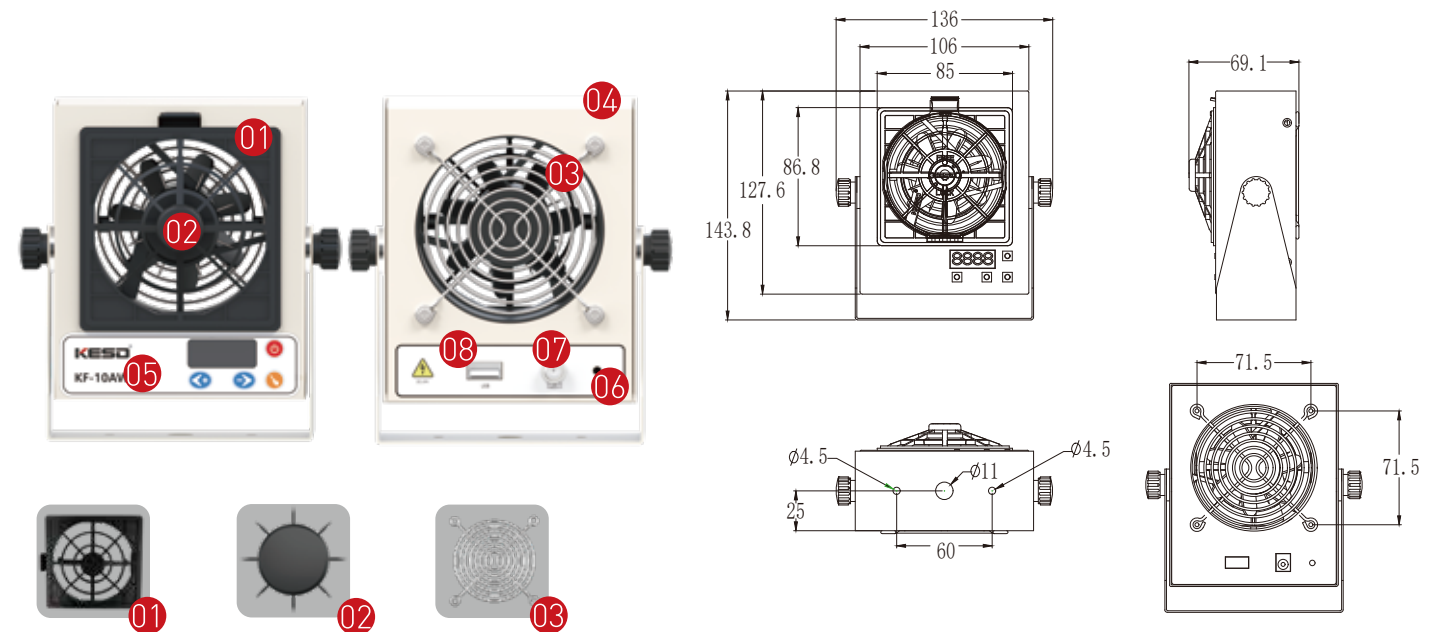
1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method.
2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume.
3. Test in the central area of the ionizer.



Features

- 01 Automatic cleaning function for discharge needles and reverse fan design to avoid the recontamination after cleaning.
- 02 With wireless network monitoring, real-time monitoring via wireless receiver and transmitter.
- 03 According to the workshop environment level, there is setting timer from 0~999 hours of automatic cleaning, as well as the LED display of setting time.
- 04 Automatic ion balance system, and the ion balance can be reached within 0±10V.
- 05 Lock function of the whole machine (refer to the button function description)
- 06 With abnormal operation alarm system.

Product Function



- 01 **Front windshield**
The front windshield can be freely disassembled, and after disassembly, the fan will automatically cut off the power. Built-in automatic cleaning discharge needle structure, which is maintenance-free. The brush made of special materials make cleaning more thorough. (Accessory can be purchased separately)
- 02 **Discharge needle**
The discharge needle holder can be freely disassembled, making maintenance and replacement easy. It uses tungsten alloy discharge needles with a tungsten content of 99.9%, and each needle generates both positive and negative ions, achieving an automatic ion balance system. (Accessory can be purchased separately)
- 03 **Metal window mesh(80*80mm)**
(Accessory can be purchased separately)
- 04 **Housing**
The outer casing is made of stainless steel, which is more suitable for use in clean rooms. (white powder coating)
- 05 **Operation panel and function buttons**
Power switch button
1) Press the power switch after power on.
2) During normal operation, there is a memory function after power is cut off. After power is restored, no need to reset.
The fan has seven fixed speeds that can be adjusted F-01-F-07
Clean time setting can be adjusted H000~H999 (hours)
- 06 **Grounding socket**
- 07 **Power socket**
- 08 **USB interface**
- Manual clean button**
To clean the discharge needle manually, you can press this button. When press this button, the fan will reverse run then stop working.
- Fan speed 1-7 levels increase button.**
Cleaning time setting: 0-999 hours increase button.
- Fan speed 1-7 levels decrease button.**
Cleaning time setting: 0-999 hours decrease button.
- Cleaning of the discharge needle is currently underway**

Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Wind volume	2.44~5.1m³/min
Ion balance	Automatic ion balance system 0±10V	Ozone concentration	≤0.015ppm (distance 50mm)
Cleaning timer setting time	Set within the range of 0~999 hours	Operating environment temperature and humidity	0~40℃ 15~75%RH (no condensation, no water drop condensation)
Mode of voltage application	AC mode/±2200V	Power consumption	≤17W
Weight	1.5kg (including bracket)	Noise	≤68db

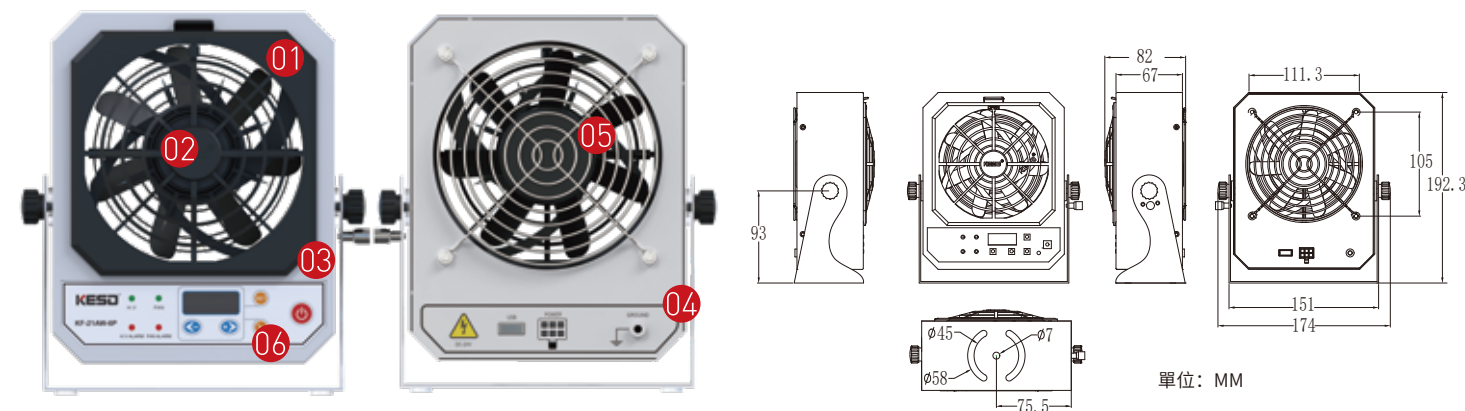
Test conditions, Operating voltage: DC24V Test voltage: $\pm 1000V \sim \pm 100V$ Environmental temperature: $23^{\circ}C \pm 2^{\circ}C$















Distance	Decay time	Ion balance	Remark: 1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method. 2. Decay time refers to voltage from 1000V to $\pm 100V$ when the rear window is not installed with a filter and maximum wind volume. 3. Test in the central area of the ionizer
300mm	1.5s~1.8s	0 \pm 10V	
600mm	2.5s~3.0s	0 \pm 15V	
900mm	3.5s~4.6s	0 \pm 20V	

Features

- 01 Automatic cleaning function for discharge needles and reverse fan design to avoid the recontamination after cleaning.
 - 02 With wireless network monitoring, real-time monitoring via wireless receiver and transmitter.
 - 03 According to the workshop environment level, there is setting timer from 0~999 hours of automatic cleaning, as well as the LED display of setting time.
 - 04 Automatic ion balance system, and the ion balance can be reached within $0 \pm 10V$.
 - 05 Lock function of the whole machine (refer to the button function description)
 - 06 With abnormal operation alarm system.

Product Function



- | | | |
|---|--|--|
| <p>01 Front windshield</p> <p>The front windshield can be freely disassembled, and after disassembly, the fan will automatically cut off the power. Built-in automatic cleaning discharge needle structure, which is maintenance-free. The brush made of special materials make cleaning more thorough. (Accessory can be purchased separately)</p> | <p>04 Rear label</p> <p>05 Rear windshield</p> <p>06 Operation panel and function buttons</p> <p> Power switch button</p> <p>1) Press the power switch after power on.
2) During normal operation, there is a memory function after power is cut off. After power is restored, no need to reset.</p> <p> Fan normal operation indicator light
FAN</p> <p> High voltage normal operation indicator
H.V</p> <p> High voltage abnormal operation indicator
H.V.ALARM</p> <p> Fan abnormal operation indicator light
FAN.ALARM</p> | <p> The fan has seven fixed speeds that can be adjusted F-01-F-07</p> <p> Clean time setting can be adjusted H000~H999 (hours)</p> <p> Lock function of the whole machine</p> <p> Unlock function of the whole machine</p> <p> Cleaning of the discharge needle is currently underway</p> <p> Air volume and cleaning time settings switch</p> <p> Manual clean button</p> <p>To clean the discharge needle manually, you can press this button. When press this button, the fan will reverse run then stop working.</p> <p> Fan speed 1-7 levels increase button.
Cleaning time setting: 0-999 hours increase button.</p> <p> Fan speed 1-7 levels decrease button.
Cleaning time setting: 0-999 hours decrease button.</p> <p>Press “+” and “-” for more than 5s, the whole machine is locked automatically.</p> |
| <p>02 Discharge needle</p> <p>The discharge needle holder can be freely disassembled, making maintenance and replacement easy. It uses tungsten alloy discharge needles with a tungsten content of 99.9%, and each needle generates both positive and negative ions, achieving an automatic ion balance system. (Accessory can be purchased separately)</p> | | |
| <p>03 Housing</p> | | |

High frequency ion fan

KF-21F



Technical Parameters

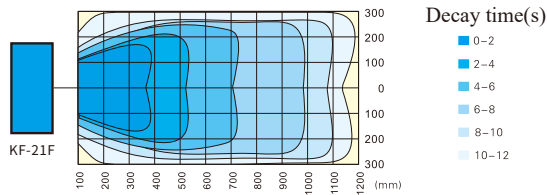
類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Wind volume	2.44~3.8m³/min
Decay time	≤3.0S	Ozone concentration	≤0.015ppm (distance 50mm)
Ion balance	Automatic ion balance system 0±10V	Working temperature	0~40℃
Weight	2.3kg (including bracket)	Working humidity	30~70%RH(No condensation or water droplets)
Power consumption	≤14.3W	Noise	≤58db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance
300mm	≤3.0s	0±20V

Remark:

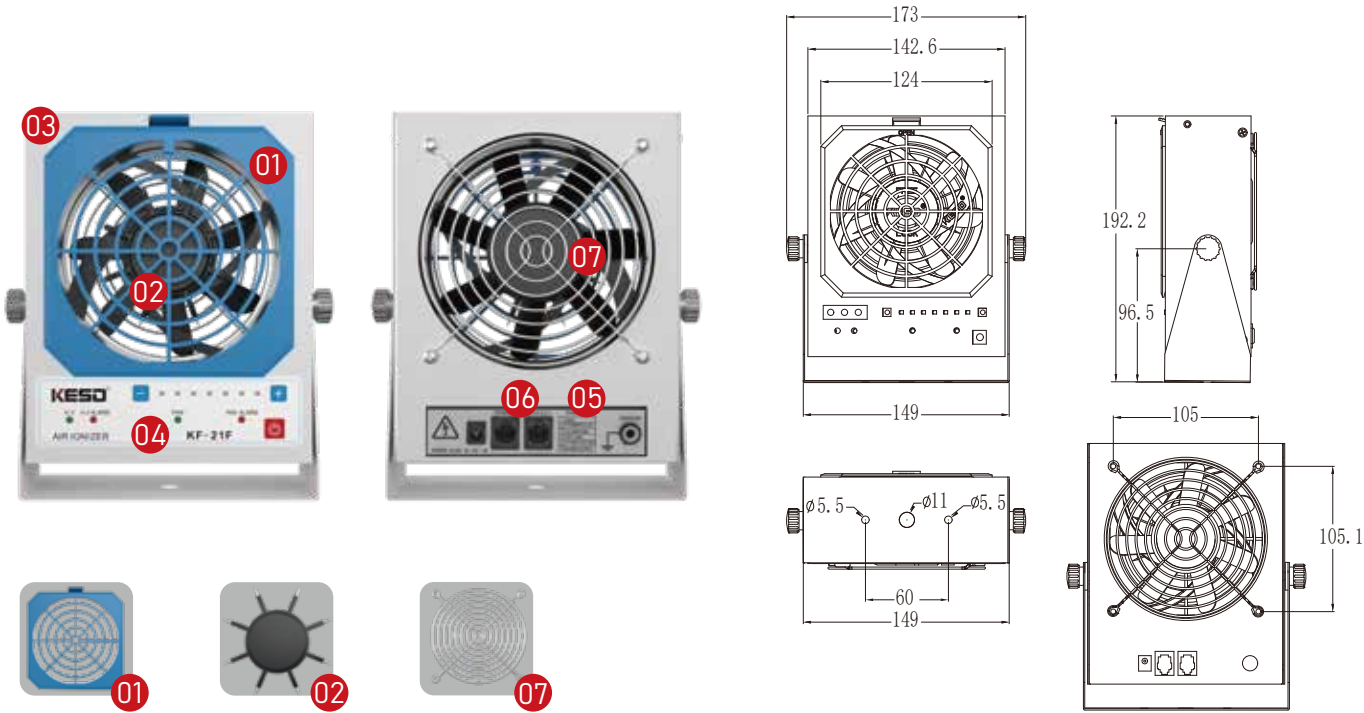
1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method.
2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume.
3. Test in the central area of the ionizer



Features

- 01 Apply high frequency AC type to achieve excellent ion balance.
- 02 Special tungsten alloy discharge needle for longer service time.
- 03 Indicator for fan operating alarm of both normal and abnormal condition.
- 04 Indicator for high voltage operating alarm of both normal and abnormal condition.
- 05 Visual management of working performance and wind speed display.
- 06 Removable discharge needle parts and the front window and convenient for cleaning, maintenance and replacement.

Product Function



- 01 **Front windshield**
The linear grid type air window is used to make the blow wind linear, increase the static elimination effect, and can be flexibly disassembled for easy maintenance.
(Accessory can be purchased separately)
- 02 **Discharge needle**
Discharge needle parts can be disassembled for replacement and maintenance. Cleaning or maintenance outside the working area to avoid secondary pollution.
(Accessory can be purchased separately)
- 03 **Exterior shell**
The shell is made of spray-coated process (standard white powder)
- 04 **Indicator**
Unique LED display for visual viewing the working status and management.
 - High voltage normal operation indicator H.V
 - High voltage abnormal operation indicator H.V ALARM
 - Fan normal operation indicator light FAN
 - Fan abnormal operation indicator light FAN ALARM
 - ■ Air volume decrease, increase button and air volume indicator.
- 05 **Rear label(schematic diagram)**
- 06 **Power supply**
Equipped with DC socket and network power socket for easy connection with equipment and neat line.
- 07 **Rear windshield**
Metal window mesh(120*120mm)
Filter window(accessory, can be purchased separately)

Low voltage and high frequency ionizing air blower

KF-40AR



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	AC220V/50Hz AC110V/60Hz	Wind volume	2.44~5.1m³/min(Single-head)
Ion balance	Automatic ion balance system 0±10V	Ozone concentration	≤0.015ppm (distance 50mm)
Mode of voltage application	AC mode/±2200V	Working temperature	0~40°C
Weight	4.3kg	Working humidity	30~70%RH(No condensation or water droplets)
Power consumption	≤32W	Noise	≤70db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance
300mm	1.2s~1.5s	0±10V
600mm	2.0s~3.0s	0±15V
900mm	3.5s~4.5s	0±20V

Remark:

- 1.Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method.
- 2.Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume.
- 3.Test in the central area of the ionizer.

