

VESSEL

ESD PRODUCT CATALOG



VESSEL,





the ionizing and dust elimination expert, helps solve your quality problems.

Product quality is an important determination at manufacturing sites. VESSEL has focused on countermeasures against static electricity and dust in relation to quality. Since 2000, we have provided products to remove static and dust. All to help improve our customer's quality. Let VESSEL, the ionizing and dust elimination experts, help you improve your product quality.

3 particular reasons why VESSEL ionizers are chosen

1

Wealth of product

VESSEL's line-up of reliable and wide range from fan, gun, and bar-type air blow ionizers, EPA mats and wrist straps that prevent static discharge, to adhesive mats that prevent dust from scattering. Our products provide solutions to your problems in relation to static electricity and dust.

2

User-friendly products

To provide optimum products for production sites, our designs aim for ease of use. VESSEL aims for user convenience in various applications.

3

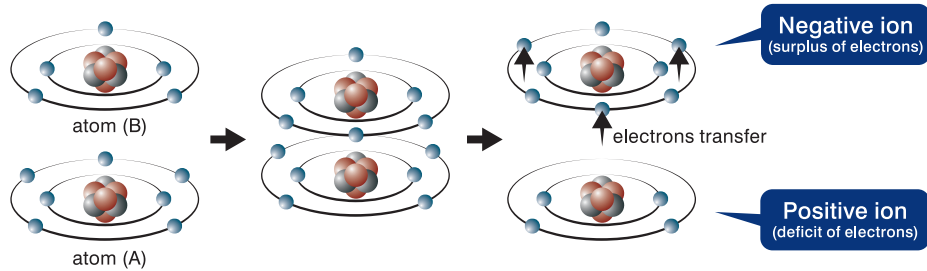
Direct support from our specialists

Our static removal and dust removal specialists will visit your production site to propose the best available products. Customization is also available upon request.

THE STATIC ELECTRICITY

Theory

The static electricity comes from the transfer of electrons between two or more atoms becoming electrically unbalanced.

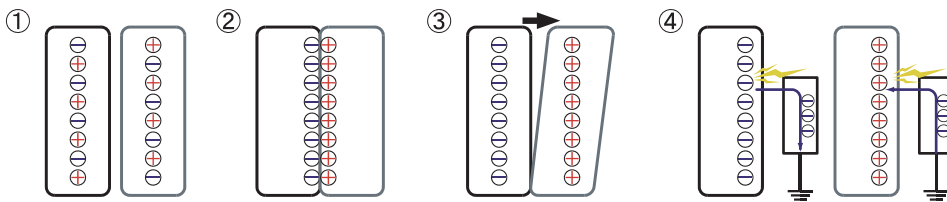


How is it created?

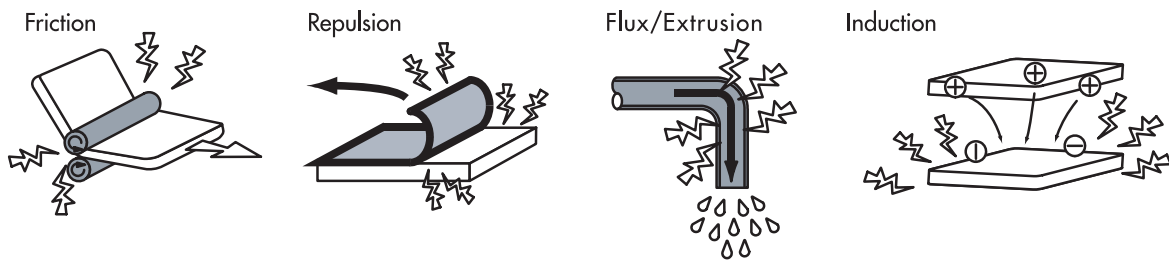
The static electricity is created after contact between two materials (one of which at least is an insulator).

The static electricity level depends on humidity, materials, as well as on the pressure, the time, and the surface of contact.

An electric voltage of several kV might be easily generated.

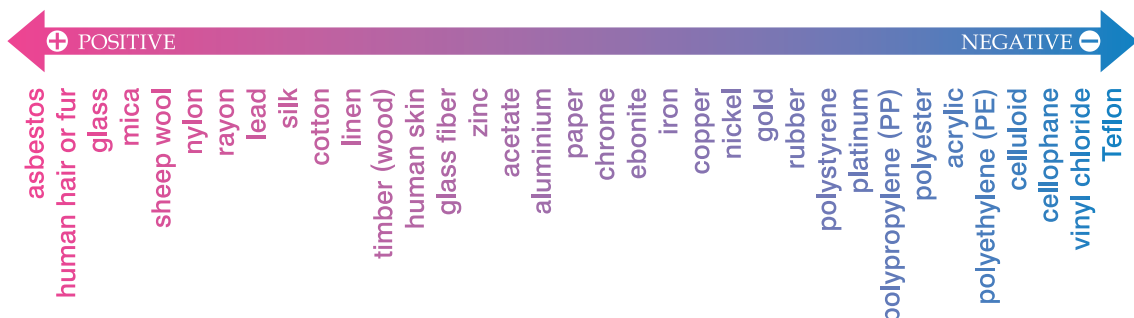


- ① Usually an object contains positive ions and negative ions. They are same in quantity and keep balance.
- ② When two objects come into contact, unstable electrons start moving (Charge Transfer).
In such a state, however, electrons just move, and two objects in touch as a whole are not charged.
- ③ Dragging these objects away makes the number of electrons unbalanced.
At this time, one object which receives electrons is negatively charged, while another object which loses them is positively charged.
- ④ Then, the electrons transfer, once the object, either negatively or positively charged, approaches to a grounded metal.



Triboelectric series

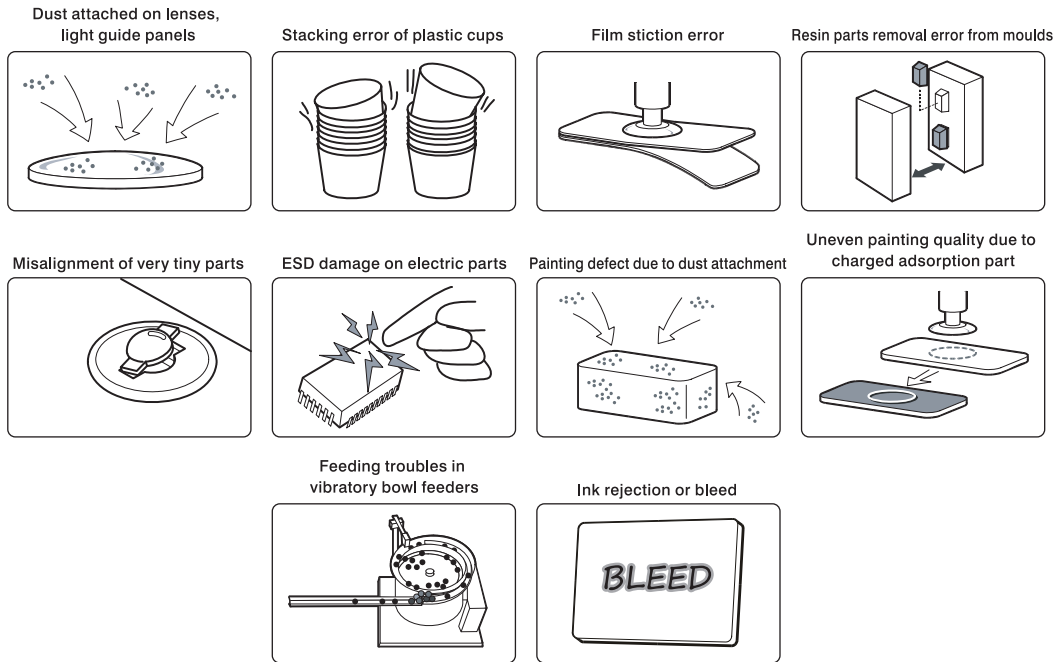
The Triboelectric Series chart shows the relative positive or negative charge of various materials.



Consequences

Three types of problems can result from static electricity:

- Apparition of electric arcs, which can damage the electronic circuits,
- Dust attraction, which can lead to unwanted defaults after parts painting or cause hygiene and cleanliness problems,
- And attraction or repulsion of other materials, which can cause, for instance, printing problems due to the repulsion of the ink or labeling problems due to the unwanted repulsion or attraction of the paper when being positioned.



How is it eliminated?

Different methods are used:

If possible and if it is a conductor, connect the part to the ground:

- The voltage of the part will be equal to 0V. However in certain cases, in order to avoid any sudden discharge, which could lead to electric arcs, it is necessary to use dissipative material with a controlled conductivity.

Otherwise use an ionizer:

- The ionizer will send positive and negative ions to be combined with the positive and negative charges on the targeted surface. The ions are created thanks to the corona discharge principle. The static electricity elimination is made without any contact.

Realize ionizing and clean control from your VESSEL's line-up of a reliable and wide range

Fan Type

Mount on a cell workbench, parts stock shelf, or belt conveyor. Switch the fan speed for neutralization in the close or far distance.



<Mini>
F-6RCL-E
F-6RST-E
→P08



<Standard>
F120R-E
F120S-E
→P09



<Wide width>
CF300-E
→P10



L-90-E
→P10

Nozzle Type

Assemble into manufacturing devices for pinpoint neutralization and dust-elimination within cramped spaces. Just replace the nozzle to use with various applications.



N-1
N-3
→P12



<High Power Series>
HPN-1
→P33



HPF-1
→P34

Gun Type

Ideal for air washing and neutralization after part acceptance and before part assembly, as well as for neutralization and dust elimination from resin formed products before painting.



G7R-E
→P14



G2-E
→P15



G-9
→P16



<High Power Series>
HPG-1
→P35

Bar Type

Suitable for neutralizing clean rooms, and preventing static generation on film moving at high speeds.

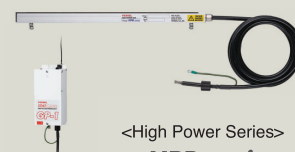


<Built-in power supply>
C-series
→P19



SJ-series*
P21

* Note
SJ-** is available while stocks last. →
The model code will be changed to SL-** afterward (CE compliant).



<High Power Series>
HPB-series
→P36

→P07

→P11

High Power Series P33

→P13

High Power Series P35

→P17

High Power Series P36

fingertips to your toes. of anti-static products.

Ion Parts Cleaner	EPA Working Mat	Clean Walker	Options
<p>Perform air washing within static electricity removal area. Scattered dust is collected with the dust collector to maintain a clean environment.</p> <p><Gel Dust Collection Type> IPC-A4 IPC-A3 →P24</p> <hr/> <p>IPC-250CR →P25</p>	<p>ESD control mats for use in areas where parts are handled, assembled, repaired and tested.</p> <p>Conductive Rubber Mat →P28</p> <p><Wrist Strap> EPS-05 →P28</p> <p><EPD Mat Grounding Kit> EPS-GK →P28</p> <p><Conductive Anti-Fatigue Mat> AF-45 AF-90 →P29</p> <p><Surface resistance checker> SRC-01 →P29</p> <p><Electrostatic Field Meter> EYE-02 →P30</p>	<p>Adhesive mat placed before a clean room, collects dust off soles of work shoes. Non-peeling, washable type.</p> <p><Clean Walker> CW-900B →P32</p> <p><Clean Walker Easy> CW-900EZ →P32</p>	<p>Options and replacement parts.</p> <p>Needle Electrode Unit Needle Electrode Unit</p> <p>AC Adapter Filter</p> <p>Standard Nozzle Branch Box</p> <p>Brush Branch Adapter</p> <p>Speed Controller Silent Nozzle</p> <p>Adhesive Gel Sheet Needle Electrode</p>

→P23

→P27

→P31

→P37

Measurement Conditions

Ion balance : 300 mm from the front of the device at maximum airflow setting
Decay time : 300 mm from the front of the device at maximum airflow setting
 (given as the time required for the voltage to attenuate from ±1,000 V to ±100V)(Charged plate monitor: 150 mm × 150 mm square, 20 pF)
Noise level : 1 m from the front of the device at maximum airflow setting

*Measurement values given in this catalog are typical values from a sample unit, and do not guarantee the performance.

Fan Type



F-6RCL-E/F-6RST-E

Compact and free installation
Pinpoint neutralization

Decay time 3.0 sec or less



F120R-E

Butterfly louver realizes
high-speed neutralization

Decay time 1.5 sec or less



F120S-E

Silent fan model
with mild airflow

Decay time 2.5 sec or less



CF300-E

Wide area neutralization
Easy cleaning of needle electrode

Decay time 1.5 sec or less



L-90-E

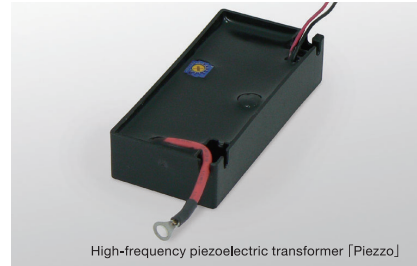
Efficient static electricity removal
in the versatile application

Decay time 1.5 sec or less

1

High neutralization performance through efficient ion generation

The high frequency piezoelectric transformer generates large volumes of ions, and eliminates losses caused by recoupling.

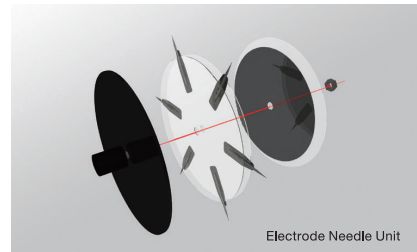


High-frequency piezoelectric transformer [Piezzo]

2

Advanced control technology with steady ion balance

The capacity coupling type electrode needle ensures a stable ion balance, and prevents static destruction of the semiconductor.



Electrode Needle Unit

3

Louver cover improves serviceability

The cover can be easily removed allowing the electrode needle to be cleaned where it will not contaminate the work environment.



Ionizing Mini Fan with clip

Clip onto workbench or pillar
for pinpoint neutralization

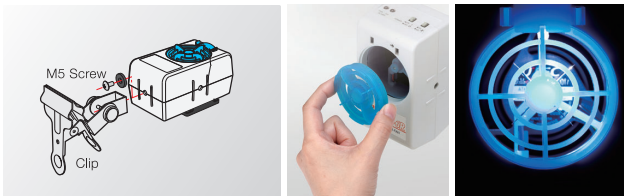
F-6RCL-E

Low
noise
Fan

EDP No.621662

High Voltage Transformer	Ion balance	Decay time
Piezoelectric high-frequency AC corona discharge	within ± 10 V	3.0 sec or less
Power supply DC24V	Fan Speed HI/LOW	LED illumination
AC adapter 100~240V included	Needle electrode unit replacement	ALARM FAN LOCKUP
	ALARM H.V.	

- ▶ Install anywhere
- ▶ Easily remove louvers
- ▶ Confirm operation status and electrode tip contamination with built-in light.



Can remove the clip when not needed

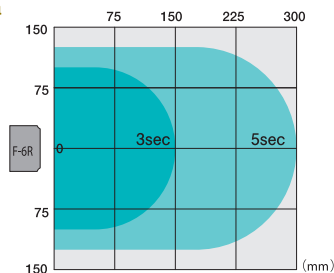
Easy removal

Built-in light

Specifications

Model No.	F-6RCL-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC 3.5kV
Power supply and current consumption	DC24V $\pm 5\%$ / 210mA(typ.)
Ion balance	within ± 10 V (150mm at front)
Decay time	3 sec or less (150mm at front)
Operating distance	150 mm to 600 mm
HxWxDmm	H254xW77xD108mm(clip included)
Weight	514g
Airflow	0.78m ³ /min (Maximum flow rate)
Noise level	HI 53 dBA / LO 42 dBA
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITF6E, AC cable (1.8m)

Decay area



Accessories



AC Adapter
AD24-ITF6E
EDP No.806138

I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Ionizing Mini Fan with stand

Compact fan can be installed
anywhere for pinpoint neutralization

F-6RST-E

Low
noise
Fan

EDP No.621663

High Voltage Transformer	Ion balance	Decay time
Piezoelectric high-frequency AC corona discharge	within ± 10 V	3.0 sec or less
Power supply DC24V	Fan Speed HI/LOW	LED illumination
AC adapter 100~240V included	Needle electrode unit replacement	ALARM FAN LOCKUP
	ALARM H.V.	

