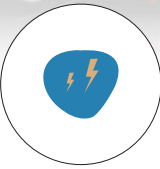
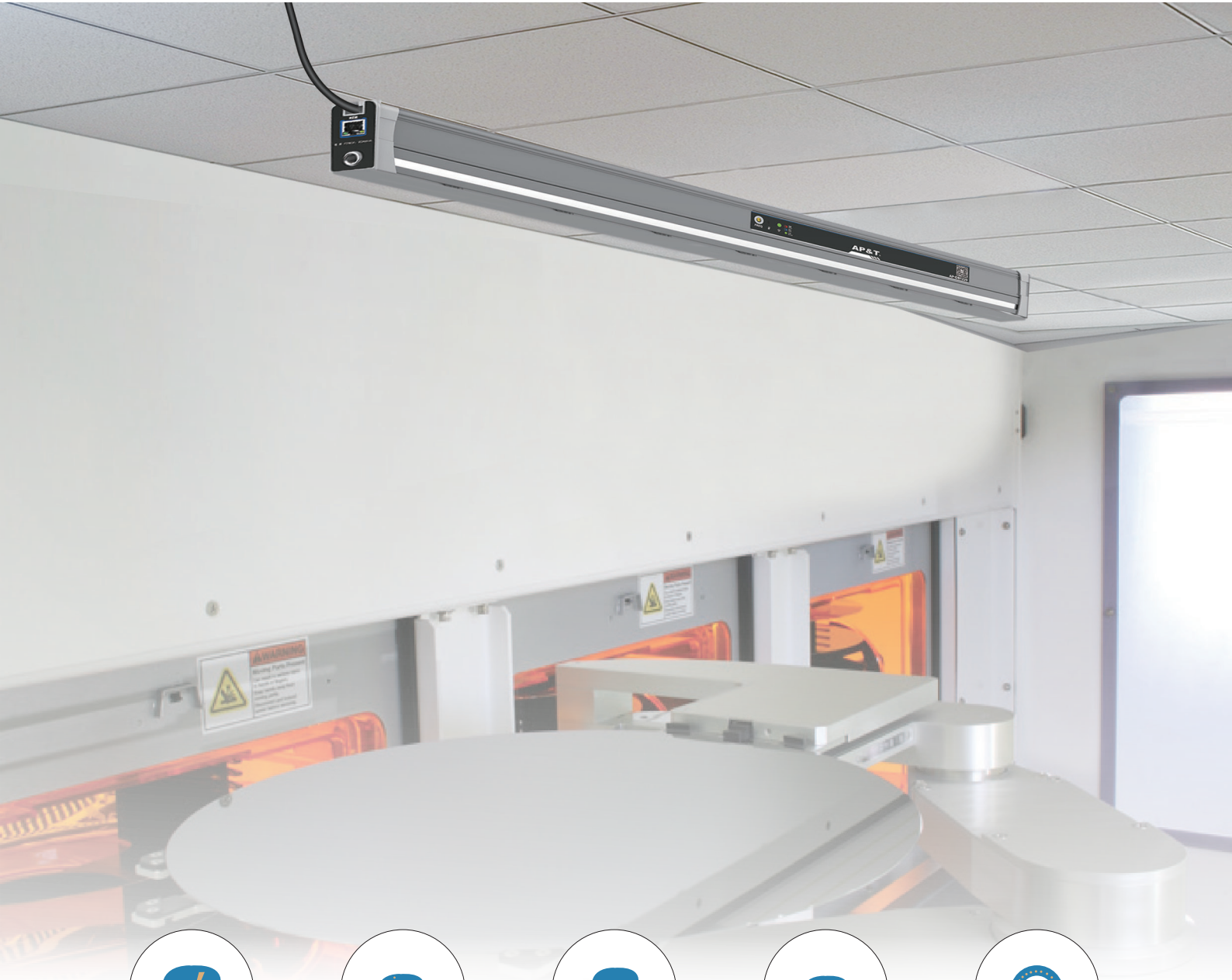


# Laminar Flow Ion Bar

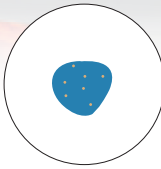


# Suitable for electronics, optoelectronics, semiconductor and other industries

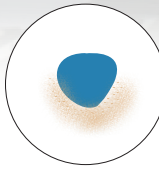
Effectively solve the problems caused by static electricity