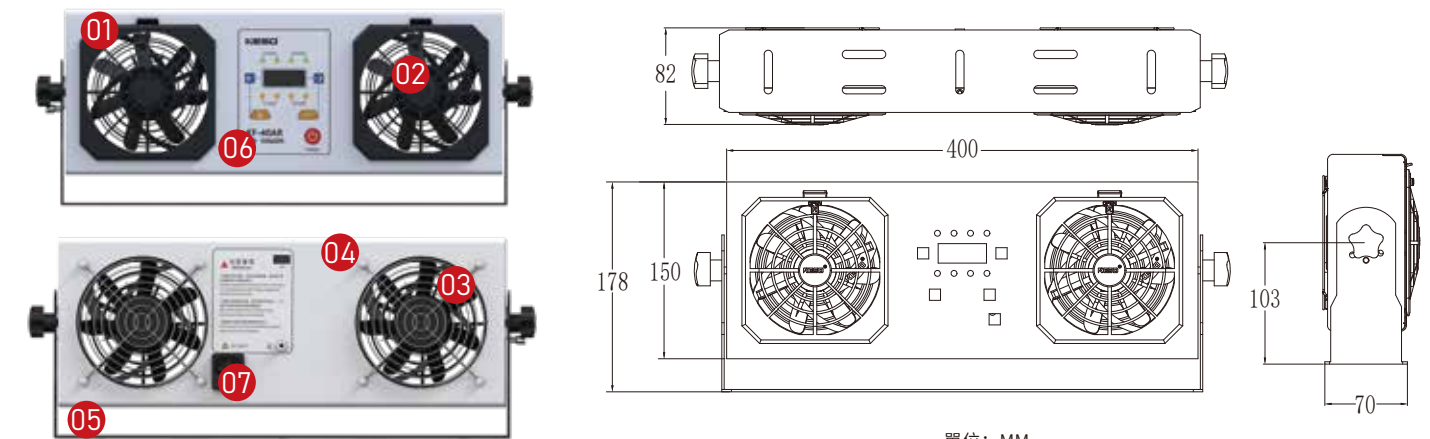
Decay time(s)

- 0-2
- 2-4
- 4-6
- 6-8
- 8-10
- 10-12

Features

- 01 Automatic cleaning function for discharge needles and reverse fan design to avoid the recontamination after cleaning.
- 02 Automatic ion balance system, and the ion balance can be reached within 0±10V.
- 03 Reverse fan design to avoid the recontamination after cleanign.
- 04 According to the workshop environment level, there is setting timer from 0~999 hours of automatic cleaning, as well as the LED display of setting time.
- 05 More optional fans of different lengths depending on the workbench and product size.
- 06 Lock function of the whole machine (refer to the button function description)

Product Function



單位: MM

- 01 **Front windshield**
The front windshield can be freely disassembled, and after disassembly, the fan will automatically cut off the power. Built-in automatic cleaning discharge needle structure, which is maintenance-free. The brush made of special materials make cleaning more thorough. (Accessory can be purchased separately)
- 02 **Discharge needle**
The discharge needle holder can be freely disassembled, making maintenance and replacement easy. It uses tungsten alloy discharge needles with a tungsten content of 99.9%, and each needle generates both positive and negative ions, achieving an automatic ion balance system. (Accessory can be purchased separately)
- 03 **Rear windshield**
Metal window mesh(120*120mm)
Filter window(accessory, can be purchased separately)
- 04 **Exterior shell**
The shell is made of spray-coated process (standard white powder)
- 05 **Mounting bracket**
- 06 **Operation panel and function buttons**
 - Power switch button
1) Press the power switch after power on.
2) During normal operation, there is a memory function after power is cut off. After power is restored, no need to reset.
 - High voltage normal operation indicator
 - Fan normal operation indicator light
 - High voltage abnormal operation indicator
 - Fan abnormal operation indicator light
 - Air volume and cleaning time settings switch
- Manual clean button
To clean the discharge needle manually, you can press this button. When press this button, the fan will reverse run then stop working.
- Fan speed 1-7 levels increase button.
Cleaning time setting: 0-999 hours increase button.
- Fan speed 1-7 levels decrease button.
Cleaning time setting: 0-999 hours decrease button.
Press "+" and "-" for more than 5s, the whole machine is locked automatically.
Press "+" and "-" again for more than 5s, the whole machine is unlocked automatically.
- The fan has seven fixed speeds that can be adjusted F-01-F-07
- Clean time setting can be adjusted H000~H999 (hours)
- Lock function of the whole machine
- Unlock function of the whole machine
- Cleaning of the discharge needle is currently underway
- 07 **Power socket**

Intelligent ionizing air blower

KF-40AY



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	AC220V/50Hz AC110V/60Hz	Wind volume	2.44~5.1m³/min(Single-head)
Ion balance	Automatic ion balance system 0±10V	Ozone concentration	≤0.015ppm (distance 50mm)
Mode of voltage application	High-frequency AC mode 68K Hz/±2200V	Working temperature	0~40°C
Weight	3.05kg	Working humidity	30~70%RH(No condensation or water droplets)
Power consumption	≤32W	Noise	≤70db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance	Remark: 1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method. 2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume. 3. Test in the central area of the ionizer.
300mm	1.0s~1.5s	0±10V	
600mm	2.0s~3.0s	0±15V	
900mm	3.5s~4.5s	0±20V	

Features

- 01

With automatic needle cleaning function, daily manual cleaning and maintenance frequency can be reduced.
- 02

Automatic ion balance, ion balance can reach 0±10V.
- 03

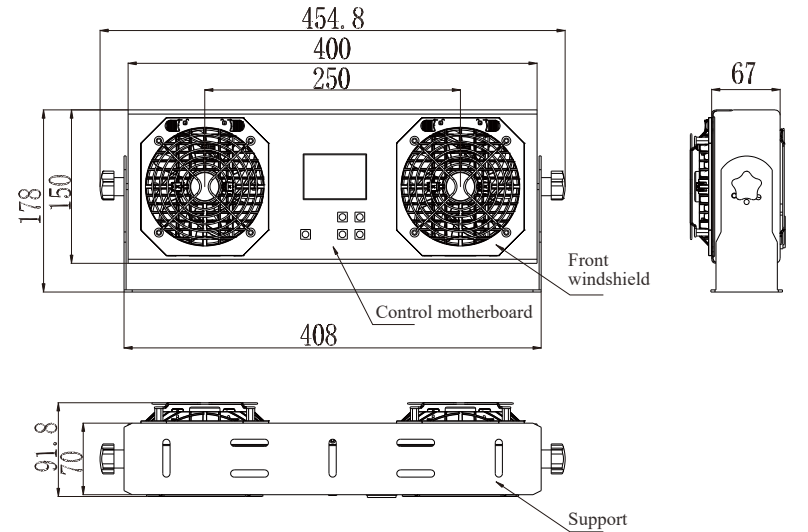
When the cleaning fan is reversed, it prevents cleaning debris from being blown towards the product.
- 04

According to the workshop environment, the voltage, ion balance, etc. can be displayed on the TFT screen, and the cleaning needle time can be adjusted from 0-999 hours.
- 05

Screen display introduction, high voltage detection display, ion balance detection display.
- 06

With the whole machine locking function, USB network port output, supporting machine communication.

Product Function



- 01

Front windshield
The front windshield can be freely disassembled, and after disassembly, the fan will automatically cut off the power. Built-in automatic cleaning discharge needle structure, which is maintenance-free. The brush made of special materials make cleaning more thorough.
(Accessory can be purchased separately)
- 02

Discharge needle
The discharge needle holder can be freely disassembled, making maintenance and replacement easy. It uses tungsten alloy discharge needles with a tungsten content of 99.9%, and each needle generates both positive and negative ions, achieving an automatic ion balance system.
(Accessory can be purchased separately)
- 03

Rear windshield
Metal window mesh(120*120mm)
Filter window.(accessory,can be purchased separately)
- 04

Exterior shell
The shell is made of spray-coated process. (standard white powder)
- 05

Installation bracket
- 06

Power supply
Input power AC220V/50Hz or AC110V/60Hz
- 07

Operation panel and function buttons
Power button
1) After connecting the power supply, need to press the power button.
2) During normal operation, there is a memory function after power failure, and the system will automatically restore to the state before the power failure after reconnecting the power.
- ↑

Increase button
Menu function selection, edit button
- ↓

Decrease button
Menu function selection, edit button
- ↻

Set and confirm shift button
Menu/Confirm/Edit
- ↺

Clean and return shift button
Clean/Return previous command.
- 🧹

Cleaning Setting
Cleaning function switch, cleaning interval time setting
- 🔍

Power-on diagnostics setup
Self-diagnosis function switch, Timed diagnostics time setting
- ⚡

Voltage settings
Voltage/air port/calibration settings, edit normal value, warning value, and alarm value for numerical settings.
- ⚖️

Ion balance settings
Balance/air port/calibration settings, edit normal value, warning value and alarm value for numerical settings.
- 🔒

Password setting
- 🕒

Timed switch on/off settings
Set automatic on/off times, scheduled power on/off settings.
- 💡

Screen brightness settings
Adjust brightness/Screen off time.
- 🇨🇳/🇺🇸

Chinese and English language setting
Settings for switching between Chinese and English
- 🌡️

The feature of temperature display
Temperature display function
- 🔌

Grounding indicator function
Red flashing display indicates abnormal, while no flashing means normal.
- 🌬️

Wind volume level display feature
Display of wind volume levels 1-7 airflow level display function.
- 🕒

Time display function
Duration of working
- 📶

Wireless display function
No display abnormally, displays a normal icon.
- 🌀

The display function of the fan outlet
Detailed view of outlets F1-F7
- ⚡

High voltage numerical value display
F1-F7 high voltage value display, abnormal value red flashing display, normal without flashing.
- ⚖️

Ion balance numerical display
F1-F7 high voltage value display, abnormal value red flashing display, normal without flashing.
- 🌬️

Windshield
F1-F7 windshield, normal display "OK"
Abnormally display "NG"

Low voltage and high frequency ionizing air blower

KF-60AR



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	AC220V/50Hz AC110V/60Hz	Wind volume	2.44~5.1m³/min(Single-head)
Ion balance	Automatic ion balance system 0±10V	Ozone concentration	≤0.015ppm (distance 50mm)
Mode of voltage application	AC mode/±2200V	Working temperature	0~40℃
Weight	5kg	Working humidity	30~70%RH(No condensation or water droplets)
Power consumption	≤56.7W	Noise	≤68db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance	Remark: 1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method. 2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume. 3. Test in the central area of the ionizer.
300mm	1.2s~1.5s	0±10V	
600mm	2.0s~3.0s	0±15V	
900mm	3.5s~4.5s	0±20V	

Features

- 01 Automatic cleaning function for discharge needles and reverse fan design to avoid the recontamination after cleaning.

02 Automatic ion balance system, and the ion balance can be reached within 0±10V.

03 Reverse fan design to avoid the recontamination after cleanign.
- 04 According to the workshop environment level, there is setting timer from 0~999 hours of automatic cleaning, as well as the LED display of setting time.

05 More optionalion fans of different lengths depending on the workbench and product size.

06 Lock function of the whole machine. (refer to the button function description)

Product Function



- 01 Front windshield

02 Discharge needle

03 Rear windshield
Metal window mesh(120*120mm)
Filter window(accessory, can be purchased separately)

04 Exterior shell
The shell is made of spray-coated process. (standard white powder)

05 Mounting bracket

06 Power supply
Input power AC220V/50Hz or AC110V/60Hz
- 07 Operation panel and function buttons

Power switch button
1) Press the power switch after power on.
2) During normal operation, there is a memory function after power is cut off. After power is restored, no need to reset.

Fan normal operation indicator light

Fan abnormal operation indicator light

High voltage normal operation indicator

High voltage abnormal operation indicator

Air volume and cleaning time settings switch
- Manual clean button
To clean the discharge needle manually, you can press this button. When press this button, the fan will reverse run then stop working.

Fan speed 1-7 levels increase button.
Cleaning time setting: 0-999 hours increase button.

Fan speed 1-7 levels decrease button.
Cleaning time setting: 0-999 hours decrease button.

Press "+" and "-" for more than 5s, the whole machine is locked automatically.
Press "+" and "-" again for more than 5s, the whole machine is unlocked automatically.

The fan has seven fixed speeds that can be adjusted F-01-F-07

Clean time setting can be adjusted H000~H999 (hours)

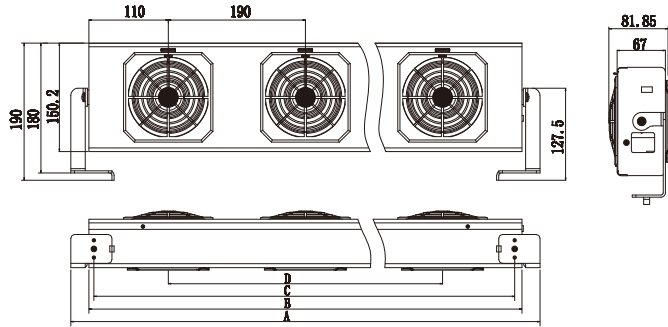
Lock function of the whole machine

Unlock function of the whole machine

Cleaning of the discharge needle is currently underway

Overhead series ionizing air blower

Parameters for reference KF-60AR



Model	Total length A (including bracket)	Length of device B	Mounting distance C	Fan spacing D	Quantity of fans	Weight
KF-60AR	650mm	600mm	583mm	380mm	3	5kg
KF-80AR	850mm	800mm	783mm	570mm	4	6.5kg
KF-100AR	1050mm	1000mm	983mm	760mm	5	7.5kg
KF-120AR	1250mm	1200mm	1183mm	950mm	6	8.8kg
KF-150AR	1450mm	1400mm	1383mm	1140mm	7	9.8kg

Smart Ionizing Fan (Waterproof Version)

KF-95AT-TH



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	AC220V/50Hz AC110V/60Hz	Wind volume	2.44~5.1m³/min(Single-head)
Ion balance	Automatic ion balance system 0±20V	Ozone concentration	≤0.01ppm (distance 50mm)
Applied voltage	Low-frequency AC mode 50Hz /±4500V	Working temperature	0~40℃
Weight	6.35kg	Working humidity	30~70%RH(No condensation or water droplets)
Power consumption	≤54W	Noise	≤84db

Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance	Remark: 1. Testing method: Use TREK-156A electrostatic charged plate meters and follow the company's measurement method. 2. Decay time refers to voltage from 1000V to ± 100V when the rear window is not installed with a filter and maximum wind volume. 3. Test in the central area of the ionizer.
300mm	1.0s~1.5s	0±20V	
600mm	2.0s~2.5s	0±20V	
900mm	3.5s~4.0s	0±20V	

Features

- 01

With automatic needle cleaning function, daily manual cleaning and maintenance frequency can be reduced.
- 02

Automatic ion balance, ion balance can reach 0±20V.
- 03

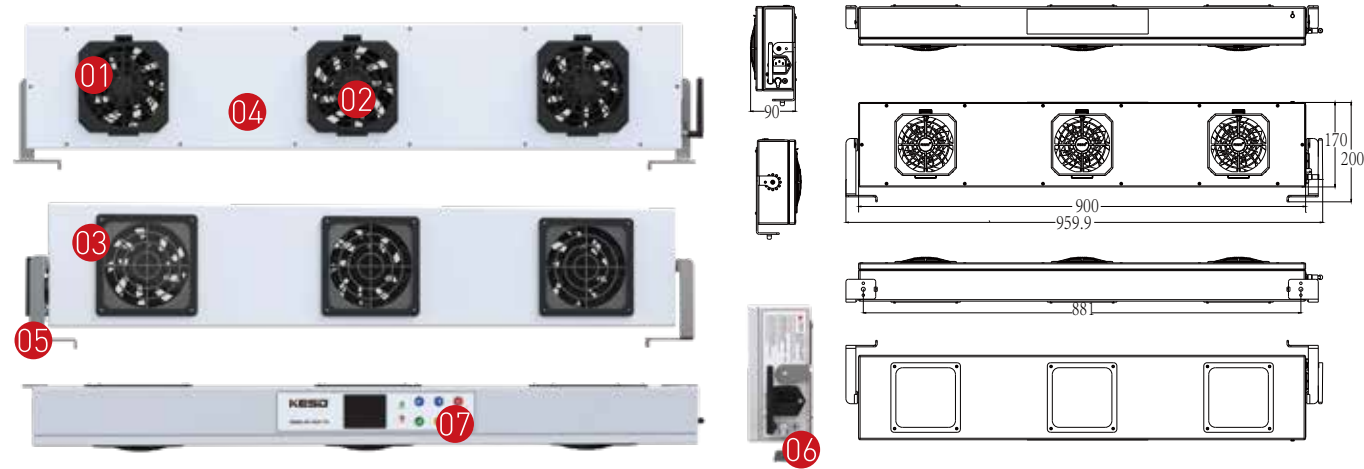
When the cleaning fan is reversed, it prevents cleaning debris from being blown towards the product.
- 04

High-voltage package version, voltage is visualized, ion balance is visualized, TFT color screen display, grounding alarm.
- 05

Distance 30cm, decay time ≤2 seconds, ion balance ±20V.
- 06

With whole machine lock function, supports wireless monitoring, USB network output and machine linkage.

