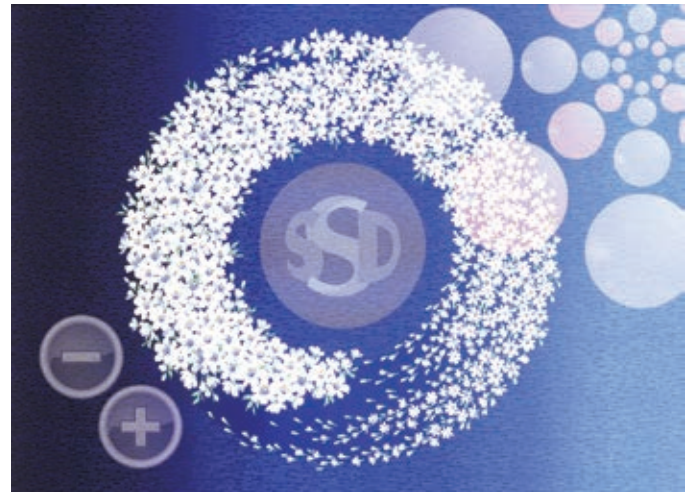




General Catalog 2016

Real ESD Solutions & New Technology

SHISHIDO ELECTROSTATIC, LTD.

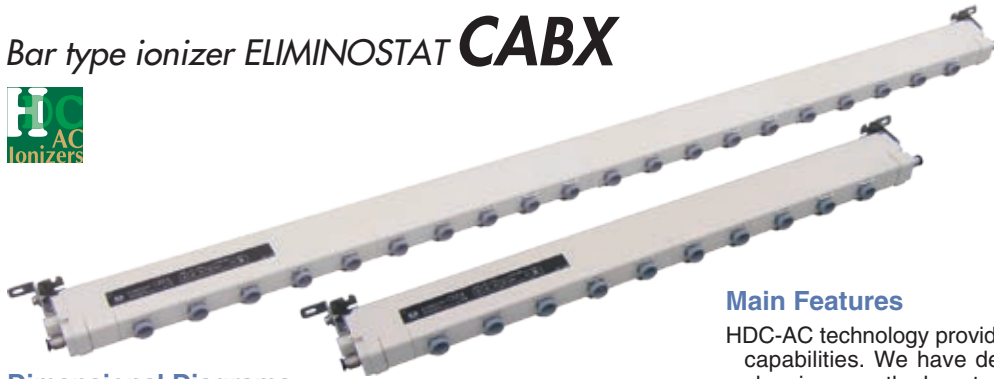


<http://www.shishido-esd.co.jp/>

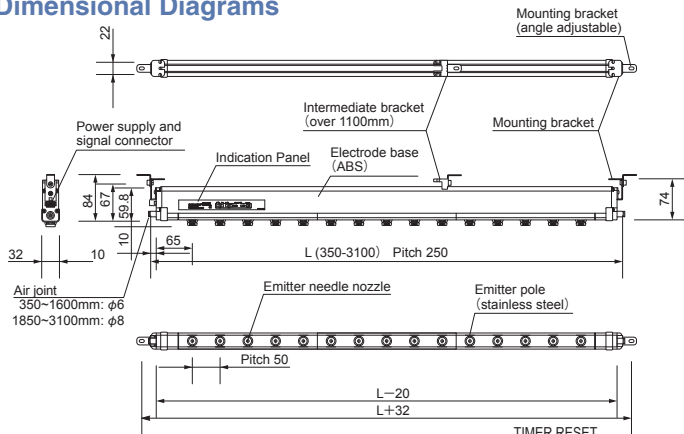
Bar type Ionizer

HDC-AC with built-in high-voltage power supply

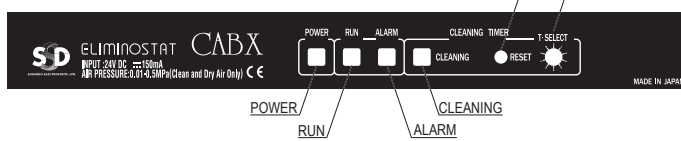
Bar type ionizer ELIMINOSTAT CABX



Dimensional Diagrams



Indicator Panel



Main Features

HDC-AC technology provides stable and long-term static elimination capabilities. We have designed an ionizer that does not require cleaning over the long term.

- 1) 30% increase in capabilities
- 2) Long-term stability of static elimination capabilities
- 3) Decrease in emitter needle abrasions
- 4) Ultra low ozone
- 5) Superior ion balance
- 6) Minimum flow type nozzle
- 7) Cleaning timer
- 8) Emitter needle variations
- 9) Safety features

Specifications

Model	ELIMINATOR CABX
Ion generation method	Corona discharge method (HDC-AC)
Input power supply	DC24V ±5%
Output voltage under abnormal circumstances	No voltage contact output (by normal close MOSFET relay)
Unit dimensions	350~3100×92×29mm (W×H×D) DC24V±5%
Air supply range	Less than 0.5MPa
Ion balance	Within ±30V (distance 300mm, air pressure 0.3MPa at time of supply)
Operating environment	Surrounding temperature: 5~40°C, surrounding humidity: 5%~85% (no condensation) Air supply: clean dry air
Accompanying items	Operation manual, mounting bracket, power supply and signal, connector cable (3m), intermediate bracket (over 1100mm)

Models according to electrode dimensions

- CABX350
- CABX600
- CABX850
- CABX1100
- CABX1350
- CABX1600
- CABX1850
- CABX2100
- CABX2350
- CABX2600
- CABX2850
- CABX3100

★Please state the length of the electric pole and type of emitter needle required, along with the product model when placing your order with Shishido Electrostatic.

CABX□□□□-□□

Length and nozzle type

- Lengths are 350-3100mm (250mm pitch)
- Nozzle flow H or L
- Emitter needle material W, S or G

Examples

Length 1850mm, high flow tungsten emitter needle: CABX1850-HW

Length 600mm, low-flow silicon emitter needle: CABX600-LS

Lengths	Weights
350mm	450g
600mm	650g
850mm	860g
1100mm	1060g
1350mm	1260g
1600mm	1470g
1850mm	1670g
2100mm	1880g
2350mm	2080g
2600mm	2290g
2850mm	2500g
3100mm	2710g

Optional parts to support easy static elimination

- CABX custom AC adapter : OCAB-DA2 (input voltage AC100V-240 V)
- Intermediate bracket : OCABX-SUSP-A (over 1100 mm comes as standard equipment)
- Power supply and signal extension cable : OCABX-ENC3M (length : 3 m)
- Low-flow type L nozzle Tungsten emitter needle type : OCABX-NDL-LW01
- Silicon emitter needle type : OCABX-NDL-LS01
- Glass emitter needle type : OCABX-NDL-LG01
- High-flow type H nozzle Tungsten emitter needle type : OCABX-NDL-HW01
- Silicon emitter needle type : OCABX-NDL-HS01
- Glass emitter needle type : OCABX-NDL-HG01



Custom AC adapter



Intermediate bracket



Power supply and signal extension cable

Optional parts

In case the target is Electric Sensitive Device, please keep the distance between CABX bar to the target at least 300mm for safety reason.

ELIMINOSTAT

Safety features detect abnormal discharges and sparks



Exchange of the emitter needle

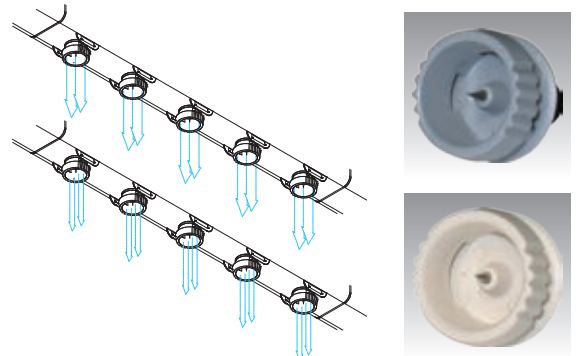
Choose from two types of nozzles depending on the purpose

● For rapid static elimination: High-flow type H nozzle (4 holes) unit: l/min (ANR)

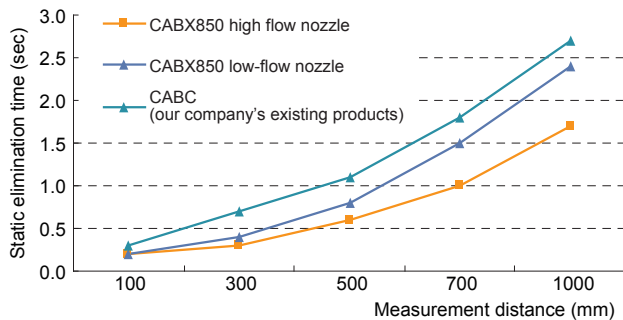
	350	600	850	1100	1350	1600	1850	2100	2350	2600	2850	3100
0.05MPa	22	41	53	62	68	92	130	145	149	154	159	163
0.1MPa	32	59	81	95	105	112	194	223	229	244	250	259
0.2MPa	48	89	122	151	168	180	294	328	343	362	374	383
0.3MPa	61	117	165	200	230	248	381	426	466	496	516	531
0.4MPa	78	149	208	259	293	321	499	559	614	654	678	698
0.5MPa	95	177	255	323	362	393	622	687	748	806	848	882

● For low air consumption: Low-flow type L nozzle (2 holes) unit: l/min (ANR)

	350	600	850	1100	1350	1600	1850	2100	2350	2600	2850	3100
0.05MPa	11	22	33	44	50	55	80	91	100	108	115	126
0.1MPa	16	32	48	52	60	81	112	130	146	158	171	184
0.2MPa	26	48	70	91	106	129	177	201	227	246	270	289
0.3MPa	34	63	95	123	149	173	240	276	303	333	363	397
0.4MPa	42	82	120	157	188	222	306	363	388	423	461	492
0.5MPa	51	91	143	187	233	274	374	425	471	515	556	598

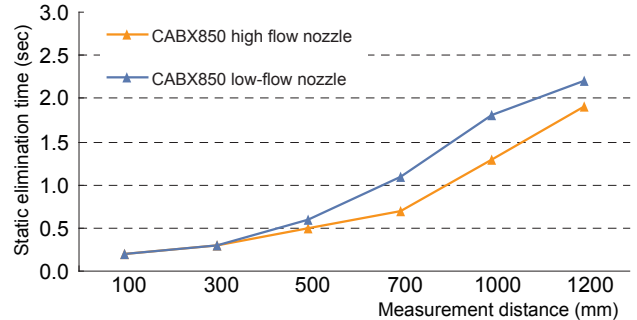


CABX850mm, air pressure: 0.3 MPa



Measurement distance (mm)	100	300	500	700	1000
CABX high flow nozzle	0.2	0.3	0.6	1.0	1.7
CABX low-flow nozzle	0.2	0.4	0.8	1.5	2.4
CABX (our company's existing products)	0.3	0.7	1.1	1.8	2.7

CABX850mm, air pressure: 0.5 MPa



Measurement distance (mm)	300	500	700	1000	1200
CABX high flow nozzle	0.3	0.2	0.5	0.7	1.3
CABX low-flow nozzle	0.3	0.2	0.6	1.1	1.8
CABX (our company's existing products)	0.3	0.2	0.6	1.1	1.8

Bar type ionizer ELIMINOSTAT CABS



Specifications

Model	CABS-AW-xxxx *1	
System Structure	Ionizer Bar	CABS-DBW-xxxx *1
	Controller	CABS-CT1-xxxx *1
Ion Generation Method	High voltage power unit	CABS-TR1
	Corona Discharge method	
Electrical Specification	Input Voltage	DC24V±5%
	Electric Consumption	12VA
	Output voltage	± 7,500vp-p
Air tubing size	Dia 6mm air tubing	
Maximum supplied air pressure	0.5MPa	
Supplied Air	CDA (Clean and dried air)	
Ion Balance	Below ±30V	
Decay time performance	(At 300mm distance, 0.3 MPA air pressured, Bar length length:350mm)	

*included Bar length, and it is available for same length model controller of bar.

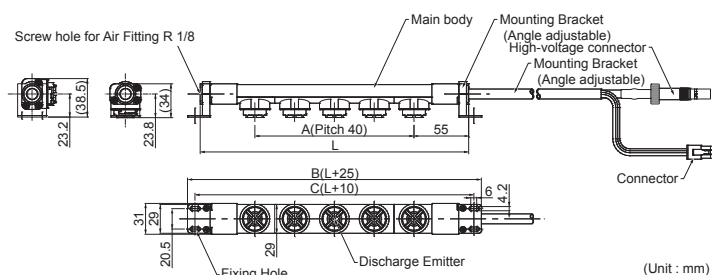
Specifications

Sensing name	Details
HV Error	Minute electrical discharge or over current detecting
Needle Error	Nozzle unsettled or taking off detecting
Cleaning	Ion creating level detecting
ChargeSNS	The charged object detecting

Please see SSD web site, in case you need System structure, or the drawing of each outlook.