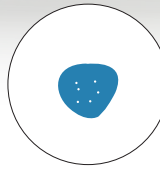
Static removal



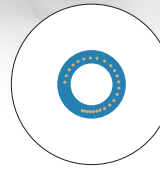
Prevent adhesion of objects



Prevent material splash



Prevent static electricity



Prevent blockage of feeder

# Intelligent Remote Control

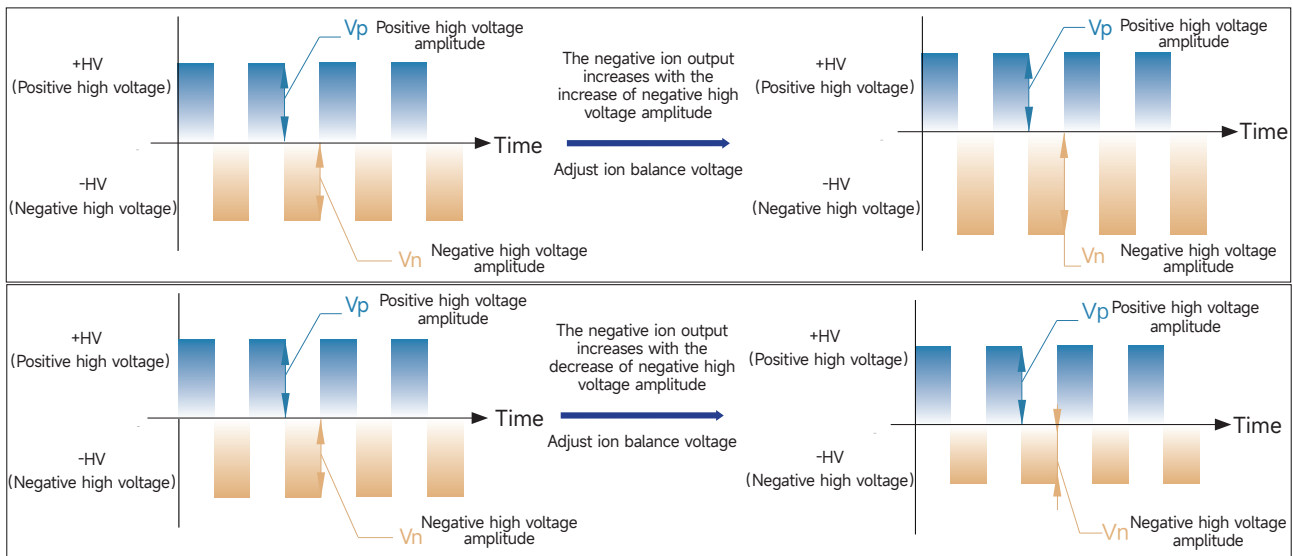
Adjustable ion balance, output frequency

## ◆ Product Profile

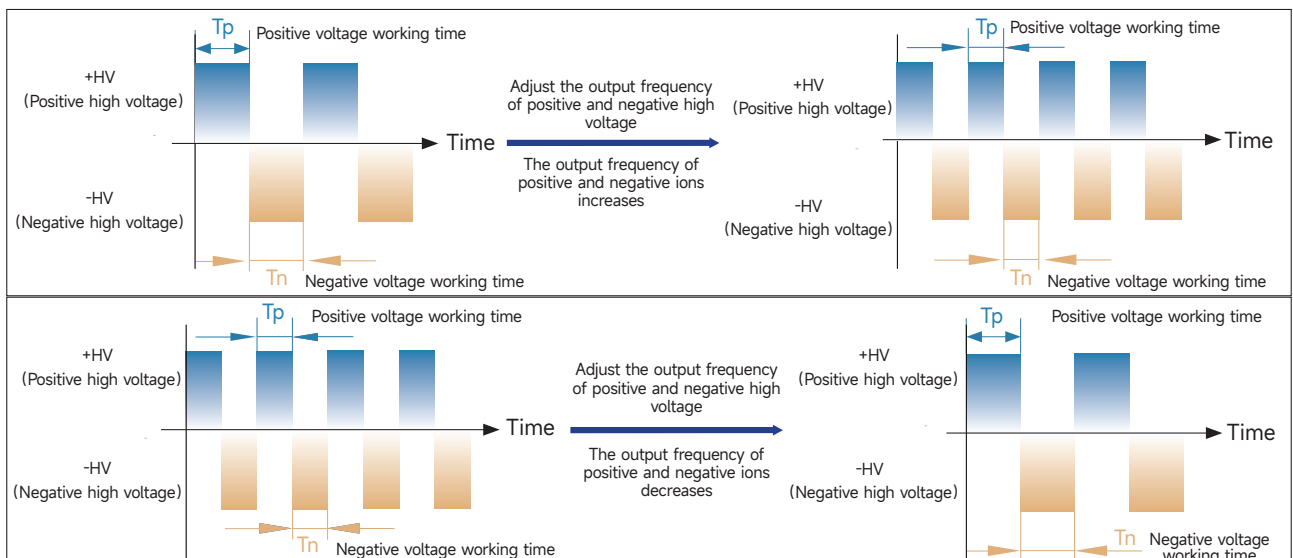
AP-DB1229 laminar flow ion bar is a bar-type electrostatic elimination device developed and produced by Anping Company to eliminate static electricity in laminar flow clean areas and maintain electrostatic balance in clean areas.

The AP-DB1229 laminar flow ion bar uses a DC high voltage power supply and specially designed silicon-based electrodes. By alternately applying positive and negative DC high voltage to positive and negative coupled electrode needles, it generates corona discharge, ionizes air molecules, produces a large number of positive and negative air ions, neutralizes static charges in space, achieves efficient and reliable maintenance of electrostatic balance in laminar flow clean areas, reduces particle adhesion in clean areas, makes contaminated particles easy to be filtered out by the air conditioning purification system, and reduces electrostatic and particulate pollution in clean areas.

◆ The output ratio of positive and negative ions is adjustable, which can be used to adjust the ion balance voltage.