Product Function



- 01

Front windshield
The front windshield can be freely disassembled, and after disassembly, the fan will automatically cut off the power. Built-in automatic cleaning discharge needle structure, which is maintenance-free. The brush made of special materials make cleaning more thorough. (Accessory can be purchased separately)
- 02

Discharge needle
The discharge needle holder can be freely disassembled, making maintenance and replacement easy. It uses tungsten alloy discharge needles with a tungsten content of 99.9%, and each needle generates both positive and negative ions, achieving an automatic ion balance system. (Accessory can be purchased separately)
- 03

Rear window
Filter window (can be purchased separately as an accessory)
- 04

Exterior shell
The outer casing is made of stainless steel, which is more suitable for use in clean rooms.(white powder coating)
- 05

Installation bracket
- 06

Power cable port
- 07

Operation panel and function buttons
Power switch button
1)After connecting to the power supply, press the power switch button to start the machine.
2) During normal operation, after a power outage, the machine will have a power-failure function, and after reconnection, it will automatically restore to the state before the power outage.

OUTPUT

Normal operation indicator light.

ALARM

Abnormal operation indicator light.

Clean interface button

Clean switch / clean timer function.
- ←+

Air volume button /left control button
Menu function selection and editing button.

→

Air volume button /right control button
Menu function selection and editing button.

✓

Confirm button
Enter menu/confirm function/enter editing button.

↶

Return to conversion button
Return to function/return to the previous command level.

🏠
清洁时间

Cleaning Settings
Cleaning function switch on/off, set the interval time for scheduled cleaning.

🔍
开机自检

Startup self-check settings
Startup self-check function switch, scheduled self-check time setting.

⚡
高压设置

Voltage setting
Set up voltage/air intake/calibration, edit normal values, warning values, and alarm values as numerical settings.

⚖️
离子平衡

Ion balance setup
Set up ion balance/air intake/calibration, edit normal values, warning values, and alarm values as numerical settings.

🔒
机器锁定

Password setup
Turn on password setup and set the password lock.

💡
屏幕亮度

Screen brightness setting

🕒
开关机

Timed switch machine setting
Set the timer to turn on/off, Automatic on/off time setting, Adjust the brightness/screen off time.
- 中/英切换

Chinese/English language settings
Switch between Chinese and English language settings.

🌡️

Temperature display function
Features a temperature display function.

🔌GND

Grounding display function
Abnormal display appears in red flashing, no flashing indicates normal.

📶

Display function for air volume level
1-7 air volume levels are displayed and can be adjusted to control the air volume.

🕒

Time Display Function
Working Hours.

📶

Wireless display function
No display in abnormal, display icon in normal.

🌀

The fan vent display function
Details of vent F1~F7 can be viewed.

⚡

High voltage values display
F1~F7 ventilation outlets, with abnormal values flashing in red and normal values without flashing.

⚖️

Ion balance values display
F1~F7 ventilation outlets, with abnormal values flashing in red and normal values without flashing.

🌐

Windshield
F1~F7 windshield, normally displays "OK" / Abnormal display "NG"

Vertical multi-head ionizer fan KF-180DW



Technical Parameters

Model			KF-180DW			Air level	Power consumption w	Noise dB	Air volume m³/h
Input voltage			AC110V/60Hz or AC220V/50Hz			Level 1	60	55	3250
Ion generated way			Corona type			Level 2	88	65	5800
Applied static voltage			High frequency AC type ±2200V			Level 3	133	72	6500
Decay time			≤1.5s(30cm distance)			Level 4	198	76	8400
Ozone concentration			≤0.03ppm			Level 5	230	77	9100
Overall dimension			70.4*49.5*175.6cm			Level 6	255	78	10000
Air volume			2.56-4.07m³/min （Single fan）			Level 7	340	85	11000
Ion balance			Auto ion balance 0±35V						
Environment temperature			0-40℃ （No condensation）			Test distance	Decay time	Ion balance	
Environment humidity			30-70% RH (No water drop condensation)			30cm	+1.2s/-1.5s	±35V	
Net weight			75kg			60cm	+2.5s/-2.8s		
LED display	H.V	High voltage normal indicator		90cm	+3.4s/-3.8s				
	H.V ALARM	HV abnormal or circuit abnormal indicator, buzzer alarm		120cm	+4.5s/-4.8s				
	FAN	Fan normal indicator		150cm	+5.5s/-5.8s				
	FAN ALARM	Fan abnormal indicator, buzzer alarm		Remark: All the process within 6 seconds					

Product Function

- 01

Adopt tungsten alloy emitter, durable and non wear out.
- 02

Easy install, side angle 90°free adjustment, wider static elimination area.
- 03

Ion generate normal and abnormal indicator, fan normal and abnormal indicator.
- 04

Auto clean function, reduce labor cleaning and maintenance frequency.
- 05

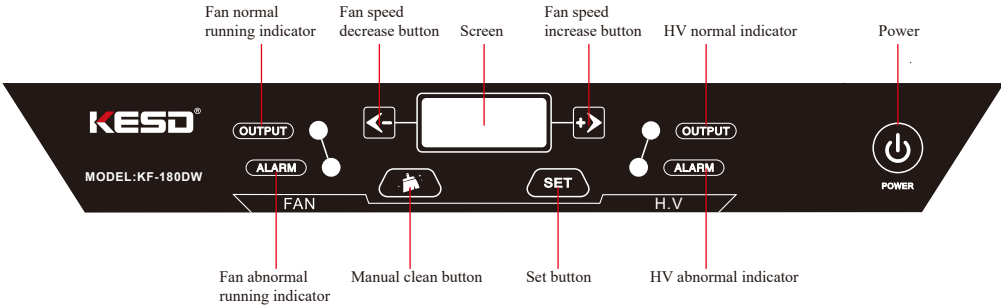
Mobile design, painting and wire drawing craft, firm base.
- 06

Easy uninstall of the emitter and front windshield, convenient for cleaning, maintenance and replacement.
- 07

Static elimination and dust removal, fast subside find particles.
- 08

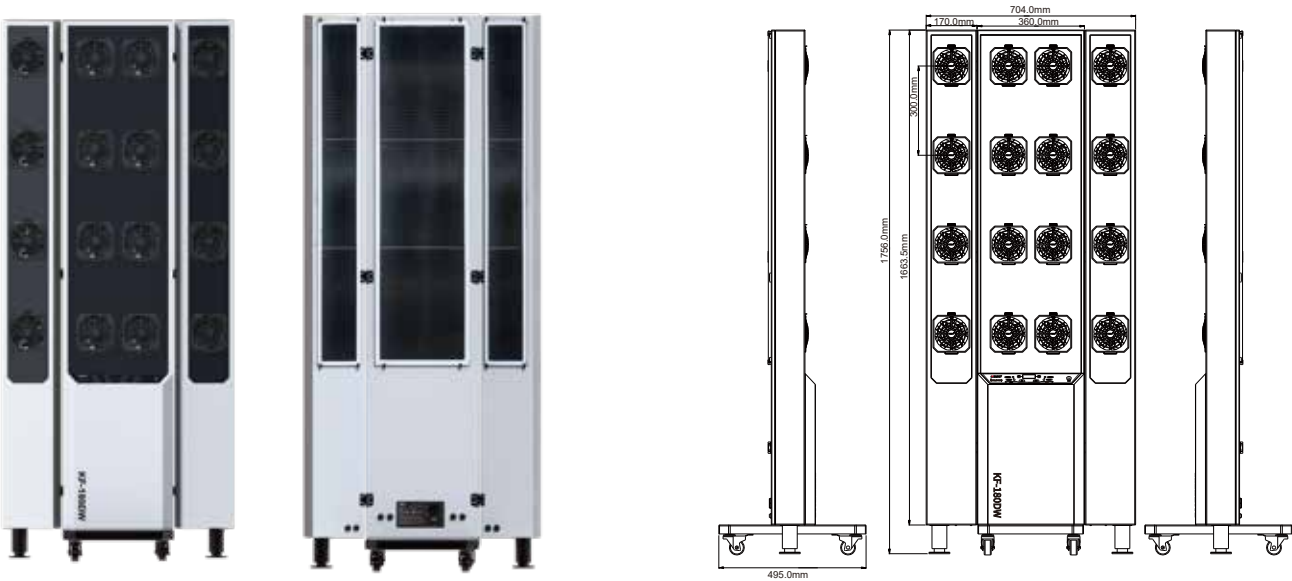
1-7 levels adjustable.

Display



Button additional function: Press the plus or minus buttons simultaneously for more than 5 seconds, and the entire machine will automatically lock

Product Structure



Low voltage and high frequency AC type ionizing air bar

KE-36X



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Ozone concentration(ppm)	< 0.035ppm
Mode of voltage application	High frequency AC type/±2200V	Airflow applied	Clear air(without water and oil)
Ion balance	Within ±20V	Air pressure application range(MPa)	0.1~0.5MPa
Decay time	≤2.0S	Applied environment temperature	0~40°C
Cleaning setting timer	Adjustable from 0~999 hours	Applied environment humidity	15~75%RH(no water drop condensation)
Power consumption	≤5.8W	Gas flow	≤113.5L/min(0.4MPa air pressure)

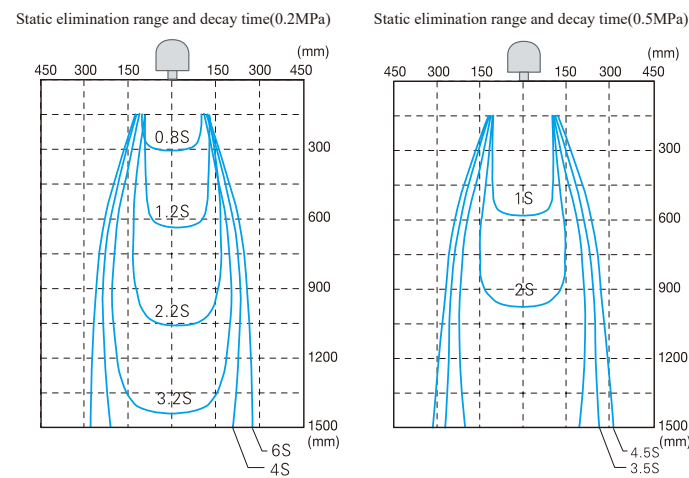
Static elimination range and decay time

Distance	Decay time	Ion balance
300mm	0.5s~0.6s	0±20V
600mm	1.3s~1.5s	0±20V
900mm	2.0s~2.2s	0±20V

The following chart shows the related data like decay time and the distance between ion bar and the object.

Test conditions:

- 1.Test the decay time,when voltage changed from ±1000V to ±100V.
- 2.Using the charge plate monitor of 150mm*150mm(20pF).
- 3.The data is applied air pressure under 0.2MPa and 0.5MPa upward air flow.



Features

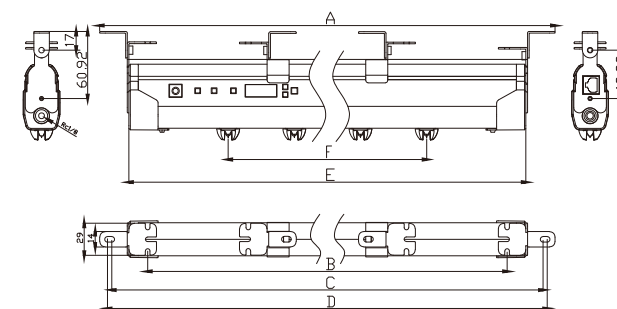
- 01 Applying high frequency AC mode. and the frequency can reach 68000Hz.
- 02 The clean time can be settled from 0~999 hours according to the workshop environment.
- 03 Side wiring to ensure front and rear space.
- 04 Automatic ion balance system, fast static elimination.
- 05 Increase the air volume to get a better performance.
- 06 Equipped with high-voltage normal operation indicator and high-voltage abnormal operation indicator.

Product Function



- 01 Shell body
- 02 Left side panel
- 03 Right side panel
- 04 Spray head(discharge needle)
- 05 Power port(DC24V)
- 06 Air inlet slot
- 07 Control panel
- Power switch
- High voltage normal operation indicator
- High voltage abnormal operation indicator
- Cleaning reminder indicator
- LED display
Mainly display the time of setting maintenance of discharge needle and cleaning reminder.
- Cleaning reminder settings
Increase
- Cleaning reminder settings
Decrease
- Cleaning reminder settings
Adjustable in the range of 0~999 hours.