Dimensional Diagrams



(Unit : mm)

Nozzle-type high frequency model

Compact AC Ionizer with an Ultra-small Built-in Piezoelectric Transformer

PIEZONIZER ZappII

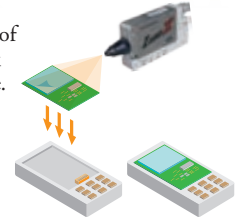


Application

When handling the display and base of a cellular phone, it is possible to work under low voltage control at any time.



Power and Signal cable (attached with ZappII)

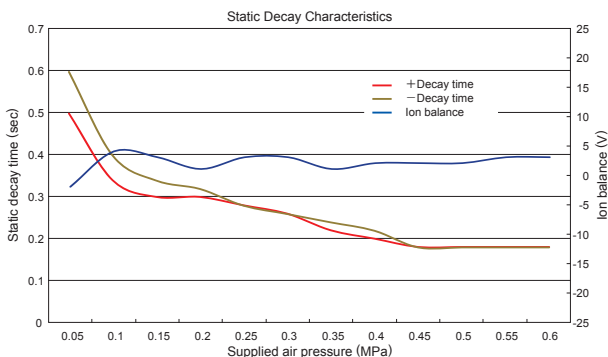


The OZ-S nozzle at the front is an option.

Additional new specific products

- High Volume air flow type(350L/min at 0.5Mpa): ZappII-H
Other specifications are followed as ZappII standard.
- Insulated type(in case it can't be grounded or for the machine that is not grounded with its frame to the earth grounding.): ZappII-U
Other specifications are followed as ZappII standard.

Static Decay Characteristics and Ion Balance Characteristics of the ZappII Model

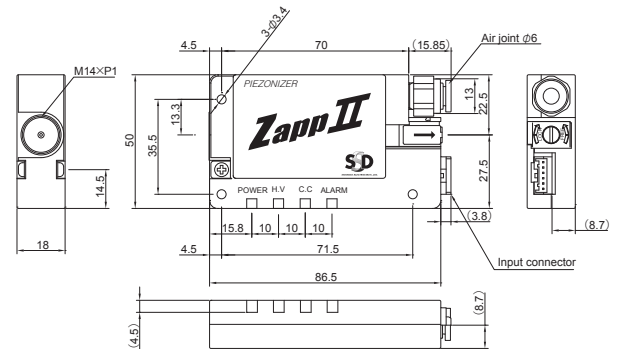


- (Note 1) Using □150mm, 20pF charged plated monitor for measurements.
 (Note 2) Static elimination time equals the decay time $\pm 1000V \rightarrow \pm 100V$.
 (Note 3) Distance is measured 50mm from the plate monitor.
 (Note 4) Using Shishido Electrostatic's standard nozzle OZ-S.

Specifications other products

- High Air flow type(350L/min at 0.5MPa): ZappII-H
*Except Air consumption, other specifications follow ZappII
- Insulated type(Isolated with grounding case): ZappII-U
*Except electrical insulation, other specifications follow ZappII

Dimension Diagram



Specifications

Model	ZappII
Input power supply	DC (24V \pm 10)
Electric consumption	2.4VA
Air pressure*1	Please check with below sheet
Airflow supply	30 ℓ / min~160 ℓ / min
Ozone density	0.05ppm or less (air pressure input: 0.02Mpa, distance 300mm)
Guaranteed operating temperature	(stored at -10°C to 60°C)
Guaranteed operating humidity	From 65% or less with no condensation (stored at -90% or less with no condensation)
Main unit dimensions	87x18x50mm (WxHxD) not including protruding portion
Weight	72g
Accompanying items	Power supply cable

*1 The available air pressure range is different for each nozzle, please check with below sheet.

OZ-S	0.05~0.60MPa	OZ-C100~C500	0.05~0.50MPa
OZ-TT	0.05~0.50MPa	OZ-ST	0.05~0.30MPa
OZ-100B-300B	0.05~0.60MPa	OZ-60SII	0.05~0.60MPa
OZ-100BLF~200BLF	0.05~0.60MPa	OZ-F	0.05~0.60MPa
PZ-PSP120	0.05~0.50MPa	OZII-SC	0.05~0.60MPa
OZII-90S	0.05~0.60MPa		0.05~0.60MPa

Nozzle type Air ionizer

Ultra low air consumption model

PIEZONIZER

Compact size Air Ionizer

PIEZONIZER **ZappII-L**

ZappII-L

Main Application

For small products that it can't be supplied with high air pressure.



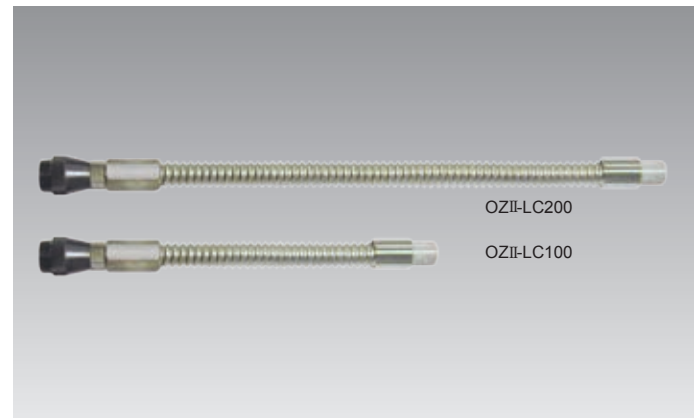
**Notice: The adjustment of ZappII-L is not same as ZappII, so it cannot use with standard optional nozzles.*

Optional part

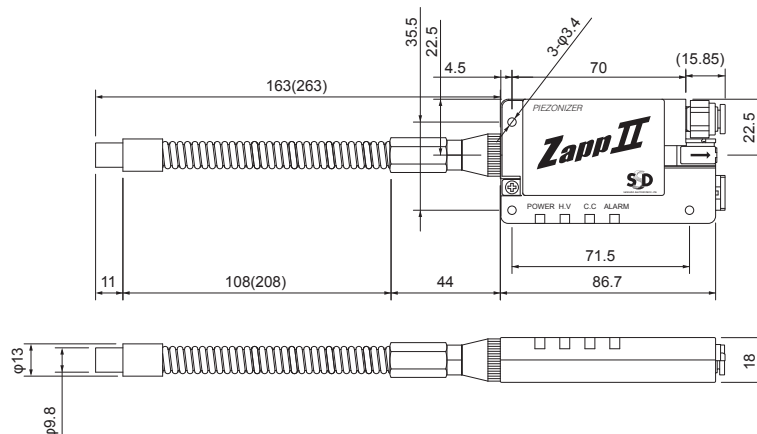
ZappII-L exclusive nozzle



Power and Signal cable (attached with ZappII)



Dimension Diagram



Main Features

- High performance
Even ultra-low air pressure supply, it keeps high performance ionization to compare with Zapp-II.
- Integrated designed nozzle
The point of ion creation is around the tip of nozzle and easy installation with flexible seamless piping. Available length of piping is 100mm or 200mm.
- H.V. alarm function
In case high voltage shut down, alarm LED light and alarm output function with non-signalized contact normally open or normally close use.
- Cleaning Check [C.C] function
With detecting the abnormal discharge through the discharge emitter, it shows with C.C alarm LED and it links with signal output as normally open.

Specifications

Model	ZappII-L
Input Voltage	DC+24V±10%
Capacity	2.4VA
Output Voltage	AC 2000 V
Discharge method	High Frequency AC Corona discharge method
Ion Balance	Below ±15V(Distance at 50mm)
Alarm output	MOS FET Relay, Normally Closed contact(NO/NC) (Alarm)Maximum current: 100mA, Voltage: Below 30VDC
Cleaning Check output	MOS FET Relay, Normally Closed contact(NO/NC)(C.C) Maximum current: 100mA, Voltage: Below 30VDC.
Discharge stop input(HV-OFF)	Discharge off: Short circuit to 0V, Discharge on: Open circuit (remained voltage below0.5V)
Ozone level	Below 0.1ppm (Supplied air: 30 liter/min(ANR) at 50mm)*2
Supplied Air	Clean Dried Air
Available air pressure	0.005~0.1MPa
Air consumption	Maximum 50 liter/min (ANR)
Available environment	0~40°C / 15~85%RH (without condensation)
Dimensions	87×18×50mm (W×H×D) only body size
Weight	Approx 78g
Accessories	Manual, Power and Signal cable (2.5m), Nozzle is optional.

*2 Under some environment condition, it sometime makes more high level Ozone, we recommend to use ozone-resistant materials around the tip of nozzle.

Nozzle-type

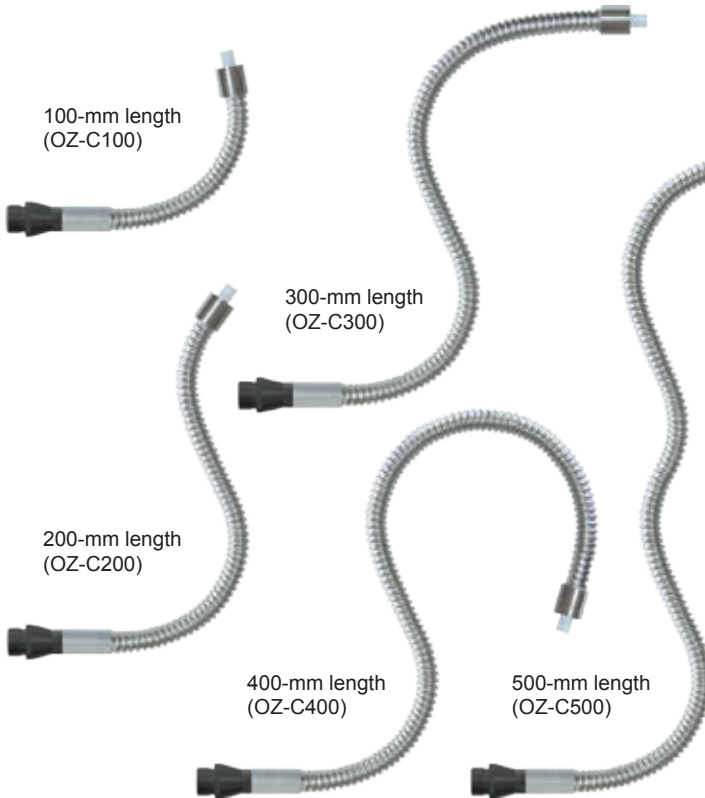
high frequency model

A wide variety of nozzle applications provided to meet various application needs.

Optional part

These nozzles are not for Nitrogen use.

- **Seamless carrier pipes nozzle (external diameter: $\phi 11$)**
There is a teflon tube in the pipe.
It is bent more freely than a past DK pipe.



- **Bar nozzles Stainless steel pipe**
(external diameter: $\phi 4$; internal diameter: $\phi 3$)



- **Bar nozzles (straight type)**



- **bar nozzle (free angle L-shaped type)**



- **Nozzle (standard type)**



- **Shower nozzle (60° spray angle)**



- **Nozzle (Variable angle 75°)**



- **Shower nozzle (90° injection angle)**



- **Air Fitting Nozzle ($\phi 6$ tubing)**

OZ-PPC6-01
(Straight Air fitting)

- **Air Fitting Nozzle ($\phi 6$ tubing)**

OZ-PPL6-01
(L shape Air fitting)

- **Option nozzle**



- **Teflon carrier tube nozzle**
(external diameter: $\phi 6$; internal diameter: $\phi 4$)



- **Silicon carrier tube nozzle**
(external diameter: $\phi 6$; internal diameter: $\phi 4$)



- **AC adapter, Connection cable**



(OZII-24V) Power supply only

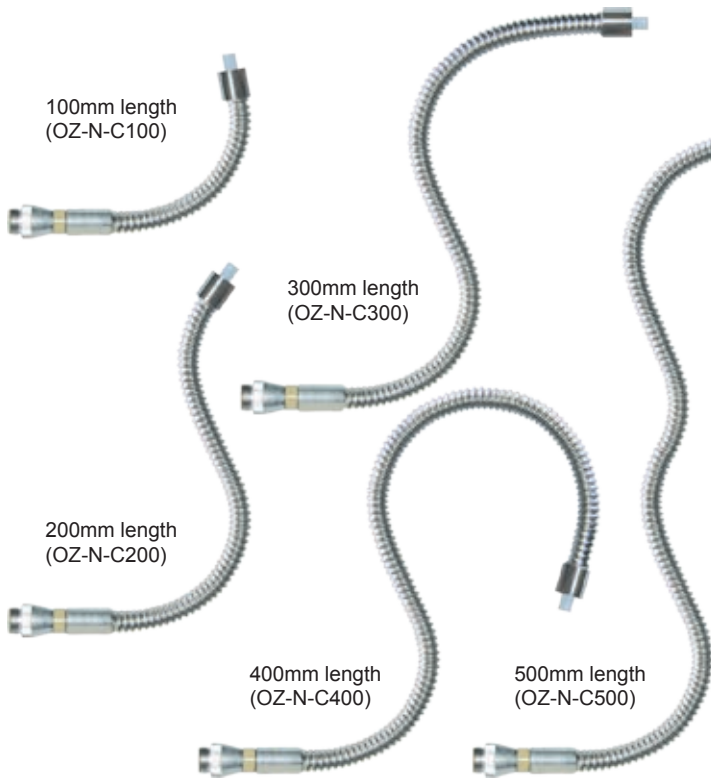
(OZII-24VA)
Power supply(signal cable)
grounding wire

PIEZONIZER ZappII Options

For Nitrogen application (OZN serize)

These nozzles are for only nitrogen use.