◆ The output frequency of positive and negative ions is adjustable, which can be applied to different discharge distance to achieve faster discharge speed.



# Intelligent Remote Control

Adjustable cleaning cycle, static elimination speed, and ion balance



## Button Function instructions

Function	Symbol	Operation instructions
Unlock		Unlock before adjusting operating parameters
Run / Pause		After powering on, the device is in operation; pressing the pause button puts the device on standby (STOP) with no high voltage output; pressing the run button again starts the device
Adjust cleaning cycle	CT <sub>TH</sub> → +/-	<ol style="list-style-type: none"> <li>Enable cleaning alarm function (see Cleaning Alarm Function operation instruction)</li> <li>Press CT<sub>TH</sub>, then +/-, to increase or decrease the cleaning period. The cleaning period adjustment range is 1-60 days, default setting is 15 days. When cleaning period is due, blue light flashing cleaning alarm is executed</li> </ol> <p>*Note: Since the default cleaning alarm function is off, it needs to be enabled before adjusting the cleaning period</p>
Cleaning alarm function	Unlock → 5 → OK	<p><b>To enable the cleaning alarm function:</b></p> <ol style="list-style-type: none"> <li>Operate the remote control: Unlock---5---OK</li> <li>Product indicator light changes: from a brief white light (1s) to green light (5s), and finally to blue light flashing</li> <li>After the indicator light flashes blue, please power off the product and restart</li> <li>After repowering, the indicator light stays constant green</li> </ol> <p><b>To disable the cleaning alarm function:</b></p> <ol style="list-style-type: none"> <li>Operate the remote control: Unlock---5---ok</li> <li>Product indicator light changes: from a brief white light (200ms) to constant green light</li> </ol>
Adjust balance IB <sub>N</sub>	IB <sub>N</sub> → +/-	When the surface voltage of the charge plate tester or object is high positive, first press IB <sub>N</sub> , then +; when it's high negative, first press IB <sub>N</sub> , then -; until the
Adjust frequency	FREQ → +/-	First press FREQ, then +/-, to increase or decrease the output frequency of positive and negative ions (cyclic setting). Note: This adjustment function is only effective when the code switch is in the C or D position
Confirm	CAL → OK	Note: After adjusting the output parameters for each frequency and voltage level, press CAL then OK to confirm; otherwise, it may lead to false alarms
Reset	CAL →	To restore factory settings, press CAL then

Note: If the object to be de-electrified has a specific polarity that hasn't changed, adjusting the ion balance (output) to the opposite polarity of the object's charge can improve de-electrification. However, in such cases, care should be taken not to reverse charge the object.