Product Specification

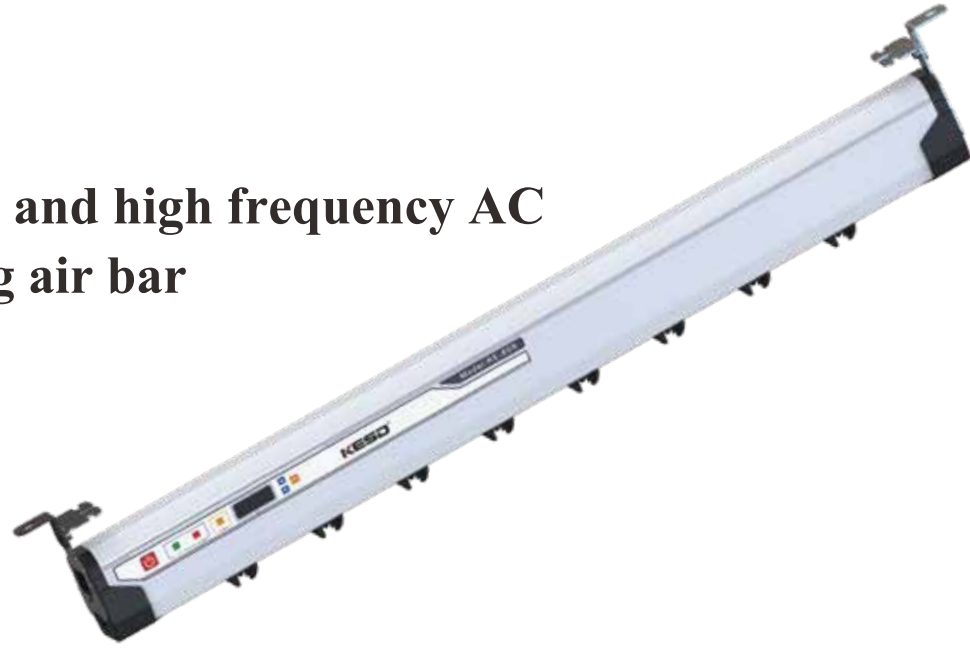


Model		Overall length	Mounting distance	Mounting distance	Mounting distance	Static elimination	Electrode spacing
Standard series	I/O control type	A	B	C	D	E	F
KE-36X	KE-36XI	413	326	391.2	398.8	360	180
KE-60X	KE-60XI	653	566	631.2	638.8	600	420
KE-84X	KE-84XI	893	806	871.2	878.8	840	660
KE-108X	KE-108XI	1133	1046	1111.2	1118.8	1080	900
KE-132X	KE-132XI	1373	1286	1351.2	1358.8	1320	1140
KE-156X	KE-156XI	1613	1526	1591.2	1598.8	1560	1380

*High voltage alarm feedback(with I/O control)

Low voltage and high frequency AC type ionizing air bar

KE-60X



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Ozone concentration(ppm)	< 0.035ppm
Mode of voltage application	High frequency AC type/±2200V	Airflow applied	Clear air(without water and oil)
Ion balance	Within ±20V	Air pressure application range(MPa)	0.1~0.5MPa
Decay time	≤2.0S	Applied environment temperature	0~40°C
Cleaning setting timer	Adjustable from 0~999 hours	Applied environment humidity	15~75%RH(no water drop condensation)
Power consumption	≤10W	Gas flow	≤124L/min(0.4MPa air pressure)

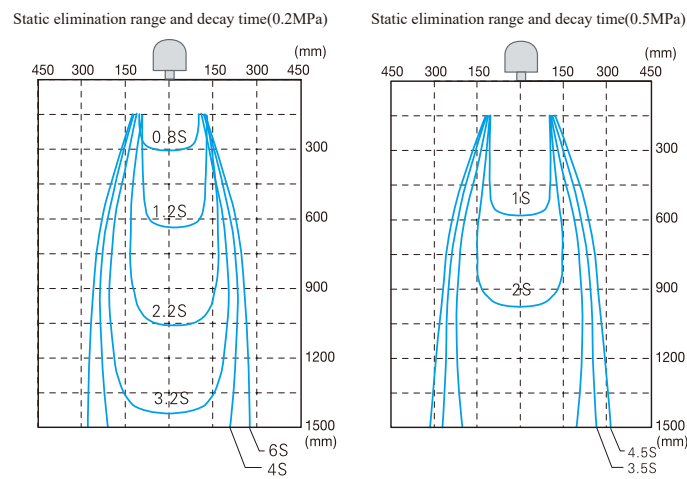
Static elimination range and decay time

Distance	Decay time	Ion balance
300mm	0.5s~0.6s	0±20V
600mm	1.2s~1.5s	0±20V
900mm	1.8s~3.0s	0±20V

The following chart shows the related data like decay time and the distance between ion bar and the object.

Test conditions:

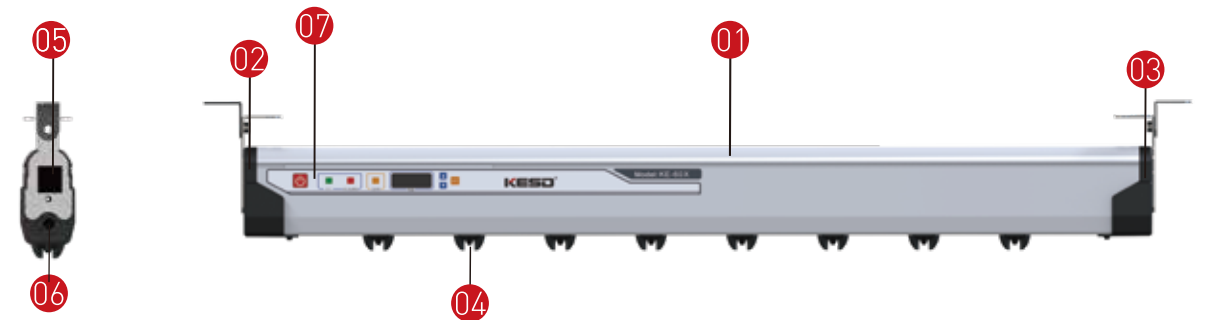
- 1.Test the decay time,when voltage changed from ±1000V to ±100V.
- 2.Using the charge plate monitor of 150mm*150mm(20pF).
- 3.The data is applied air pressure under 0.2MPa and 0.5MPa upward air flow.



Features

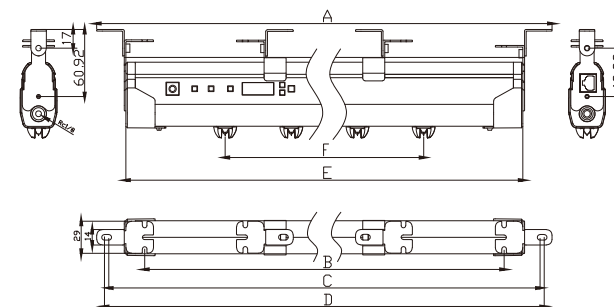
- 01 Applying high frequency AC mode. and the frequency can reach 68000Hz.
- 02 The clean time can be settled from 0~999 hours according to the workshop environment.
- 03 Side wiring to ensure front and rear space.
- 04 Automatic ion balance system, fast static elimination.
- 05 Increase the air volume to get a better performance.
- 06 Equipped with high-voltage normal operation indicator and high-voltage abnormal operation indicator.

Product Function



- 01 Shell body
- 02 Left side panel
- 03 Right side panel
- 04 Spray head(discharge needle)
- 05 Power port(DC24V)
- 06 Air inlet slot
- 07 Control panel
- Power switch
- High voltage normal operation indicator
- High voltage abnormal operation indicator
- Cleaning reminder indicator
- LED display
- Mainly display the time of setting maintenance of discharge needle and cleaning reminder.
- Cleaning reminder settings Increase
- Cleaning reminder settings Decrease
- Cleaning reminder settings Adjustable in the range of 0~999 hours.

Product Specification

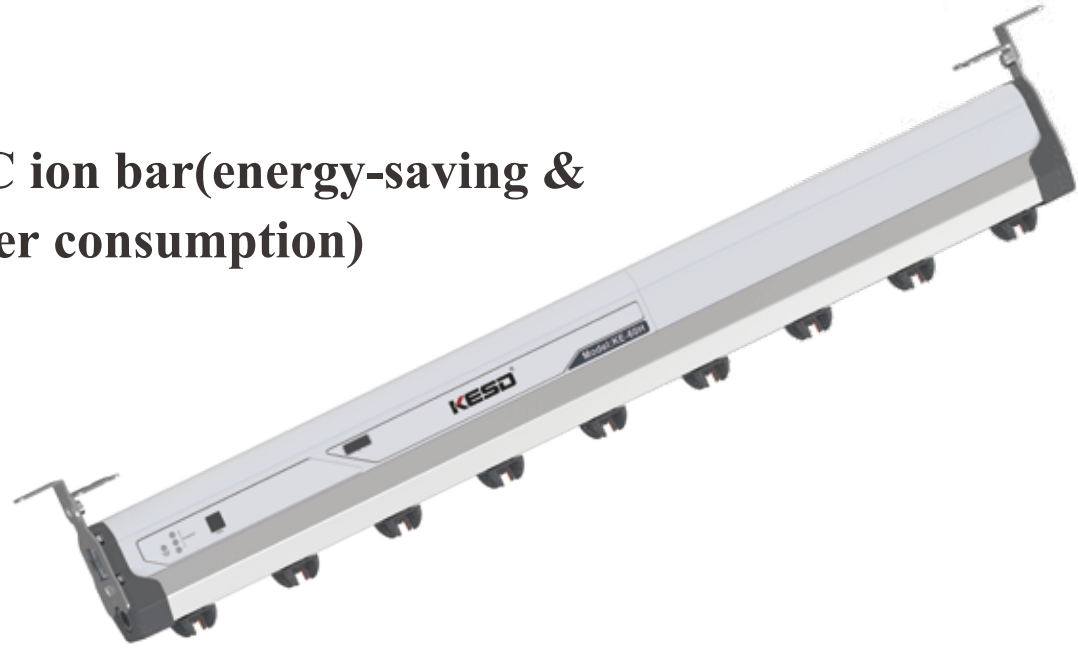


Model		Overall length	Mounting distance	Mounting distance	Mounting distance	Static elimination	Electrode spacing
Standard series	I/O control type	A	B	C	D	E	F
KE-36X	KE-36XI	413	326	391.2	398.8	360	180
KE-60X	KE-60XI	653	566	631.2	638.8	600	420
KE-84X	KE-84XI	893	806	871.2	878.8	840	660
KE-108X	KE-108XI	1133	1046	1111.2	1118.8	1080	900
KE-132X	KE-132XI	1373	1286	1351.2	1358.8	1320	1140
KE-156X	KE-156XI	1613	1526	1591.2	1598.8	1560	1380

*High voltage alarm feedback(with I/O control)

Pulse AC ion bar(energy-saving & low power consumption)

KE-60H



Technical Parameters

類別/category	參數/parameters	類別/category	參數/parameters
Maintenance-Free Function	Discharge Needle Resistant to Crystallization	Power Supply Voltage	DC24V±10%
Ion Generation Method	Pulse Corona Discharge Method	Continuous Current	200~350 mA (Adaptive Balanced Current)
High-Voltage Module Electronic Structure	RDC Positive-Negative Combined Type	Input Power	Transient Maximum 12W
Voltage Application Method / Applied Voltage	Pulse AC Method / ±7000V	Operating Temperature & Humidity	0 to +40°C, 35% to 85% RH (Non-Condensing)
Ion Balance Residual Voltage	±30V / 1.0s (Air Pressure 0.4MPa, Set Distance 30cm)	Communication Function	485 Remote Communication and I/O High Low Level Output
Supports Nitrogen Purification	Supported	Target Area for Electrostatic Elimination Air-Saving Function	±1000V~ ±100V
Electrode Needle	Tungsten Needle	Electrostatic Elimination	Energy Efficiency Doubled (Traditional Nozzle: High Airflow, Pulse Nozzle: Low Airflow)
Main Body	ABS/PBT, etc.	Main Function	Temperature Abnormality Alarm, High Voltage Abnormality Alarm, Ion Deviation Alarm, Current Abnormality Alarm
Air Connection Interface	Rc1/8 (Dual-End Air Inlet / φ6 Air Tube Connector)		
Air Pressure	0.1MPa to 0.5MPa (Recommended Pressure: 0.4MPa)	Ion Balance Control Method	Dual-Ion Feedback Self-Balancing System (Automatically Adjusts Optimal Pulse Width Based on Environmental Temperature and Humidity, as well as Electrode Aging, to Regulate Ion Generation per Unit Time)

Features

- 01** Dual-Ion Automatic Ion Balance System, Ion Balance Accuracy: 0±35V

04 The nozzle is detachable for easy maintenance. It can monitor ion output reduction caused by dirty or worn electrodes and trigger a cleaning alert.
- 02** Designed with an energy-efficient structure, achieving high-performance electrostatic elimination with minimal airflow, significantly reducing operating costs.

05 Ion Display: This product is equipped with an ion balance display and a self-diagnosis function, providing a clear view of the positive and negative ion generation status.
- 03** This product adopts a pulse AC method, ensuring high ion concentration and long-term stable electrostatic elimination performance. Regular cleaning of the discharge needle is required.

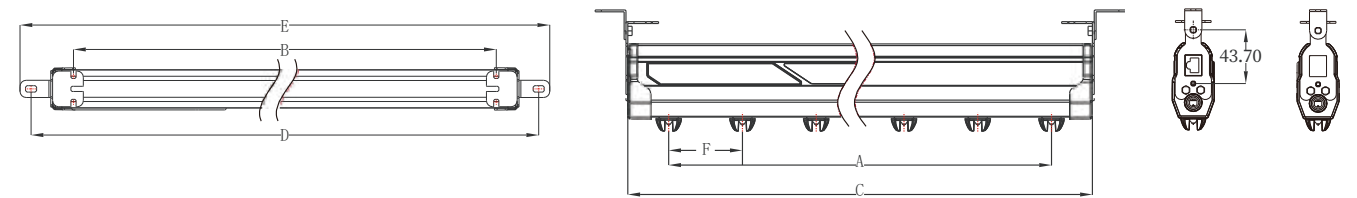
06 Equipped with a high-voltage normal operation indicator and an abnormal alarm indicator. If internal circuitry is damaged or abnormal discharge occurs, the high-voltage power supply is cut off.

Product Function



01	Main Control Unit	04	Nozzle (Discharge Needle)	08	Air Inlet
02	Left Side Panel of the Enclosure	05	Main Enclosure Body	09	Status/Ion Balance/Alarm Indicator
03	Right Side Panel of the Enclosure	06	Stainless Steel Counter Electrode Ring	10	FREQ.: Frequency Adjustment Knob
		07	Network Cable Interface (Communication & DC24V)	11	Infrared Signal Transceiver for Remote Control

Product Specification



Model	Number of discharge pins	Electrode spacing D	Mounting distance B	Static elimination E	Mounting distance C	Overall length A	Product size(mm)
KE-60H	9	F60x8=480	512.5	546.5	581.5±2	599.5	546.5*61.2*34.2
KE-84H	13	F60x12=720	752.5	786.5	821.5±2	839.5	786.5*61.2*34.2
KE-108H	17	F60x16=960	992.5	1026.5	1061.5±2	1079.5	1026.5*61.2*34.2
KE-132H	21	F60x20=1200	1232.5	1266.5	1301.5±2	1319.5	1266.5*61.2*34.2
KE-156H	25	F60x24=1440	1472.5	1506.5	1541.5±2	1559.5	1506.5*61.2*34.2
KE-180H	29	F60x28=1680	1712.5	1746.5	1781.5±2	1799.5	1746.5*61.2*34.2
KE-204H	33	F60x32=1920	1952.5	1986.5	2021.5±2	2039.5	1986.5*61.2*34.2
KE-228H	37	F60x36=2160	2192.5	2226.5	2261.5±2	2279.5	2226.5*61.2*34.2
KE-252H	41	F60x40=2400	2432.5	2466.5	2501.5±2	2519.5	2466.5*61.2*34.2
KE-300H	49	F60x48=2880	2912.5	2946.5	2981.5±2	2999.5	2946.5*61.2*34.2

**Ion bar without compressed
air supply**
KE-200E



Additional options required

Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Ozone	≤0.04ppm (distance 50mm)
Applied static voltage	7000V 50Hz	Ion balance	±50V
Working distance	100-300mm(with air) 30-80mm(without air)	Working temperature	32°F(0°C)~122°F(50°C)
Typical power	≤8W	Air volume	≤103.7L/min(0.4MPa air pressure)

Decay time			
Distance	30mm	60mm	100mm
Central	0.2s	0.3s	0.7s
*Decay time conform to ESD standard, tested from 5000v-500v.			
*Use ME268A charged plate meter.			
*Test data may differs according to the environment.			