- **Seamless carrier pipes nozzle (external diameter: $\phi 11$)**
There is a teflon tube in the pipe.
It is bent more freely than a past DK pipe.



- **Nozzle (standard type)**



(OZ-N-S)

- **Teflon carrier tube nozzle (external diameter: $\phi 6$; internal diameter: $\phi 4$)**



500mm
(OZ-N-TT)

- **Silicon carrier tube nozzle (external diameter: $\phi 6$; internal diameter: $\phi 4$)**



500mm
(OZ-N-ST)

- **Fixing Bracket**

(OZII-FM)



Optional part (Controller)

ZappII controller

PIEZONIZER **OZII-CB**

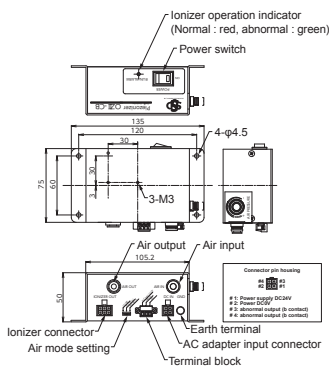
Main Features

OZII-CB control the power supply and Air supply for ZappII with connecting outside signal (sensor, foot switch, and other switch) and the pulsed air control.

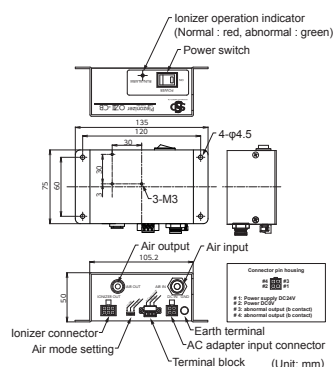


Dimension Diagram

OZII-CB-TV6



OZII-CB



Specifications

Model	OZII-CB	OZII-CB-TV6
Available model	ZappII, ZappII-H	ZappII, ZappII-H
Available model	ZappII, ZappII-H	ZappII, ZappII-H
Power Voltage	DC24V (with AC adaptor AC100~240V)	
Electric Consumption	0.3A	
Indication	Green: Normal, Red: Abnormal	
Abnormal Output	MOS FET Relay (non-voltage contact, Normally close) (Maximum voltage: 30VDC, 100mA) Normal condition of ZappII: ON, Abnormal condition: OFF	
Input signal from outside	Input terminal (DC24V OUT, INPUT, 0V) ZappII start to work: Short INPUT and 0V or supply 0~3Volt to INPUT ZappII stop to work: Open INPUT and 0V or supply 5~24Volt to INPUT	
Supplied Air	Clean and Dried air	
Available air pressure	0.05MPa~0.6MPa	
Air pressure control	-----	With air throttle valve
Maximum air consumption	450L/min(ANR) *only Contoller	240L/min(ANR) *only Contoller
Air output control	CONT: Continuously blow, PULSE Hi: High Pulse blow(10Hz), PULSE Lo: Low Pulse blow(5Hz)	
Available environment	0~40°, below 85%RH(without condensation)	
Dimensions	135x50x75(WxHxD)	
Weight	530g	
Accessories	AC adaptor, Connecting cable with ZappII, grounding cable, Air tubing($\phi 6\text{mm} \times 2\text{m}$), Operation manual, Contact pin(5pcs).	

*The life time of electric valve in the controller is below 50 million times.

Gun-type and Pencil-type high frequency model

Ion Blow Gun

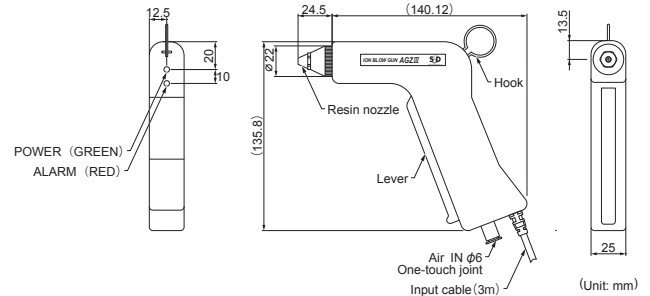
PIEZONIZER **AGZIII** CE



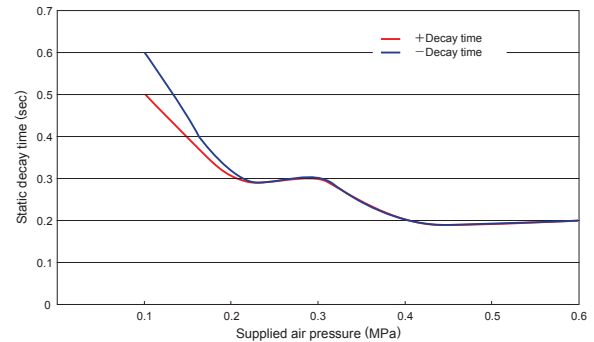
AC adaptor
(Accessories)

AGZIII

Dimension Diagram



Static Decay Characteristics



Specifications

Model	AGZIII
Input Voltage	DC24V (AC adaptor supplied; AC100~240V)
Indicator	Green: Normality power output. RED: Abnormality power output
Ion Balance	±15V or less (at factory shipment)
Ozone Abundance	0.04 ppm or less (at 150mm)
Applicable fluid	Cleaned air
Air pressure range	0.05~0.6MPa
Supplied air flow	Max. 370L/min(ANR) (at 0.6MPa)
Environment	0~40°C / 65%RH or less (no condensation)
Dimensions	164.6x25x135.8mm (LxWxH) exc. protrusions.
Weight	Approx. 200g (exc. cable)
Standard Part	Instruction manual, AC adapter

Optional for AGZIII

AGZIII Air Controller

PIEZONIZER **OAGIII-CB**



Main Features

OAGIII-CB control the power supply and Air supply for AGZIII gun with connecting outside signal (sensor, foot switch, and other switch) and the pulsed air control.

Flat nozzle for AGZIII

OAG-F



Specifications

Model	OAGIII-CB
Available model	AGZIII
Power Voltage	DC24V (with AC adaptor AC100~240V use AGZIII adaptor)
Electric Consumption	0.2A (with AGZIII gun)
Indication	Green: Supply the power and Air to AGZIII
Supplied Air	Clean and Dried air
Available air pressure	0.05MPa~0.7MPa
Air pressure control	500L/min (ANR) *only Contoller
Maximum air consumption	CONT: Continuously blow, PULSE Hi: High Pulse blow (10Hz), PULSE Lo: Low Pulse blow (5Hz)
Air output control	Open the INPUT port: Start to work, Close the INPUT port: Stop to work.
Available environment	0~40°, below 85%RH (without condensation)
Dimensions	135x50x75 (WxHxD)
Weight	490g
Accessories	Connecting cable with AC adaptor (2m), Connecting cable with AGZIII (0.3m), grounding cable, Air tubing (φ6mm x 3m), Operation manual, Contact pin (5pcs).

*The life time of electric valve in the controller is below 50 million times.

Brush for AGZIII

OAG-BRS



This is the optional part for brushing off the dust.
Three kinds of size of brush
*OAG-BRS-1: nylon brush diameter φ0.1
*OAG-BRS-2: nylon brush diameter φ0.2
*OAG-BRS-3: nylon brush diameter φ0.3
Available for AGZ/ANZ series.

Static Eliminator Blowers

HDC-AC with built-in high-voltage power supply

FEATURE of HDC-AC Ionizer

- With SSD high technology HDC-AC (Hybrid Digital controlled AC), it performs as less particle attach and long term stability performance.
- Wide and Straight ionization with two kinds of louver part. (XMB/X2MB)
- Safety operation with minute discharge detection and over current detection.

- Abnormal alarm and output signal.
- Angle locked function keeps fixed angle direction. (X2MB/X4MB)
- Easy maintenance with detachable louver and emitter needle unit.
- Less maintenance structure designed.
- Variable air speed control.

Slim and light weight Air ionizer

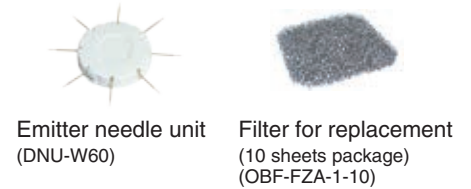
WINSTAT **BF-XMB**



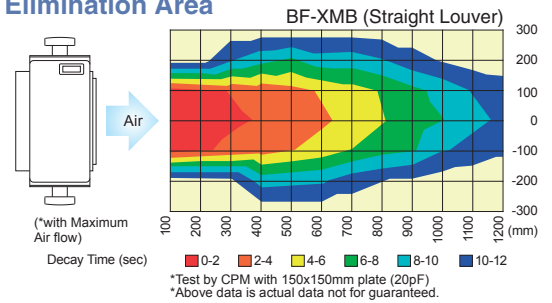
Main Features

Compact Air Ionizer WINSTAT BF-XMB is slim and light-weight designed desktop ionizer with featuring SSD high technology HDC-AC that has long term and stable static elimination capabilities.

Optional Parts



Static Elimination Area



Wide blow Air Ionizer

WINSTAT **BF-X4MB**

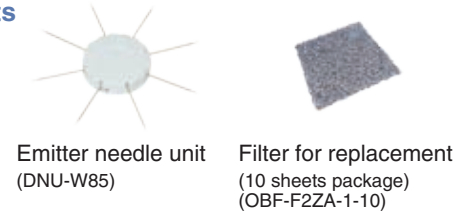


Main Features

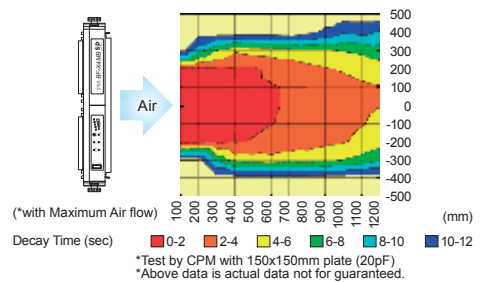
Wide blow Air Ionizer WINSTAT BF-X4MB is slim and light-weight designed desktop ionizer with featuring SSD high technology HDC-AC that has long term and stable static elimination capabilities.

- Wide Coverage area as 400mm

Optional Parts



Static Elimination Area



Static eliminator blower

WINSTAT **BF-OHP3B**

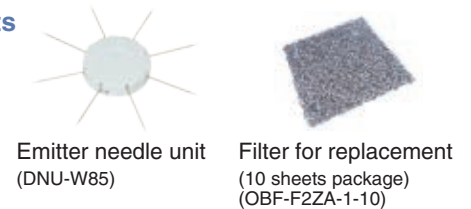


Main Features

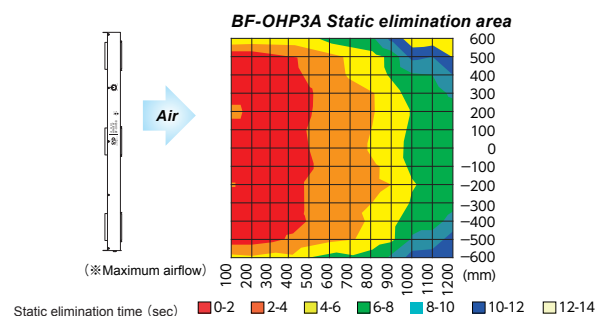
New Overhead ion blower BF-OHP3B is based on SSD HDC-AC technology with high performance.

- This is the overhead air ionizer with SSD new technology "HDC-AC".
- High performance and stable balance.
- Easy maintenance.
- Safety controlled as pulse discharge and current control.
- Meets RoHS standards.

Optional Parts

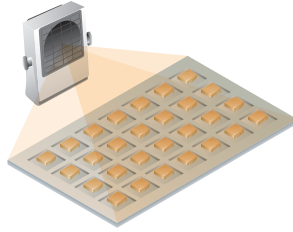


Static Elimination Area



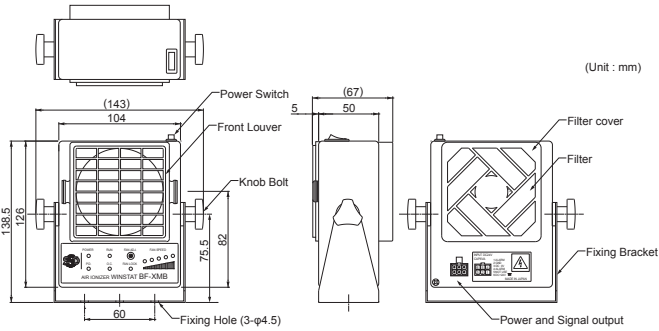
Application

When handling an IC in a tray, it is possible to maintain low voltage in the IC at any time.