- ▶ Install anywhere
- ▶ Easily remove louvers
- ▶ Confirm operation status and electrode tip contamination with built-in light.



Can remove the stand when not needed

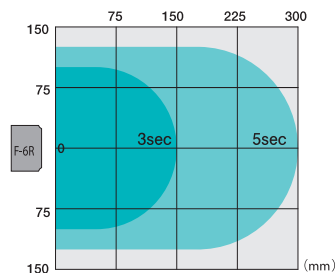
Easy removal

Built-in light

Specifications

Model No.	F-6RST-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC 3.5kV
Power supply and current consumption	DC24V $\pm 5\%$ / 210mA(typ.)
Ion balance	within ± 10 V (150mm at front)
Decay time	3 sec or less (150mm at front)
Operating distance	150 mm to 600 mm
HxWxDmm	H142xW90xD81mm(stand included)
Weight	460g
Airflow	0.78m ³ /min (Maximum flow rate)
Noise level	HI 53 dBA / LO 42 dBA
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITF6E, AC cable (1.8m)

Decay area



Accessories



AC Adapter
AD24-ITF6E
EDP No.806138

I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Ionizing Fan

Butterfly louver,
for neutralization in a wide area

F120R-E



EDP No. 621651

High Voltage Transformer Piezoelectric high-frequency AC corona discharge	Ion balance within ± 10 V	Decay time 1.5 sec or less
Power supply DC24V	Fan Speed HI/MD/LO	AC adapter 100-240V included
Needle electrode unit replacement	ALARM FAN LOCKUP	ALARM H.V.
External grounding terminal		

- ▶ **Butterfly Louver.** Press outer side to disperse air. Press center to let air out straight.
- ▶ **Apparent indication of operating status:** 2-color LED illuminates red when errors or malfunction occurs.
- ▶ **Easy maintenance.** The needle electrode unit is set into the front cover.

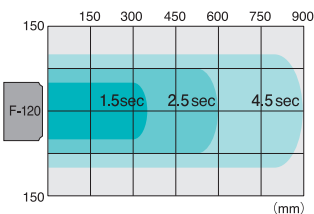


Specifications

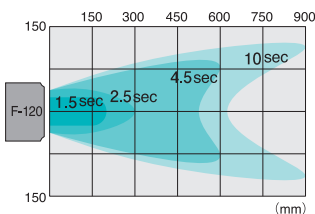
Model No.	F120R-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC 10kV (p-p)
Power supply and current consumption	DC24V $\pm 5\%$ / 700mA (max.)
Ion balance	within ± 10 V
Decay time	1.5 sec or less
Operating distance	150 mm to 900 mm
HxWxDmm	H198xW162xD70mm
Weight	0.9kg
Airflow	3.66m ³ /min (Maximum flow rate)
Noise level	HI : 55dBA / LO : 49dBA
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable (1.8m)

Decay area

Straight (F120R-E)



Wide (F120R-E)



Accessories



AC Adapter
AD24-ITE
EDP No.806135

I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Ionizing Fan

Silent fan model
with mild airflow

F120S-E



EDP No. 621646

High Voltage Transformer Piezoelectric high-frequency AC corona discharge	Ion balance within ± 10 V	Decay time 2.5 sec or less
Power supply DC24V	Fan Speed HI/MD/LO	AC adapter 100-240V included
Needle electrode unit replacement	ALARM FAN LOCKUP	ALARM H.V.
External grounding terminal		

- ▶ **Butterfly Louver.** Press outer side to disperse air. Press center to let air out straight.
- ▶ **Apparent indication of operating status:** 2-color LED illuminates red when errors or malfunction occurs.
- ▶ **Easy maintenance.** The needle electrode unit is set into the front cover.

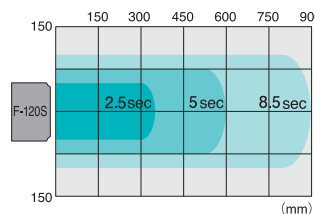


Specifications

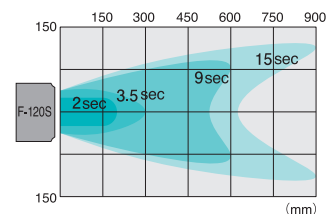
Model No.	F120S-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC 10kV (p-p)
Power supply and current consumption	DC24V $\pm 5\%$ / 500 mA (max.)
Ion balance	within ± 10 V
Decay time	2.5 sec or less
Operating distance	150 mm to 900 mm
HxWxDmm	H198xW162xD70mm
Weight	0.9kg
Airflow	2.21m ³ /min (Maximum flow rate)
Noise level	HI : 51dBA / LO : 44dBA
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable (1.8m)

Decay area

Straight (F120S-E)



Wide (F120S-E)



Accessories



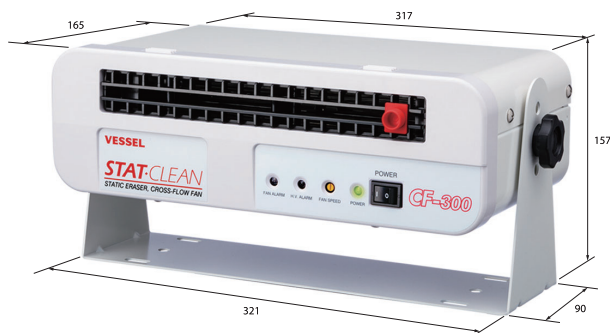
AC Adapter
AD24-ITE
EDP No.806135

I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Ionizing Cross-Flow Fan

Wide area neutralization
Evenly, straight, and far

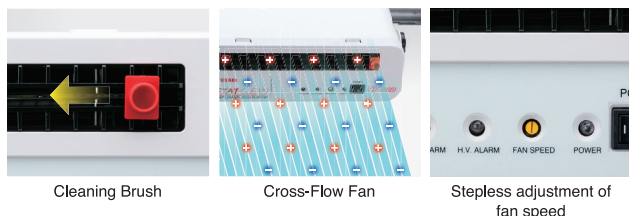
CF300-E



EDP No.621657

High Voltage Transformer	Ion balance	Decay time
Coiled transformer AC corona discharge	within $\pm 10V$	1.5 sec or less
Power supply DC24V	No-step airflow volume changeover	AC adapter 100~240V included
ALARM FAN LOCKUP	ALARM H.V.	External grounding terminal

- ▶ Superior ionizing performance with a combination of a cross-flow fan for neutralization in a wide area and of a front cover for straight neutralization.
- ▶ Easy maintenance of needle electrode with a brush that can be slid by a finger.



Cleaning Brush

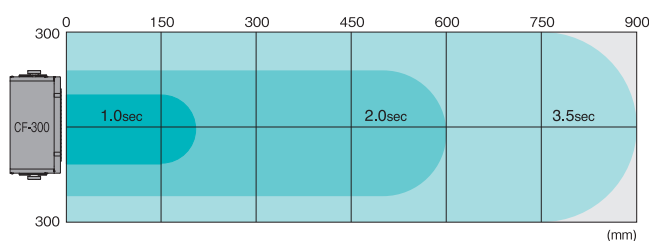
Cross-Flow Fan

Stepless adjustment of fan speed

Specifications

Model No.	CF300-E
Ionizing method/Applied voltage	High voltage AC(20KHz) corona discharge / AC 9.2kV(p-p)
Power supply and current consumption	DC24V $\pm 10\%$ / 500 mA (max.)
Ion balance	within $\pm 10V$
Decay time	1.5 sec or less
Operating distance	150 mm to 900 mm
HxWxDmm	H157xW348xD165
Weight	2.9 kg
Airflow	2.5m ³ /min (Maximum flow rate)
Noise level	48dBA (at 1m, Maximum flow rate)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable(1.8m) Cleaning brush

Decay area



Accessories



AC Adapter
AD24-ITE

EDP No.806135
I/P : AC100V~240V 0.4A
O/P : DC24V 0.75A



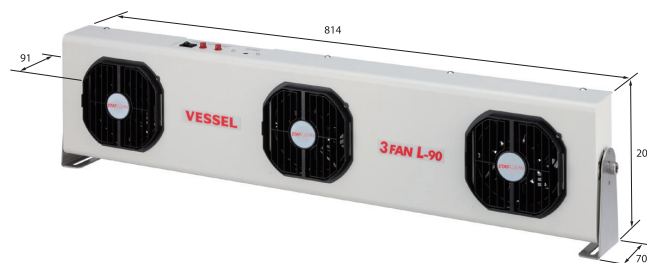
Cleaning Brush
CF-300B

EDP No.806140

Overbench Ionizing Fan

Efficient static electricity removal
in the versatile application

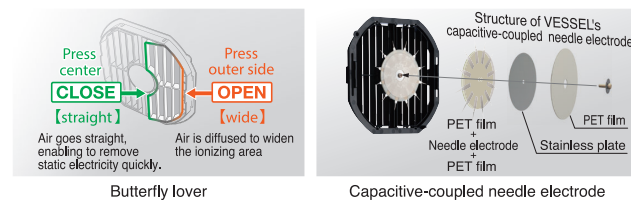
L-90-E



EDP No.621628

High Voltage Transformer	Ion balance	Decay time
Piezoelectric high-frequency AC corona discharge	within $\pm 10V$	1.5 sec or less
Power supply DC24V	No-step airflow volume changeover	AC adapter 100~240V included
Needle electrode unit replacement	ALARM FAN LOCKUP	ALARM H.V.
External grounding terminal		

- ▶ Butterfly flover for flexible setting of ionizing area.
- ▶ Unique capacitive-coupled needle electrode for stable and long-lasting ionizing performance.
- ▶ Easy maintenance.



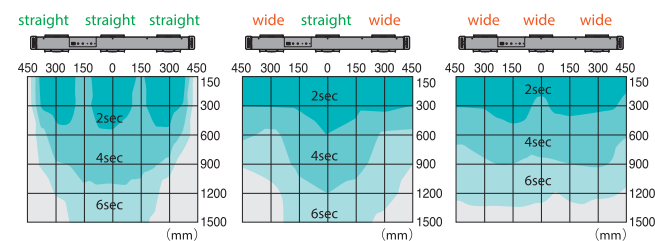
Butterfly flover

Capacitive-coupled needle electrode

Specifications

Model No.	L-90-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/ AC 9.5kV(p-p)
Power supply and current consumption	DC24V $\pm 5\%$ / 3.0A (max.)
Ion balance	within $\pm 10V$
Decay time	1.5 sec or less
Operating distance	150 mm to 900 mm
HxWxDmm	H182xW814xD91 (with stand : H201xW880xD91)
Weight	4.7kg
Airflow	7.1m ³ /min (a total of 3 fans) (Maximum flow rate)
Noise level	75.4 dBA (at 1m, Maximum flow rate)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-IT37E AC cable (1.8m)

Decay area



Accessories



AC Adapter
AD24-IT37E

EDP No.806139

I/P : AC100V~240V 1.5A
O/P : DC24V 3.75A

Nozzle Type



N-1
Ultra-compact slim ionizing nozzle

Decay time 1.0 sec or less



N-3
Interchangeable nozzles for a versatile application

Decay time 1.0 sec or less



HPN-1 →P33
Good for Highly Charged Products
Good for an automated production line

Decay time 0.5 sec. or less



HPF-1 →P34
Good for Highly Charged Products
Flexible installation angle adjustment

Decay time 1.0 sec. or less

1

LED indicators clearly indicate the operating status

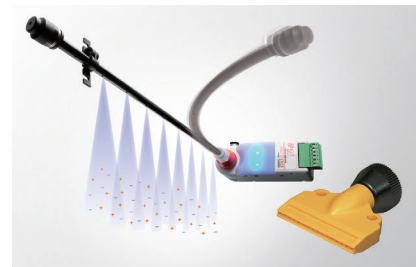
The bright LED lamps show the operating state even when installing in dark systems.



2

Diverse lineup of optional nozzles support various applications

Use the optional shower nozzle or silent nozzle.



3

Daisy-chain the power cables to keep high-voltage cables inside and ensure safety

Power can be supplied to multiple units by daisy-chaining them. 24 VDC wiring enhances safe connection.



Super Slim Ionizing Nozzle

Super Compact Slim Body.

N-1

EDP No. 621639

High Voltage Transformer Piezoelectric high-frequency AC corona discharge	Ion balance within ± 10 V	Decay time 1.0 sec or less
Power supply DC24V	Power supply: AIR/N ₂ max 0.6MPa	AC Adapter (Option)
Screw-type needle electrode	"ON" lamp	ALARM H.V.
External grounding terminal		

- ▶ Super slim and compact design enabling to be installed at any place for any direction. 27.5mm×28mm.
- ▶ Equipped with 6-pole terminals enabling high voltage alarm signal output as well as 24VDC daisy-chain connection.

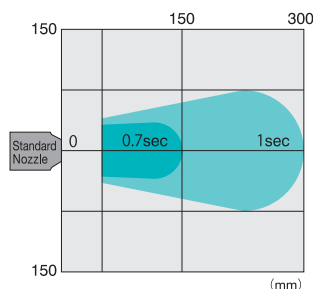


Alarm outputs and daisy chains possible.

Specifications

Model No.	N-1
Ionizing method/Applied voltage	Piezo high-frequency AC Corona discharge method/AC5kV (p-p)
Power supply and current consumption	DC24V±5% / 100mA(max.)
Ion balance	within ± 10 V
Decay time	1.0 sec or less (standard nozzle: 0.3MPa, 150mm) (measured values)
Operating distance	50 mm to 600 mm
H×W×Dmm	L109.6×W27.5×H28mm (with standard nozzle mounted)
Weight	80 g (with standard nozzle mounted)
Air supply hose diameter	tube fitting $\Phi 6$ mm
Operating fluid	Clean dry air (0.1MPa to 0.6MPa), nitrogen N ₂ (0.1MPa to 0.6MPa)
Air Consumption	219ℓ/min (With standard nozzle mounted, at 0.3 MPa)
Noise	96dBA (With standard nozzle mounted, at 0.3MPa)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	Standard Nozzle (included with device)

Decay area Air Pressure : 0.3MPa

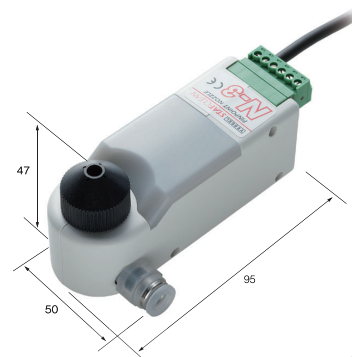


Accessories

Standard Nozzle
N-1SN
EDP No. 806120

Pinpoint Ionizing Nozzle

Featuring an LED indicator that communicates the device's operating status at a glance

N-3

EDP No. 621654

High Voltage Transformer High voltage AC corona discharge	Ion balance within ± 10 V	Decay time 1.0 sec or less	Directive CE
Power supply DC24V	Power supply: AIR/N ₂ max 0.6MPa	AC Adapter (Option)	Screw-type needle electrode
"ON" lamp	ALARM H.V.	External grounding terminal	

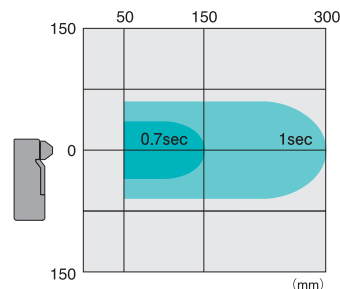
- ▶ Easy to wire with connector terminals.
- ▶ Diverse nozzles support various applications.

Standard Nozzle
(included as accessory)Alarm outputs
and daisy chains.

Specifications

Model No.	N-3
Ionizing method/Applied voltage	Piezo high-frequency AC Corona discharge method/AC5.6kV (p-p)
Power supply and current consumption	DC24V±5% / 90mA(max.)
Ion balance	within ± 10 V
Decay time	1.0 sec or less (standard nozzle: 0.3MPa, 150mm) (measured value)
Operating distance	50 mm to 600 mm
H×W×Dmm	L95×W50×H47mm
Weight	104g (with standard nozzle mounted)
Air supply hose diameter	tube fitting $\Phi 6$ mm
Operating fluid	Clean dry air (0.1MPa to 0.6MPa), nitrogen N ₂ (0.1MPa to 0.6MPa)
Air Consumption	210 ℓ/min (With standard nozzle mounted, at 0.3 MPa)
Noise level	99.4 dBA (With standard nozzle mounted at 0.3MPa)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	Standard Nozzle (included with device), Power supply harness

Decay area Air Pressure : 0.3MPa



Accessories

Standard Nozzle
N-1SN
EDP No. 806120

Why is VESSEL's gun type our customer's top choice?