Features

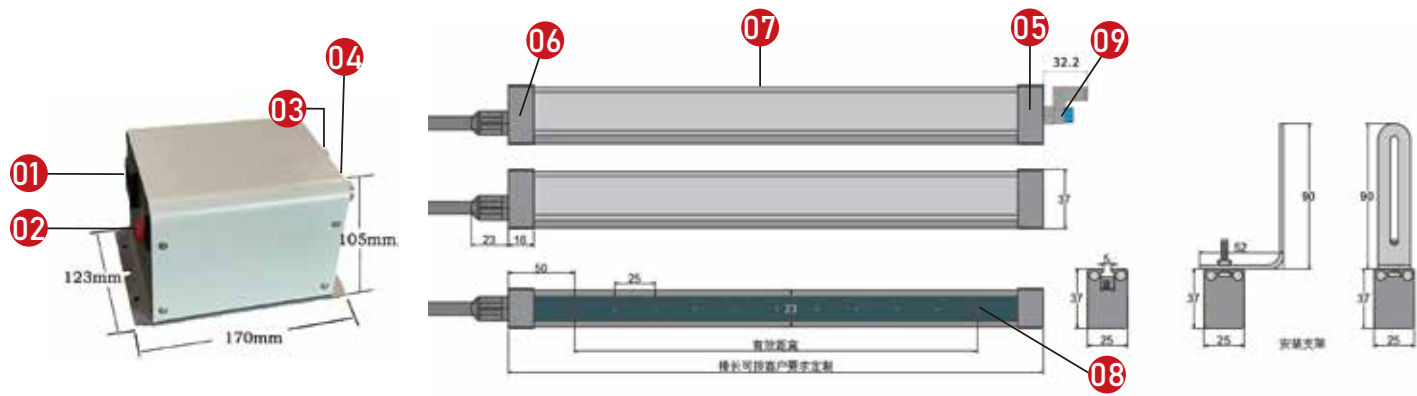
- 01 Tungsten alloy emitter, Anti electric shock design safety for use.

04 Special treatment on the electro de, better anti static performance.
- 02 Aluminum alloy body, elegant appearance.

05 Fully sealed structure, suitable for harsh environment, not easy break and long life time.
- 03 Excellent anti static performance, wide applications.

06 User-friendly design of the base, body chute design for easy installation.

Product Function



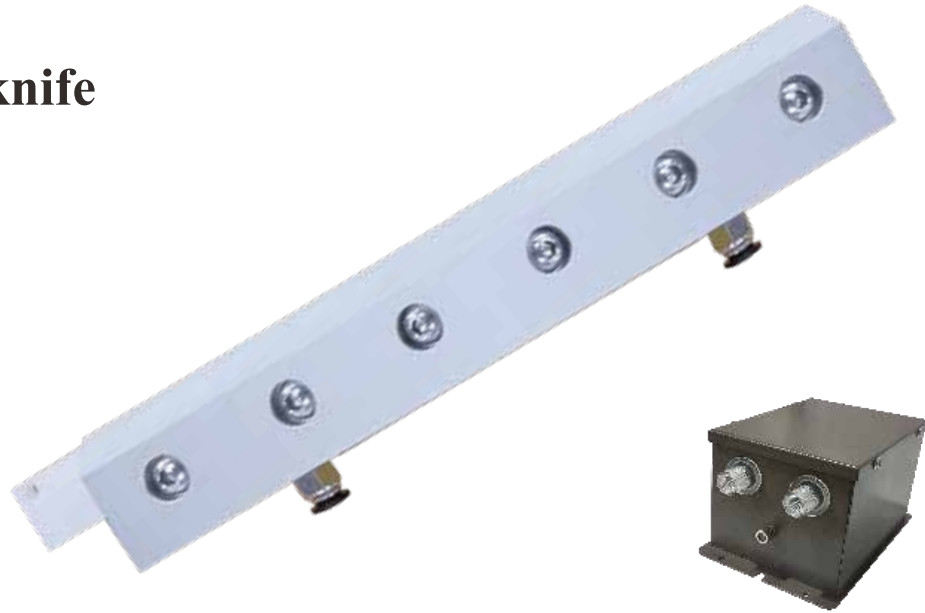
- | | | | | | |
|----|------------------|----|------------------------|----|-------------|
| 01 | Power cable port | 04 | H.V output port | 07 | Screw chute |
| 02 | Power switch | 05 | End cover | 08 | Emitter |
| 03 | H.V output port | 06 | H.V cable connect port | 09 | Air input |

Product Specification

Model	Overall length	Effective distance	Install distance (without air supply)	Install distance (with air supply)	Decay time	Ion balance
KE-200E	200mm	100mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-300E	300mm	200mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-400E	400mm	300mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-500E	500mm	400mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-600E	600mm	500mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-700E	700mm	600mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-800E	800mm	700mm	3~10cm	10~30cm	0.7s~1.0s	±50V
KE-900E	900mm	800mm	3~10cm	10~30cm	0.7s~1.0s	±50V

Ionizing air knife

KN-30XL



Additional options required

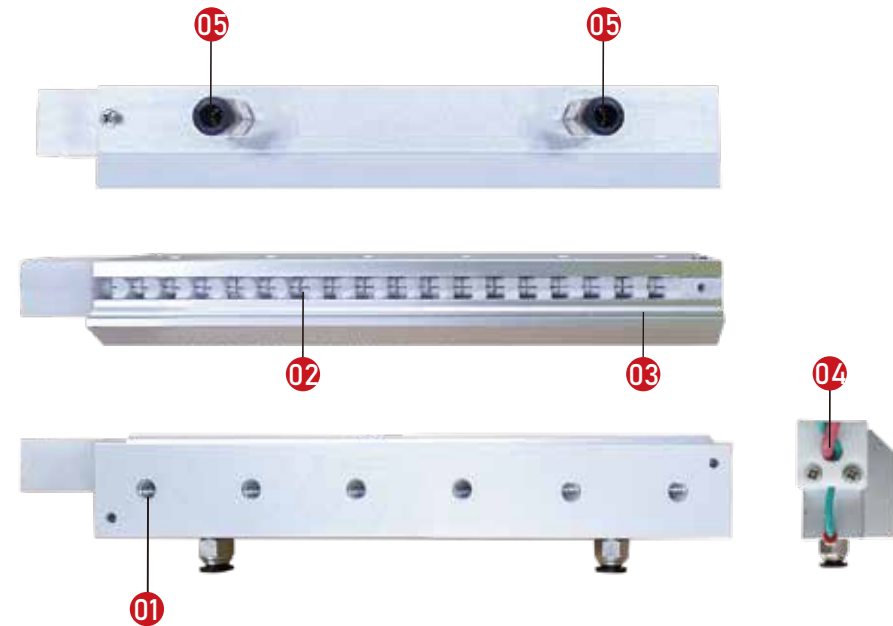
Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	AC220V	Ion balance	±80V
Ion generated way	Induction type	Decay time	≤1.5s (300mm 0.4MPa)
Power switch indicator	Running indicator	Applied air	Compressed air
Applied static voltage	Power frequency ±7000V	Environment humidity	15-75%RH
Typical power	≤8.2W	Air volume	≤214.1L/min

Features

- 01 Aluminum material, easy install and can be used in various working environment.
- 02 Strong and smooth air flow, compress adjustable and fast in static eliminating.
- 03 Maximum drainage 40 times of the environment air, air consumption 1/5 of traditional ionizing air knife.
- 04 HV ceramic component which is safety, remove the electro static and particle.
- 05 No wear parts inside, low maintenance cost and long life time.
- 06 Running stable and safe with low noise.

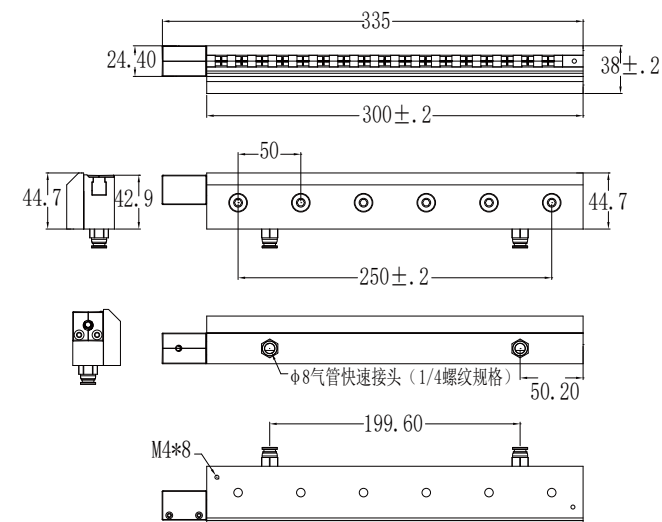
Product Function



- 01 Screw hole
- 02 HV output
- 03 Air outlet

- 04 HV cable port
- 05 Air inlet

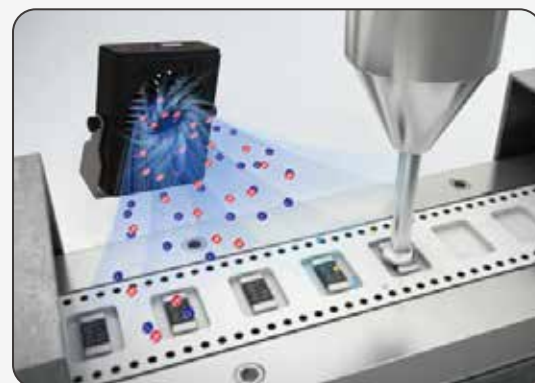
Product Specification



Model	Spring Nos	Dimension (Length can be customized)	HV cable location
KN-30XL	17	335*44.7*38	The left
KN-30XR	17	335*44.7*38	Right side
KN-40XL	23	435*44.7*38	The left
KN-40XR	23	435*44.7*38	Right side
KN-50XL	31	565*44.7*38	The left
KN-50XR	31	565*44.7*38	Right side
KN-60XL	36	635*44.7*38	The left
KN-60XR	36	635*44.7*38	Right side

Note: Suggest air supply from both two ends.

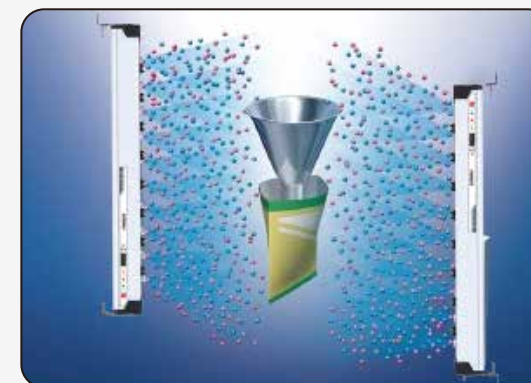
Static eliminating in wafer package and test



Static eliminating in integrated circuit



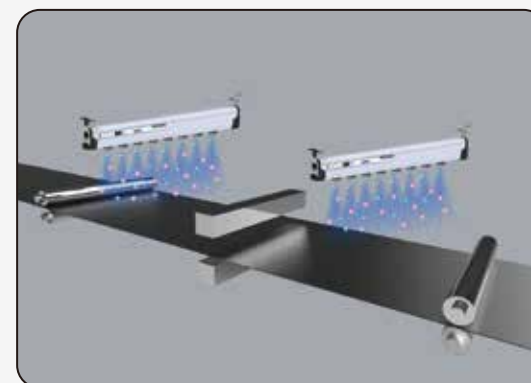
Static eliminating in plastic film packing



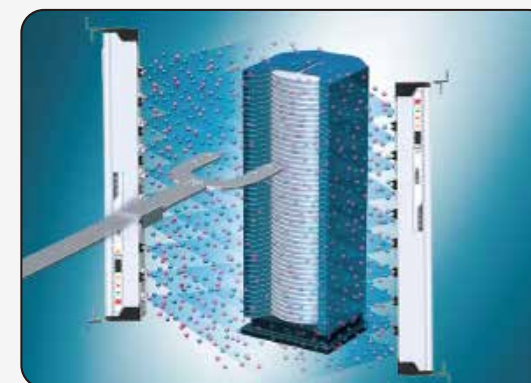
Static eliminating in PCB manufacturing



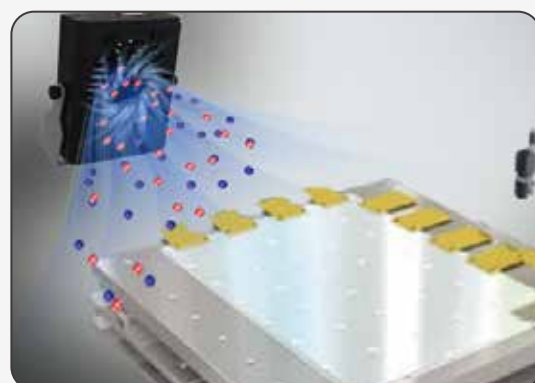
Static eliminating in film rolling



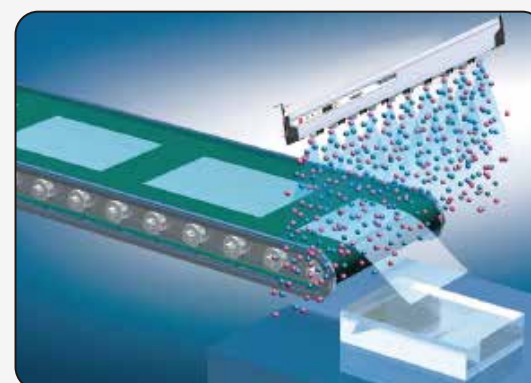
Static eliminating in wafer handling



Static eliminating on wafer surface



Static eliminating in film forming



Static eliminating in film process



**Working cases
for some of the
static elimina-
tors**



Low voltage and high frequency ionizing air nozzle

Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Model	KZ-10C/KZ-10A/KZ-10A-SY-HPJ	Ion generated way	High frequency AC type
Input voltage	DC24V	Ion balance	Automatic ion balance system 0±10V
Current	60mA	Ozone concentration(ppm)	≤0.04ppm(50mm,0.2MPa)
Airflow applied	Clear air(without water and oil)	Tube diameter	φ6
Temperature and humidity	0~40℃ 30~70%RH	Air pressure application range(MPa)	0.1~0.5MPa
Power consumption	≤4.85W	Gas flow	≤112.5L/min

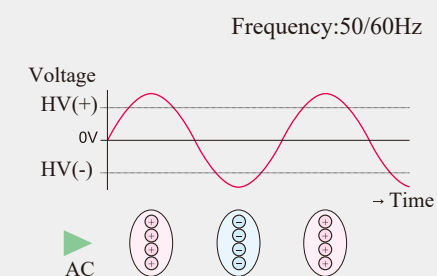
Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance	Note: 1.Firstly,be sure to connect compressed air,then turn on the power. 2.Ion balance measurement according to KESD measuring condition.Any questions please consultus. 3.The filter is optional. 4.The above test data is under specific temperature and humidity.
150mm	0.5s~0.8s	0±10V	
300mm	0.8s~1.0s		

Features

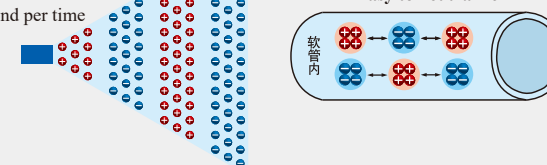
- 01** Adjustable ion balance system, and the ion balance can be reached within 0±10V.
- 02** Different nozzle heads optional depending on the applied situation.
- 03** Special tungsten alloy discharge needle for longer service time.
- 04** Built-in high voltage system, more safe and convenient.
- 05** Indicator for high voltage operating alarm of both normal and abnormal condition.
- 06** The inner wall of the housing is sprayed with metal painting to make the whole body grounding shield.