WINSTAT

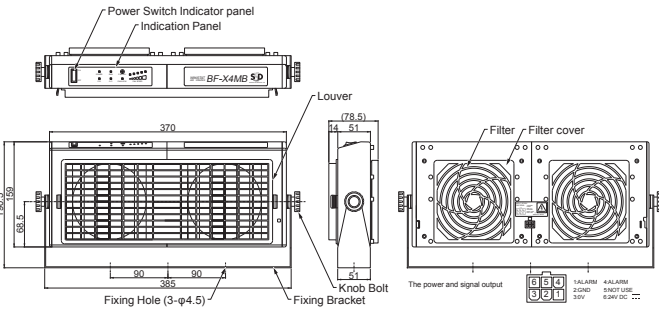
Dimension Diagram



Specifications

Model	BF-XMB
Input Voltage	DC24V (AC adaptor AC100~240V available)
Capacity	6VA
Output Voltage	± 7000V _{o-p}
Ion Balance	Below ±10V (Distance at 300mm)
Air Volume	0.7~1.2m ³ /min
Air Speed	1.2~1.9m/s (with Straight Louver at 300mm) 0.7~1.2m/s (with Wide angle Louver at 300mm)
Ozone level	Below 0.004ppm (Distance at 150mm)
Available environment	0~40°C / 15~85%RH (without condensation)
Filter	Pre-filter level
Alarm output	Normal: ON, Abnormal (HV alarm or fan alarm with Red LED light): OFF MOS FET Relay, Normally Closed contact. Maximum current: 200mA, Voltage: Below 30VDC.
Dimensions	104x126x67mm (W×H×D) not including projecting portion
Weight	Approx. 560g(with Bracket)
Sound level	51dB (A) (at 1m distance)
Accessories Manual	AC Adaptor, Wide angle louver, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W60), Filter (10pcs) (OBF-FZA-1-10)

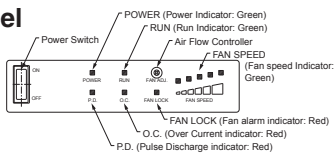
Dimension Diagram



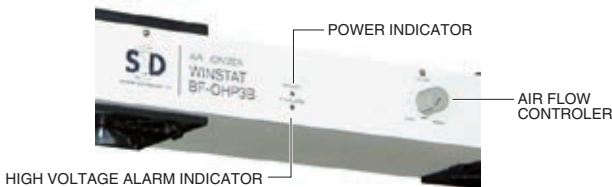
Specifications

Model	BF-X4MB
Input Voltage	DC24V (AC adaptor AC100~240V available)
Capacity	25A
Output Voltage	± 7500V _{o-p}
Ion Balance	Below ±5V (Distance at 300mm)
Air Volume	1.4~3.2m ³ /min x 2 fans
Air Speed	0.7~1.8m/s (at 300mm)
Ozone level	Below 0.006ppm (Distance at 150mm)
Available environment	0~40°C / 15~85%RH (without condensation)
Filter	Pre-filter level
Alarm output	MOS FET Relay Non-voltage contact (NC output) HV alarm or fan alarm: OFF
Dimensions	370x159x78.5mm (W×H×D)
Weight	Approx. 1700g(with Bracket)
Materials	Main Body: ABS, Emitter: tungsten, Bracket: SECC
Sound level	62dB (A) (at 1m distance)
Accessories	Manual, AC Adaptor, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W85), Filter (10pcs) (OBF-F2ZA-1-10)

Indicator Panel



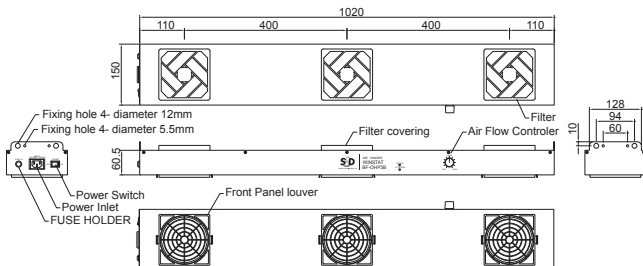
Decay Performance



Specifications

Model	BF-OHP3B
Input Voltage	AC100V to 240V 50/60Hz
Capacity	42VA
Output Voltage	±7,500V _{o-p}
Ion Balance	±10V or less (at factory shipment)
Air Flow	2.6 to 4.0m ³ /min×3 fans
Ozone Abundance	0.006ppm or less (at 150mm distance)
Environment	0 to 40°C / 15 to 85%RH (No condensation)
Filter	Pre-filter class
Dimensions	1020×60.5×150mm (W×H×D)
Weight	Approx. 5.0kg
Material	Main Body : SECC, Emitter Needle : Tungstane
Sound level	66dB(A) (Distance at 1m)
Accessories	Operation Manual, AC adaptor, Cleaning Brush
Optional Part	Discharging needle unit: DNU-W85 Filter(10 sheet pack) : OBF-F2ZA-1-10
Accessories	Manual, AC Adaptor, Fixing Bracket, Rubber packing, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W85), Filter (10pcs) (OBF-F2ZA-1-10)

Dimension Diagram



Static Eliminator Blowers

HDC-AC with built-in high-voltage power supply

Static Elimination Blowers

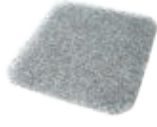
WINSTAT BF-X2MB



Optional Parts



Emitter needle unit
(DNU-W85)



Filter for replacement
(10 sheets package)
(OBF-F2MA-1-10)



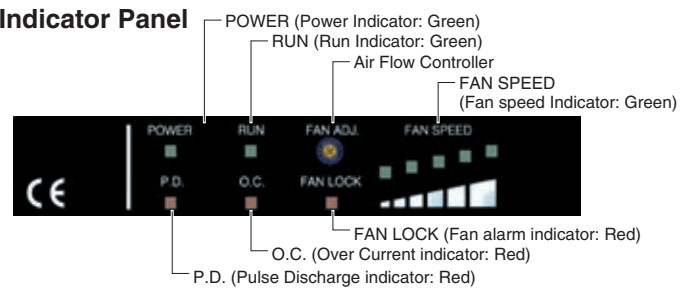
Main Features

Compact Air Ionizer WINSTAT BF-X2MB is slim and light-weight designed desktop ionizer with featuring SSD high technology HDC-AC that has long term and stable static elimination capabilities.

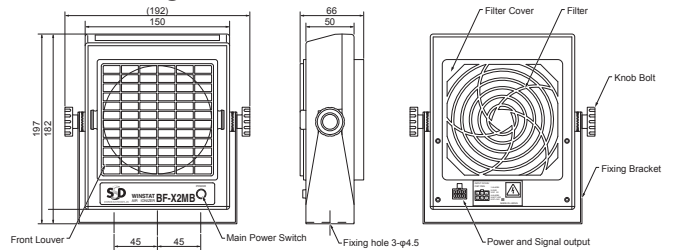
Specifications

Model	BF-X2MB
Input Power	DC24V (AC adaptor AC100~240V available)
Capacity	10VA
Output Voltage	± 7500Vo-p
Ion Balance	Below ±10V (Distance at 300mm)
Air Volume	1.4~3.2m ³ /min
Air Speed	1.8~3.8m/sec (with Straight Louver at 300mm) 0.4~0.6m/sec (with wide angle louver at 300mm)
Ozone density	Below 0.004ppm (Distance at 150mm)
Available environment	0~40% / 15~85%RH (without condensation)
Filter	Pre-filter level
Signal Output	MOS FET Relay Non-voltage contact (NC output) HV alarm or fan alarm: OFF
Dimensions	150x182x66mm (WxHxD)
Weight	Approx 1000g (with Bracket)
Sound level	59dB (A) (at 1m distance)
Accessories	Manual, AC Adaptor, Wide angle louver, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W85), Filter (10pcs) (OBF-F2MA-1-10)

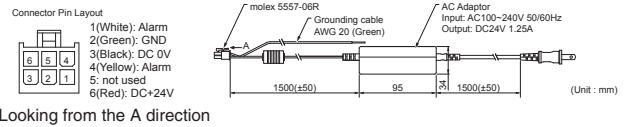
Indicator Panel



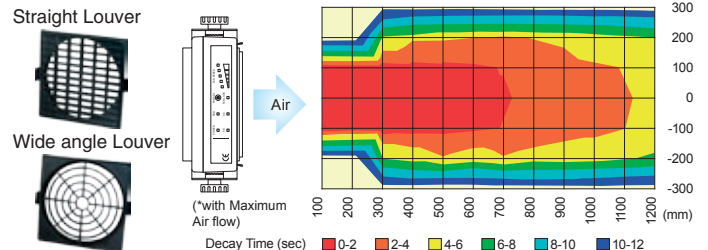
Dimension Diagram



AC Adaptor (Accessory)



Static Elimination Area

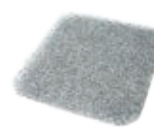


Static Elimination Blowers

WINSTAT BF-X2MC



Optional Parts



Filter for replacement
(10 sheets package)
(OBF-F2MA-1-10)



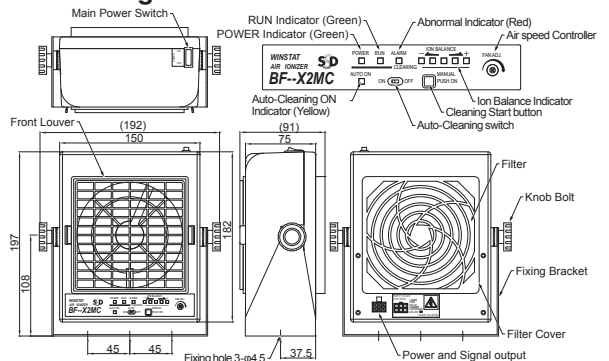
Main Features

Model BF-X2MC is update model of BF-2ZC with automatically cleaning emitter function as maintenance free performance.

Automatically emitter cleaning (once per day), and manual cleaning available Ion Balance indicator

- With SSD HDC-AC Technology, keep long stability performance
- Safety function with Pulse discharge detection, Over current detection
- With alternative front louver, you can use for long distance or wide area ionization.
- Easy angle adjustable with locked for each angle
- Alarm function: High voltage abnormal and locked Fan with alarm output

Dimension Diagram



Specifications

Model	BF-X2MC
Input Power	DC24V (AC Adaptor AC100~240V available)
Capacity	18VA
Output Voltage	± 7500Vo-p
Ion Balance	Below 5V (Distance:300mm)
Air Volume	1.4~3.2m ³ /min
Air Speed	1.8~3.6m/sec (With straight Louver: 300mm center) 0.4~0.6m/sec (With Wide angle Louver: 300mm center)
Ozone density	Below 0.004ppm (Disance:150mm)
Available environment	0~40% / 15~85%RH (without condensation)
Filter	Pre-filter level
Signal Output	ALARM: MOS FET Relay Non-Voltage contact (NC) (HV abnormal, or Fan abnormal: OFF) ION BALANCE: MOS FET Relay Non-Voltage contact (NC) (Ion Balance abnormal: OFF)
Dimensions	150x182x75mm (WxHxD)
Weight	Approximately 1,2kg (with stand frame)
Sound level	59dB(A) (Distance: 1m)
Accessories	Operation Manual, AC Adaptor, Wide angle louver, Signal output cable
Optional Part	Filter (10pcs)

Static Eliminator Blowers

High frequency type

WINSTAT

FEATURE of HF-AC Ionizer

- With SSD high frequency HF-AC, it performs as compact light and weight structure.
- Wide and Straight ionization with two kinds of louver part. (XZB/ X2ZB-V2)

- Safety operation with minute discharge detection and over current detection.
- Angle locked function keeps fixed angle direction. (X2ZB-V2/X4ZB)
- Easy maintenance with detachable louver and emitter needle unit.
- Variable air speed control.
- Cleaning Check (CC) alarm LED. (X2ZB-V2/X4ZB)

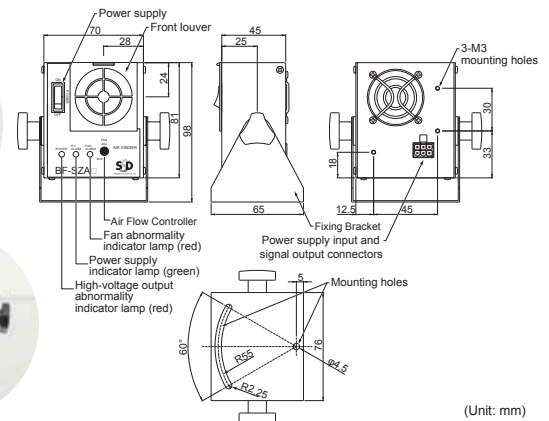
Compact size Air Ionizer

WINSTAT SZAI

As usual package of BF-SZAI, AC adaptor is not included, so in case you use AC power line, please purchase AC adaptor AD-24V100-6P as optional part.



Dimension Diagram



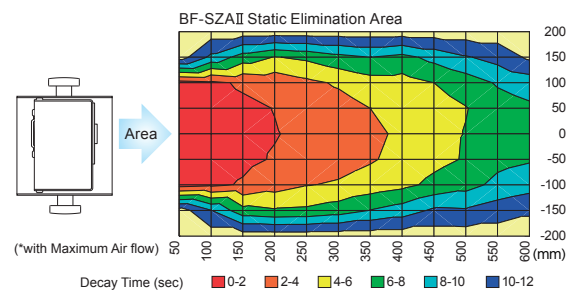
Main Features

- As unparalleled small designed, it is easy to install into small space like in the machine.
- Easy installation with using the attached fixing bracket, or directly use the fixing hole at back side.