Gun Type



G7R-E

Compact and lightweight
High discharge air blow ionizer

Decay time 1.0 sec or less



G2-E

Placticable handy ionizer
with flexible cable Installation

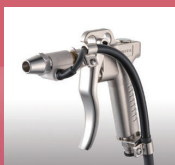
Decay time 0.8 sec or less



G-9 NEW

Self Power Generating
Ionizing Gun

Decay time 1.0 sec. or less



HPG-1 →P35

Good for Highly Charged Products
Easy handling large trigger model

Decay time 0.5 sec. or less

1

The bright LED lamp makes dust visible

Use the LED lamp to check dust that has adhered on the workpiece.



2

Piezoelectric transformer enhances safety with no need to expose high-voltage cables

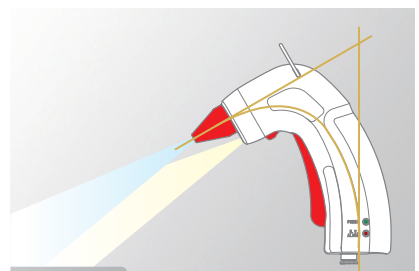
The high-voltage cable is not exposed, so there's no need to worry about current leaks or electric shock caused by wire breakage.



3

Ergonomically designed grip is easy to hold and adjusted to the optimum angle

The nozzle direction faces the optimum direction when the grip is held, allowing work to be started right away.



Ionizing Gun

Our most popular ionizing air gun is compact,
lightweight and user-friendly

G7R-E



EDP No.621621

High Voltage Transformer Piezoelectric high-frequency AC corona discharge	Ion balance within ± 10 V	Decay time 1.0 sec or less	Directive CE
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Power supply DC24V	Air Pressure max 0.6MPa	LED illumination	AC adapter 100~240V included	Screw-type needle electrode	"ON" lamp	ALARM H.V.
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- ▶ Bright green LED lamp makes dust visible.
- ▶ Ideal for neutralization and dust elimination from precision parts, for example, at hand in a cell production.
- ▶ Diverse options support various applications.



Attach a brush to blow out dust

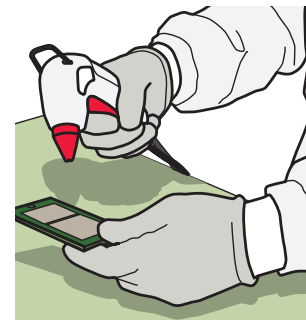


Operating and malfunction alarm LEDs are provided on both sides of the grip

Dust removal from plastic trays



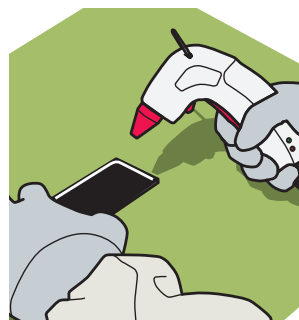
Dust removal from substrates



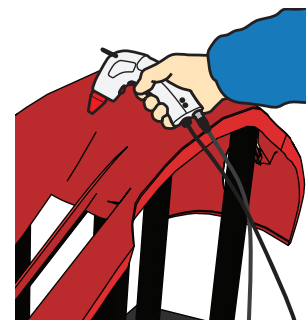
Specifications

Model No.	G7R-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC 2kV
Power supply and current consumption	DC24V $\pm 5\%$ / 85mA (typ.)
Ion balance	within ± 10 V
Decay time	1.0 sec or less (standard nozzle·measured 150mm from device at 0.3 MPa)
Operating distance	50 mm to 600 mm
HxWxDmm	L105xH150xD36mm
Weight	200g
Air supply hose diameter	tube fitting $\varnothing 6$ mm
Operating fluid	Clean dry air (0.1MPa to 0.6MPa)
Air Consumption	200 l /min(0.3MPa)
Noise level	92 dBA (0.3MPa)
Ozone production	0.05ppm or less(measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH(with no dew condensation or freezing)
Accessories	AC adapter AD24-ITC-E AC cable(1.8m)/ Standard Nozzle (included with device)

Dust and static-electricity removal from mobile phone parts

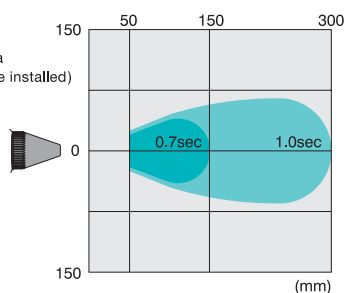


Dust and static-electricity removal from bumpers



Decay area

Air Pressure : 0.3MPa
(with Standard Nozzle installed)



Accessories



Standard Nozzle
G-7SN
EDP No. 806057



AC Adapter
AD24-ITC-E
EDP No. 806067
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Ionizing Gun

Practicable handy ionizer with flexible cable installation

G2-E



EDP No.621659

High Voltage Transformer Piezoelectric high-frequency AC corona discharge	Ion balance within ± 10 V	Decay time 0.8 sec or less	Directive CE
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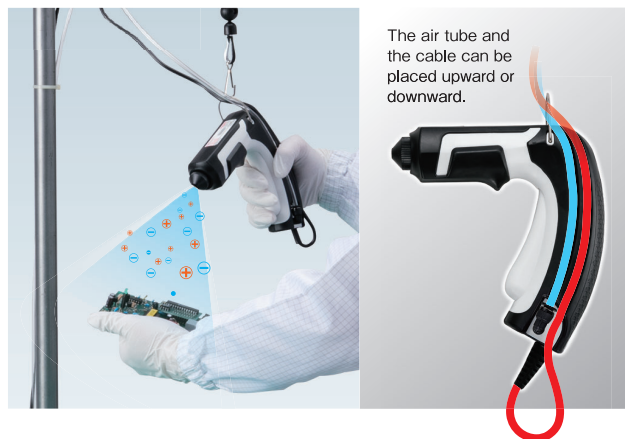
Power supply DC24V	Air Pressure max 0.6MPa	AC adapter 100~240V included	Screw-type needle electrode	"ON" lamp	ALARM H.V.
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- ▶ Changeable wiring direction upward or downward. This makes it easy to use the G2-E by hanging it from the top of a cell production table (e.g. when using a tool balancer).
- ▶ Compact, lightweight, and ergonomically designed grip that fits your hand.
- ▶ Operating status and alarm lamps.
- ▶ Interchangeable nozzle for various applications. (option)
- ▶ The needle electrode can be easily replaced with a dedicated tool.



Powerful blow of ionized air through the dedicated nozzle. Can fit the cable in the groove on the grip lateral side.

Use by hanging above cell production benches



The air tube and the cable can be placed upward or downward.

Dust removal from plastic trays



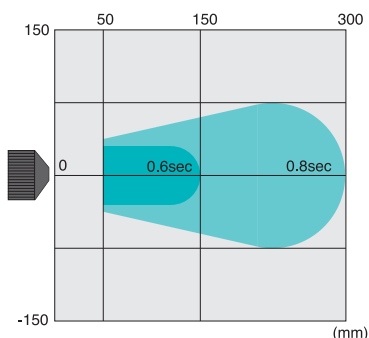
※ Possible to fix the direction of the air hose and the power cable.

Specifications

Model No.	G2-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/AC4.5 kV
Power supply and current consumption	DC24V $\pm 5\%$ / 100mA(typ.)
Ion balance	Within ± 10 V (at 0.3 MPa measured at 150mm)
Decay time	0.8 sec (measured at 150mm)
Operating distance	50 mm ~ 300 mm (Installation:Indoor, non-hazardous area)
HxWxDmm	L 148mm x H 57mm x W 44mm
Weight	260g
Air supply hose diameter	OD $\phi 6$ mm x ID $\phi 4$ mm
Operating fluid	Clean dry air (0.1MPa to 0.6MPa)
Air Consumption	153 ℓ /min (0.3MPa)
Noise level	94dBA (0.3MPa)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter AD24-ITCS-E, AC cable (1.8m), Standard nozzle (included with device)

Decay area

Air Pressure:0.3MPa



Accessories



AC Adapter
AD24-ITCS-E (Length 1.5m)

EDP No. 806084
I/P : AC100V~240V 0.4A
O/P : DC24V 0.75A

[Note] AD24-ITC-E may be included as standard accessory, depending on the stock availability.



AC Adapter
AD24-ITC-E (Length 2.5m)

EDP No. 806067
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Pneu-Power Ion Gun

Innovative self-power generating ionizing gun.
No need for electric wiring



EDP No.621670

High Voltage Transformer Coiled Transformer AC corona discharge	Ion balance within +/-30V	Decay time 1 sec. or less	Directive CE
Air Pressure max 0.6MPa	Screw-type needle electrode	Adjustment lamp	Regulator

- ▶ Innovative ionizing gun working only with a compressed air.
- ▶ Motor cartridge (replaceable) converts compressed air to the power. Rotor blades in the center of the motor generate power while rotating and supply it to the high voltage power unit.



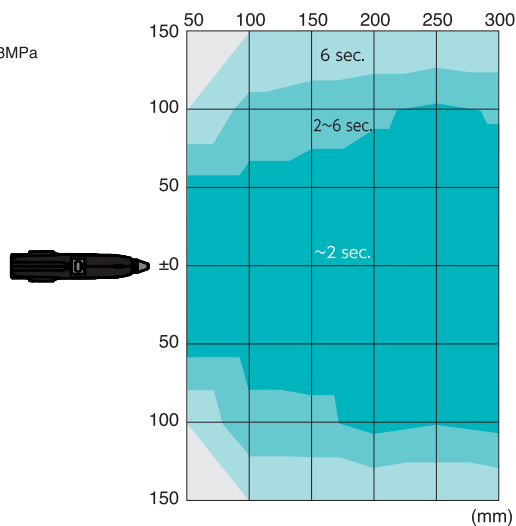
Air turbine rotates the motor,
and this generates the power for ion generation.

Specifications

Model No.	G-9
Ionizing method/Applied voltage	AC corona discharge /AC8kV p-p
Ion balance	Within +/- 30 V
Decay Time	1 second or less
Operating distance	50mm ~ 300mm
Air speed	12.3m/s (0.5MPa, 200L/min, 150mm)
Air connection	Φ8mm with one-touch joint
Operating fluid	Clean dry air
Air consumption	200L/min (0.5MPa)
HxWxD	191 x 233 x 51 mm (without protrusions)
Weight	470 g
Noise	88dBA (0.5MPa)
Operating temperature and humidity	0 to +45°C 10 to 90% RH (no condensation or freezing)
Accessories	Instruction manual

Decay area

Air Pressure:0.3MPa



Options



Silent Nozzle
G-9WN
EDP No. 806151



Straight Silent Nozzle
BB-ZSN
EDP No. 621708



Plug with Urethane Tube
G-9UTP
EDP No. 806148
Hose:Φ8×Φ5mm
Length: 3m

Bar Type



C-series

Compact and clean design
Super-high speed ionizer

Ion balance within $\pm 30V$
(Distance 1000mm)



SJ-series* **NEW**

For highly charged or
fast moving products

* Note
SJ-** is available while stocks last.
The model code will be changed to SL-** afterward.



HPB-series →P36

Good for Highly Charged Products
Optimum for installation in a cramped space

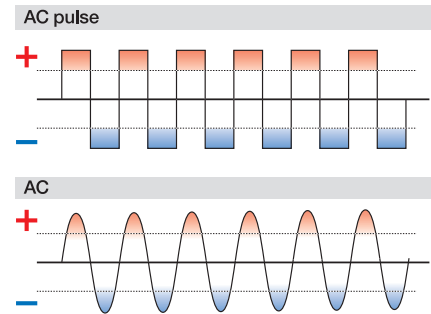
Decay time 2.0 sec. or less

1

High Speed Static Electricity Removal

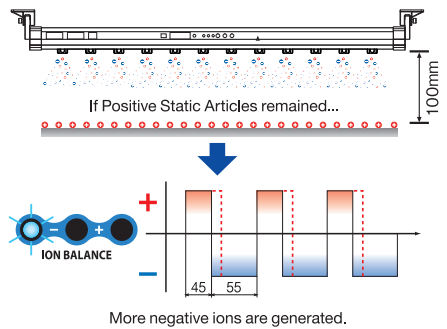
AC pulse method

Generating alternately positive ions and negative ions from each electrode. Since ions are generated at the maximum width of each positive and negative electrode cycle, the ion volume is high and static electricity can be removed quickly.



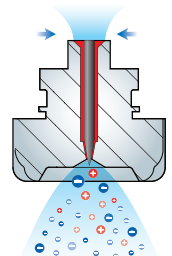
Auto Balance Mode

The C series are equipped with a mode to optimally adjust the ion balance automatically according to the polarity of the charged matter. (Target distance: 50 to 100 mm)



Air purge function

With air purged toward the needle electrode tip. This not only prevents contamination at the tip of the electrode needle, but also carries the generated ions quickly to the charged object and removes static electricity.



2

Usability

Easy maintenance design

One-touch needle replacement. A socket type needle can be easily replaced.



Clean design

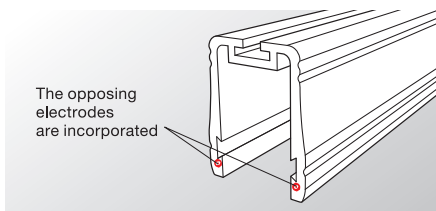
Needle cleaning time notified

The cleaning interval can be set between 1 and 60 days in one-day unit. When the time elapses, the needle-cleaning lamp lights up and it is notified on the



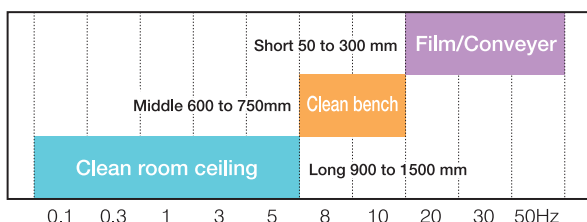
Body contamination prevention

Opposing electrodes are incorporated in the body. The induced voltage prevents particles from sticking to the outer side of the body, and limits the losses in applied voltage to improve the ion generation efficiency.



Frequency

Change the frequency according to the distance to the object to be neutralized, for quick static electricity



3

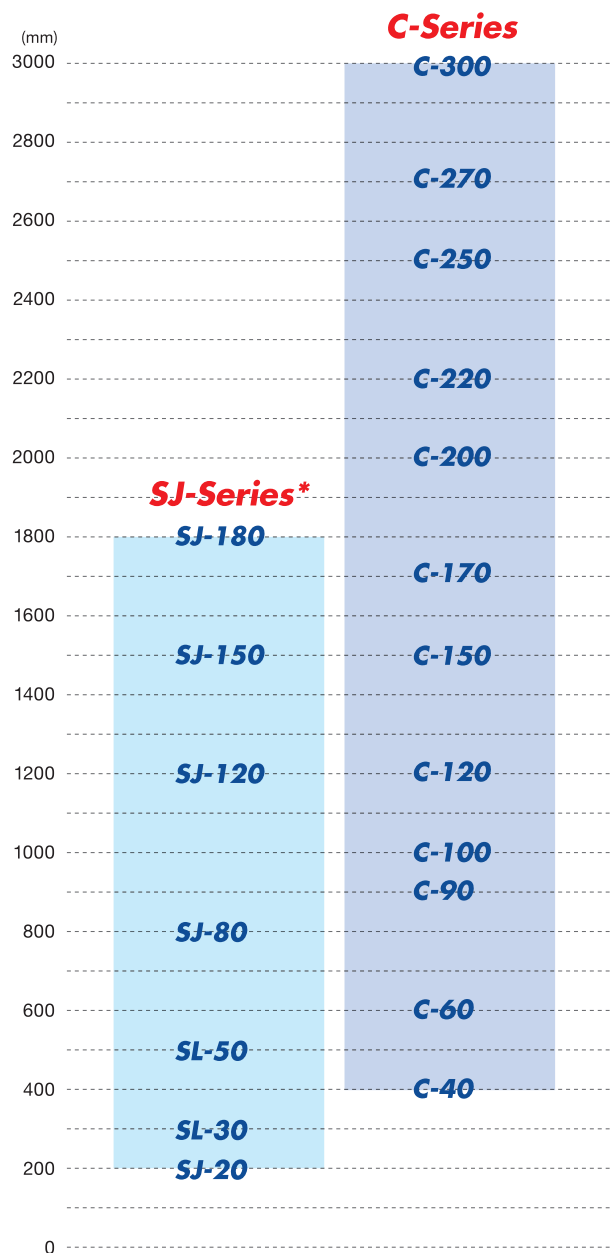
Line-up at a glance

Sizes to match various working environments

Ionizing bars are available in a variety of sizes for assembly into small electronic part manufacturing systems to neutralization of large workpieces such as film and liquid crystal glass.