Traditional way(commercial frequency)



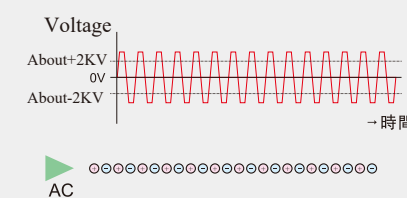
- Number of positive and negative charges 60Hz→60 Times per second 0.016 second per time

Ion status in hose and spray-head
Easy to neutralize



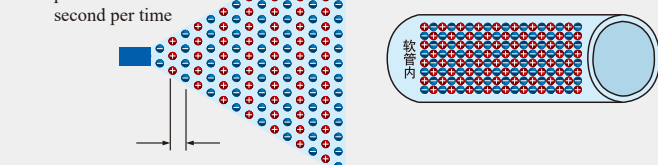
High-frequency mode

Frequency:68000Hz(68KHz)



- Number of positive and negative charges 60Hz→68000 Times per second 0.000015 second per time

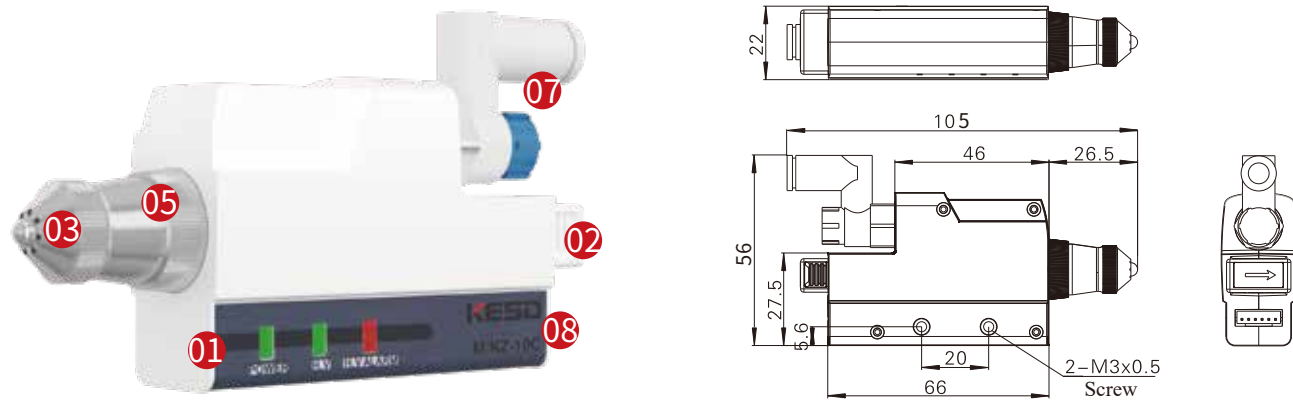
Ion status in hose and spray-head
Hard to neutralize



Charge balance well no the small area

Small size ionizing air nozzle KZ-10C

Dimension :105*56*22mm Weight :90g (including stand)



- 01 Indicators**
POWER/Power indicator(Green)
H.V/High voltage normal operation(Green)
H.V ALARM/High voltage abnormal operation(Red)
Alarm when HV system abnormal
- 02 High voltage box**
Inside the ceramic HV generator and tungsten alloy discharge needle.
- 03 Nozzle**
Variety of nozzle heads can be choose according to the anti static requirements and the applied situation.
(Performance parameters refer to P43 high frequency nozzle specification.)

- 04 Ceramic protection tube**
- 05 Nozzle holder**
- 06 Filter(optional)**
(Performance parameters refer to P48 filter specification.)
- 07 Regulation valve**
φ6,applied air pressure is about 0.05~0.5MPa.
- 08 Power socket**
- 09 Power cable**
- 10 2-M3(mounting hole)**

Small size ionizing air nozzle KZ-10A

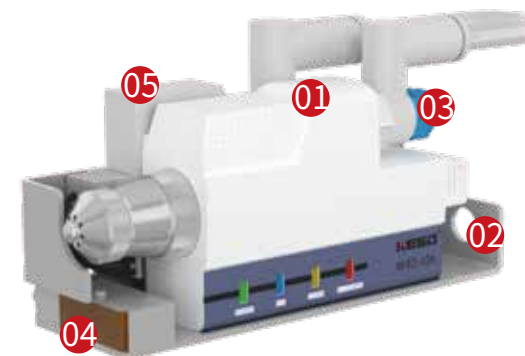
Dimension :105*56*22mm Weight :90g (including stand)



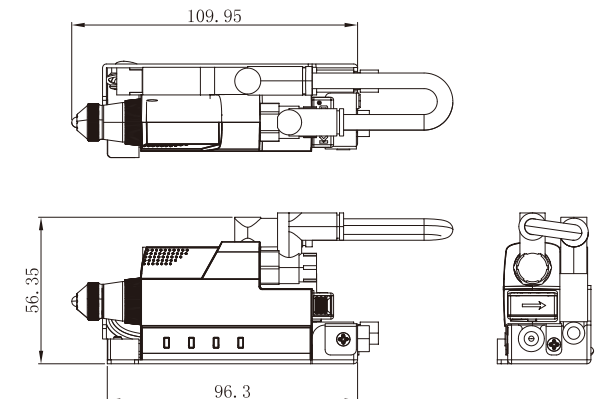
- 01 Indicators**
Power indicator(Green)
H.V/High voltage normal operation(Blue)
CLEAN/Cleaning reminder indicator(Yellow)
H.V ALARM/High voltage abnormal operation(Red)
Equipped with I/O control,high voltage alarm feedback
- 02 More details**
Performance parameters and product detail refer to KZ-10C

Sensor type ionizing air nozzle KZ-10A-SY-HPJ

More product detail refer to KZ-10A



- 01 Composed of KZ-10A and the sensor**
Parameters refer to KZ-10C or KZ-10A
- 02 Stand of KZ-10A**
To fix KZ-10A with photoelectric sensor.
- 03 Connection of air**

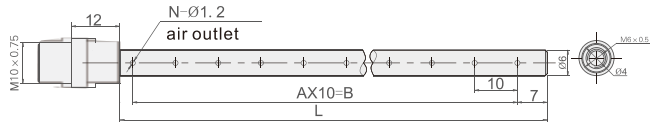


- 04 Photoelectric sensor**
Adjustable for sensing distance:≤300mm
- 05 Electromagnetic valve**
After the photoelectric sensor senses the product,the solenoid valve automatically turns on,with ion generated and air ventilated at the same time.

Accessories for ionizing air nozzle-Air curtain tube

Multiple choices,and the tubes can be spliced

Straight bar type air curtain tube



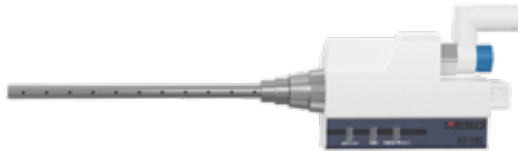
Note:

A=N-1

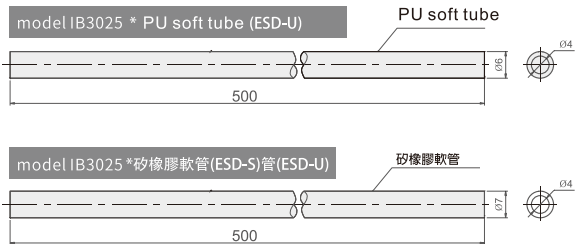
Tube length:

Model	A	B	L	N
Z-100L	10	100	110	11
Z-200L	20	200	210	21
Z-300L	30	300	310	31

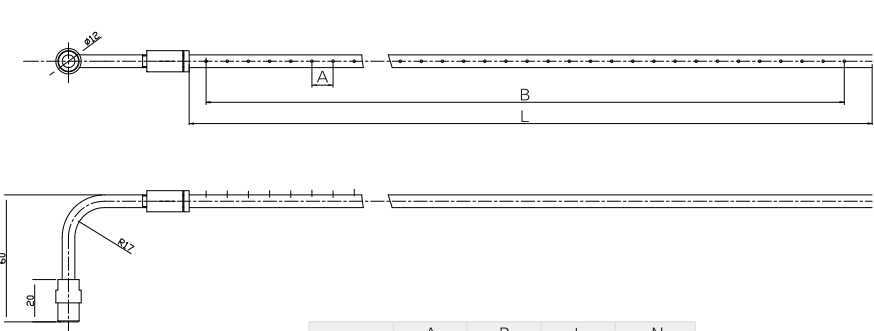
100mm~300mm Length can be customised



Plastic air curtain tube



L-type air curtain tube



	A	B	L	N
ZL-100L	10	100	127	11
ZL-200L	10	200	227	21
ZL-300L	10	300	327	31
ZL-400L	10	400	427	41
ZL-500L	10	500	527	51

Remark:in order to ensure the static elimination effect,the recommended length is below 300mm.



Accessories for ionizing air nozzle-nozzle head

Material/SUS304

Silencer spray head/H8148 Weight/7.75g

Shower spray head/H80012 Weight/5.0g

Standard spray head/H80013 Weight/4.8g



Trachea spray head/H80568 Weight/5.4g

Straight spray head/H80749 Weight/7.6g

Connect spray head/H80636 Weight/8.4g



Metal soft air curtain tube(can be bent and shaped)



Tube length:	Model	A/mm	L/mm
100mm~300mm	ZW-100L	78.5	100
	ZW-200L	178.5	200
Length can be customised	ZW-300L	278.5	300



Using high-frequency AC method, compressed air is used to eject positive ions and negative ions from the nozzle. With excellent ion balance, static elimination can be performed from pin point to large area. With a variety of nozzle heads, various work pieces can be applied in more filed.

Anti static, anti dust nozzle series use cases

Remove or insert silicon chips

It is possible to prevent the discharge when the silicon wafer is taken out from the wafer cassette and to prevent the silicon wafer after being placed in the wafer cassette from being sucked bay the robot arm.



Remove the static charge from the parts feeder when the parts are loaded

Parts of the feeder in the delivery of parts, due to friction and other parts of the static electricity, resulting in parts attached to the feeder surface. By using the static electricity, it is possible to prevent the adhesion of the parts caused by static electricity to the short supply.



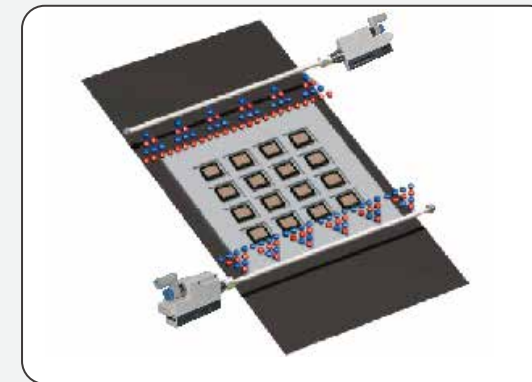
Remove the static electricity from the silicon wafer

Can prevent the silicon chip surface adsorption of dust, and to prevent damage to the internal lattice.



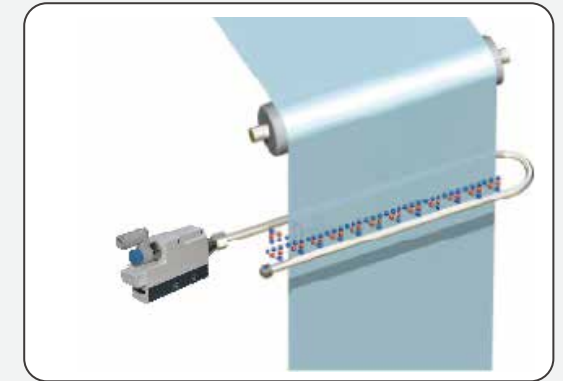
Remove static electricity from the device of handling tray

By using straight type air tube can quickly remove large amounts of dust and static electricity from the pallet.



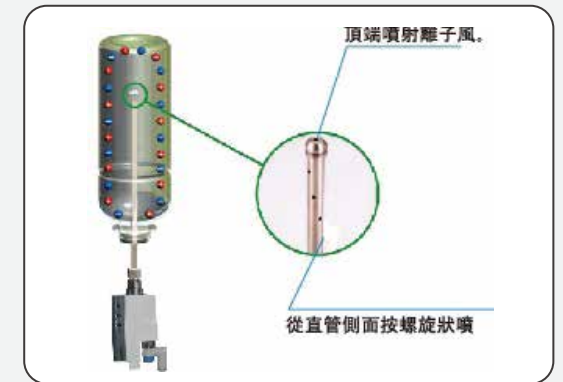
Remove the static electricity from film for packaging

In a narrow place, you can use U-tube nozzle to remove static electricity no both sides of the film.



Remove static and dust from the inside of the container

By using straight type air tube can remove the static electricity and dust from inside of the container.



Low voltage and high frequency ionizing air gun

KG-5



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Input voltage	DC24V	Ion generation mode	High frequency AC type/68KHz
Output voltage	2200V	Ion balance	0±15V
Airflow applied	Clear air(without water and oil)	Ozone concentration(ppm)	≤0.04ppm(50mm,0.2MPa)
Air pressure application range(MPa)	0.1~0.5MPa	Tube diameter	φ6
Temperature and humidity	0~40℃ 30~70%RH	Filter precision	40~60μm
Power consumption	≤2.55W	Gas flow	≤120.6L/min(0.4MPa air pressure)

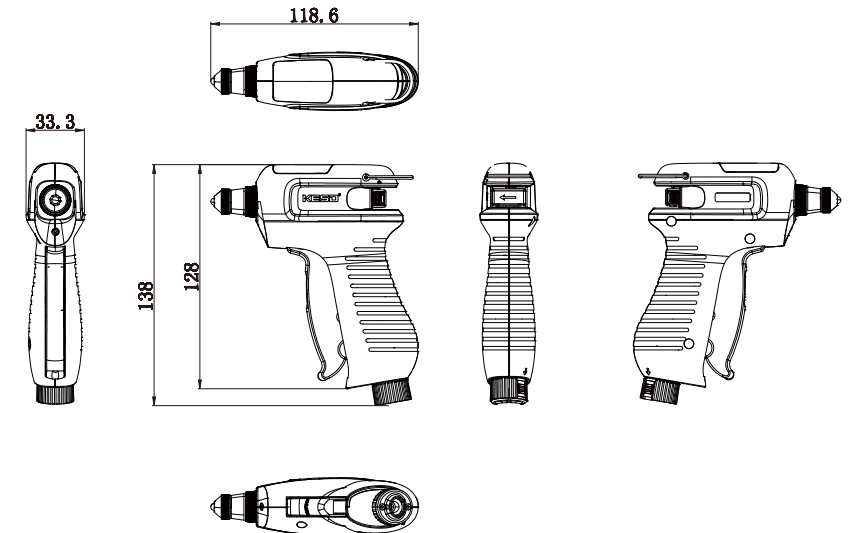
Test conditions, Operating voltage: DC24V Test voltage: ±1000V~±100V Environmental temperature: 23°C±2°C

Distance	Decay time	Ion balance	Remark: The above data is in specific environmental conditions.
150mm	0.5s~0.6s	0±15V	
300mm	0.8s~0.9s		

Features

- 01 Small in size,flexible and safe to use. The handle part is more ergonomic, simple and flexible to operate.
- 02 Static electricity can be removed from the point to the large area.
- 03 Built-in high pressure system to automatically adjust ion balance. The ion balance can reach 0±15V.
- 04 Built-in filter to improve the purity of compressed air and reduce noise.
- 05 Piston air flue design with large air volume,to get a fast decay time.
- 06 A variety of different air nozzle fittings are available,which are widely used in the different ESD fields.

Product Function



- 01 **Spray head**
Different spray heads optional(refer to nozzle head specification)
- 02 **High voltage module**
Spray needle/high voltage generator(refer to nozzle specification)
- 03 **Power**
Fastener equipped on the connector which is not easy to break off.
- 04 **Indicator**
Power indicator
H.V normal indicator
Clean reminder
H.V alarm
- 05 **Infrared laser**
Easy to find the positioning of the object.
- 06 **Pothead**
- 07 **Trigger**
Press the trigger to release the ions.