Specifications

Model	BF-SZAI
Input Voltage	DC24V±5% (AC adaptor is not included)
Capacity	5VA
Output Voltage	AC 2500V
Ion Balance	Below ±10V
Air Volume	0.2~0.30m ³ /min
Ozone level	Below 0.04ppm (Distance at 150mm)
Available environment	0~40°C / 15~65%RH (without condensation)
Filter	No filter
Dimensions	70x81x45mm (WxHxD) only body size
Weight	Approx 370g (with Bracket)
Sound level	48dB (A) (at 1m distance)
Alarm output	Normal: ON, Abnormal (HV alarm or fan alarm with Red LED light): OFF MOS FET Relay, Normally Closed contact. Maximum current: 200mA, Voltage: Below 30VDC.
Accessories	Manual, Signal output cable, Cleaning Brush
Optional Part	AC Adaptor (OBF-24V-AD-SZAI) AC100~240V available

Static Elimination Area

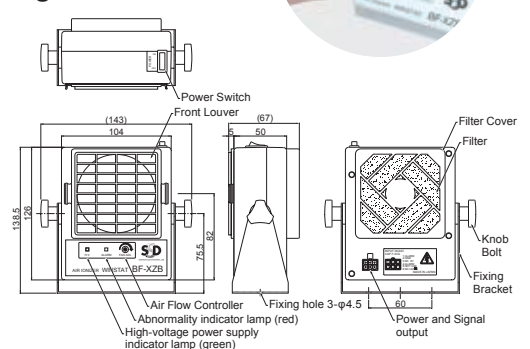


Slim and light weight Air ionizer

WINSTAT BF-XZB



Dimension Diagram



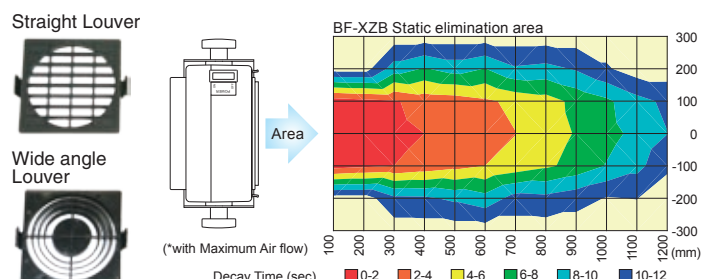
Main Features

- Compact Air Ionizer WINSTAT BF-XZB is slim and light-weight designed desktop ionizer with featuring SSD HF (high frequency) AC technology

Specifications

Model	BF-XZB
Input Voltage	DC24V (AC adaptor AC100~240V available)
Capacity	7.2VA
Output Voltage	AC 2500V
Ion Balance	Below ±10V (Distance at 300mm)
Air Volume	1.0~1.7m ³ /min
Air Speed	1.6~2.4m/s (with Straight Louver at 300mm) 0.7~1.3m/s (with Wide angle Louver at 300mm)
Ozone level	Below 0.04ppm (Distance at 150mm)
Available environment	0~40°C / 15~65%RH (without condensation)
Filter	Pre-filter level
Indication	Green: Normal condition (H.V), Red: HV Abnormal (ALARM)
Alarm output	Normal: ON, Abnormal (HV alarm or fan alarm with Red LED light): OFF
Dimensions	104x126x50mm (WxHxD) only body size
Weight	460g (with Bracket)
Sound level	60dB (A) (at 1m distance)
Accessories	Manual, AC Adaptor, Wide angle louver, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W60), Filter (10pcs) (OBF-FZA-1-10)

Static Elimination Area



Static Eliminator Blowers

High frequency type

WINSTAT

Static eliminator blower

WINSTAT BF-X2ZB-V2



Condition in which the louver and the discharging unit have been removed



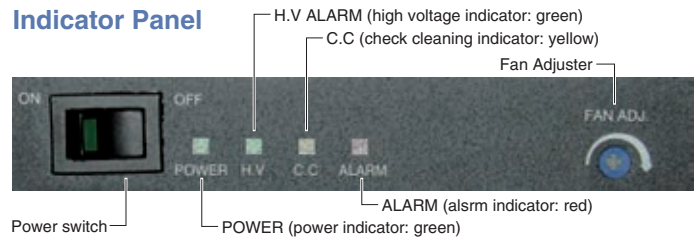
Main Features

- Louver and emitter needle easy to remove and replace.
- Can choose the area for static elimination with two types of louvers.
- Main unit angle can be adjusted and locked and the angle never changes due to vibrations.

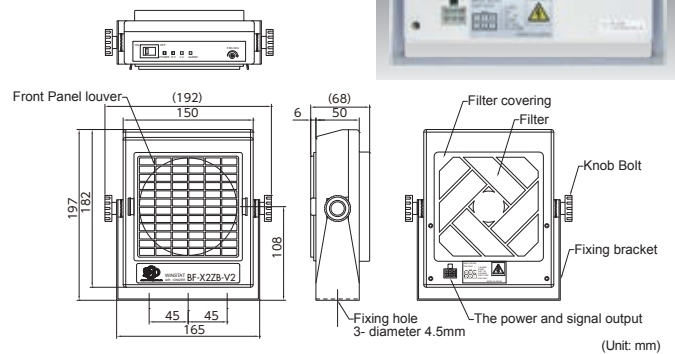
Specifications

Type	BF-X2ZB-V2
Input Voltage	DC24 (VAC adaptor supplied; AC100~240V)
Capacity	10VA
Output Voltage	AC 3000V
Ion Balance	±10V or less (at 300 mm; at factory shipment)
Air Flow	1.6~3.3m ³ / min
Wind Velocity	1.9~3.2m / sec (Straight louver at 300mm center) 0.7~0.9m / sec (Wide angle louver at 300mm center)
Ozone Abundance	0.04 ppm or less (at 150 mm)
Environment	0~40°C / 15~65%RH (without condensation)
Filter	Pre-filter Class
Output Signal	MOS FET Relay No-voltage Contact Output HV abnormal (Red LED with ALARM)
Dimensions	150x182x68mm (WxHxD) exc. protrusions.
Weight	Approx. 820g (with Bracket)
Noise Level	57dB (A) at 1m distance
Accessories	Instruction Manual, AC adapter, wide-angle louver, output signal connecting lead, cleaning brush
Optional Items	Discharging needle unit (DUN-W85), filters (10-sheet set)

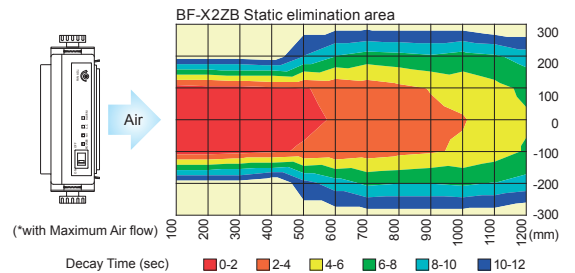
Indicator Panel



Dimension Diagram



Static Elimination Area



Wide blow Air Ionizer

WINSTAT BF-X4ZB



Main Features

- Compact Air Ionizer WINSTAT BF-X4ZB is slim and light-weight designed desktop ionizer with featuring SSD HF (high frequency) AC technology
- Wide Coverage area as 400mm

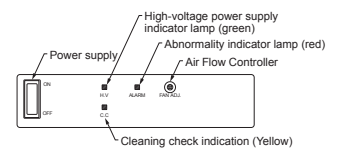
Specifications

Model	BF-X4ZB
Input Voltage	DC24V (AC adaptor AC100~240V available)
Capacity	25VA at maximum fan speed
Output voltage	AC 3000V
Ion Balance	Below ±10V (Distance at 300mm)
Air Volume	1.4~3.2m ³ /min × 2fan
Air Speed	0.7~1.8m/sec
Ozone Level	Below 0.04ppm (Distance at 150mm)
Available environment	0~40°C / 15~85%RH (without condensation)
Filter	Pre-filter level
Alarm output	Normal: ON, Abnormal(HV alarm with Red LED light): OFF
Dimensions	370x159x78.5mm (WxHxD) only body size
Weight	1600g (with bracket)
Sound Level	63dB (A) (at 1m distance)
Accessories	Manual, AC Adaptor, Signal output cable, Cleaning Brush
Optional Part	Emitter Needle unit (DNU-W85), Filter (10pcs) (OBF-F2ZA-1-10)

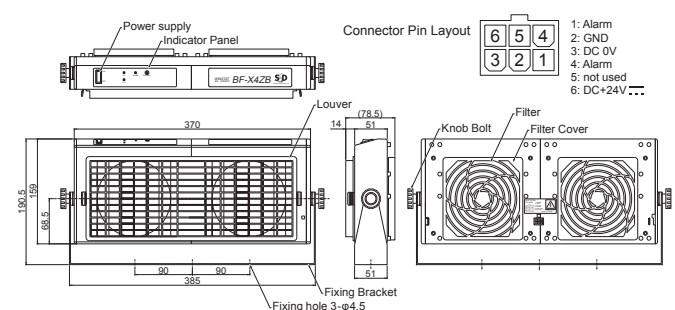
Optional Parts



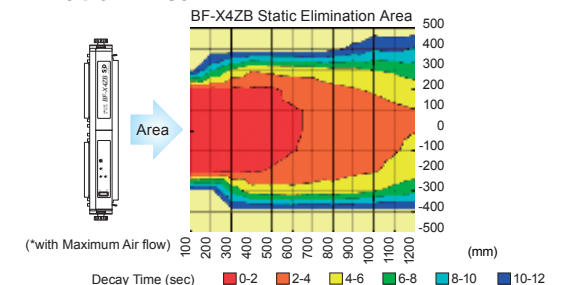
Indicator Panel



Dimension Diagram



Static Elimination Area



Tester

Static Electricity Measuring Instrument

STATIRON

Static Field Meter

STATIRON DZ4

DZ4

Application Example

- Check the charge condition of film, resin, etc.
- ESD check at the assembling process line
- Check the ion balance of the ionizer



Angle of the rotary sensor head 180 degree (hold each 45 degree)



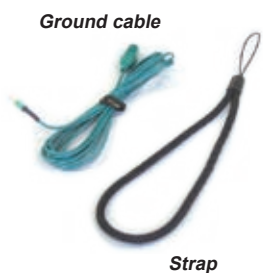
Unit Electrostatic Measurement Plate (optional)
Model: ODZ4-HPLT
Can measure static electricity in human bodies



DZ4 plate (optional)
Model name: ODZ4-PLT
for ion balance measurement



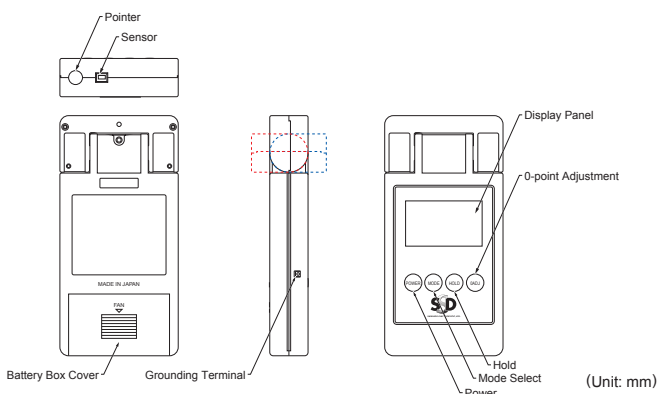
Soft storage case
(standard accessory)



Ground cable

Strap

Dimension Diagram



Specifications

Model	DZ4
Signal detection method	Oscillating chopper *1
Frequency of data indication	Each 0.5 second
Measurement range	Normal mode: 0.01~19.99kV I.B mode: 0.001~1.999kV
Measurement distance	30mm (between measurement object and sensor)
Measurement distance adjust	Red Light focusing system
Angle of the rotary sensor head	180 degree (hold each 45 degree)
Indicator	LED indicator with back light
Polarity display	Both positive and negative polarity
Mode select	With MODE select button
Battery check	Indicate in LED indicator
Power supply	DC 9V alkaline battery 006P
Operating Environment	0~40°C
Main unit dimensions	66×22×138mm (W×D×H)
Weight	160g
Accessories	9V battery, soft storage case, Grounding Cable, Strap

*1. The oscillating chopper is very susceptible to shock such as being dropped. Take care not to subject when using it.

Tester

Static Electricity Measuring Instrument

STATIRON

Handy Type Charged Plate Monitor

STATIRON DP

DP



Application Example

- Characteristics evaluation of various ionizers



Angle of the rotary sensor head 180 degree (hold each 45 degree)



Ionizer Checking



AC adapter (optional)

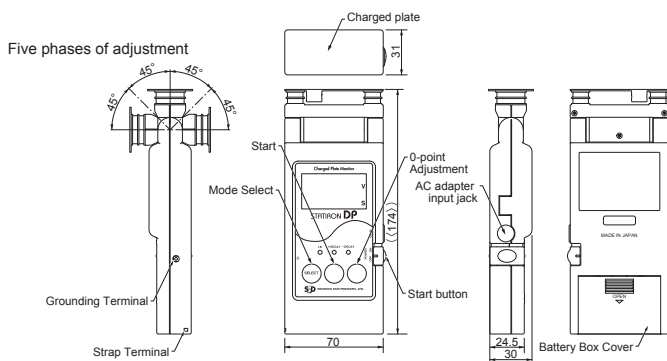


Soft storage case (standard accessory)

Main Features

As handy type of CPM function, can check the ion balance and decay time of ionizers. Impressed 1000V onto the plate and measure the decay time up to 100V.