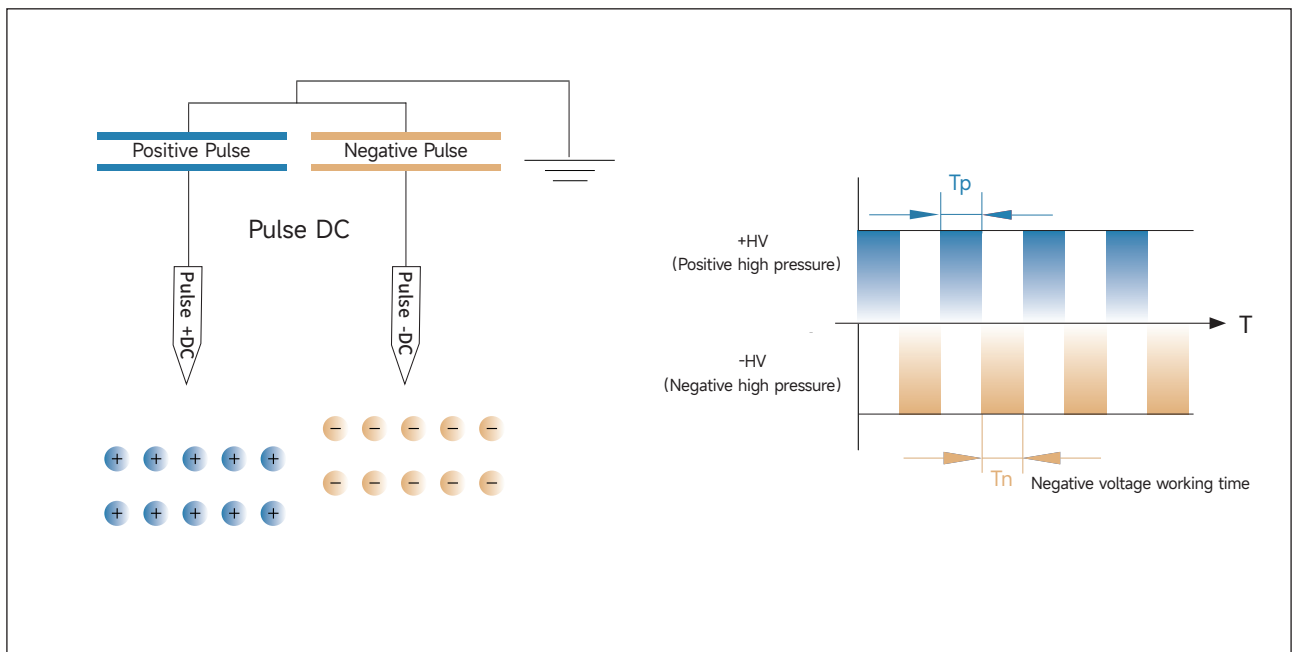
# Pulse DC

Compared to power frequency AC ion bars, the static elimination effect is better

## ◆ Comparison between Pulsed DC and Traditional AC

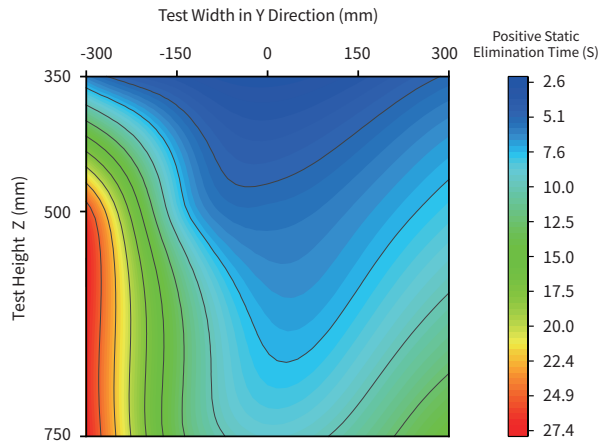
The pulsed DC method alternately applies "+" and "-" high voltage to the positive and negative electrode needles, generating ions of both polarities.

Compared to the power frequency AC method, the ion production utilization rate is higher, capable of exerting its static elimination ability at both close and long distances. Additionally, the discharge frequency can be adjusted, which can extend the static elimination distance. The ratio of positive to negative ion output can be adjusted, facilitating intelligent control.

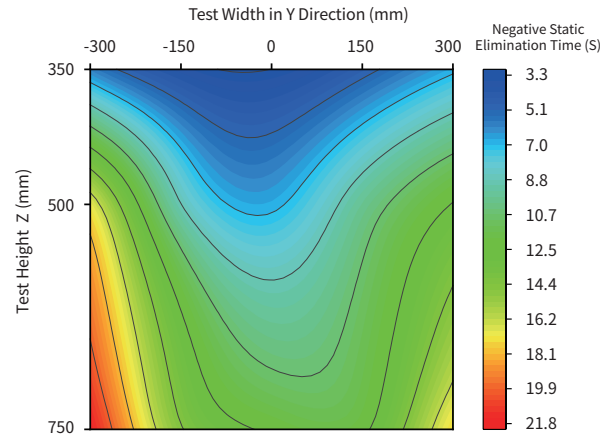


# High Efficiently static removal

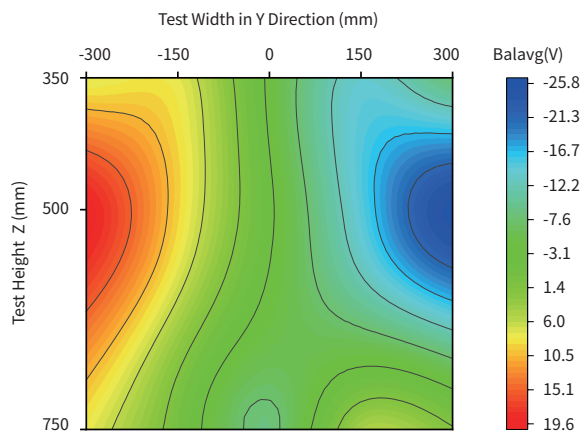
Stay away from static troubles, providing a clean production environment



Positive Static Elimination Time Spatial Distribution Diagrams



Negative Static Elimination Time Spatial Distribution Diagrams



Ion Balance Spatial Distribution Diagram

**Test standard:** ANSI/ESD.STM3.1, SJ/T 11446—2013

**Test instrument:** Trek charge flat panel tester

**Test voltage:**  $\pm 1000V \rightarrow \pm 100V$  attenuation

**Test environment:** Humidity  $50 \pm 5\%$ ; Temperature  $23 \pm 3^\circ C$

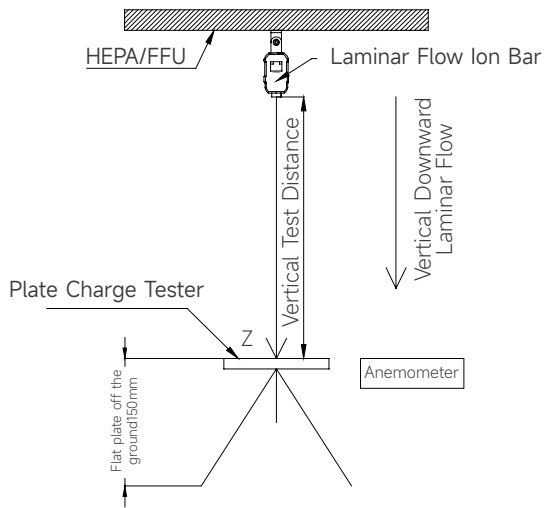
**HEPA (FFU) airflow speed:** 0.35-0.5m/s