Bar Type Line-up



Clean & Compact.
Newly designed high-precision and high-speed ionizer applying a new technology

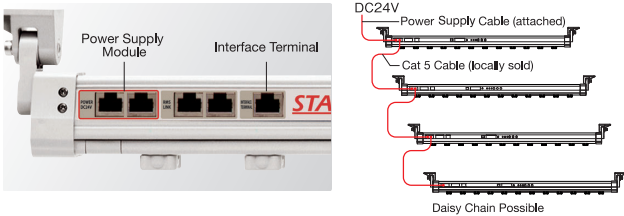
C-series



- | | |
|----------------------------|----------------------------|
| C-40 EDP No.621857 | C-170 EDP No.621855 |
| C-60 EDP No.621858 | C-200 EDP No.621856 |
| C-90 EDP No.621851 | C-220 EDP No.621859 |
| C-100 EDP No.621852 | C-250 EDP No.621860 |
| C-120 EDP No.621853 | C-270 EDP No.621861 |
| C-150 EDP No.621854 | C-300 EDP No.621862 |

High Voltage Transformer		Ion balance					
Pulse AC corona discharge		within ±30 V (measured 1000 mm)					
Power supply DC 24V ±5%	Air Pressure max 0.3MPa	LCD Display	Electrode needle unit replacement	Adjustable Ion Balance	Needle Cleaning Timer (1 to 60 days)※	ALARM H.V.	External output LAN Terminal
※ except C-40, C-60							

- ▶ Newly designed super-fast ionizing air discharge port.
- ▶ Auto Balance Mode (Target distance: 50 to 100 mm).
- ▶ Terminals grouped on one side. Enabling a daisy-chain connection.

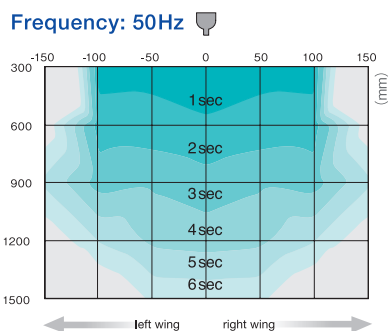
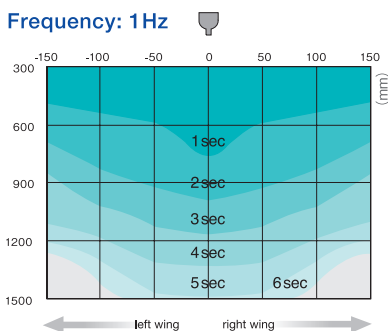
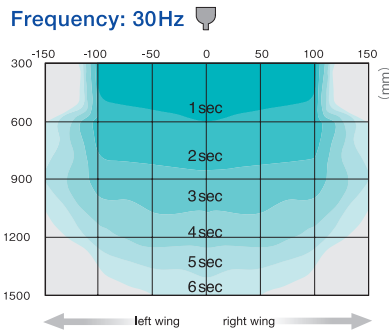
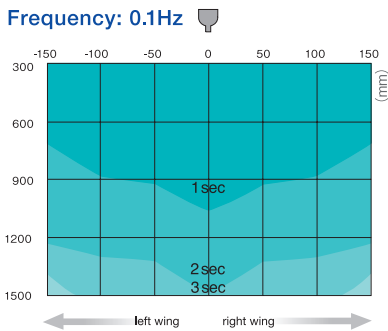


Common Specifications

Model No.	C-40 ~ C-300
Ionizing method/Applied voltage	Pulse AC Corona discharge / AC8~12.5kV (p-p)
frequency	0.1 to 50Hz (Select form ten steps)
pulse ratio	Positive ion 40 to 70 %, negative ion 60 to 30%
Power supply and current consumption	DC24V±5% / 600mA (max.)
Ion balance	within ±30V (Distance 1000mm)
Decay time	See below
Operating distance	50 to 2000mm
HxWxDmm	Refer to the table on the right
Weight	Refer to the table on the right
Air supply hose diameter	PT1/8
Operating fluid	Clean dry air or nitrogen (N ₂) (0, 3 MPa or less)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	0 to 50°C / 35 to 85% RH (with no dew condensation or freezing)
Accessories	Remote controller (except C-40/60) / Interface cable (C-40/60 only) / Power cable (5m) / End bracket (included with device) / Middle bracket (included with device) (except C-40/60/90)

*Silicon discharge needles also available. For more detail please contact us.

Decay area Measurement conditions •Product : C-150 •Voltage : 10.5kV(P-06 N-06) •Air pressure : 0.3MPa •Temperature : 24°C±1°C •Humidity : 40%±2%RH •Decay time : ±1000V→±100V •CPM : 20P/±2pF(150x150mm)



Options

Adapter specification



AC Adapter
AD24-IT
● EDP No. 806051
AD24-ITE
● EDP No. 806135

I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Operation : One bar



AC Adapter
AD-24-IT19
● EDP No. 806081
AD24-IT19E
● EDP No. 806137

I / P : AC100V~240V 1.2A
O/P : DC24V 1.9A

Operation : 2 or 3 bars
(Please consult us for more detail)



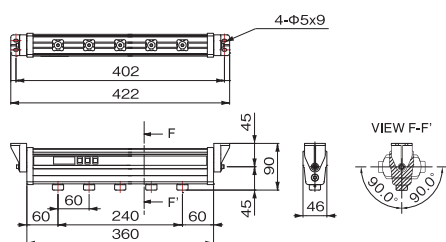
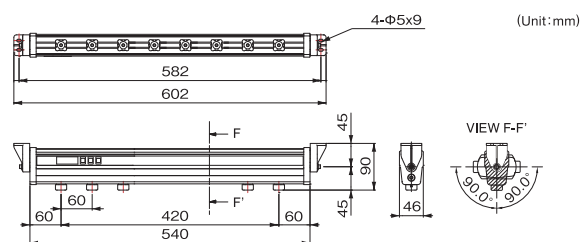
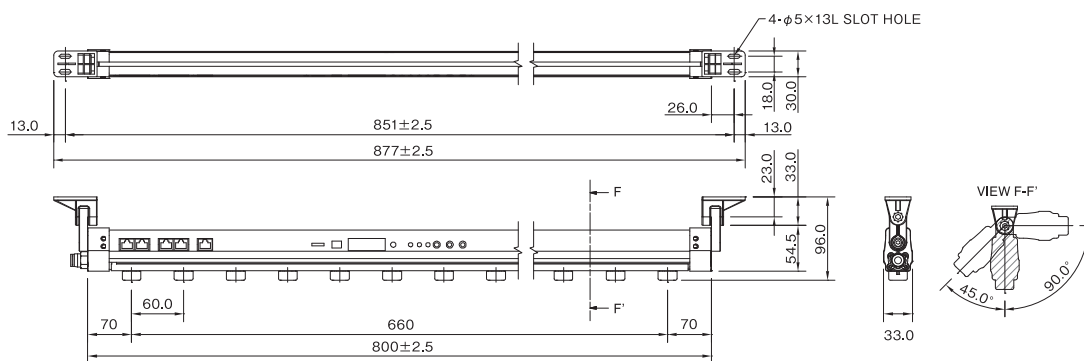
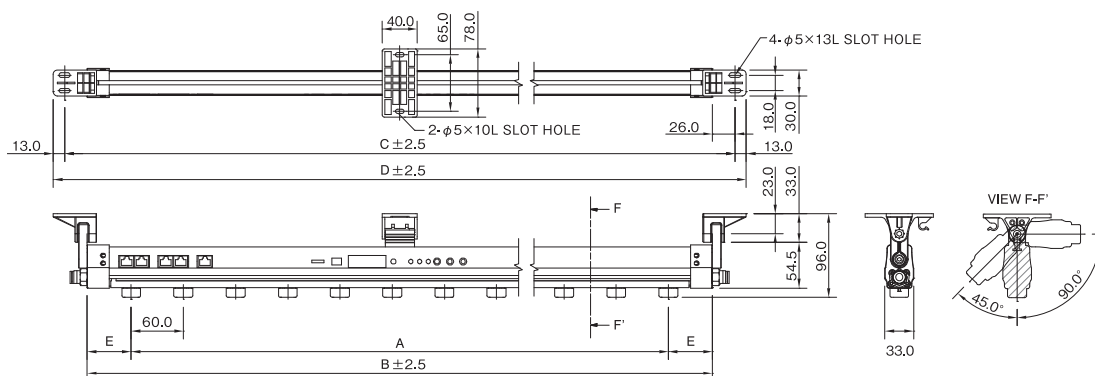
Power Supply Cable (5m)
For AC adapter

CT-5
EDP No.621709

※When using AC adapter, Power Supply Cable (CT-5) is necessary.



Remote Control
RMC-01
EDP No. 806104

C-40**C-60****C-90****C-100, 120, 150, 170, 200, 220, 250, 270, 300****Dimension / Needle Electrode / Middle Bracket**

Model.No	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	Needle Electrode	Middle Bracket	Weight (kg)
C-40	240	360	402	422	60	5 pcs	—	0.78
C-60	420	540	582	602	60	8 pcs	—	1.08
C-90	660	800	851	877	70	12 pcs	—	0.9
C-100	900	1001	1052	1078	50.5	16 pcs	1 pc	1.0
C-120	1140	1241	1292	1318	50.5	20 pcs	1 pc	1.2
C-150	1380	1481	1532	1558	50.5	24 pcs	1 pc	1.4
C-170	1620	1721	1772	1798	50.5	28 pcs	2 pcs	1.6
C-200	1860	1961	2012	2038	50.5	32 pcs	2 pcs	1.8
C-220	2100	2201	2252	2278	50.5	36 pcs	2 pcs	2.3
C-250	2340	2441	2492	2518	50.5	40 pcs	3 pcs	2.6
C-270	2580	2681	2732	2758	50.5	44 pcs	3 pcs	2.8
C-300	2820	2921	2972	2998	50.5	48 pcs	3 pcs	3.1

Pulse Ratio

The ion balance can be adjusted by changing the pulse ratio.

Address

When using multiple units, an address allocation setting (1 to 16) is available to identify each ionizing bar. (except C-40/60)

Voltage Level

The applied voltage can be changed (common). The one for the positive side and the negative side can be changed respectively (except C-40/60). The amount of ions varies by different output (10 steps: 8.0~12.5kVP-p).

Voltage level	1	2	3	4	5	6	7	8	9	10
Positive voltage (kV)	4	4.25	4.5	4.75	5	5.25	5.5	5.75	6	6.25
Negative voltage (kV)	4	4.25	4.5	4.75	5	5.25	5.5	5.75	6	6.25
kV p-p	8	8.5	9	9.5	10	10.5	11	11.5	12	12.5

Ion parts cleaner IPC CLEAN

High power bar
For highly charged or fast moving products

SJ-series*

NEW

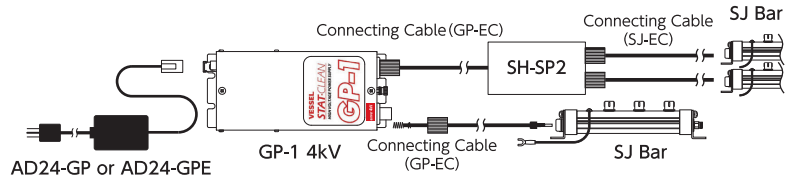


SJ-20	EDP No.621591	SJ-120	EDP No.621595
SL-30	EDP No.621592	SJ-150	EDP No.621596
SL-50	EDP No.621593	SJ-180	EDP No.621597
SJ-80	EDP No.621594		

* Note
SJ-** is available while stocks last. The model code will be changed to SL-** afterward.
(Example)
SJ-20 → SL-20
SJ-EC2.5 → SL-EC2.5

Optional High Voltage Power Unit and Branch Box enable the use of multiple ionizing bars.

1 x High Voltage Power Supply Unit (No.GP-1) can be directly connected to max.2 ionizing bars. In addition, 3 ionizing bars in total can be connected when Branch Box (No. SH-SP2) is used.



※The maximum cable length is 10m in total. If you require more length please contact us.

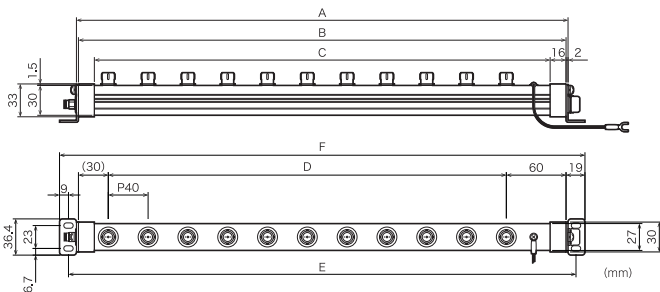
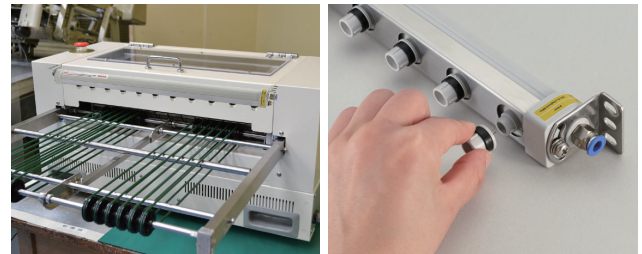
High Voltage Transformer	Ion balance	Decay time
AC corona discharge	within +/- 50V (measured 1000 mm)	1 sec. or less (measured at 300 mm)

Power supply	Air pressure
No.GP-1 4kV	max. 0.3 MPa

- ▶ Compact and slim design
- ▶ Detachable and replaceable discharge needles
- ▶ Detachable high voltage cable
- ▶ Wide variety of sizes
- ▶ Brackets enable to change the installation in angle
- ▶ Fine ionizing adjustment control with the GP-1

Specifications

Model	SJ-20 / SL-30 / SL-50 / SJ-80 / SJ-120 / SJ-150 / SJ-180*
Ionizing method/ Applied voltage	AC corona discharge / 4 kV
Power Supply	High Voltage Power Supply No.GP-1 4kV (Option)
Ion Balance	Within ±50V (measured at 1,000mm, at air pressure 0.3MPa)
Decay Time	1 second or less (measured at 300mm, at air pressure 0.3MPa)
Operating Distance	50 ~ 2000mm
Ozone production	0.05ppm or less (measured at 50mm from the discharge needle)
Air Connection	PT1/8, with one-touch joint
Air hose	SJ-80 or smaller: Hose O.D.6mm x I.D.4mm SJ-120 or larger: Hose O.D.8mm x I.D.6mm
Operating Fluid	Clean dry air or Nitrogen gas (0.3MPa or less)
Operating Environment	5 ~ 50°C 35 ~ 85% R H (without freezing or dew condensation)
Accessories	Ground wire, Instruction manual



Dimensions / Needle Electrodes

Model No.*	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Needle Electrode	Weight (kg)
SJ-20	174	170	138	80	190	208	3 pcs	0.2
SL-30	334	330	298	240	350	368	7 pcs	0.3
SL-50	494	490	458	400	510	528	11 pcs	0.7
SJ-80	814	810	778	720	830	848	19 pcs	0.9
SJ-120	1,134	1,130	1,098	1,040	1,150	1,168	27 pcs	1.1
SJ-150	1,454	1,450	1,418	1,360	1,470	1,488	35 pcs	2.0
SJ-180	1,774	1,770	1,738	1,680	1,790	1,808	43 pcs	2.2