Dimension Diagram



Specifications

Model	DP
Signal Detection Method	Oscillating Chopper *1
Plate Size	70x32mm (IEC standard 150x150mm)
Plate Capacity	10pF ±10%
Measuring Accuracy	±10%rdg ± 2 digit
Measuring Voltage Range	0~±1999V
Measuring Time range	0.0~99.9 sec
Angle of Rotary head	180 degree (hold each 45 degree)
Battery Check	Indicate in LCD indicator
Power Supply	Two 1.5V DC AA-type alkaline battery or AC adaptor
Weight	240g
Main Unit Dimensions	70x174x30mm (WxHxD)
Accessories	1.5VDC AA-type battery (2pcs), Soft case, Grounding cable
Operation Environment	0~40°C *2
Optional Part	AC Adaptor (ODP-ADP) for AC100~240V

*1 The oscillation chopper is very susceptible to shock such as being dropped. Take care not to subject it to strong shock when using it.

*2 Under high humidity environment as over 60% humidity, it will cause the problem to charge the high voltage onto the plate

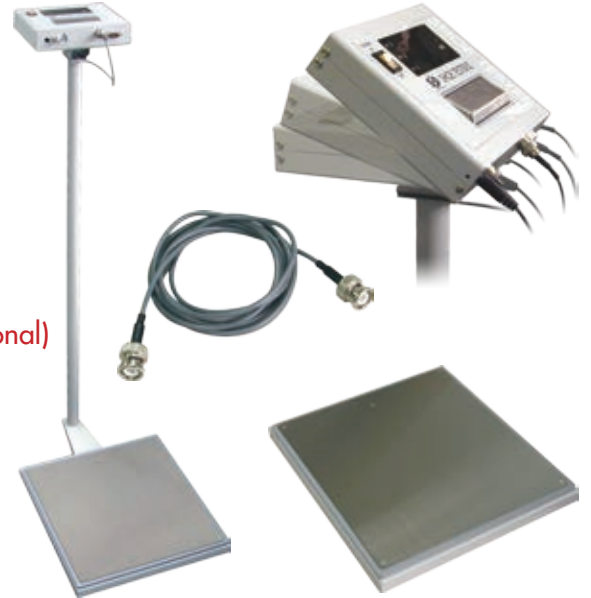
Tester

Resistance Measuring Instrument

Antistatic Shoe Leakage Measuring Instrument

SHOE TESTER II

SHOE TESTER II

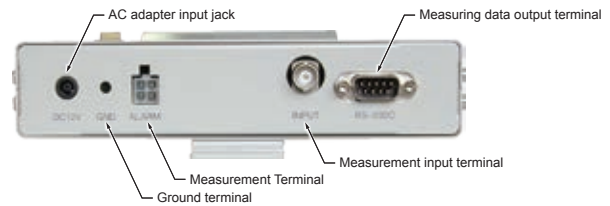
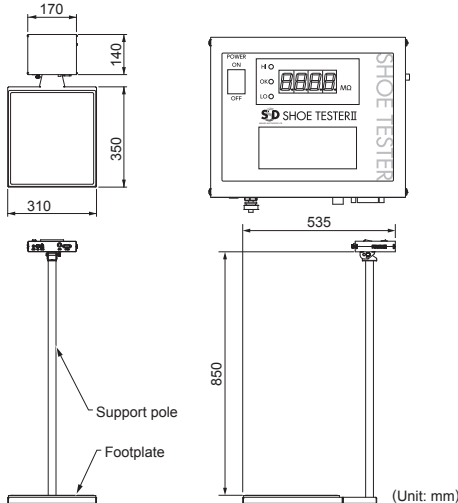


Application Example

- Semiconductor manufacturing plants
- Paint plants
- Plants where hazardous products such as solvents or powder are handled and the wearing of antistatic shoes is required.

(Support pole is optional)

Dimension Diagram



Main Features

The SHOE TESTER is a dedicated measuring instrument that measures the electrical resistance of antistatic shoes designed to eliminate static electricity from the human body, while the shoes are being worn. To perform measurement, the person wearing the shoes stands on the base and operates the instrument simply by pressing the touch panel with one finger.

A resistance of 100 MΩ or less to ground is required to eliminate static electricity from the human body, and at least 0.1 MΩ is desired for the prevention of electrical shock. Since the resistance of the shoes will vary depending on the temperature and humidity, dirt on the shoe soles, and friction, periodic measurement and maintenance is required.

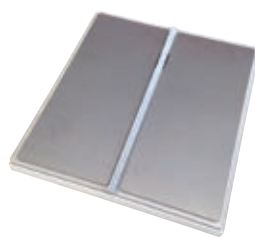
Specifications

Model	SHOE TESTER II
Measurement method	Resistance measurement using a transistor DC converter, analog comparison method
Measurement voltage	10VDC
Measurement accuracy	±10%+2digits
Measurement range	0.00~200.0MΩ
Display	3-1/2 digit red LED display, automatic decimal point setting
Limit settings	Upper limit value 1MΩ / 5MΩ / 10MΩ / 20MΩ / 35MΩ / 50MΩ / 100MΩ
	Lower limit value 0.1MΩ / 0.5MΩ / 1MΩ / 5MΩ / 10MΩ
	Cannot settings upper and Lower limit value
Alarm	The green lamp is lit during normal recording
	Upper limit value The red lamp lights and a buzzer (with on/off switch) sounds
	Lower limit value The red lamp lights and a buzzer (with on/off switch) sounds
Function check	Ohm check switch, 0.95~1.05MΩ
Battery check	Push-button method
Power supply	DC12V ACadapter (100~240AC)
Operating Environment	0~40°C
Dimensions	Main unit: 170×140×37 (W×H×D)
	Measurement stand: 310×350×30mm (W×D×H)
Weight	Main unit 0.9kg
	Measurement plate 4.5kg

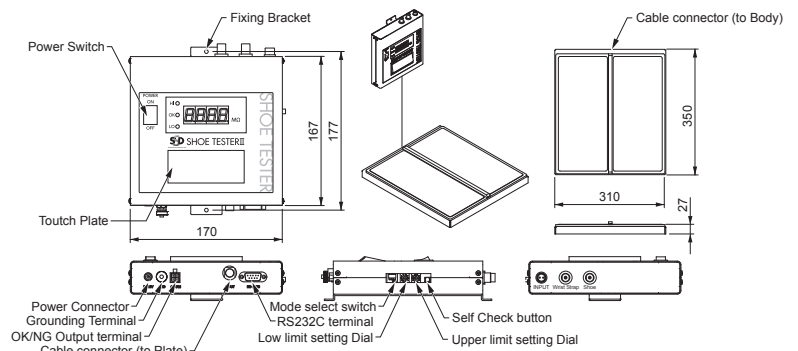
For Both legs Check



Measuring instrument



Measuring table



Tester

Electric Charge Attenuation Measuring Instrument

Tester Electric Charge Attenuation Measuring Instrument

STATIC HONESTMETER **H-0110-S4**

H-0110-S4

The standard height of the STATIC HONESTMETER probe is 20mm. The probe size can be changed to 15mm to meet the Japanese Industrial Standard (JIS). Please specify this at the time of order.



Please specify either 50 or 60 Hz.
Only AC100V available!

If necessary, we will provide Stable transformer with AC100V output.

Safety cover is now Standard accessory with
Safety Interlocked function

Main Features

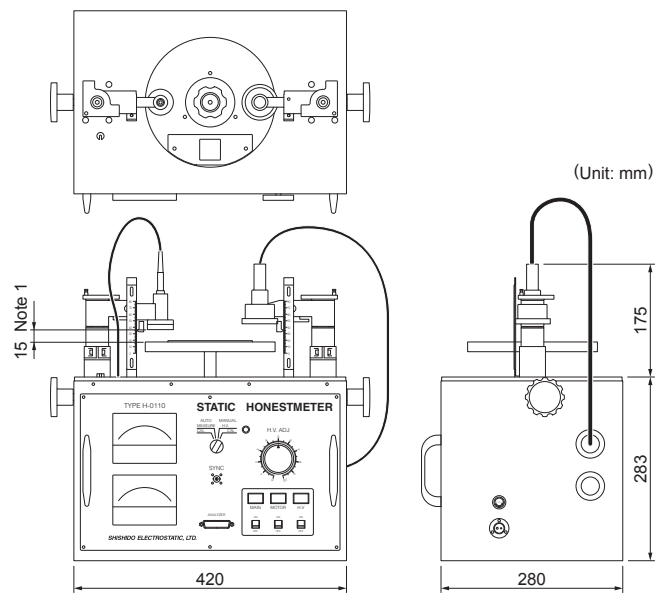
The STATIC HONESTMETER is an instrument designed to measure the attenuation of static electricity, and is the ideal device for measuring the diffusibility of static in materials. This device is used to charge the sample by irradiating it with air ions generated by a corona discharge, and, after irradiation has stopped, to measure the static decay curve.

Specifications

Model	H-0110-S4
Input Voltage	100VAC ±10% (50/60Hz) *1
High-voltage	H.V.(applied voltage for corona discharge): 0~10kV
Power supply output	CAL (applied voltage for calibration): 0~3kV
Operating temperature range	0~40°C
Operating humidity range	20~90% RH (non-condensing)
Output signals	ANALYZER terminal: for the analyzer Voltage: 0~±10V Accuracy: Approx. 10% Accuracy: Approx. 10%
Main unit dimensions	420×450×280mm (W×H×D)
Weight	Approx. 33kg
Accessories	Power supply cord, signal cable calibration jig and balancer (one set) hexagonal wrenches (2), 2A fuse (3)

*1 Please specify at the time of purchase 50Hz/60Hz. It does not correspond to the different voltage.

Dimension Diagram



Note 1) Probe height at the time of calibration

Device Configuration and Operation

As shown in Fig. 1, this device comprises a power application section where corona discharge is used to charge the sample (specimen) as desired, a turntable on which the specimen is placed for rotation, and a power receiving section for detecting the potential of the sample. The operation of the device is shown in Fig. 2.

Fig. 1

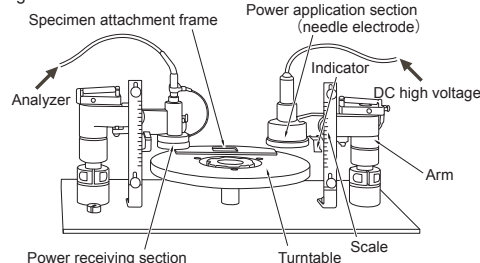
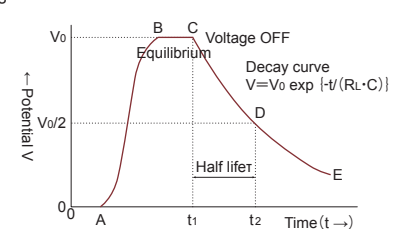


Fig. 2



STATIC HONESTMETER

HONEST DATA ANALYZING SYSTEM V2-S1

V2-S1

HONESTMETER

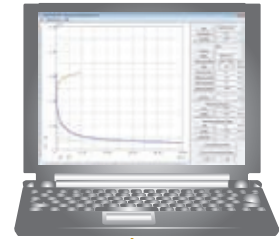


HONEST DATA ANALYZING SYSTEM V2-S1



PC

*PC is not included, the software is include with Model V-2.

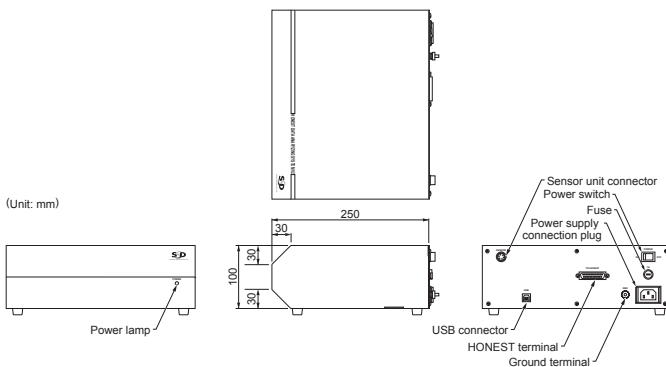


Main Features

The HONEST DATA ANALYZING SYSTEM V2-S1 is an analysis and calculation device designed to automatically calculate the half life of the voltage decay from the static decay curve obtained from the HONESTMETER device. The attenuation of materials can be automatically measured by a one-touch operation.