**Working frequency:** 105Hz

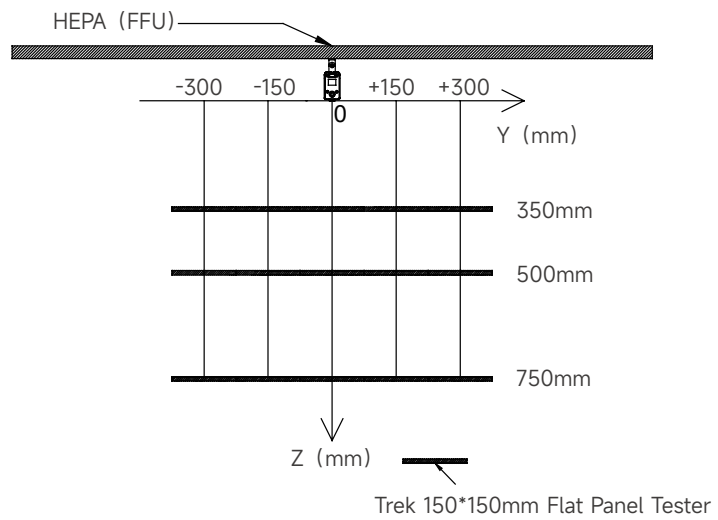
# High Efficiently static removal

Stay away from static troubles, providing a clean production environment

Note: The following data is for reference only. The performance data may vary due to different usage environments and working parameters.

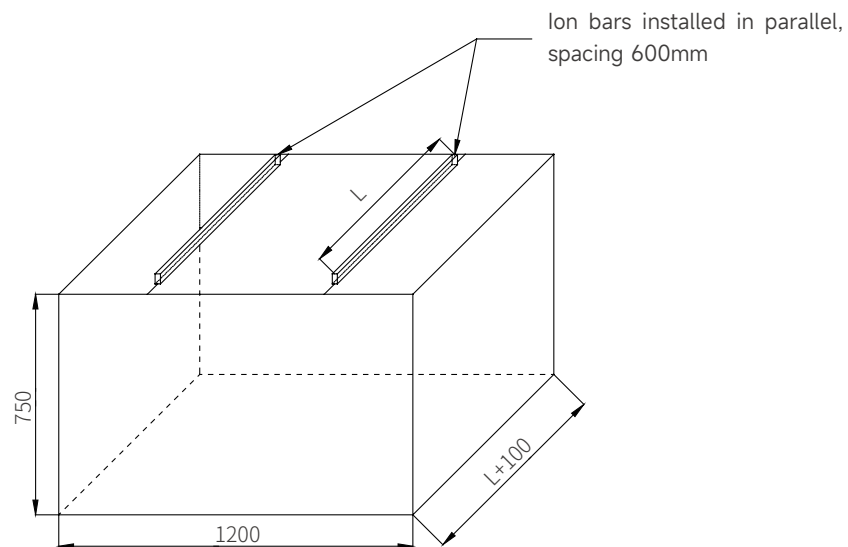


Test Schematic



Test Orientation Diagram

The diagram below shows the approximate static elimination coverage area of the laminar flow ion bar within 30s of static elimination time (L is the length of the ion bar):



# Features

Safe / Easy to use / Durable



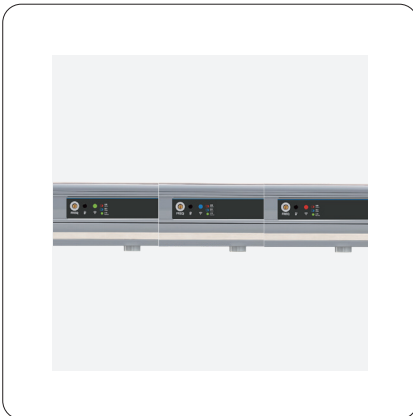
## Electric Shock Proof

Avoid injuries from accidental human contact.



## Unique Discharge Structure Design

Si electrode configuration, suitable for eliminating static electricity and particulate contamination in laminar flow clean areas.



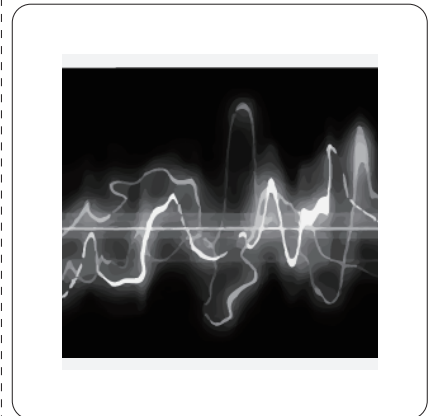
## Indicator Light

Green light - Normal operation  
Blue light - Infrared adjustment / Pause operation / Cleaning indication  
Red light - High voltage abnormal alarm