Options



Connecting cable (2.5m)
GP-EC2.5
EDP No. 623053

Connecting cable (5m)
GP-EC5
EDP No. 623054

Branch Box
SH-SP2
EDP No. 621552

Connecting cable (2.5m)
SL-EC2.5*
EDP No. 623051

Connecting cable (5m)
SJ-EC5*
EDP No. 623052

Needle electrode
SJ-00HR*
EDP No. 623055

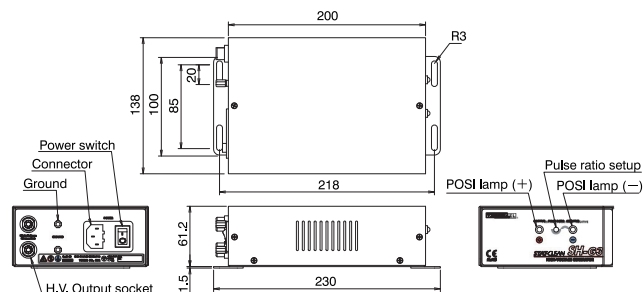
Power supply units

Power Supply units supporting 100 to 240 VAC

SH-G3

EDP No. 621555

Directive

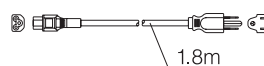


Specifications

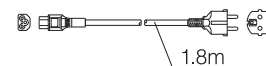
Model No.	SH-G3
Ionizing method/Applied voltage	AC corona discharge / 5kV
Power supply	100V-240V AC \pm 5%
H x W x D	61 x 138 x 200 mm (without protrusions)
Weight	1.5 kg

AC power cable

For AC100V



For AC200V



Power supply units

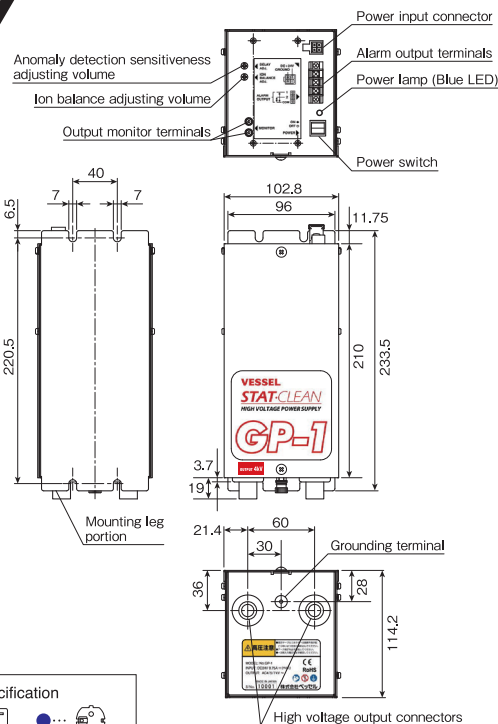
High Voltage Power Supply Unit

GP-1 4kV

OUTPUT 4kV



EDP No. 623044



Specifications

Model	GP-1 4kV
Operating Temp./Humidity	0 ~ 50°C/10 ~ 90%RH(without freezing or dew condensation)
Storage Temp./Humidity	-30 ~ 70°C/10 ~ 95%RH(without freezing or dew condensation)
Installation Place	Indoors
Rated Input Voltage	24V DC \pm 10%
Variable Output Range Without Loud (rms)	AC output 4kV DC output -150 to +550V
Secondary Short Circuit Current	5 mA or lower
Output Monitor	1/1000V \pm 5% of the output voltage is emit to the monitor terminals.
Low-voltage Detection	Anomaly detection function will operate when each output drops to about 85% or less of the set voltage due to high voltage short circuit or abnormal sparks.
Overcurrent Detection	Anomaly detection function will operate when the output current is about 4mA or more.
Anomaly Detection Sensitivity Adjustment	The anomaly detection response speed can be adjusted (using external adjustment knob)
Power Supply Input	Molex 5569-04A1-210
High Voltage Output Connector	Ceramic high voltage output terminalx2
Alarm Output Terminal	C contact relay output
Switches And Displays	On-off rocker switches, Blue LED power indicator lamp (goes off when anomaly is detected)
Material	Housing SPCC, painted white
Size	W102.8xD233.5xH114.2mm
Weight	Approx. 4.5kg

Option

Adapter specification



AC Adapter

AD24-GP

● EDP No. 806049

AD24-GPE

● EDP No. 806048

I / P : AC100V~240V 0.4A

O / P : DC24V 0.75A

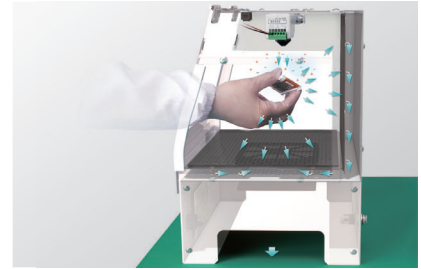


Why is VESSEL's ion parts cleaner our customer's top choice?

1

Neutralization and dust elimination inside hoods

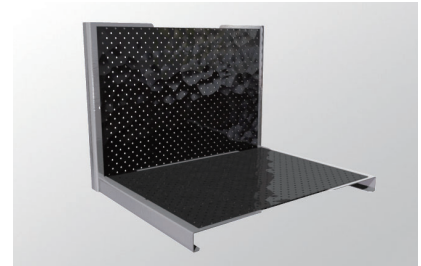
Dust adhered with static electricity is neutralized inside the ionized hood and eliminated with automatic powerful air blow.



2

Capture dust with self-adhesive urethane gel

The adhesive surface of the urethane gel mat enables to catch any dust blown away by the ionized air inside the booth. The washable gel sheet can be used repeatedly (IPC-A4/A3).



Ion Parts Cleaner



IPC-A4

Ideal A4 size for cell workbenches



IPC-A3

Ideal A3 size for cell workbenches



IPC-250CR **NEW**

New concept of neutralization

Ion Parts Cleaner

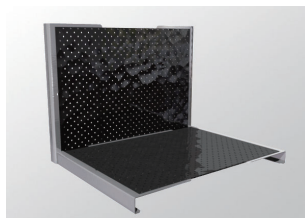
A4 size is ideal for capturing dust with adhesive urethane gel at cell workbench

IPC-A4

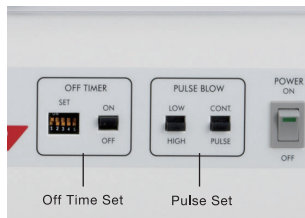
EDP No. 621610

Sensor	Air blow	Off delay timer
Diffused reflection type	Continuous/pulse blow selection	1 to 30 seconds (5 steps)
Power supply DC24V	Air Pressure max 0.6MPa	Ionizer N-3x1pc
AC adapter 100~240V included	Regulator Built-in	Self-adhesive polyurethane gel sheets and non-woven fabric filter
		Integrated hood/dust collector

- ▶ With no built-in dust collector, its power consumption is substantially reduced.
- ▶ Dislodged dust will be collected by the adhesive gel sheets.
- ▶ Select continuous or pulse blow of ionizing dust collection air from nozzle-type ionizer.



Self Adhesive GEL collects Dust

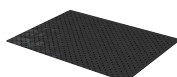


Off Time Set Pulse Set

Specifications

Model No.	IPC-A4
Ionizing method/Applied voltage	Piezoelectric high frequency AC corona discharge / 5.6kVAC (p-p)
Power supply	DC24V±5%
Current consumption	700mA or less
Dust collection airflow	3.5 m ³ /min (Built-in fan)
Static pressure	105Pa (Built-in fan)
Dust collection filter	Self-adhesive polyurethane gel sheets and non-woven fabric filter
H×W×Dmm	H361×W314×D253mm
Weight	6kg
Air supply hose diameter	Tube fitting 8mm
Operating fluid	Clean dry air (0.1 to 0.6MPa)
Air Consumption	147ℓ/min(0.3MPa, Continuous mode)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5°C to 40°C/35% to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter, Adhesive gel sheet plate (included with device) x 2pcs

Accessories



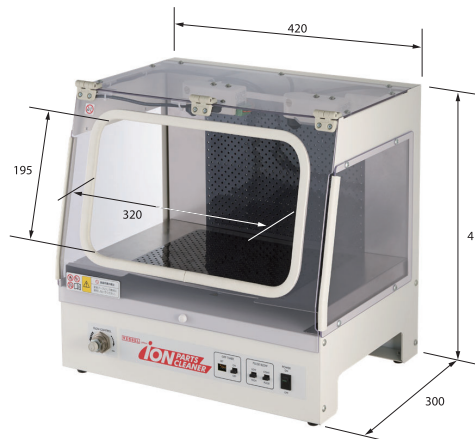
Adhesive gel sheet (1pc)
IPC-A4G
EDP No. 806091



AC Adapter
AD-24-IT19
EDP No. 806081
I/P : AC100V~240V 1.2A
O/P : DC24V 1.9A
(AD24-IT19E is available on request.)

Ion Parts Cleaner

A3 size is ideal for capturing dust with adhesive urethane gel at cell workbench

IPC-A3

EDP No. 621612

Sensor	Air blow	Off delay timer
Diffused reflection type	Continuous/pulse blow selection	1 to 30 seconds (5 steps)
Power supply DC24V	Air Pressure max 0.5MPa	Ionizer N-3x2pcs
AC adapter 100~240V included	Regulator Built-in	Self-adhesive polyurethane gel sheets and paper pack filter
		Integrated hood/dust collector

- ▶ With no built-in dust collector, its power consumption is substantially reduced.
- ▶ Dislodged dust will be collected by the adhesive gel sheets.
- ▶ A paper pack filter can be attached to the exhaust port on the rear side (standard).



Regulator Built-in

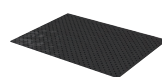


Filter to Duct: Replaceable

Specifications

Model No.	IPC-A3
Ionizing method/Applied voltage	Piezoelectric high frequency AC corona discharge / 5.6kVAC (p-p)
Power supply	DC24V±5%
Current consumption	900mA or less
Dust collection airflow	1.13 m ³ /min (Built-in fan)
Static pressure	460Pa (Built-in fan)
Dust collection filter	Self-adhesive polyurethane gel sheets and paper pack filter
H×W×Dmm	H411×W420×D300mm
Weight	9.5kg
Air supply hose diameter	Tube fitting 10mm
Operating fluid	Clean dry air (0.1 to 0.6MPa)
Air Consumption	315ℓ/min(0.3MPa, Continuous mode)
Ozone production	0.05ppm or less (measured 50mm)
Operating environment temperature and humidity	5 to 40°C / 35 to 65% RH (with no dew condensation or freezing)
Accessories	AC adapter, Adhesive gel sheet plate (included with device) x 2pcs, Duct flange (for φ75mm), Paper pack filter (6pcs)

Accessories



Adhesive gel sheet (1pc)
IPC-A4G
EDP No. 806091



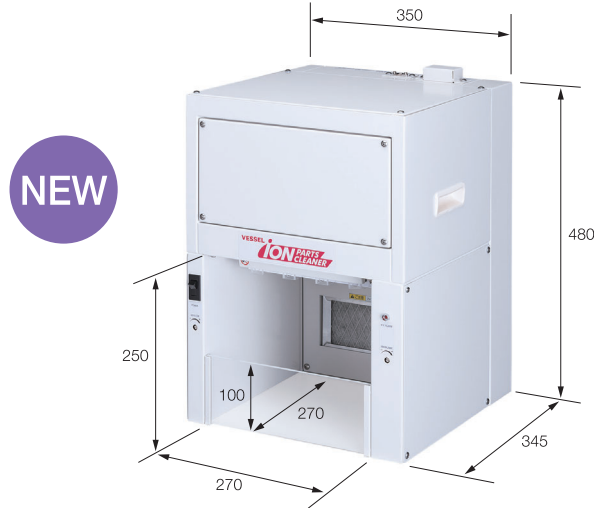
AC Adapter
AD-24-IT19
EDP No. 806081
I/P : AC100V~240V 1.2A
O/P : DC24V 1.9A
(AD24-IT19E is available on request.)



Paper pack filter (6pc.)
IPC-A3F

"ION CLEANING" - New Concept of Neutralization

IPC-250CR



EDP No. 623201

Air blow
Continuous

- Power supply 24V DC
- DC type ionizer
- AC adapter 100~240V (Option)
- Airblow port
- Air volume regulator built-in
- HEPA filter

- ▶ Cleaned air blow with HEPA filter
- ▶ DC ionizer incorporated, creating an ionized space
- ▶ Adjustable air blow volume
- ▶ No exhausted air by the air circulation system

Built-in HEPA filter. Replaceable by unit.



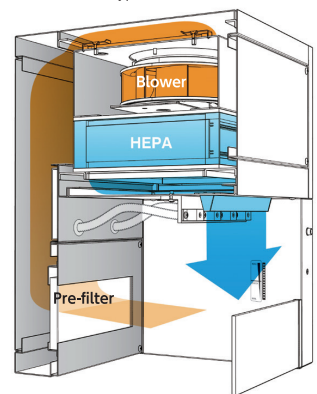
Specifications

Model No.	IPC-250CR
Ionizing method/Applied voltage	DC corona discharge / +6 kV,-3 to -7 kV
Power supply	24V DC ±5%
Current consumption	4.5 A max. (excluding inrush)
Air flow	Max. 14 m ³ /min (No internal filter clogging, output value of the blower)
Wind speed	Max. 25m/sec. (No clogging of built-in filter, output value of the blower)
Dust collection method	Built-in pre-filter and HEPA filter (two-stage)
HxWxD	515 x 350 x 345 mm (without protrusions)
Weight	22 kg
Noise	74 dBA (Maximum air flow, no clogging of built-in filter or deterioration of blower)
Operating temperature and humidity	+5 to +40°C 35 to 65% RH (no condensation or freezing)
Accessories	Caution label sticker / Instruction manual

The generated ions are blown off downward with the air through the wide air discharge port.



Air circulation type, with no exhausted air.



Replacement parts



Pre-filter
IPC-250CRPF
EDP No.623203



HEPA filter
IPC-250CRHF
EDP No.623202



Needle electrode
SDJ-05RH
EDP No.806044

Option

Adapter specification

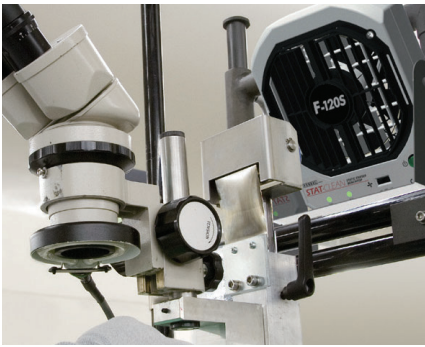


AC Adapter
AD24-150-PD4

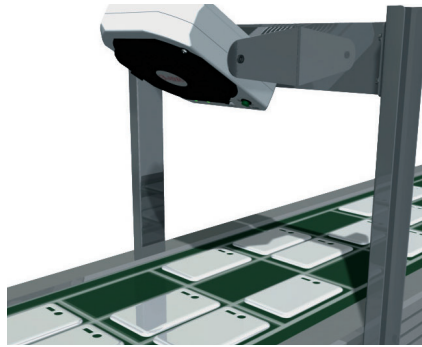
● EDP No.806146
I/P : 100V to 240 V AC, 50/60 Hz
O/P : 24V DC 5A

● ● ● ● ● Inquire us of the 2 round pin type.

VESSEL ionizers for a variety of applications.



Inspection process



Dust prevention on molded parts



Wide conveyor



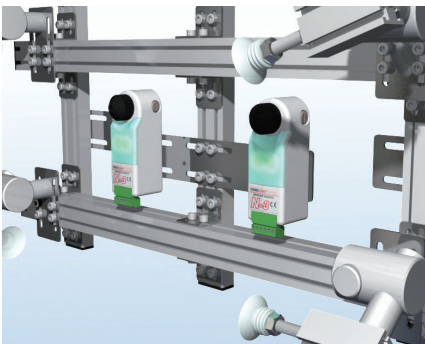
Cell production table



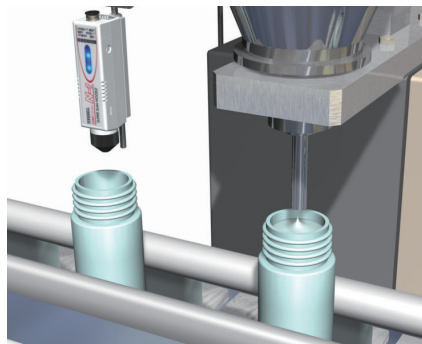
Bottle cleaning



Vibratory bowl feeder (joint nozzle + shower tube)



Robots for molded parts



Removal of fluid spills in filling lines



Using with flexible shaft



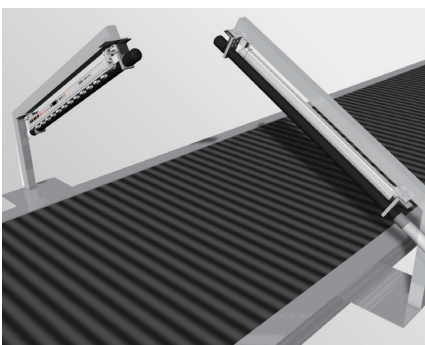
Moval in a bottle



Check the small points with LED Beam Light.