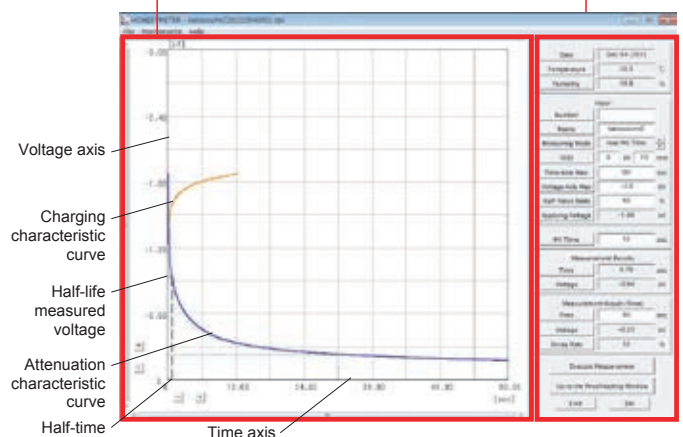
- Decay rate setting: 2~100% decay
- Digital data storage (CSV file data)
- Automatically operation

Dimension Diagram



Measurement data graph display screen

Control screen buttons and parameter settings



Date, temperature and humidity

Date	Oct /04 /2012	Date (automatic entry)
Temperature	26.3 °C	[Measurements] temperature
Humidity	56.8 %	[Measurements] humidity

Basic Configuration

Number		
Name	kakousumi2	
Measuring Mode	real / HV Time	Measurement mode setting
ADD	0 kV 10 mm	
Time Axis Max	60 sec	Measurement time setting
Voltage Axis Max	-3.0 kV	
Half-Value Ratio	50 %	% Half-life setting
Applying Voltage	-1.88 kV	[Measurements] maximum charging voltage
HV Time	12 sec	of real / HV time when Application time setting

Measurement data of half-rate is specified

Time	0.70 sec	[Measurements] Decay time of the half-rate set at the time
Voltage	-0.94 kV	[Measurements] Voltage setting of half-time rate

Measurement data in the specified time period

Time	30 sec	Measurement time setting
Voltage	-0.23 kV	[Measurements] Voltage at the time of setting measurement time
Decay Rate	12 %	

Specifications

Model	V2 -S1
Input Voltage	AC 100~240V±10%(50/60Hz)
Capacity	0.5VA
Main unit dimensions	300×250×100mm(W×H×D)
Weight	Approx. 1kg
Operating environment	Supported model DOS/V computer with a USB interface Intel Pentium 500 MHz or faster (or equivalent) At least 128 MB of memory recommended, depending on the capacity required by the OS • Hard disk drive (HDD): At least 2 GB of available space • Screen resolution: 1024 x 768 or greater recommended Operating systems (OS) Windows Vista (32bit) Windows XP (SP2 or later, 32bit) Windows 7 (32bit/64bit) Windows 8 (64bit)
Accessories	Power supply cord, connection cable USB cable, Temperature/humidity sensor, CD-ROM(Manual and drivers), Stand

High-voltage Power Supplies

Configuration of the Safety Device

The over-current detection section is a device that detects an over-current by measuring the current returned to the secondary ground terminal on the high-voltage transformer and comparing it with the reference input value.

When it detects an abnormal leakage current on the static-eliminating electrode or a high-voltage cable, the safety device stops the high-voltage power supply and displays an alarm.

Model	Current setting for abnormality detection
SAT-11	Upper limit 2.5 mA constant
SAT-20	3 settings; 2, 3.5, or 5 mA
SAT-30	SAT-30 Digital setting enabled up to 5mA in 1μA increments

Safety device meeting Product Liability standards

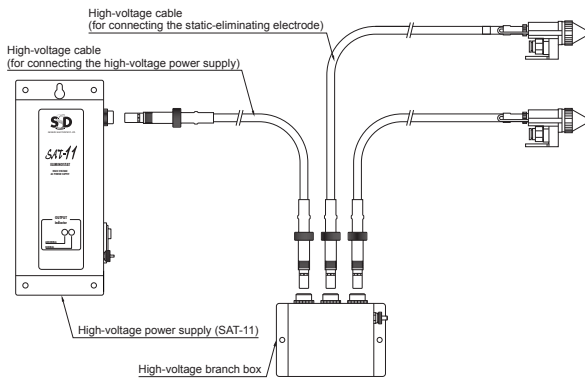
ELIMINOSTAT SAT Series

A safety device detects an abnormal leak electric current and stops a high pressure power supply

Powered-up and Abnormal Alarm Output
ELIMINOSTAT **SAT-11**

SAT Series

Static Eliminator Connection Example



SAT-11



Please use the following calculation formulae to configure your system.

SAT-11/AT-10	$[\text{Total electrode length}] + [\text{Total cable length}] \leq 8\text{m}$
SAT-20/SAT-30	$[\text{Total electrode length}] \leq 10\text{m} + [\text{Total cable length}] \leq 12\text{m}$

* The length of the branch box is calculated as 1m, and the length of the AP-5, AG-5, and FAPS-GP electrodes as 0.5 m.

* Please make sure the limited length of cable and bar before using. Because when over-length using will cause alarm of SAT series.

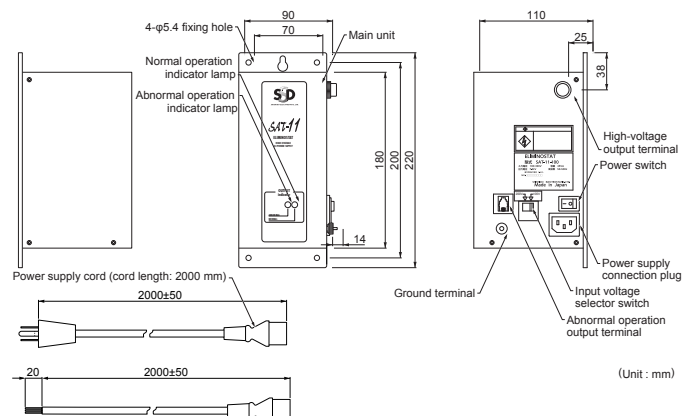
Main Features

The ELIMINOSTAT SAT Series comprises a static-eliminating electrode, a high-voltage power supply, high voltage cables and a high-voltage branch box for connecting the system units.

The SAT Series static eliminators are provided with a safety device that meets standards proscribed under the Product Liability Law.

This safety device incorporated in the SAT Series high-voltage power supplies is an over-current protector that cuts off the high-voltage power supply when an abnormal current is detected in the electrode or in the high-voltage cables.

Dimension Diagram



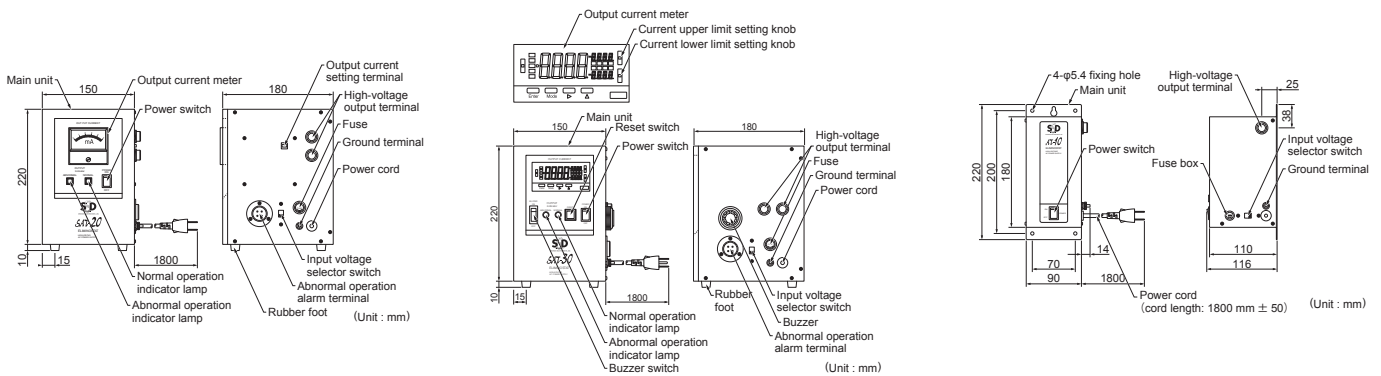
ELIMINOSTAT SAT-20

ELIMINOSTAT SAT-30

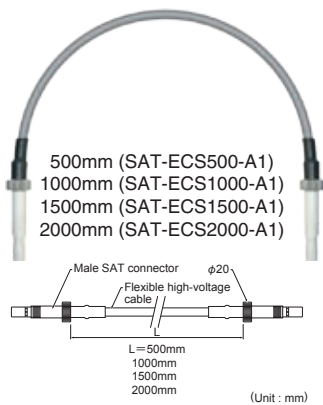
ELIMINOSTAT AT-10



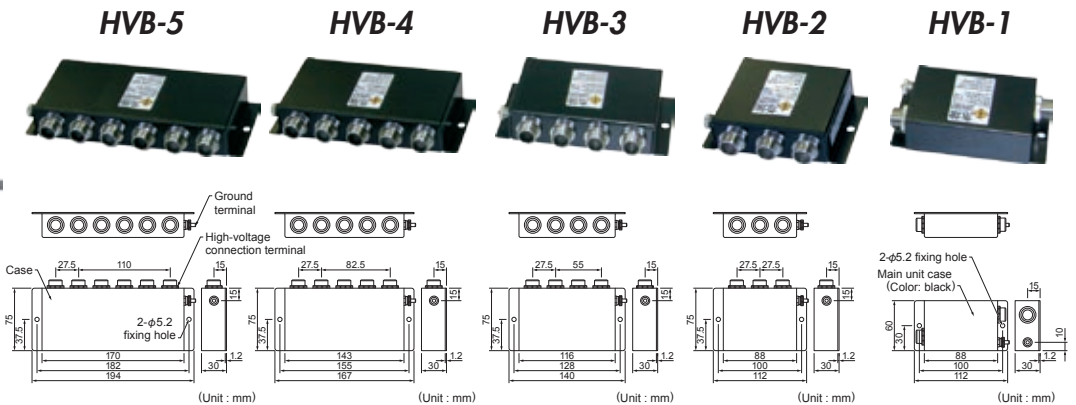
Dimension Diagram



High-voltage Cables SAT-ECS-A1



High-voltage Branch Boxes HVB



Specifications

Model	SAT-11	SAT-20	SAT-30	AT-10
Input power supply	110~120VAC or 220~240VAC (switch-selectable)			
HV power supply used	Commercial frequency alternating current power supply (wire wound high-voltage power supply)			
Allowable output current	2.5mA	Maximum 5.0mA (2mA, 3.5mA, 5mA switch-selectable settings)	Maximum 5.0mA (upper and lower limits settable in 1μA units)	2.3mA
Operating Environment	0 to 40°C			
Main unit dimensions	90×220×110mm (W×H×D)	150×230×180mm (W×H×D)	150×230×180mm (W×H×D)	90×220×110mm (W×H×D)
Weight	3600g	6000g	6000g	3800g
Alarm functions	LED indication when a high-voltage abnormality or shutdown occurs			
Allowable length for connecting electrodes/wiring	8 meters in total	Electrode length: 10m; cable length: 12m		8 meters in total
Accessories	Power supply cord (100 VAC 3P-plug) (cord length: 2000mm)	Metallic connector for alarm output; protective bushing for high-voltage output; 3-pin adapter		-

AT-10 is not provided with the safety device.