## Intelligent Remote Control

Ion output characteristics can be



## CE Certification

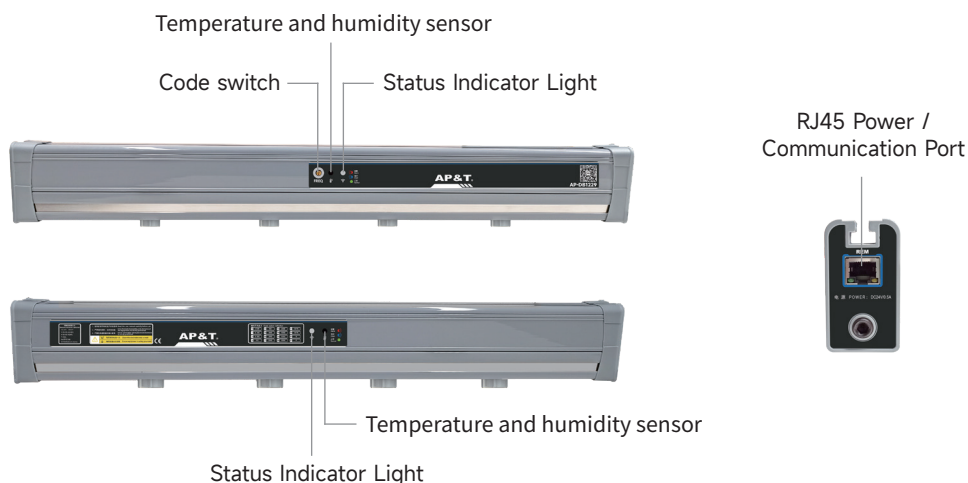
It can effectively prevent the external electromagnetic interference from affecting the normal operation of the ion bar. This is a static electricity eliminator with high safety and high reliability.



# Product Specifications

Product Appearance / Product Parameter / Product Size

## ◆ Product Appearance



- (1)、Select the best static elimination position and firmly install the bar body and the power adapter.
- (2)、Insert one end of the power connection network cable into the power adapter port, and the other end into either end of the ion bar marked with "REM" at the power/communication port. The port wiring information is as follows:

Port Wiring Function Information		Frequency Selection Coding Switch Information	Indicator Light Function
1	Orange	+24VDC	Blue light: Infrared, pause, cleaning indication
2	White orange	+24VDC	Green light: Operation
3	Blue	RS485+B	Red light: Alarm indication
4	White blue	RS485+A	<b>NPN Function</b>
5	Green	GND	7: High voltage indication
6	White green	GND	8: Power on indication, cleaning indication
7	Brown	HV <sub>AL</sub> : High voltage alarm for the de-electrifier	
8	White brown	ACT: Power indicator for the de-electrifier Clean: Cleaning indicator for the de-electrifier	
9	Metal shield	PE	

The output wiring diagram for pins 7 and 8 is as follows:

DC24V or less  
100mA or less

High voltage alarm signal:  
Normal - Normally open,  
Abnormal - Normally closed

DC24V or less  
100mA or less

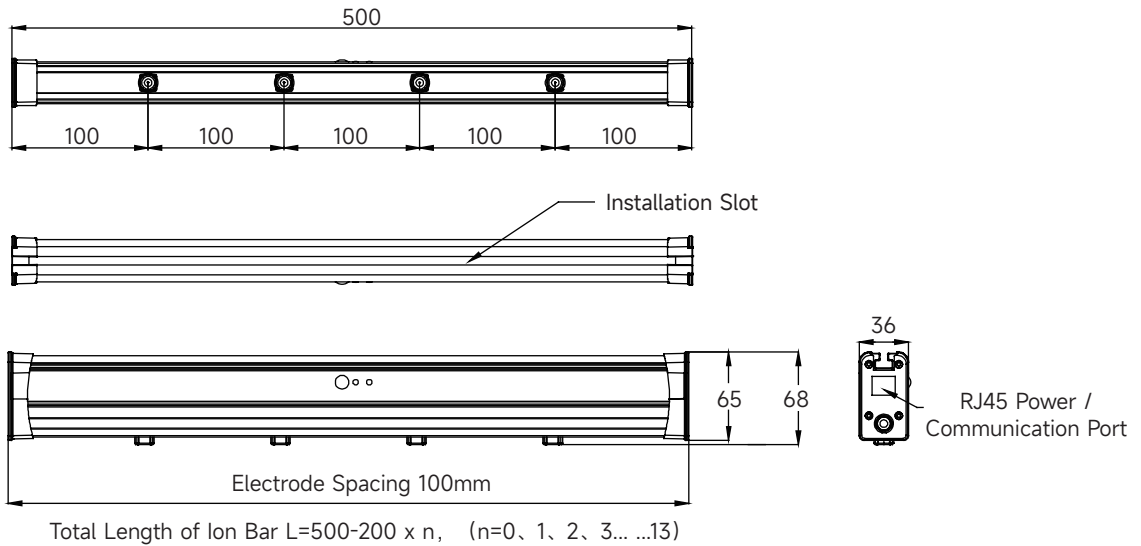
Power-on signal:  
Normal - Normally closed  
Cleaning signal:  
Cleaning - Normally open