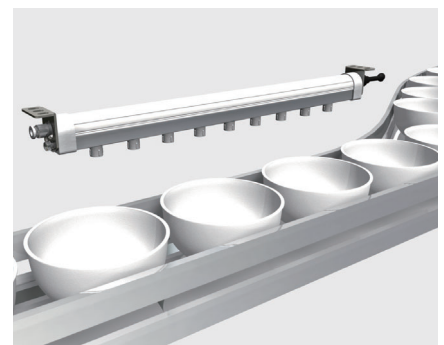
Static electricity removal of resin parts



Over a belt conveyor

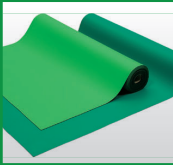


Injection molded plastic objects



Packing process of food containers

EPA Working Mat



Mat

Ideal for workbenches needing static-erasing measures



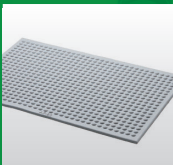
EPS-5 **NEW**

Anti-Static Wrist Strap



EPS-GK **NEW**

ESD Mat Grounding Kit



Anti-Fatigue Mat

Alleviate fatigue caused by standing for a long time



Surface Resistance Checker

Easy checking of surface resistance on floor or mat



Electrostatic Field Meter

Essential item for static electricity measurement
Visualize the static charge and discharge state

1

Creating an optimum EPA environment from a working table, a floor, to a human body with one-stop solution.

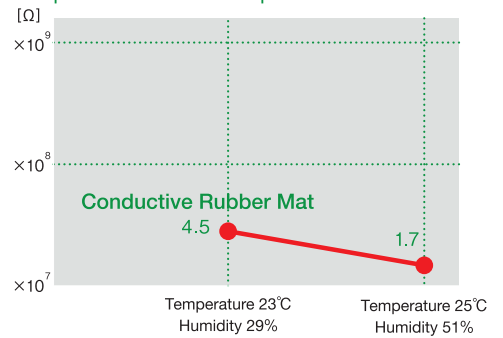
Our IEC61340-5-1 compliant products include the ESD protection items, the EPA working mats for workbenches, storage shelves, or trolleys, the EPA floor material for vinyl or painted floors, and the anti-static wrist straps.



2

Stable conductivity performance

Conductivity rates fluctuate frequently according to changes in humidity in the working environments. VESSEL's conductive rubber mats realize a "conductive performance" that complies with strict criteria.



3

RoHS

Environmental Measures

Pb (lead) / Cd (cadmium) / Hg (mercury) / Hexavalent chromium / PBB (polybrominated biphenyl) / PBDE (polybrominated diphenyl ether) / DEHP, BBP, DBP, DIBP (phthalate esters)

The products with this mark in this catalogue are compliant with the RoHS directives (EU) (usage limit of the above 10 substances).

Note: For the updated information on RoHS compliant products, visit our homepage, because some products or sizes are under investigation or are not compliant at the time of publication of this catalogue.

EPA Working Mat · Conductive Rubber Mat

Controlling electroconductivity between $10^6\Omega$ and $10^7\Omega$, unsusceptible to the working environment. Ideal for workbenches requiring anti-static measures.



RoHS

10m
ROLL

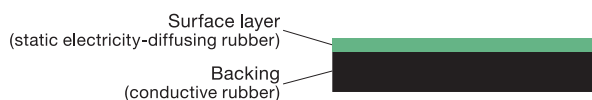
LG-100 EDP No. 621464
SG-100 EDP No. 621461



Applications	Conductivity	Material	Directive
Work benches	$10^6 \leq R \leq 10^7 \Omega$	NBR+SBR	EPA RoHS

- ▶ Offers uniform, consistent conductive performance.
- ▶ Features a matte surface finish, reducing reflections and preventing eye fatigue.
- ▶ Heat resistant to solder drops.

Structure



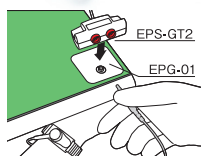
Common Specifications

Model No.	LG-100	SG-100
Color	Light green	Green
Size	W1.0m×L10m×t2.0mm	W1.0m×L10m×t2.0mm
Conductivity	$10^6 \leq R \leq 10^7 \Omega$	$10^6 \leq R \leq 10^7 \Omega$
Weight	29kg/roll	29kg/roll
Material	NBR+SBR	NBR+SBR

Grounding Tap

Neatly wire the grounding cords around your workbench

EPS-GT2



Specifications EDP No. 621402

Model No.	EPS-GT2
Size	Approx. 3.0 m (with round jack)
Resistance value	1M Ω
Material	ABS

Grounding Cord

Connect to mat-connecting gel with a single touch

EPC-18



EDP No. 621393

Common Specifications

Model No.	EPC-18
Size	max length of 1.8m.(max length 0.5m)
Resistance value	1M Ω
Accessories	Alligator clip

Wrist strap

Anti-Static Wrist Strap (10pcs/box)

EPS-05



NEW

RoHS

EDP No. 621471

- ▶ Anti-static product, complying with JIS C 61340-4-6: 2016
- ▶ Contractile band with rubber woven, adjustable to the wrist
- ▶ Ground cord with 1M ohm current-limiting resistor

Specifications

Model No.	EPS-05
Weight (g)	38 per piece, including alligator clip
Band length (mm)	Approx.190
Cord length (m)	Max.2.5 (0.72 when shrunken)
Resistance (Ω)	Approx. 1M between the body and the ground cord
Contents	Wrist strap, Ground cord, Alligator clip, Instruction manual

Replacement

Wrist Strap Cord
No.EPS-05-C
EDP No.621472

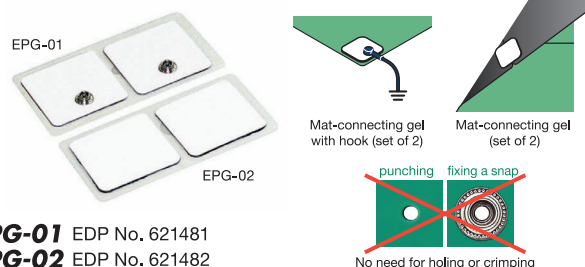


Weight (g)	24 including alligator clip
Embedded resistor (Ω)	1M
Cord length (m)	Max.2.5 (0.72 when shrunken)

Mat-connecting gel

Made from medical-grade conductive gel, with no need for time-consuming eyelet setting

EPG-01/EPG-02



EPG-01 EDP No. 621481

EPG-02 EDP No. 621482

No need for holing or crimping

Common Specifications

Model No.	EPG-01	EPG-02
Size	50x50mm	
Conductivity	104 Ω or less	
Operating environment temperature and humidity	5°C to 30°C / 60% RH or less	
Material	Conductive polyurethane, SUS, carbon film, PET	Conductive polyurethane, carbon film, PET

ESD Mat Grounding Kit

From the floor or mat to the working bench, provides an optimal EPA environment

EPS-GK



NEW

RoHS



- ▶ Grounding kit for a conductive rubber mat.

Specifications

EDP No. 621484

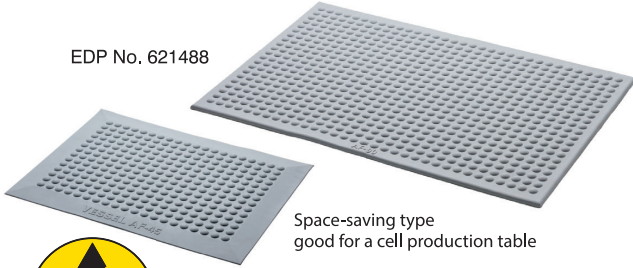
Model No.	EPS-GK
Ground cord	Wires : Stranded wire 0.5mm2(AWG20 Length 2.4m) Snap dia. : 10mm
Weight (g)	45g
Resistance (Ω)	1M (built in the ground cord)
Contents	Ground cord with snap Snap hardware/Screw, Single-use punch, Instruction manual

Conductive Anti-Fatigue Mat

Alleviate Fatigue
caused by standing for a long time

AF-90/ AF-45

EDP No. 621488



Space-saving type
good for a cell production table

EDP No.621489



RoHS

Applications	Conductivity	Material	Directive
Cell production, line work, assembly process	$R \leq 1.0 \times 10^9 \Omega$	NBR	EPA RoHS

- ▶ Conductive mat for fatigue alleviation from long standing work.
- ▶ Non-slip mat with embossments on the surface.
- ▶ Air pockets on the reverse side for spreading the body weight to alleviate fatigue.
- ▶ Light gray mat for easy detection of dirt, which may cause the conductive failure.
- ▶ 900mm x 600mm convenient size for the working stand for cell production.
- ▶ Space-saving 600x477mm good for one person. (AF-45)
- ▶ Inclined marginal area prevents workers from stumbling or falling. (AF-45)



Fall Prevention

The inclined marginal area prevents workers from stumbling or falling. (AF-45 only)

AF-45 sectional view

Comfortable and which make
you feel like jumping up



Air pocket on the reverse side spread the body weight to alleviate fatigue.



Specifications

Model No.	AF-90	AF-45
Size	W900mm x L600mm x t15mm	W600mm x L447mm x t15mm
Color	Gray	Gray
Conductivity	$R \leq 1.0 \times 10^9 \Omega$	$R \leq 1.0 \times 10^9 \Omega$
Weight	4.2kg	2.0kg
Material	NBR	NBR

*Grounding wire is not attached.

Surface Resistance Checker

Easy measurement of surface resistance
on a floor or mat

SRC-01



EDP No. 621604

Measurement

4 types

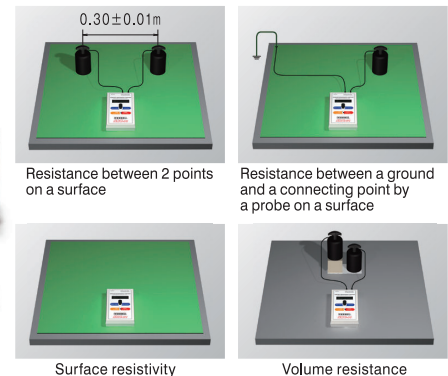
- One 9V battery
- With probes
- With a carrying case
- Auto-off

- ▶ All necessary for 4 types of measurement in one package.
- ▶ This can also measure temperature and humidity. (The values are for reference)
- ▶ Applied voltage selector switch enables to measure either the range from $1.0 \times 10^3 \sim 10^5 \Omega$ or from $1.0 \times 10^6 \sim 10^{12} \Omega$.

4 types of measurement

With a carrying case

Useful to carry all necessary items for measurement



Specifications

Conformity standards	IEC61340-4-1, JIS-C2170
Measurement range	$10^3 \sim 10^{12} \Omega (\Omega/\text{sq})$
Applied voltage	10V ($R < 1.0 \times 10^6 \Omega$ or Ω/sq), 100V ($R \geq 1.0 \times 10^6 \Omega$ or Ω/sq)
Display	Triple-digit LCD (□□□ e□□) ex.: 3.14 e10 → 3.14 × 10 ¹⁰
Power source	9 V battery × 1 (Type: 006P, recommended alkaline battery)
L x W x Dmm	L190 × W101.5 × D54.7mm
Weight	Body: around 340 g (including a battery); gross weight: around 6.2 kg (including the carrying case)
Operating temperature and humidity	0°C ~ 37°C 10% ~ 90%RH
Material	Body case: ABS resin

Accessories

- Probe (outer diameter: about $\Phi 66$ mm, about 2.3 kg): 2
- Curled cord for a body earth (banana plugs at both ends): 1
- Curled cord for measurement for the point-to-point resistance and resistance to ground (banana plug/mono plug): 2
- Crocodile clip: 1, Large crocodile clip: 1, Stainless plate (142mm × 67mm): 1
- Carrying case: 1, 9 V battery (006P type: manganese dry battery): 1
- Manuals

*An inspection report and a calibration certificate available as option.
Please consult us for more detail.

Electrostatic Field Meter

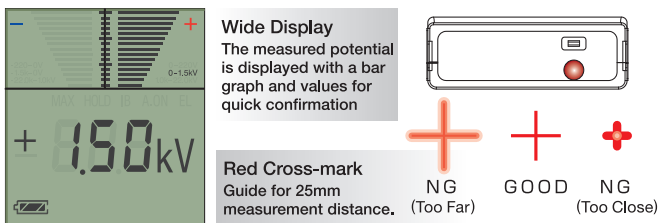
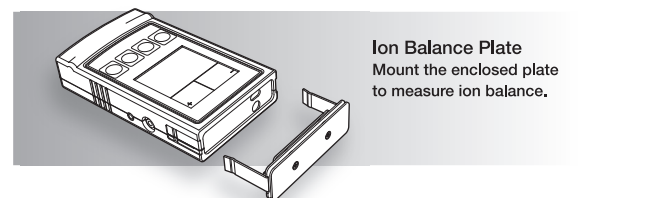
Visualizing invisible static electricity
Peak hold supports long-time measurements

Eye-02

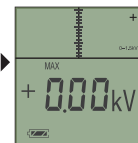


Measurement	Measurement	LCD display
Charge potential	Ion balance	Bar graph + 3 digits
One 9V battery	ion balance measurement plate	Measuring distance 25 mm
	Auto power off	Out of measuring range alarm
	Peak hold function	Battery level display
	Anti-Drop strap	

- ▶ Easily establish measurement distance with cross mark LED.
- ▶ Color LCD clearly shows the polarity.
- ▶ Mountable onto a tripod.

Maximum (peak) value display **MAX**

This function is efficient for measurement of the "charge of workpieces traveling at a high speed", in which the value changes rapidly, and also efficient for "continuous" measurement, in which changes are monitored over time.

**HOLD**

"HOLD" temporarily stops the measurement. Use this when checking the value at a difference place.

Automatic power OFF / continuous measurement **A.ON**

The power turns OFF in five minutes to save the battery (default). This automatic power OFF function can be disabled during "continuous" measurement.

Backlight **EL**

Illuminate the display to see clearly even in a dark place. Hold down the power button to switch the modes (EL/A.ON).



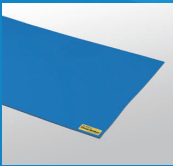
Specifications

Model No.	EYE-02
Charge potential measurement	±0 to ±1.50 kV (LO range) / ±1.0 to ±20.0 kV (HI range)
Ion balance measurement	0 to ±200 V
Response time	within 1sec
Accuracy	±10%
Power	One 9V battery (006P)
Charged potential measurement distance	25mm±0.5mm
LxWxDmm	L123xW70xD25mm
Weight	170 g / ion balance measurement plate 30g
Operating environment temperature and humidity	10°C to 50°C / 80% RH or less
Accessories	Ion balance measurement plate, Grounding cord, alligator clip, Soft case

◆Complies with ISO 9000 traceability standards.

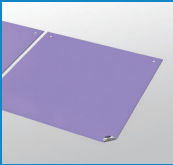
Calibration tables and certificates can be issued for this instrument. (Option)

Clean Walker



CW-900B

5mm thick
Capture dust off shoe soles



CW-900EZ

3mm thick
Strong and tear resistant even
under heavy objects

1

Non-peeling type adhesive mat

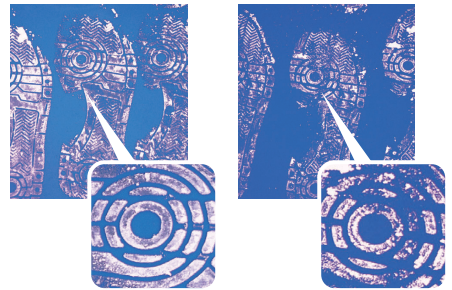
There's no need sacrifice cleanliness by limiting the number of sheets peeled to save costs.



