

VESSEL

ESD PRODUCT CATALOG



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

Product quality is very important issue at manufacturing sites.

Since 2000, VESSEL has focused on solutions for static electricity and dust elimination, with aspiration for improvement in the product quality of all customers.

VESSEL, the ionizing and dust elimination expert, is ready to help.

3 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

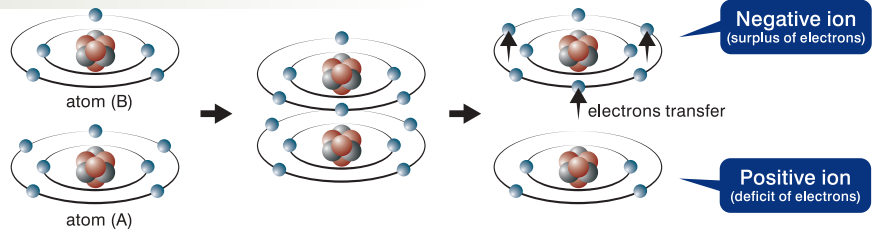
Our static removal and dust removal spacialists will visit your production site to propose the best available products. Customization is also available upn request.



THE STATIC ELECTRICITY

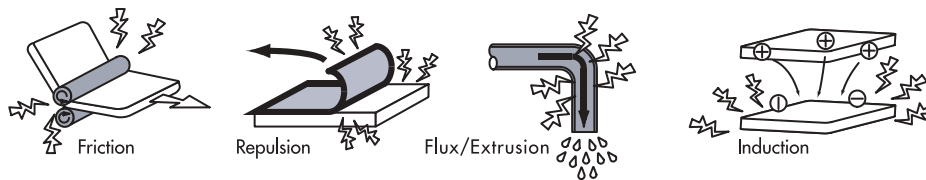
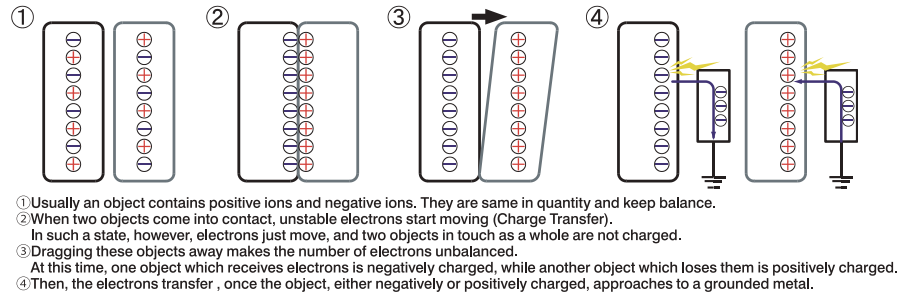
Theory

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.



Triboelectric series

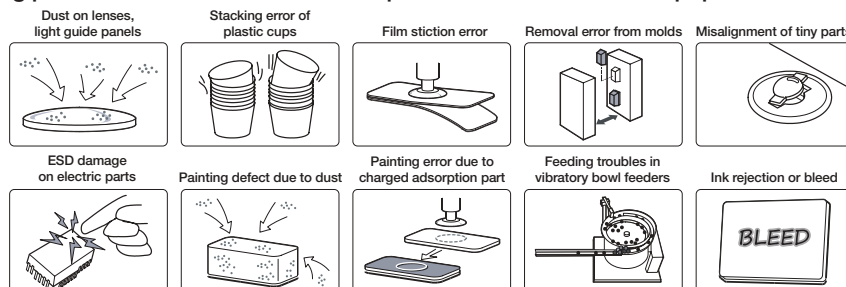
The Triboelectric Series chart shows the relative positive or negative charge of various materials.



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:

- 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, 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:


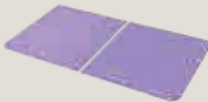


- The ionizer will send positive and negative ions to be combined with the positive and negative charges on the targeted surface. The ions are created thanks to the corona discharge principle. The static electricity elimination is made without any contact.

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

Fan Type	Nozzle Type	Gun Type	Bar Type
<p>Mount on a cell workbench, parts stock shelf, or belt conveyor. Switch the fan speed for neutralization in the close or far distance.</p>  <p><Mini> F-6RCL-E F-6RST-E →P06</p>	<p>Assemble into manufacturing devices for pinpoint neutralization and dust-elimination within cramped spaces. Just replace the nozzle to use with various applications.</p>  <p>N-1 N-3 →P12</p>	<p>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.</p>  <p>G7R-E →P14</p>	<p>Suitable for neutralizing clean rooms, and preventing static generation on film moving at high speeds.</p>  <p><Built-in power supply> C-series →P19</p>
<p><Standard> F120R-E F120S-E →P07</p>	<p><High Power Series> HPN-1 →P33</p>	<p>G-2-E →P15</p>	<p>SJ-series*/SL-series P21 <small>* Note SJ-** is available while stocks last. → The model code will be changed to SL-** afterward (CE compliant).</small></p>
<p><Wide width> CF300-E →P8 CF600-E →P8</p>	<p>HPF-1 →P34</p>	<p>G-9 →P16</p>	<p><High Power Series> HPB-series →P36</p>
<p>L-90-E →P9</p>	<p><High Power Series> HPG-1 →P35</p>	<p><High Power Series> HPG-1 →P35</p>	



your fingertips to your toes. range 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><Vertical Type> IPC-V4 →P26</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 $\pm 1,000$ V to ± 100 V)(Charged plate monitor: 150 mm x 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



CF-600-E NEW

Wide area neutralization
Slim & 600mm wide space-saving model

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 [Piezo]

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 F-120R/ F-120S/ L-90

This is for illustrative purpose.