# Product Specifications

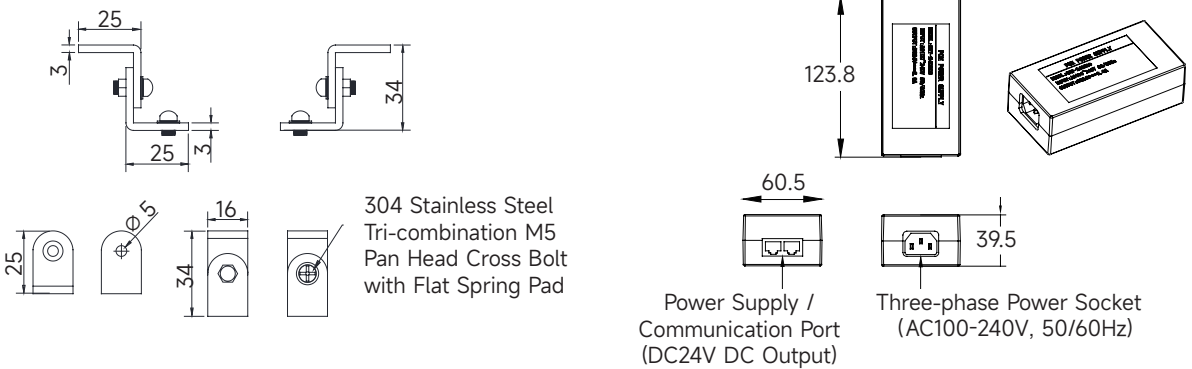
Product Size / Product Parameter / Product Details

## ◆ Product Size

Unit: mm

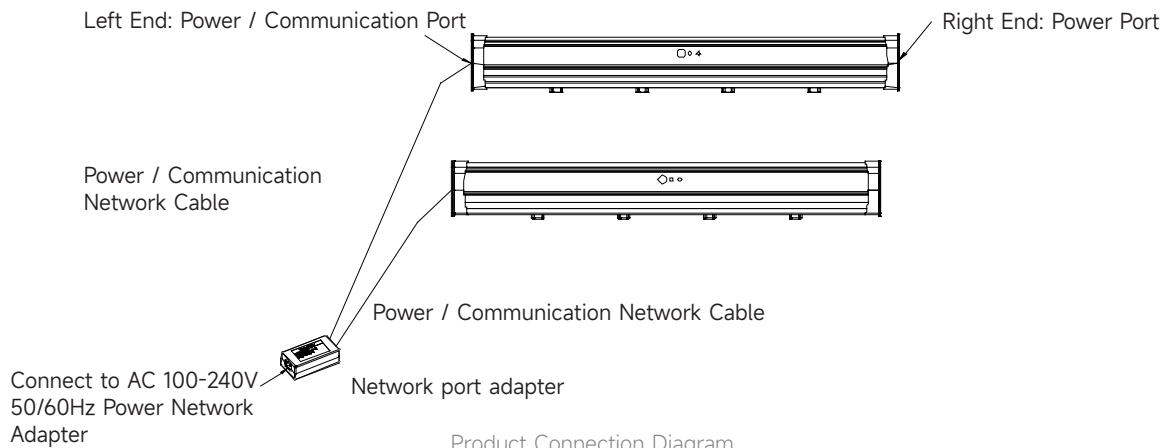


Ion Bar Dimension Diagram



Installation Bracket Dimension Diagram

Adapter Dimension Diagram



Product Connection Diagram

# Product Specifications

Product Size / Product Parameter / Product Details

## ◆ Product Parameter

Model	AP-DB1229
Input Voltage	DC 24V
Power	< 5.5W
Working voltage	±7000V~±12000V
Ion emission	Pulse DC
Emission Electrode	Si
Output Frequency	0.1、0.5、1、5、10、30、55、65、105Hz
	EX-Work Setting: 105Hz, parameters can be adjusted by the code switch or remote control
	Ion balance is calibrated at the factory but can be readjusted using a charge plate tester to select the appropriate working frequency based on site conditions
Ozone Thickness	Ozone Thickness < 0.1ppm (50mm from the emitter)
Status Indicators	Green light—normal operation, Red light—high voltage abnormal, Blue light—debugging / cleaning indication
	RJ45 port indicator light: Green light—power on indication, Orange light—flashes with working frequency
Status Monitoring	RS485 (115200bps,8,1,n,n) ≥ 30ms
	Collector Open Circuit: < 50V,100mA
Working Temperature	0°C -50°C
Working Humidity	< 70%
Dimensions	L*W*H: {500,700,900,...→ 3100}*36*68mm
Product Material	Flame retardant PVC、ABS、SUS
Installation Accessories	180° Rotatable Installation Bracket, M5-12124 Square Nut
Power Supply	GRT-240200: DC24V 2A, Dual Network Port Output, 123*61*40.5mm (L*W*H)
Power Supply Network Cable Length	2.5m
Warranty	1 Year
Certification	CE / RoHS

# Use of the product

## Installation Position / Packaging Accessories

### ◆ Installation Position

- When using the ion bar, it should be placed in the work area where static electricity needs to be eliminated, and installed at a vertical angle.
- The ion bar's discharge electrodes should be at least 10cm away from metal conductors and metal grounding bodies, and the bar must be reliably connected to a grounding wire.