2

Reliable dust removal

Self-adhesiveness of polyurethane resin is the key. The thick mat flexibly contacts against shoe treads and carefully catches dust between them.



Clean Walker

Conventional peel-off mats

3

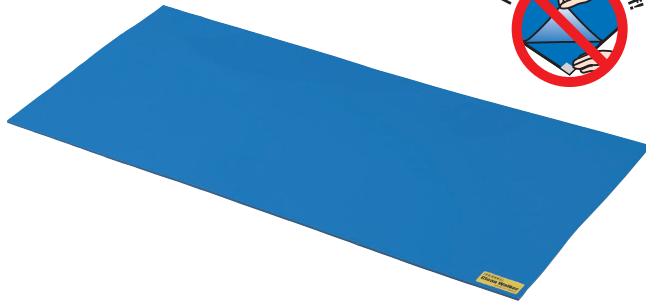
Wash & dry to restore adhesiveness

Wet the surface with water, alcohol or diluted household detergent, and the dirt will lift right up. Wash and dry the mat well to restore the original adhesiveness.



Clean Walker

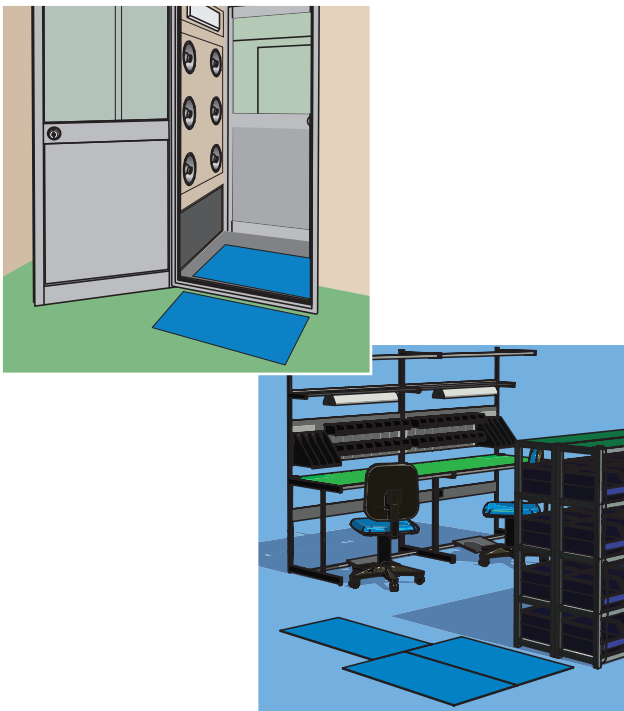
High elasticity.
Outstanding dust collection performance

CW-900B**RoHS**

EDP No. 621485

Applications	Material	Washable
For indoor use (especially in front of clean rooms)	Polyurethane	✓

- ▶ The 5mm high elasticity mat.
- ▶ Powerfully catches dust from shoe soles.
- ▶ Collected dust can be easily wiped off with a wet cloth.

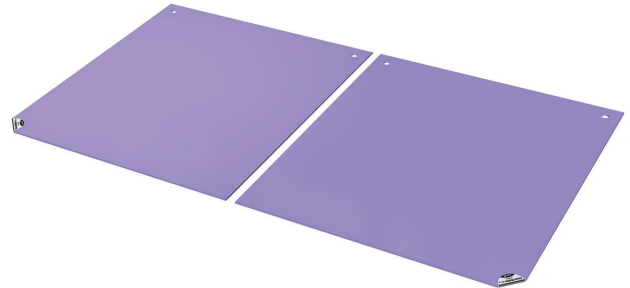


Specifications

Model No.	CW-900B
Color	Blue
Size	W900mm×L500mm×t5mm
Conductivity	Insulator
Weight	2.4kg
Material	Polyurethane

Clean Walker Easy

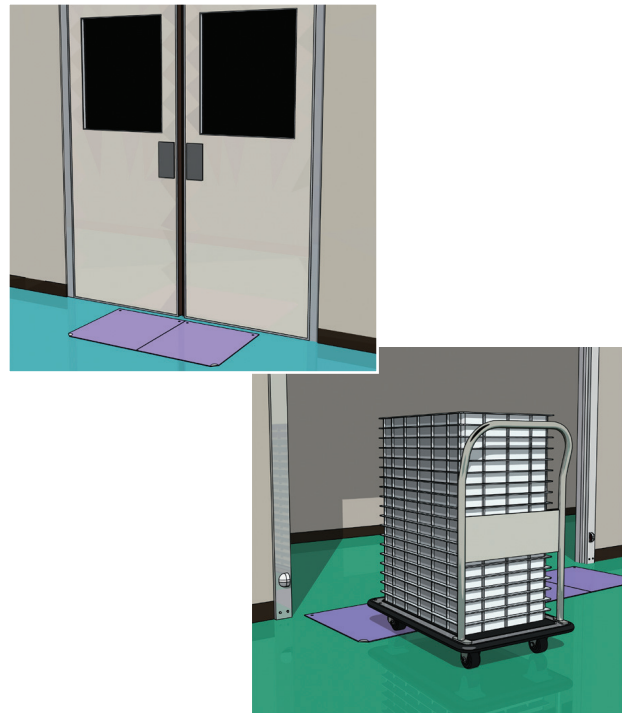
Easy maintenance.
Just 3mm thickness

CW-900EZ**RoHS**

EDP No. 621486

Applications	Material	Washable
For indoor use (especially in front of clean rooms)	Polyurethane, non-woven textiles	✓

- ▶ Non-woven textiles are sandwiched with a 3mm thickness to attain a high strength
- ▶ Resist tears even under the pressure of trolleys.
- ▶ Take the mat out of the floor and wash it with water. Hang from hook holes to dry off.



Specifications

Model No.	CW-900EZ
Color	Light purple
Size	W450mm×L500mm×t3mm
Conductivity	Insulator
Weight	1.6 kg (2 pieces)
Material	Polyurethane, non-woven textiles

High Power Ionizing Nozzle

Good for Highly Charged Products

Nozzle type ionizer suitable for installation in an automated production line

HPN-1

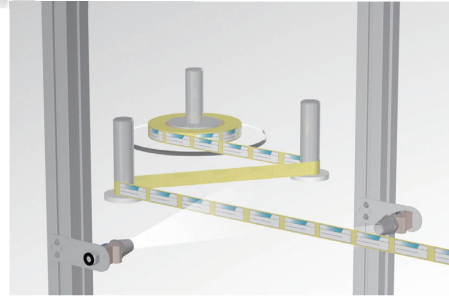


EDP No. 623043

High Voltage Transformer	Ion balance	Decay time
Piezoelectric high-frequency AC corona discharge (Option)	Adjustable on the GP-1	0.5 sec or less
Power supply AC3.5kV	Air Pressure max 0.7MPa	GP-1 Option
		AC adapter Option



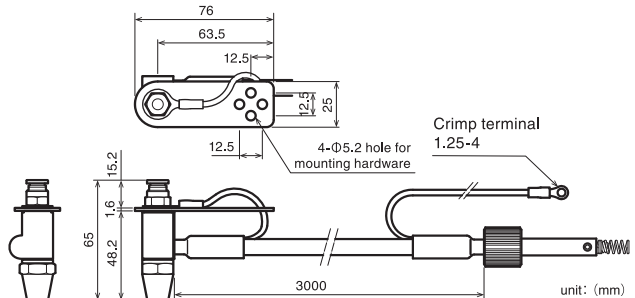
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ High speed ionizing performance with compressed air.
- ▶ Ultra-compact and light-weight model suitable for installation in equipment.



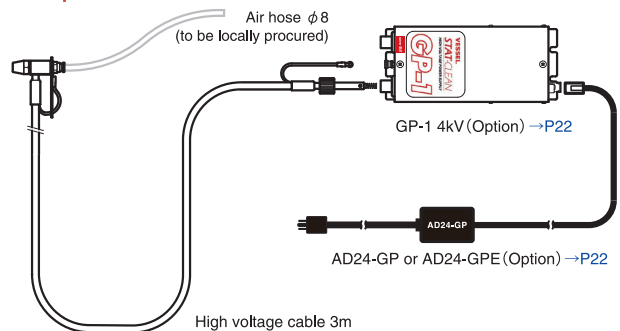
Specifications

Model No.	HPN-1
Applied High Voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing Method	AC corona discharge (Structure: Direct-coupled *1)
Applied Voltage /Frequency	3.5kV AC / 50/60Hz *2
Operating Fluid / Input Pressure	Clean air/max. input pressure of 0.7MPa *3
Operating Temp./Humidity	0~45°C/10~90%RH (without freezing or dew condensation)
Storage Temp./Humidity	-30~50°C/10~90%RH (without freezing or dew condensation)
Installation Distance	Approx.50~300mm (between a charged product and a discharge tip of the ionizer)
Decay Time	Approx. 0.5 sec. (Input air pressure: 0.3MPa, Distance: 150mm)
Ion Balance	Adjustable on GP-1 4kV *4
Installation Place	Indoor
Protective Circuit	High Voltage Power Supply GP-1 4kV has high voltage anomaly detection function and automatic stop circuit.
High Voltage Cable	3m (standard), silicon shielded cable *5 (High voltage connector CON-4)
Air Connection	One touch joint, outer dia.6mm tube applied
Weight	Approx.350g, including high pressure cable (3m), standard mounting hardware, and high pressure connector.
Noise	Approx. 95dBA (Air pressure:0.3MPa, Distance: 1m)
Air flow	Approx. 100L/min (Air pressure:0.3MPa)
Accessories	High voltage warning sticker, Instruction manual

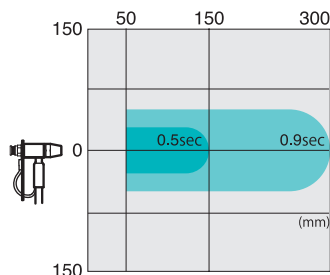
*1: Do not touch the electrode when applying current; otherwise it may bring electric shocks.
 *2: Use the high voltage power supply unit GP-1 4kV. *3: DO NOT SUPPLY AIR WITH MORE THAN THE DESIGNATED PRESSURE, BECAUSE OF SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS. *4: Charged plate monitor or an equivalent is required for ion balance adjustment. *5: A custom-made cable up to 5m is available on request. However, when connecting 2 sets of ionizer to the GP-1 4kV, use the 3m cable with either of them.



Example of connection



Decay area Air Pressure : 0.3MPa



High Power Ionizing Flexible Nozzle

Good for Highly Charged Products

Pin-point static electricity removal even in a place difficult for installation

HPF-1



EDP No. 623048

High Voltage Transformer Piezoelectric high-frequency AC corona discharge (Option)	Ion balance Adjustable on the GP-1	Decay time 0.5 sec or less
Power supply AC3.5kV	Air Pressure max 0.4MPa	GP-1 Option
	AC adapter Option	

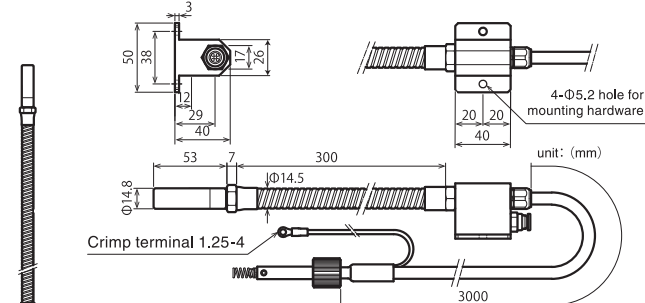
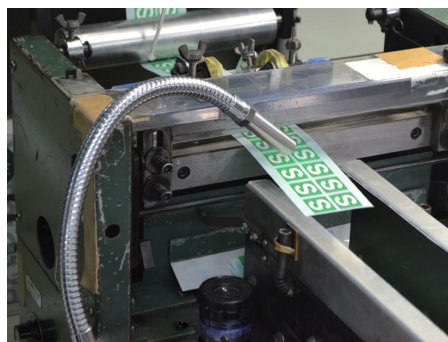
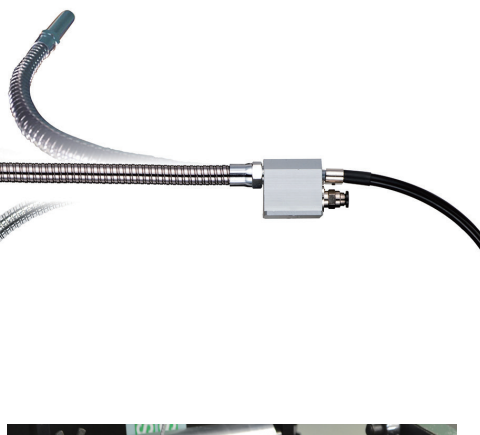
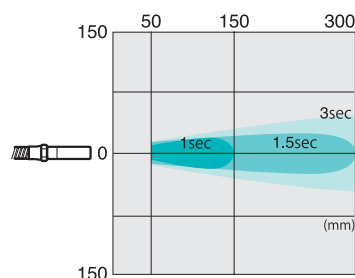
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ Free angle adjustment and pin-point ionizing from a distant place. 300mm flexible tube enables to adjust the ion emission angle freely. It is possible to perform the pin-point neutralization on a charged product.
 - * Fix the tip of the HPF-1 with a hardware or alike, so that it does not slip, when using it by bending approximately 30° or more. (Minimum bending radius: inside dimension radius 60mm)
- ▶ High speed ionizing performance with compressed air. Ultra-compact and light-weight model suitable for installation in equipment.

Specifications

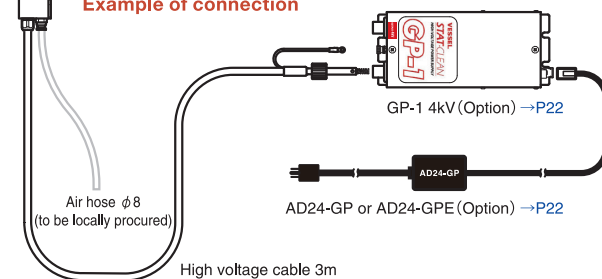
Model No.	HPF-1
Applied High Voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing Method	AC corona discharge (Structure: Direct-coupled *1)
Applied Voltage /Frequency	3.5kV AC / 50/60Hz *2
Operating Fluid / Input Pressure	Clean air/max. input pressure of 0.4MPa *3
Operating Temp./Humidity	0~45°C/10~90%RH (without freezing or dew condensation)
Installation Distance	Approx.50~300mm (between a charged product and a discharge tip of the ionizer)
Decay Time	Approx. 1 sec. (Input air pressure: 0.3MPa, Distance: 150mm)
Ion Balance	Adjustable on GP-1 4kV *4
Installation Place	Indoor
Protective Circuit	High Voltage Power Supply GP-1 4kV has high voltage anomaly detection function and automatic stop circuit.
High Voltage Cable	3m (standard), silicon shielded cable *5 (High voltage connector CON-4)
Air Connection	One touch joint, outer dia.6mm tube applied
Weight	Approx.690g, including high pressure cable (3m), standard mounting hardware, and high pressure connector.
Noise	Approx. 86 dBA (Air pressure:0.3MPa, Distance: 1m)
Air flow	Approx. 100L/min (Air pressure:0.3MPa)
Accessories	High voltage warning sticker, Instruction manual

*1: Do not touch the electrode when applying current; otherwise it may bring electric shocks.
 *2: Use the high voltage power supply unit GP-1 4kV. *3: DO NOT SUPPLY AIR WITH MORE THAN THE DESIGNATED PRESSURE, BECAUSE OF SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS. *4: Charged plate monitor or an equivalent is required for ion balance adjustment. *5: A custom-made cable up to 5m is available on request. However, when connecting 2 sets of ionizer to the GP-1 4kV, use the 3m cable with either of them.

Decay area Air Pressure : 0.3MPa



Example of connection



High Power Ionizing Gun

Good for Highly Charged Products
For neutralization of charged products or dust removal before painting

HPG-1



HPG-1 EDP No. 623046
(High voltage cable 3m)

HPG-1-4.5M EDP No. 623047
(High voltage cable 4.5m)

HPG-1S EDP No. 623045
A set of high voltage power supply unit + AC adapter (High voltage cable 3m)



High Voltage Transformer Piezoelectric high-frequency AC corona discharge (Option)	Ion balance Adjustable on the GP-1	Decay time 0.5 sec or less
Power supply AC3.5kV	Air Pressure max 0.7MPa	GP-1 Option (Except HPG-1S)
		AC adapter Option (Except HPG-1S)

- ▶ **Titanium discharge needle (discharge electrode).** Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ **The high voltage cable is shielded** so that it is less affected by the external electrical noises.
- ▶ **Robust and easy handling ionizing gun.** The body of the ionizing gun is made by robust aluminum die-casting. Easy handling large trigger for superior operability. Compact model for elimination of both static electricity and dust.