Static sensor

KS-15CH



Technical Parameters

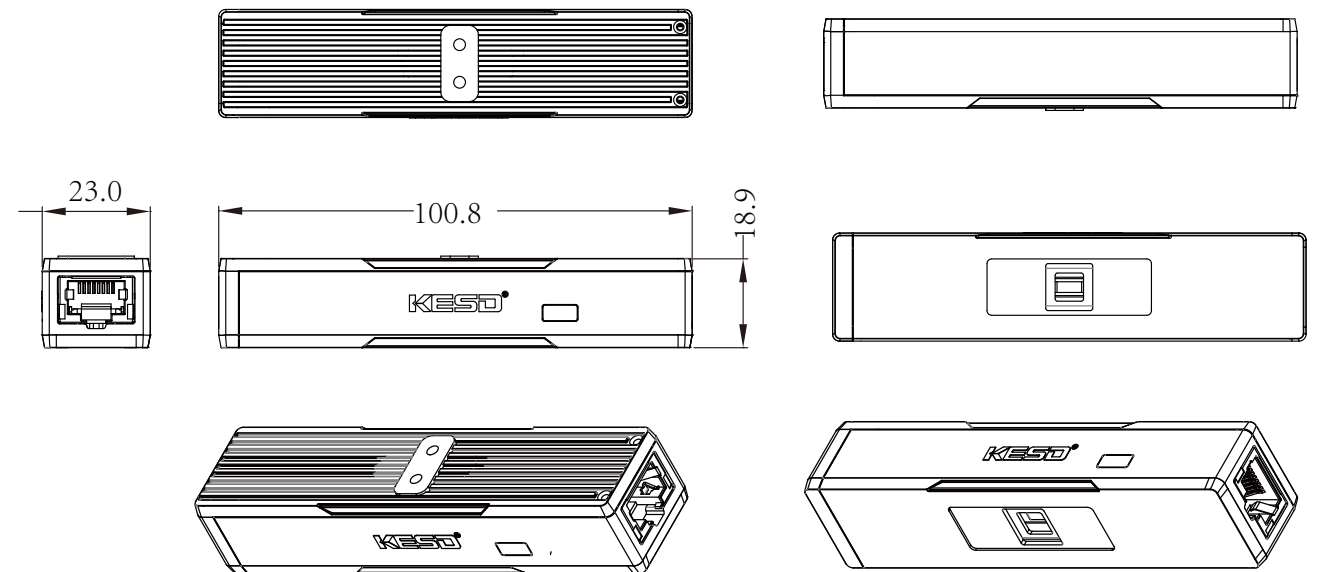
類別/Category	參數/Parameters
Input voltage	DC12V~24V
Power consumption	0.6W
Operating ambienttemperature	5°C~55°C
Working humidity	0~95%RH
Signal output	RS485
Communication test distance	<100m
Status update time	1S (Internal update time<50ms)
Switch on test time	5S
Alarm indicator	LED:First level(yellow) Second level(orange) Third level(red) Buzzer alarm
Test range	Voltage:±20KV(CPM interval 0.2m)
Definition	Voltage: 1V
Accuracy	Superior 5% (Distance from ion equipment greater then 60cm, avoid direct blowing)
Test distance	Cover 1~15cm, can be extended according to the requirement
Effective test area	Cover φ15~80cm, can be extended according to the requirement

*Please contact with our sales for any updates.

Features

- 01 Dual network interface convenient for wiring.
- 02 Test distance stable high precision and resolution.
- 03 High sensitive and low power consumption vibrating capacitor tech.
- 04 Non-contact detect to realise test and alarm.
- 05 Single wire for connecting power and status transmission.
- 06 Real time status transmit to PC and adjust the parameters on PC.

Product Structure



Weight:48.1g (with installer)

RJ45 port			
	1	Orange/White	RS485_A
	2	Orange	RS485_B
	3	Green/White	/
	4、5	Blue,Blue/White	POWER+
	6	Green	/
	7、8	Brown/White,Brown	POWER-
	CASE	/	GND

Fan filter unit

AC FFU



Technical Parameters

FFU Dimension(mm)	575*575*225mm	1175*575*225mm	1175*1175*225mm
Filter dimension(mm)	570*570*69mm	1170*570*69mm	1170*1170*69mm
Air volume(m³/h)	500m³/h±20%	1080m³/h±20%	2200m³/h±20%
Fan speed (m/s)	0.45m/s±20%	0.45m/s±20%	0.45m/s±20%
Noise(db)	45~58db	58~65db	58~65db
Group control mode	RS485 communication (optional)		
Impeller	Aluminum alloy		
Speed control	3 levels control		
Power voltage	AC220V/50Hz		
Typical powe(W)	140W~400W		
Filter efficiency	99.995%@0.3μm H14 (Filter can be customized)		
Housing material	304 Wire drawing stainless steel / 304 Mirror face stainless steel Aluminum-Zinc coated sheet / Cold-rolled sheet painting		

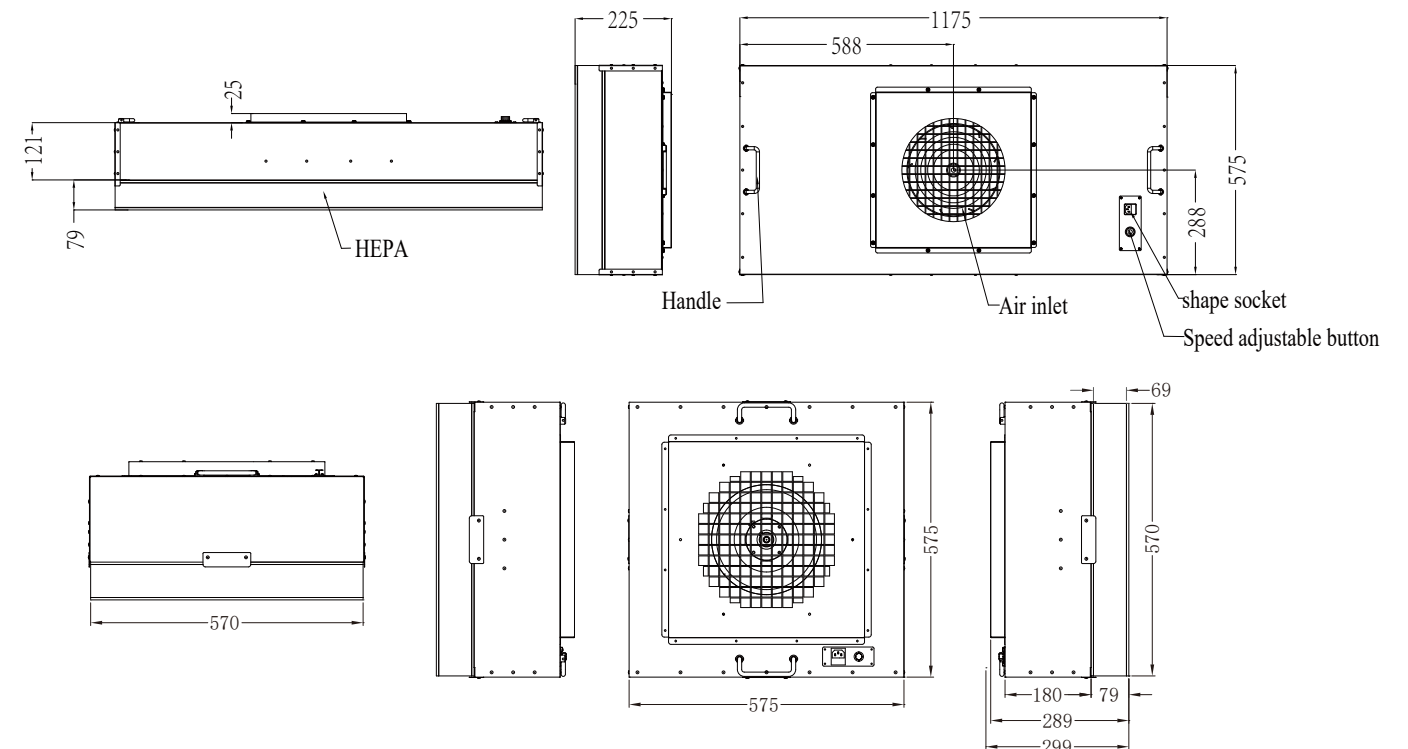
Remark: Can be customized according to the request

Application: Clean rooms, working table of clean rooms, Clean wardrobe assembly type air purifier

Features

- 01 Excellent material housing can be customized, pure copper motor, low noise and slight vibration.
- 02 Dust removal and purification function.
- 03 3 levels fan speed switch, convenient and easy operation.
- 04 HEPA filter, efficiency can be 99.995% @0.3um particle.
- 05 Safety protective mesh, protect from contacting the fan blade.
- 06 Support RS485 network group control.(optional)

Product Structure



Applications



Fan filter unit

AC FFU(Group control)



Technical Parameters

FFU Dimension(mm)	575*575*225mm	1175*575*225mm	1175*1175*225mm
Filter dimension(mm)	570*570*69mm	1170*570*69mm	1170*1170*69mm
Air volume(m³/h)	500m³/h±20%	1080m³/h±20%	2200m³/h±20%
Fan speed m/s(m/s)	0.45m/s±20%	0.45m/s±20%	0.45m/s±20%
Noise(db)	45~58db	58~65db	58~65db
Group control mode	RS485 communication (standard configuration)		
Impeller	Aluminum alloy		
Speed control	3 levels control		
Power voltage	AC220V/50Hz		
Typical power(W)	140W~400W		
Filter efficiency	99.995%@0.3μm H14 (Filter can be customized)		
Housing material	304 Wire drawing stainless steel / 304 Mirror face stainless steel Aluminum-Zinc coated sheet / Cold-rolled sheet painting		

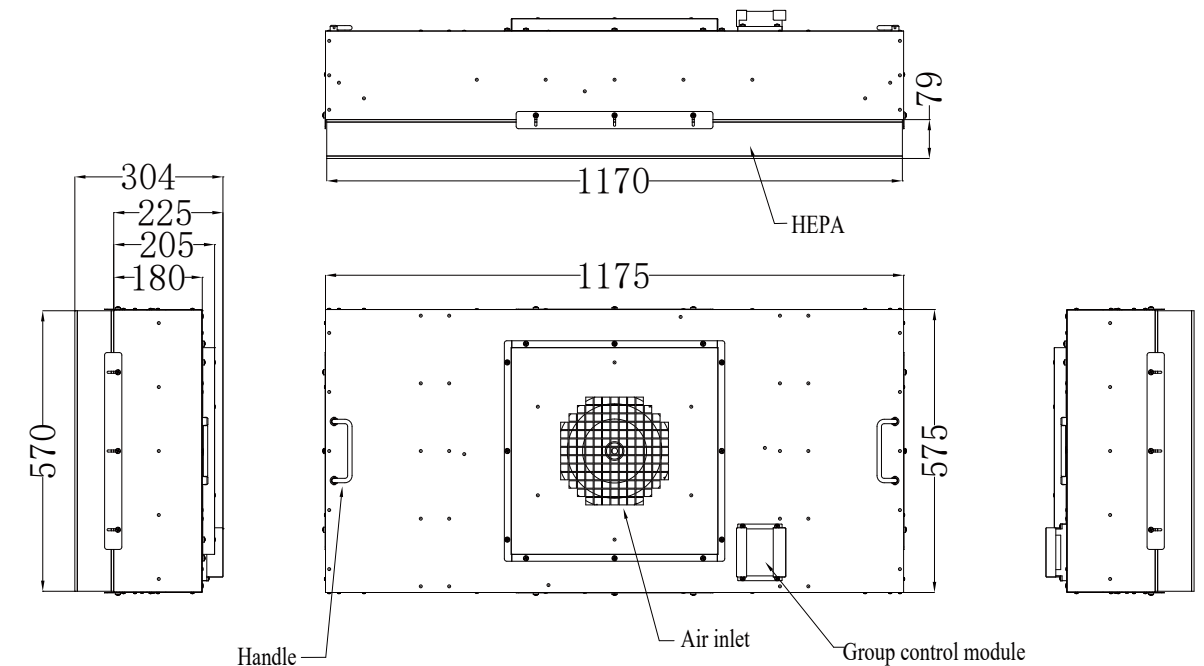
Remark: Can be customized according to the request

Application: Clean rooms, working table of clean rooms, Clean wardrobe assembly type air purifier

Features

- 01 Excellent material housing can be customized, pure copper motor, low noise and slight vibration.
- 02 Dust removal and purification function.
- 03 3 levels fan speed switch, convenient and easy operation.
- 04 HEPA filter, efficiency can be 99.995% @0.3um particle.
- 05 Safety protective mesh, protect from contacting the fan blade.
- 06 Support RS485 network group control.(standard)

Product Structure



Applications



Fan filter unit

DC FFU(Group control)



Technical Parameters

FFU Dimension(mm)	575*575*225mm	1175*575*225mm	1175*1175*225mm
Filter dimension(mm)	570*570*69mm	1170*570*69mm	1170*1170*69mm
Air volume(m³/h)	500m³/h±20%	1080m³/h±20%	2200m³/h±20%
Fan speed m/s(m/s)	0.45m/s±20%	0.45m/s±20%	0.45m/s±20%
Noise(db)	45~58db	58~65db	58~65db
Group control mode	RS485 communication (standard configuration)		
Impeller	Aluminum alloy		
Speed control	Stepless speed regulation/Controller speed regulation		
Power voltage	AC220V/50Hz		
Typical power(W)	65W~250W		
Filter efficiency	99.995%@0.3µm H14 (Filter can be customized)		
Housing material	304 Wire drawing stainless steel / 304 Mirror face stainless steel Aluminum-Zinc coated sheet / Cold-rolled sheet painting		

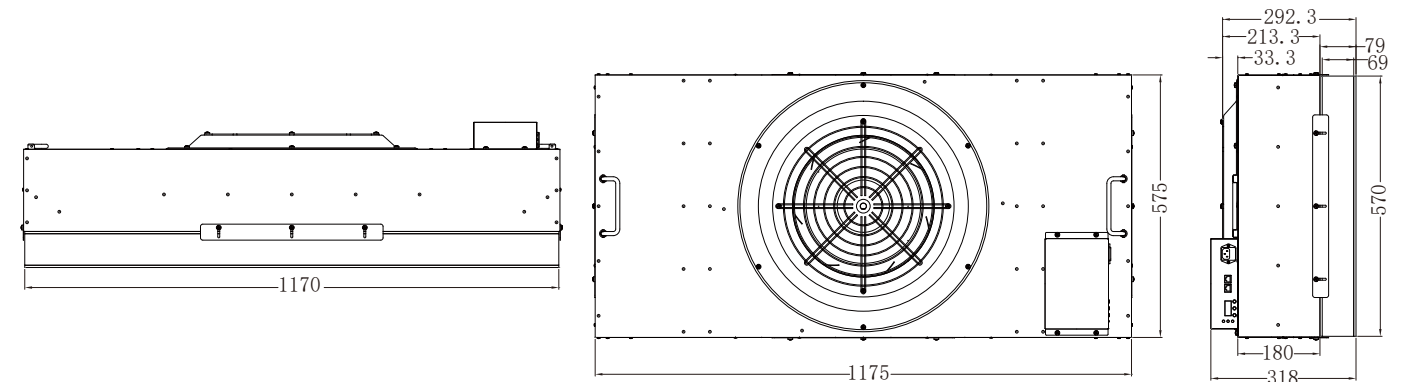
Remark: Can be customized according to the request

Application: Clean rooms, working table of clean rooms, Clean wardrobe assembly type air purifier

Features

- 01 Excellent material housing can be customized, pure copper motor, low noise and slight vibration.
- 02 Dust removal and purification function.
- 03 Safety protective mesh, protect from contacting the fan blade.
- 04 HEPA filter, efficiency can be 99.995% @0.3um particle.
- 05 Stepless speed regulation/Controller speed regulation, convenient and easy operation.
- 06 Support RS485 network group control.(standard)