### ▲ Trouble shooting

NO.	Problems	Reasons	Solutions
1	The indicator on the panel is off	Poor contact of the power cable	Check whether the power cable is in good condition and securely connected
		Power supply mismatch	Confirm the power supply specification (INPUT: 100—240VAC 50/60Hz; OUTPUT: 24VDC 2000mA)
2	The RJ45 port indicator is off (the green indicator indicates power-on, the orange indicator blinks with the working frequency)	The power cable is in poor contact	Check whether the power cable is in good condition and securely connected
		The power supply does not match	Check the power supply specifications (INPUT: 100—240VAC 50/60Hz; OUTPUT: 24VDC 2000mA)
		No power supply, power on indicator -- Green off	Check the power supply line
		Main board is abnormal	The orange light does not light, send back to factory for maintenance
3	The electrostatic removal performance decreased obviously	Discharge needle is polluted and damaged	Clean or replace the discharge needle
		Whether the discharge seat is tightened	Confirm the discharge seat is tightened
		Ion bar positioning is incorrect	Confirm the best installation location
		There are conductors or other ion bar around	Remove (moving) conductors or other ion bar
4	Panel indicator red light on	Electromagnetic interference	Turn off the power switch / unplug the power cable, restart the ion bar
		Abnormal discharge	Confirm the installation location and stay away from surrounding conductors
		No power supply for high voltage module	Return to factory for maintenance
		High voltage module is damaged	
5	Unable to discharge	High voltage module is damaged	Return to factory for maintenance
		Main-board chip is damaged	
		Main-board chip is damaged caused by poor grounding or no grounding	Check the grounding of the ion bar and plant equipment, and return to the factory for maintenance
6	The product is smoky or burnt	High voltage module is damaged or insulation of the discharge seat is damaged	Return to factory for maintenance

## ▲ Safety warning

- Please read the instruction manual carefully before installing and using this equipment.
- The whole set of equipment must be reliably grounded during use, otherwise it is easy to cause abnormality or even damage to the ion bar.
- Do not use this equipment in environment where humidity is > 70%.
- It is strictly forbidden to use this equipment in flammable and explosive environments.
- Unauthorized disassembly of the product is strictly prohibited, internal maintenance and repair must be performed by professionals.
- The product is strictly prohibited to touch liquid during use, otherwise an abnormality may occur and cause electric shock or fire.
- Power must be turned off during inspecting or replacing the product, otherwise it may cause electric shock or fire.
- Discharge needle is a sharp object, please use carefully.
- The product is ventilated with dry and clean air or nitrogen which will work abnormally or be damaged if the gas source contains water or grease.
- The product is specially designed to eliminate static electricity. It is strictly forbidden to use it for other purposes. Any abnormal use may cause machine failure, electric shock, fire and other accidents.

## ◆ Packaging accessories

Name	Picture	Part No.	Specification	Quantity
Power Adapter		AP2930003	GRT-240200 DC24V 2A P/N:1/2+ 5/6- Port metal PE	1
National standard power cord		8YXG25110	Standard:1.8m, optional:3m/5m	1
Double ended crystal head black shield cable		8WXI00004	Standard:2.5m, 5m/10m:optional	1
Single-ended crystal head black shield cable		8WXI00002	FFUTP CAT.5E 26AWG 4Pair Jacket PVC OD:5.6±0.2mm bag packed	optional
L-shaped stainless steel mounting bracket		AP8038005	Height 25mm/Width 16mm/ Thickness 3mm Aperture 5mm (measured 4.8mm)	4
Square nut		AP8933000	M5*12*12*4	2
304 stainless steel spring washer		AP8943000	M5	6
304 stainless steel flat gasket		AP8946004	M5	6
304 stainless steel pan head Phillips screw		AP8900001	M5*12	6
Hex nuts		1LML05000	M5	4
Needle Seat		AP6620006	—	—
Remote control		AP2253011	Infrared remote control, neutral panel (L*W*H : 85.76*39.76*6.66)	1

## **▲ Maintenance**

- To ensure the good performance of the product, it should be cleaned and maintained timely according to the usage environment and the required electrostatic protection requirements, namely: unscrew the electrode needle assembly and place it in an ultrasonic cleaner for 10 minutes. Ultrasonic cleaning will remove dust particles adhered to the electrode needles and most of the white crystalline deposits. After cleaning, its static elimination performance will be significantly improved.

A. The operation must be performed 10 minutes after turning off the power.

B. The ultrasonic cleaning solution should be pure water, not corrosive solvents such as circuit board cleaners, otherwise, it will corrode the plastic electrode holder.

C. After cleaning, the device must not be powered on until the moisture has completely evaporated.

- If the working indicator light and the panel indicator light on the power insert port of the bar end cap do not light up, stop using it and have it checked and repaired by professional maintenance personnel. It can only be used after the electrical performance indicators have been tested and found to be normal.

## **▲ After-sales service**

- The AP-DB1229 laminar flow ion bar undergoes rigorous testing, inspection, and aging treatment before EX-Work, and its performance fully meets the relevant indicators marked in the user manual.
- AP&T makes the following commitment to users: within one year from the date of purchase, the company will repair or replace any parts found to be defective upon inspection by the company for free. However, this commitment does not apply in the following situations:

(1)、The device has been misused or installed incorrectly.

(2)、Damage caused by negligence or accident during use.

(3)、Altered, disassembled, or repaired by oneself or by service departments not authorized by Anping Company.

- Discharge electrodes are consumable items and are not covered by the warranty. The company will charge a fee for their replacement during maintenance.
- Apart from the repair or replacement of parts specified above, AP&T does not assume any responsibility for problems arising from incorrect use of the product.

# AP&T®

**AP&T®**

**SPECIALITY CREATES VALUE**

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Professional electrostatic intelligent monitoring/analysis  
and elimination solution provider

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