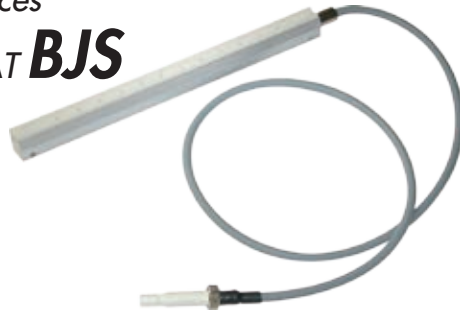
Electrodes

AC Voltage Application Method Static Eliminators

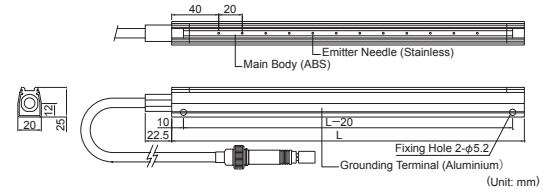
Bar electrode for small spaces

Bar Electrode **ELIMINOSTAT BJS**

(Standard cable length : 1m)



Dimension Diagram



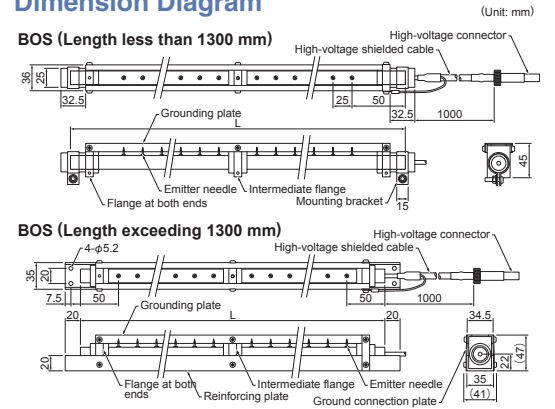
Bar electrode for long-length applications

Bar Electrode **ELIMINOSTAT BOS**

(Standard cable length : 1m)



Dimension Diagram



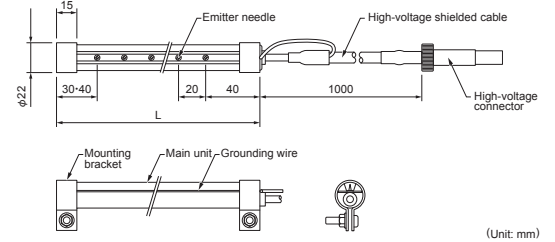
Bar electrode for small spaces

Bar Electrode **ELIMINOSTAT BICS**

(Standard cable length : 1m)



Dimension Diagram



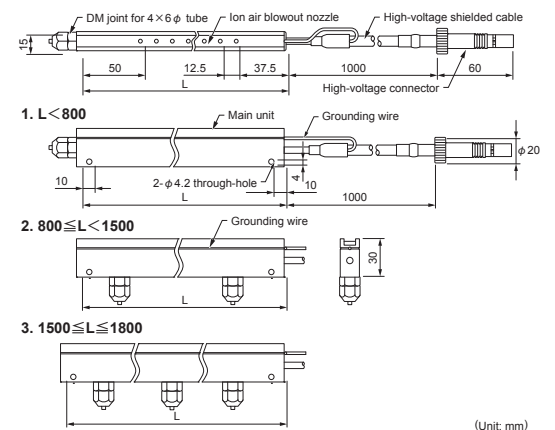
Bar electrode for small spaces

Air Electrodes **ELIMINOSTAT BUAS**

(Standard cable length : 1m)



Dimension Diagram



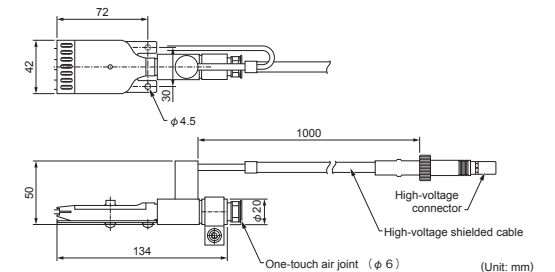
Electrode with flat nozzle

Air Electrodes **ELIMINOSTAT FAPS-GP**

(Standard cable length : 1m)



Dimension Diagram



1. Designed to be used for eliminating static from film, sheets, paper and so forth
2. Low-sensitivity construction to minimize electric shock
3. The length of the standard high-voltage cable is 1 m.
4. The optimum installation location of the bar type electrode is at a distance of 30 to 50 mm away from the charged object (when air is not used).
5. The maximum static elimination speed with respect to the charged object is 120 m/min.

ELIMINOSTAT

Electrode with pointed nozzle

Air Electrodes ELIMINOSTAT AP-5

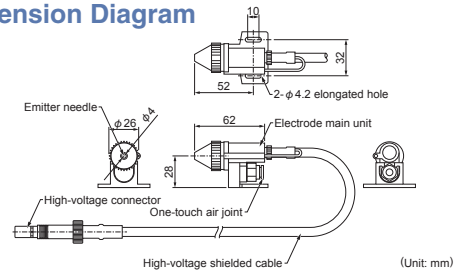
(Standard cable length : 1m or 2m)

With Nozzle Cap A



With Nozzle Cap B

Dimension Diagram

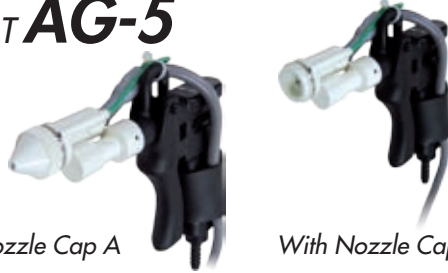


Ion air gun

Air Electrodes ELIMINOSTAT AG-5

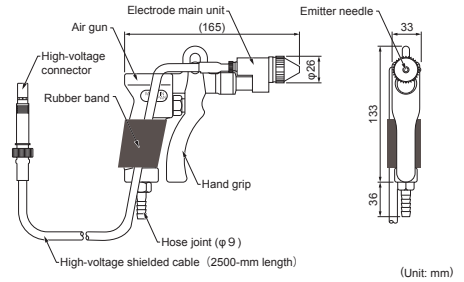
(Standard cable length : 2.5m or 5m)

With Nozzle Cap A



With Nozzle Cap B

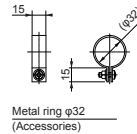
Dimension Diagram



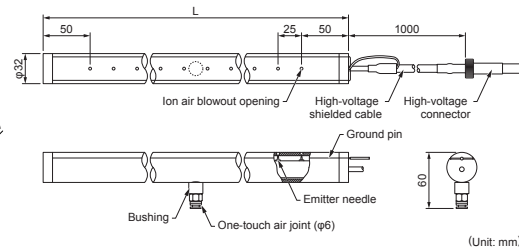
Bar electrode for long-length applications

Air Electrodes ELIMINOSTAT ALS

(Standard cable length : 1m)



Dimension Diagram



Static Eliminator with Integral Power Supply

DC Voltage Application Method Static Eliminators

ELIMINOSTAT DC-ESR-C



Ion Alarm LED

Adaptor for connected specification (optional)

1. To two electrodes at the connection : The AD-02 type.
2. To six electrodes at the connection : The AD-06 type.



Serial connector

Main Features

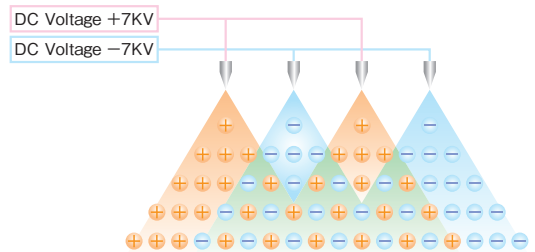
The DC-ESR-C is a bar ionizer that uses the corona discharge method to generate air ions. Air containing positive and negative ions effectively neutralizes the load on a charged object. With its low dust-emission design, this device is suitable for controlling ions in clean rooms and on clean benches. Since a small DC power supply is incorporated in the bar electrode, the device does not require a high-voltage cable. The safety design uses only low-voltage wiring, unlike other devices that require an external high-voltage power supply and high-voltage cables.

Specifications

Model	DC-ESR-C
Input power supply	24VDC (AC adapter supplied; compatible with 100~240 VAC)
External dimensions	32×50×600, 800, 1000, 1200, 1400, 1600 or 1800mm(W×H×D)
Weight	0.24kg (when L = 600mm)
Ion balance	Adjustment function provided
Static charge discharge time	2.1s *1
Amount of ozone generated	0.015ppm or less *2
Material of Emitter	Tungsten (can be changed to single-crystal silicon as an option)
Operating temperature range	0~50°C
Option	AC adapter

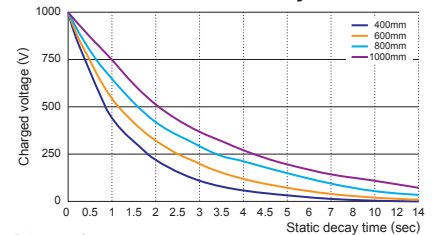
*1 Measured using a CPM measurement device (conforms to ESD, STM 3.1-2000) With the ion balance in a steady state, the static decay time is the time taken to decay from +1000 V to +100 V. Data obtained using the following parameters: Airflow: 0.2 MPa, Distance: 300 mm, Ion balance setting: B *2The ozone density was measured at a distance of 50 mm from the main unit's air outlet.

Principle of Static Elimination

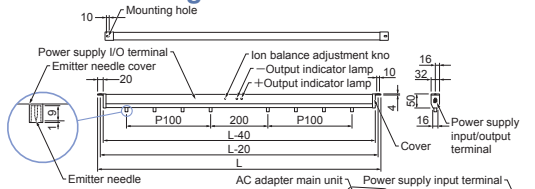


Static elimination area

When the air downflow velocity is 0.3 m/s



Dimension Diagram



The standard L dimensions are 600, 1000, and 1400 mm. The maximum L dimension is 2000 mm.

Number of emitter needles:
 L=600 to 999 mm: 4 needles (2 for +high-voltage output; 2 for -high-voltage output)
 L=1000 to 1399 mm: 8 needles (4 for +high-voltage output; 4 for -high-voltage output)
 L=1400 to 2000 mm: 12 needles (6 for +high-voltage output; 6 for -high-voltage output) (Unit: mm)

Static & Dust Remover

DUST HALER

Compact size Air Ionizer

DUST HALER Trz:CuBe/Flt:CuBe/Trz: Maxi



Trz:CuBe

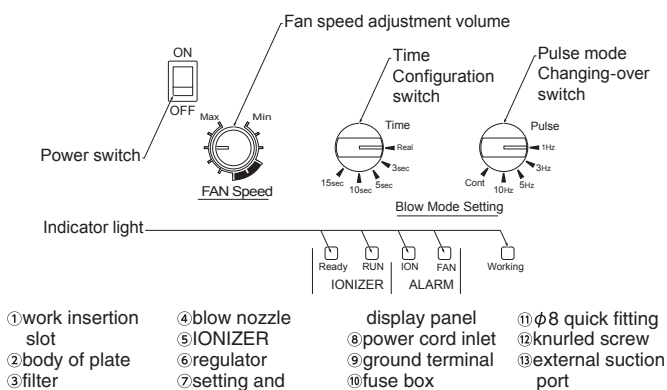


Flt:CuBe

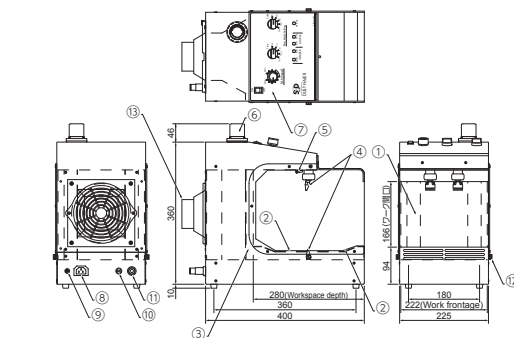


Trz: Maxi

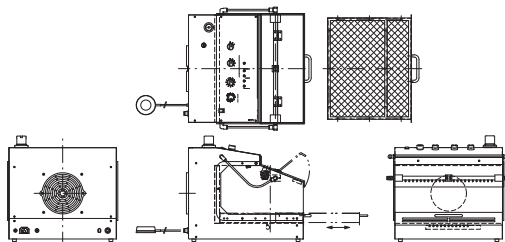
Dimension Diagram



Trz:Cube



Trz:Maxi



Main Features

- With Strong Vacuum fan, correct the particle that blown away inside box. (Trz:Cube, Trz:Maxi)
- Strong Air blow nozzle at up and down side. Installed three nozzles two for upper sides one for down side.
- Installed SSD HDC-AC Ionizer and perform fast decay performance.
- Easy operation by timer controlled air blow.
- Effective Four kinds of pulsed air blow
- Attached additional Filter (1 pc)
- You can chose non-fan vacuum type(Flt:CuBe) in case you have independent vacuum system.



Upper nozzle



Lower nozzle

Specifications

Model	Trz:Cube	Flt:Cube	Trz:MaXi
Input Voltage	AC100V~240V(50/60Hz) $\pm 10\%$		
Electric Consumption	Maximum 240W	Maximum 50W	Maximum 240W
Ionizer Specifications	Discharge Method: HDC-AC Ion Balance: Below $\pm 30V$ Decay time: Below 1 second (0.6MPa air pressured)*1		
Supplied Air	CDA (Clean and dried air) *2		
Available Air pressure	0.2MPa~0.6MPa*3		
Size of air fitting	Diameter 8mm		
Air Blow nozzle	Upper side: 2units(Angle adjustable) Down side: 1unit		Upper side: 2units(Hight adjustable) Down side: 1unit(ON/OFF avairable)
Filter Specification	Correct 98% of the particle over 10 μm		
Air Blow Pulse setting	1Hz, 3Hz, 5Hz, 10Hz, Cont		
Air Blow Time setting	3 sec, 5 sec, 10 sec, 15 sec, Real		
Fan Speed	Non-step adjustable		
Additional Function	-		Foot Switch/Sensor/Continuously Blow Selector Slide Table
Air Consumption	270 l /min ANR (at 0.3MPa Cont setting)		300 l /min ANR (at 0.3MPa Cont setting)
Vacuum System	Fan	Dust Corrector	Fan
Sound Level	Minimum fan speed: 51dBA		50% Fan speed: 74dBA
Dimensions	225x360x400mm(WxHxD)		425x370x425mm(WxHxD)
Weight	Approx. 9kg		Approx. 8.5kg
Available environment	0~40°C / 15~85%RH (without condensation)		
Accessories	Manual, Power Cable, Filter, FootSwitch(Maxi only)		
Option Part	Filter (5 pieces): Trz-RKF05		Filter(5piece):Trz-MXF05

*1 Checked by CPM with 150x150mm plate (20pF), Decay time is from $\pm 1000V$ to $\pm 100V$.

*2 Supplied air must be Clean and Dry, the air contaminated with moisture or oil will makes damage to the ionizer.

*3 Setting level of the air regulator

In the interests of product improvement, specifications and product appearance are subject to change without notice.



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