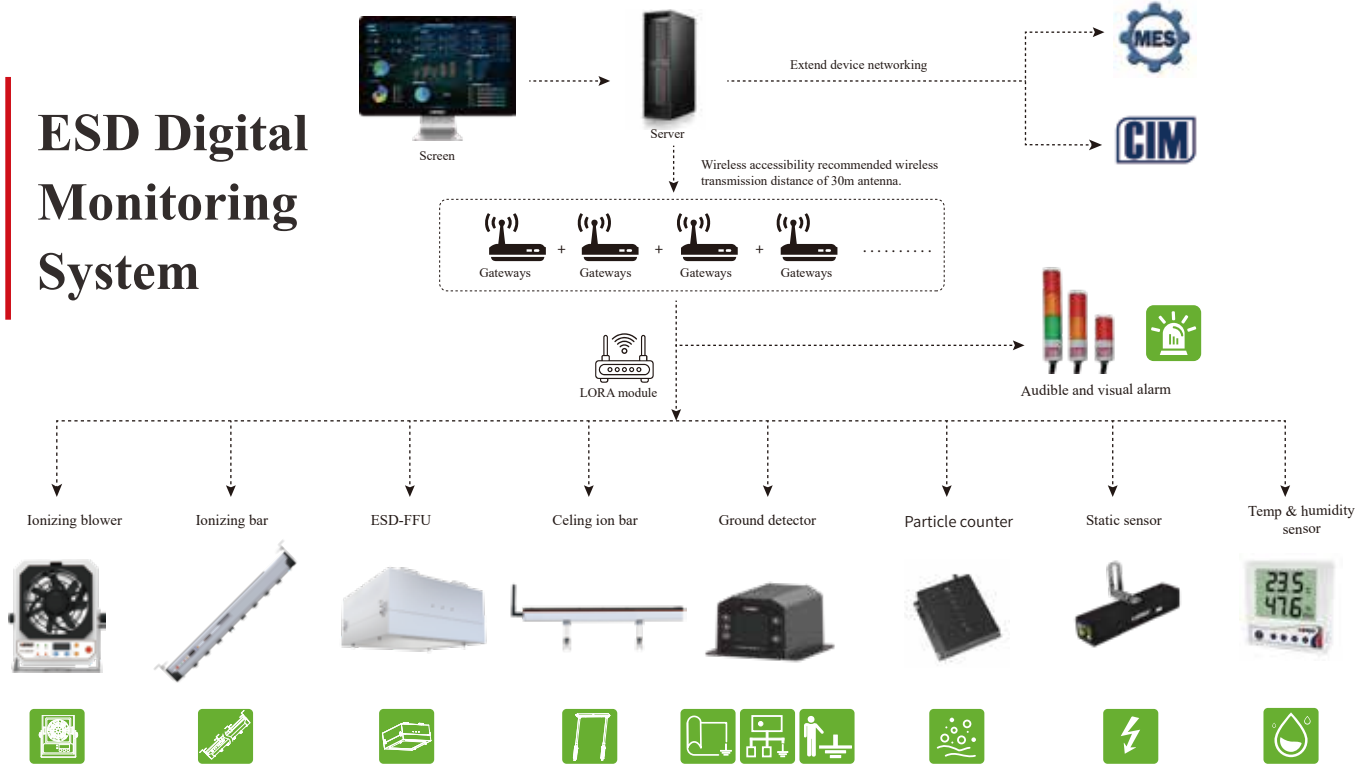
Product Structure



Applications



ESD Digital Monitoring System



Component



- 01 Ranking for stable running devices
- 02 Stability ranking for every site device
- 03 Device survey,statistics status of all devices
- 04 Visual display device distribution
- 05 Device data summarization:Normal display,stand by,alarm and missing

Gateway

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Transmission distance	500m	Humidity	5~95%(no condenseing)
Emission power	≤500mW	Working temp	-25°C~65°C
Typical power	≤2W	Transmission speed	≤5Kbps
Power supply	DC 12V	Weight	218g

LoRa wireless module

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Emission power	≤500mW	Standard frequency	470~510MHZ
Typical power	≤1W	Indicator	Upper indicator,green color, status indicator(flicker,green)
Transmission speed	≤5Kbps	Interface	serial port

Note:Need to connect RS485 LORA wireless module.

PC/Server

- ① Can connect and monitor lots of static eliminators.
- ② Recommend main computer:Configure CPU processor, 3.5GHZ;internal storage 32GB;SSD 500G.

Function(Management platform)

- ① Account set
Add/delete account,and set password for each account.
- ② Batch import device for saving time
- ③Device positioning set,multistage setting
- ④Message report
Can choose internal email report
- ⑤Statistics data and history data inquire
All devices running status,alarm message inquire,all data saved in the database
(Any time message can be saved if the hard disk capacity in big enough)
- ⑥Backstage can issue function of devices
Fan speed adjustment,clean button,clean time set,power on/off,wrist strap,matting,device grounding, particle detect,static detect,temp and humidity sent.

Screen

- ① Display device running condition,and mark with different color(Green mean normal,red means abnormal)
- ② Abnormal reason can be inquired(all running conditions can be inquired from pull down button)
- ③Scrolling display for recent abnormal
- ④Numbers of the statu devices(Noral device statistics and abnormal device statistics)
- ⑤Centralized display for different areas,choose display area according to the request

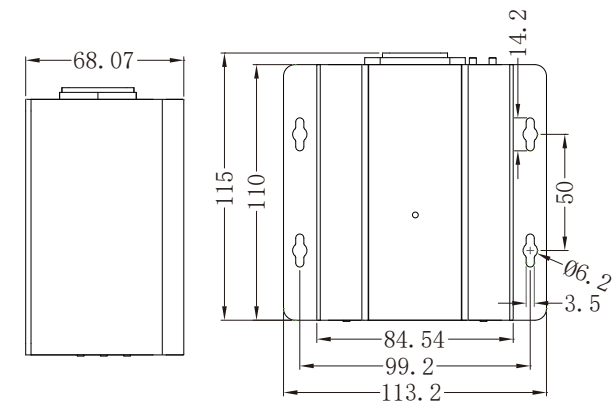
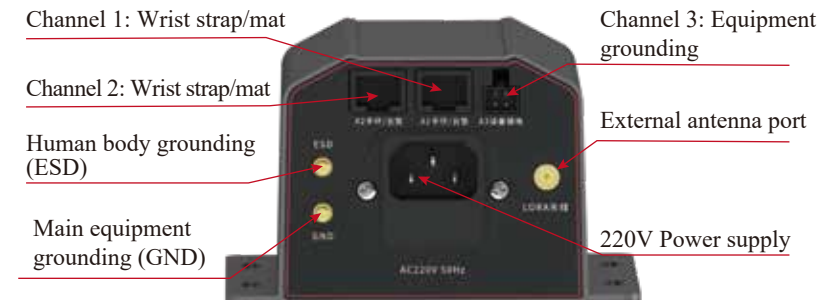
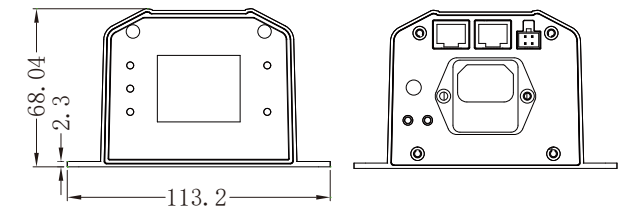
Multiport Grounding Alarm

KL-10



Wrist strap cable connect box KL-02JD

Product Function



Technical Parameters

類別/Category	參數/Parameters	類別/Category	參數/Parameters
Environment temp and humidity	0~60°C 0~90%	Grounding resistance test range	Wrist strap+mat (0-99.99MΩ)+equipment (0-99.99Ω)
Test channel port	RJ45 (2pcs) + 43045-4P(1pcs)	Test precision	3%
Test channel type	ESD wrist strap+mat+equipment	Alarm type	Buzzer
Voltage	AC 110 - 230 V 50Hz	Wireless communication type	LORA
Typical power	< 3 W	Support IR type	Diffuse reflection IR optoelectronic switch

Features

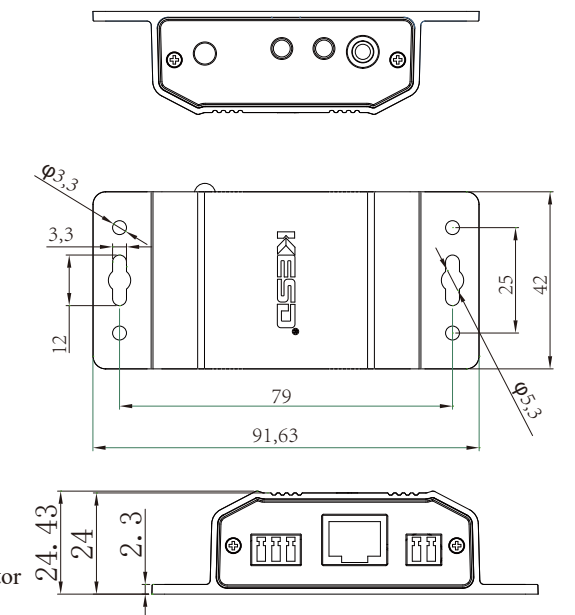
- 01 Full color LCD dot matrix screen, wireless monitoring function.
- 02 Data intensively collect function, can set and amend alarm parameter.
- 03 High test precision, can show the real-time resistance value of current tested equipment/human body/mat.
- 04 Adjustable of the alarm range, real-time display, meters grounding function.
- 05 Optional support of infrared sensor to human body, can detect the working status of the workers.
- 06 When exceed the settled alarm range, it will flicker on the screen and audio alarm.



Wrist strap single port (3.5mm earphone port)

Dual return circuit wrist strap double port(4mm)

Wrist strap status indicator



Question And Answer On Basic Knowledge Of Electrostatic Electricity

Q: How does static generate ?

A:

There are two common causes of static in daily life.
1.The object friction with each other (friction static);
2.The separation of objects in close contact with each other (separation of static).

Q: What is the difference between friction static generation and contact static generation?

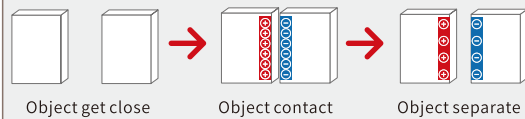
A:

Because the general object in the moment of contact with static electricity, therefore, by the friction static generation is also a kind of contact static generation.
However, due to the friction area increase and surface temperature rise, so friction static will be more greater than contact static generation

Q: How is contact electricity generation ?

A:

Contact electricity generation is the phenomenon that two objects are close to each other and then contact to make the object positive or negative. As shown, the contact causes a difference in the energy of the surface of each object. The electrons (negatively charged) are transferred from the nucleus of one surface to be positively charged, while the other is negatively charged by the electrons to generate static electricity.



Q: What is separate electricity generation?

A:

When separating objects that are in contact with each other, such as tearing off the tape, a strong charging phenomenon occurs. This phenomenon is the same as the principle of "contact electricity generation", but since the object is generated by peeling (separation), it is generally called "Separation of electricity generation." When the separation generates electricity, the closer the contact is, the more static electricity is generated. In addition, the amount of charge depends on the separation speed. If the separation speed is slow, it will continue to produce small-scale electrostatic discharge, and the charge amount will be relatively small. If the separation speed is fast, the electrostatic discharge will be reduced and the charge amount will be relatively large.

Q: How much static we can feel?

A:

The human body can feel the static is generally in the $\pm 3000V$ (+3 kv) above the reference to the table below a pair of human shock and voltage relationship.

abstract the Japan Industrial Safety Research Institute issued the static electricity safety guidance

Electrostatic voltage (kv)	Electric shock level
1.0	1.0 No feeling
2.0	2.0 Fingers feel, but no pain
3.0	3.0 Acupuncture-like tingling
5.0	5.0 Pain in the palms and forearms
6.0	6.0 The fingers have a strong pain and the upper arm is heavy
7.0	7.0 Strong pain and numbness in fingers and palms
8.0	8.0 Have a numb feeling in the palms and forearms
9.0	9.0 The wrist has a strong pain and the hand feels paralyzed
10.0	10.0 The whole arm has a pain and feels a current through
11.0	11.0 Finger numbness is strong and the whole arm has a strong electric shock
12.0	12.0 The whole arm feels badly hit

Q: About the charged sequence ?

A:

The charged sequence is arranged according to the difficulty of positive or negative power of the materials of various substances. It is used to judge what kind of electricity is brought into contact with the material. In a charged sequence, the farther it is generally arranged, the greater the charge. (The same material in the live sequence will not electrify when it touches, but in real life, the same material contact will also electrify. However, the charge is smaller than the contact with different materials in the live sequence)

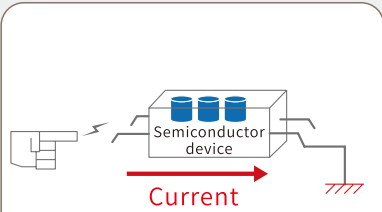
01 When glass and cotton rub
Glass: positively charged
Cotton: negatively charged

02 When cotton and Teflon rub
Cotton: positively charged
Teflon: negatively charged

Q: What are the objects that may cause electrostatic damage?

A:

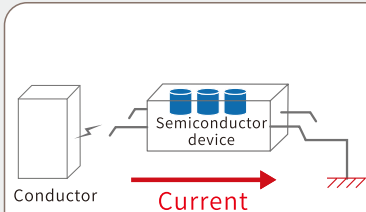
Electrostatic damage to semiconductor devices can be caused by the presence of an operator, device, and the semiconductor parts itself on the charged object. These causes can be divided into three models: 'Human Body Model' (HBM) 'Machine Model' (MM) and 'Charged Device Model' (CDM).



When a worker with static electricity inadvertently approaches a semiconductor device, an electrostatic discharge occurs between the device terminal and the worker's finger. (The workers walk around and perform various operations, so they are easily charged.)

Human body model

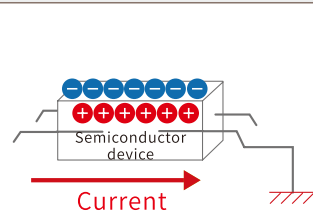
(HBM: Electrostatic migration to the semiconductor device)
When an electrostatic ally charged human body contacts the wire of the device, the device is charged by the discharge that occurs. When the device is grounded, the discharge current flows through the circuit instantaneously, causing an electrostatic shock. wear. When the external object is a human body, the human body will release a large amount of electric charge, and the speed of the discharge energy is greater than the case where the external object is an insulator. Similarly, an electrostatic ally charged external object is discharged to a semiconductor device, and a model in which the external object is a human marrow is called a "human body model (HBM)".



When the semiconductor device contacts a static-charged conductor, the device is charged. When this device is grounded, electrostatic breakdown can occur.

Machine model

(MM: The electrostatic migration machine is released to the semiconductor device)
The equivalent circuit of the machine model is similar to the human body model, but the equivalent capacitance (cb) is 200p equivalent resistance is 0, the difference between the machine model and the human body model is large, and the storage capacitance of the machine on the real gap is large, but For the unification of the description, 200f is taken because the machine model has no resistance when it is discharged, and the storage capacitance is larger than the human marrow model, and the machine model is much larger than the human body model.



The internal circuit with the semiconductor device is charged, and when the terminal of the device is close to the nearby conductor, discharge occurs, and the internal circuit is damaged by electrostatic breakdown.

Human body model

(CDM: Electrostatic discharge depends on the charge of the semi-semiconductor device itself)
Even if sufficient measures are taken to prevent HBM and MM electrostatic discharge (ESD), ESD occurs during the manufacturing process of the semiconductor device, and thus there are other possible causes of breakdown. This phenomenon is called CDM. In the CDM, the surface of the device is triboelectrically charged, and due to the presence of an external electric field, electrostatic induction occurs between the conductors (such as the circuit wires). When the wire is grounded, the internal electric field changes abruptly and the discharge current will flow through the circuit causing electrostatic breakdown.



Committed to high-tech research and development

This instruction is applicable to the general situation. If you have any doubts, please consult KESD before you use it. For the convenience of product upgrade, the upgrade and change of the latter are subject to change without notice.