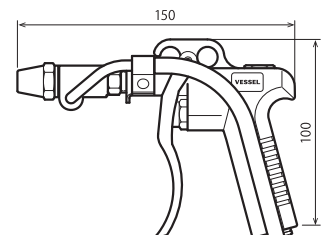
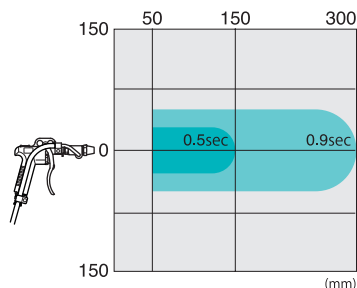


Specifications

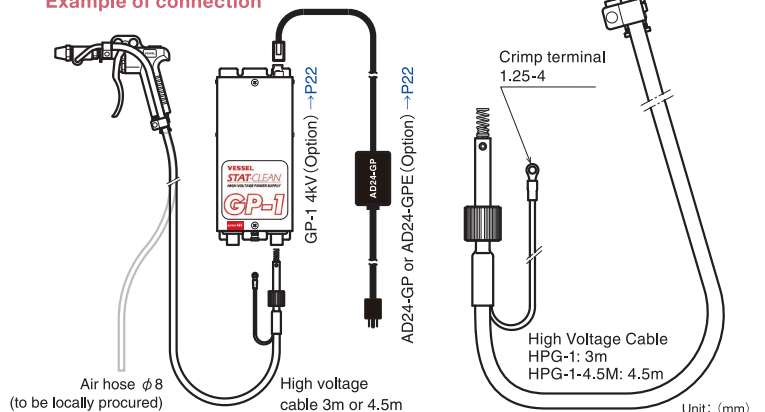
Model No.	HPG-1
Applied High Voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing Method	AC corona discharging (Structure: Direct-coupled *1)
Applied Voltage / Frequency	3.5kV AC / 50/60Hz *2
Operating Fluid / Input Pressure	Clean air/max. input pressure of 0.7MPa *3
Operating Temp./Humidity	0~45°C/10~90%RH (without freezing or dew condensation)
Storage Temp./Humidity	-30~50°C/10~90%RH (without freezing or dew condensation)
Installation Distance	Approx.50~300mm (between a charged product and a discharge tip of the ionizer)
Decay Time	Approx. 0.5 sec. (Input air pressure: 0.3MPa, Distance: 150mm)
Ion Balance	Adjustable on GP-1 4kV *4
Installation Place	Indoor
Protective Circuit	High Voltage Power Supply GP-1 4kV has high voltage anomaly detection function and automatic stop circuit.
High Voltage Cable	3m (standard), silicon shielded cable *5 (High voltage connector CON-4)
Air Connection	One touch joint, outer dia.6mm tube applied
Weight	Approx. 550g, including high voltage cable (3m) and high voltage connector.
Noise	Approx. 95dBA (Air pressure:0.3MPa, Distance: 1m)
Air flow	Approx. 100L/min (Air pressure:0.3MPa)
Accessories	High voltage warning sticker, Air consent, Instruction manual

*1: Do not touch the electrode when applying current; otherwise it may bring electric shocks.
*2: Use the high voltage power supply unit GP-1 4kV. *3: DO NOT SUPPLY AIR WITH MORE THAN THE DESIGNATED PRESSURE, BECAUSE OF SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS. *4: Charged plate monitor or an equivalent is required for ion balance adjustment. *5: A custom-made cable up to 9m is available on request (for a single piece).

Decay area Air Pressure : 0.3MPa



Example of connection



High Power Ionizing Bar

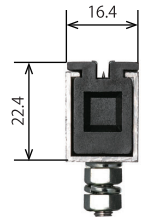
Good for Highly Charged Products

Super slim model, designed for installation in a cramped space



HPB-series

HPB-300	EDP No. 623316
HPB-600	EDP No. 623336
HPB-810	EDP No. 623350
HPB-1005	EDP No. 623363
HPB-1200	EDP No. 623376
HPB-1500	EDP No. 623396
HPB-1800	EDP No. 623416



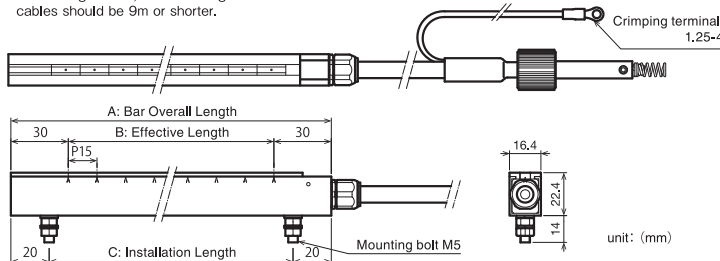
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance. The needles are allocated every 15mm on the bar, allowing to generate many ions effectively. Optimum for a high speed film transfer application.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ Super slim ionizing bar: 16.4x22.4mm (sectional dimensions). Suitable for a cramped space.
- ▶ Option: Air Assist Bar - Custom-made size is available according to the length of the HPB used together. Compressed air enables to eliminate dust and static electricity more quickly and in the distance.

High Voltage Transformer Piezoelectric high-frequency AC corona discharge (Option)	Ion balance Adjustable on the GP-1	Decay time 2 sec or less
Power supply AC3.5kV	GP-1 Option	AC adapter Option

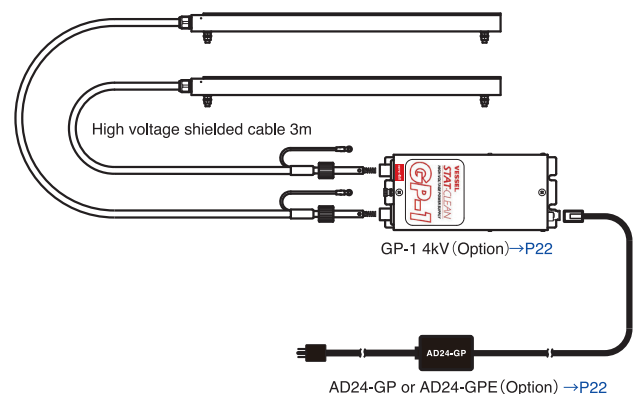
Specifications

Model No.	HPB-300/600/810/1005/1200/1500/1800
Applied High Voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing Method	AC corona discharge (Structure: Direct-coupled *1)
Applied Voltage /Frequency	AC 3.5 kV /50/60 Hz *2
Operating Temp./Humidity	0~45°C/10~85%RH (without freezing or dew condensation)
Storage Temp./Humidity	0~50°C/10~85%RH (without freezing or dew condensation)
Installation Distance	Approx.50~100mm (between a charged product and a discharge tip of the ionizer)
Decay Time	Approx. 2 secs. (No compressed air, Distance: 100mm)
Ion Balance	Adjustable on GP-1 4kV *4
Installation Place	Indoor
Protective Circuit	High Voltage Power Supply GP-1 4kV has high voltage anomaly detection function and automatic stop circuit.
High Voltage Cable	3m (standard), silicon shielded cable *5 (High voltage connector CON-4)
Weight	Approx. 540g/m, not including high voltage cable
Accessories	Instruction manual, High voltage cable (already mounted), Mounting bolt M5 (already mounted)

*1: Do not touch the electrode when applying current; otherwise it may bring electric shocks.
 *2: Use the high voltage power supply unit GP-1 4kV. *3: DO NOT SUPPLY AIR WITH MORE THAN THE DESIGNATED PRESSURE, BECAUSE OF SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS. *4: Charged plate monitor or an equivalent is required for ion balance adjustment. *5: A custom-made cable is available on request. When connecting 2 HPB, the total length of the bars and the cables should be 9m or shorter.



Example of connection



Dimensions/No. of Needle Electrode

型番	A (mm)	B (mm)	C (mm)	No. of Discharge Needle	Weight (kg)
HPB-300	300	240	260	17	0.16
HPB-600	390	540	560	37	0.32
HPB-810	810	750	770	51	0.44
HPB-1005	1005	945	965	64	0.54
HPB-1200	1200	1140	1160	77	0.65
HPB-1500	1500	1440	1460	97	0.81
HPB-1800	1800	1740	1760	117	0.97

Options and replacement parts

Adapter specification



Needle Electrode Unit / Front Cover

(Subject to change without prior notice)



Needle Electrode Unit
F-6H
EDP No. 806094
Use with: F6RCL-E, F6RST-E



Front cover w/needle electrode
F-120RCH
EDP No.806127
Use with: F120R-E



Front cover w/needle electrode
F-120SCH
EDP No.806128
Use with: F120S-E



Front cover w/needle electrode
L-90CH
EDP No.806132
Use with: L-90-E

Filter



SDJ-08F
EDP No. 806039
Use with: F6RCL-E, F6RST-E



F-12EF
EDP No. 806054
Use with: F120R-E, F120S-E



Filter Set
F-120FS
EDP No. 806123
Use with: F120R-E, F120S-E



L-90-F
EDP No.806133
Use with: L-90-E



Filter Set
L-90FS
EDP No.806134
Use with: L-90-E

AC Adapter



AD24-ITF6
● EDP No. 806095
AD24-ITF6E
● EDP No. 806138
Use with: F6RCL-E, F6RST-E
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A



AD24-IT
● EDP No. 806051
AD24-ITE
● EDP No. 806135
Use with: F120R-E, F120S-E
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A



AD24-IT37
● EDP No. 806131
AD24-IT37E
● EDP No. 806139
Use with: L-90-E
I / P : AC100V~240V 1.5A
O/P : DC24V 3.75A

For Gun / Nozzle Type



Standard Nozzle
G-7SN
EDP No. 806057
Use with: G7R-E



Joint Nozzle
G-7THN
EDP No. 806063
Use with: G7R-L, BBZ-E



Tube-fitting Nozzle
(For a tube O.D.6mm)
N-2TN
EDP No. 806085
Use with: G7R-E, G2-E
N-1*, N-3
*When installed, there is a gap between the nozzle and the body due to the difference in the thread length.



Shower Tube
N-2C6B
EDP No. 621706
Use with: N-3
(Should be used together with N-2TN)



Silent Nozzle
N-2WN
EDP No. 806087
Use with: G7R-E, G2-E
BBZ-E, N-1*, N-3
*When installed, there is a gap between the nozzle and the body due to the difference in the thread length.



Straight Silent Nozzle
BB-ZSN
EDP No. 621708
Use with: G7R-E, G2-E
BBZ-E, N-1*, N-3, G-9
*When installed, there is a gap between the nozzle and the body due to the difference in the thread length.



Silent Nozzle
G-9WN
EDP No.806151
Use with: G-9*



Standard Nozzle
N-1SN
EDP No. 806120
Use with: N-1, N-3, G2-E



Brush: 60 mm bristles
G-7B
EDP No. 806059
Use with: G7R-E



Soft Brush: 60 mm bristles
G-7SB
EDP No. 806062
Use with: G7R-E



Plug with Urethane Tube
G-9UTP
EDP No. 806148
Use with: G-9



Motor Cartridge
G-9MC
EDP No.806147
Use with: G-9



Needle Electrode Replacement Screwdriver
G-7DR
EDP No. 806061
Use with: G7R-E, BBZ-E, N-1, N-3, G2-E, G-9



Speed Controller
G-7SC
EDP No. 621373
Use with: G7R-E, BBZ-E, N-1, N-3, G2-E



Microfilter
G-7F
EDP No. 621702
Use with: G7R-E, BBZ-E, N-1, N-3, G2-E
Filter eliminates at least 99% of particles with a diameter of 0.01 μm or greater. Install a 1 μm to 10 μm air filter and mist separator on your air compressor before using this item.



Needle Electrode
GN-H
EDP No. 806124
Use with: G7R-E, BBZ-E, N-1, N-3, G2-E, G-9



AC Adapter
AD24-ITC (2.5m)
● EDP No. 806060
AD24-ITC-E (2.5m)
● EDP No. 806067
Use with: G7R-E, G2-E
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A



AC Adapter
AD24-ITB
● EDP No. 806075
AD24-ITB-E
● EDP No. 806076
Use with: BBZ-E
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A



AC Adapter
AD24-ITCS (1.5m)
● EDP No. 806083
AD24-ITCS-E (1.5m)
● EDP No. 806084
Use with G2-E
I / P : AC100V~240V 0.4A
O/P : DC24V 0.75A



Relay Cable (5 m)
G-7EC5
EDP No. 621703
Use with: G7R-E
(Should be used together with AD24-ITC or AD24-ITC-E)

Relay Cable (10 m)
G-7EC10
EDP No. 621704

Relay cables are used to connect the G7R-E to its dedicated power supply transformer (AD24-ITC-E).

Adapter specification



For C-series



Needle Electrode Unit
C-00HR8
EDP No. 806150



Power Supply Cable
CT-5
EDP No. 621709



Remote Control
RMC-01
EDP No. 806104

When using AC adapter,
Power Supply Cable (CT-5) is necessary.



AC Adapter
AD24-IT
● EDP No. 806051
AD24-ITE
● EDP No. 806135
I/P : AC100V~240V 0.4A
O/P : DC24V 0.75A

Operation : One bar



AC Adapter
AD-24-IT19
● EDP No. 806081
AD24-IT19E
● EDP No. 806137
I/P : AC100V~240V 1.2A
O/P : DC24V 1.9A

Operation : 2 or 3 bars
(Please consult us for more detail)

For SJ-series*

* Note

SJ-** is available while stocks last.
The model code will be changed to SL-** afterward.

Connecting cable (2.5m)
GP-EC2.5
EDP No. 623053

Connecting cable (5m)
GP-EC5
EDP No. 623054

Plug for
the SL, SH,
SH-G3, and
SH-SP2



Plug for
the GP-1



Branch Box
SH-SP2
EDP No. 621552
(Connecting cable is required.)

Connecting cable (2.5m)
SJ-EC2.5*
EDP No. 623051

Connecting cable (5m)
SJ-EC5*
EDP No. 623052

Plug for
the SL, SH,
SH-G3, and
SH-SP2



Plug for
the SJ, SH,
SH-G3, and
SH-SP2

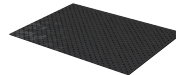


Needle electrode
SJ-00HR*
EDP No. 623055

For Ion Parts Cleaner

Unwoven fan filter (5pc.)
IPC-A4F
EDP No. 806092
Use with: IPC-A4

Paper pack filter (6pc.)
IPC-A3F
EDP No. 806126
Use with: IPC-A3



Adhesive gel sheet (1pc)
IPC-A4G
EDP No. 806091
Use with: IPC-A4, IPC-A3
(two sheets required per unit)



Needle Electrode (For N-3)
GN-H
EDP No. 806122
Use with: IPC-A4, IPC-A3



AC Adapter
AD-24-IT19
● EDP No. 806081
AD24-IT19E
● EDP No. 806137
Use with IPC-A4, IPC-A3
I/P : AC100V~240V 1.2A
O/P : DC24V 1.9A



Pre-filter
IPC-250CRPF
EDP No. 623203
Use with : IPC-250CR



Needle electrode
SDJ-05RH
EDP No. 806044
Use with : IPC-250CR



HEPA filter
IPC-250CRHF
EDP No. 623202
Use with : IPC-250CR



AC adapter
AD24-150-PD4
● EDP No. 806146
I/P : 100V to 240 V AC, 50/60 Hz
O/P : 24V DC 5A
Use with : IPC-250CR

For CF300-E

Contact us for replacement of the needle electrodes.



Cleaning Brush
CF-300B
EDP No. 806140



Rough Filter
CF-300F
EDP No. 806141



AC Adapter
AD24-IT
● EDP No. 806051
AD24-ITE
● EDP No. 806135
I/P : AC100V~240V 0.4A
O/P : DC24V 0.75A

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- Product specifications, dimensions, pricing, and other information are subject to change without notice.
- Static electricity erasing capability values given in this catalog were obtained in our measurement environment.
Your results may differ depending on the operating environment.