3

Easy maintenance of electrode needle unit

The electrode needle unit is in the louver integrated cover.
Take out the cover and perform cleaning of needles in a place away from the machine.



Ionizing Mini Fan with clip

Clip type for easy attachment to cell-production stands or workbenches.

F-6RCL-E



Low noise Fan

EDP No.621663

High Voltage Transformer	Ion balance	Decay time	Directive
Coiled, AC	within ± 10 V	3.0 sec or less	CE
Input voltage 24VDC	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

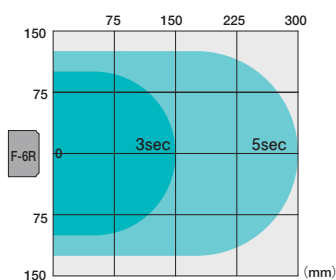
Easy removal

Built-in light

Specifications

Model No.	F-6RCL-E
Ionizing method/Applied voltage	High frequency AC corona discharge / 3.5kVAC
Input voltage/Current consumption	24VDC $\pm 5\%$ / 210mA(typ.)
Ion balance	within ± 10 V (150mm at front)
Decay time	3 sec or less (150mm at front)
Operating distance	150 ~ 600 mm
Dimensions	H254×W77×D108mm(clip included)
Weight	524g
Air volume	0.78m ³ /min (Max.)
Noise level	HI 58.5dBA / LO 39.5dBA
Ozone production	0.05ppm or less (50mm)
Operating temp./humidity	5-40°C / 35-65% RH (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 : 100~240VAC 0.4A
O/P : 24VDC 0.75A

Ionizing Mini Fan with stand

Stand type for easy installation to workbenches or machinery.

F-6RST-E



Low noise Fan

EDP No.621662

High Voltage Transformer	Ion balance	Decay time	Directive
Coiled, AC	within ± 10 V	3.0 sec or less	CE
Input voltage 24VDC	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

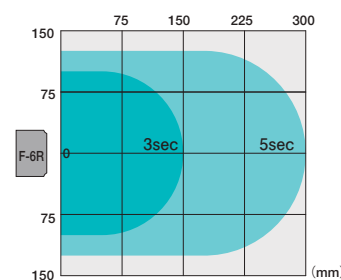
Easy removal

Built-in light

Specifications

Model No.	F-6RST-E
Ionizing method/Applied voltage	High frequency AC corona discharge / 3.5kVAC
Input voltage/Current consumption	24VDC $\pm 5\%$ / 210mA(typ.)
Ion balance	within ± 10 V (150mm at front)
Decay time	3 sec or less (150mm at front)
Operating distance	150 ~ 600 mm
Dimensions	H142×W90×D81mm(stand included)
Weight	470g
Air volume	0.78m ³ /min (Max.)
Noise level	HI 58.5dBA / LO 39.5dBA
Ozone production	0.05ppm or less (50mm)
Operating temp./humidity	5-40°C / 35-65% RH (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 : 100~240VAC 0.4A
O/P : 24VDC 0.75A

Ionizing Fan

Butterfly louver,
for neutralization in a wide area

F120R-E



EDP No. 621651

High Voltage Transformer		Ion balance		Decay time		Directive	
Piezoelectric, AC		within ± 10 V		1.5 sec or less		CE	
Input voltage 24VDC	Fan Speed HI/MD/LO	AC adapter 100~240V included	Needle electrode unit replacement	ALARM FAN LOCKUP	ALARM H.V.	External output 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.



Butterfly Louver

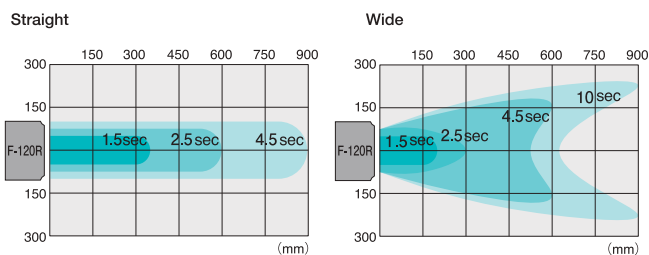
RUN lamp LED

Front cover with needle electrode

Specifications

Model No.	F120R-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/ 10kVAC (p-p) (HV power unit)
Input voltage/Current consumption	24VDC $\pm 5\%$ / 700mA (max.)
Ion balance	within ± 10 V (at factory shipment, airflow HI, straight, at 300mm)
Decay time	1.5 sec or less (at factory shipment, airflow HI, straight, at 300mm)
Operating distance	150 - 900 mm
Dimensions	H198xW162xD70mm (stand included)
Weight	0,9kg
Air volume	3.66m ³ /min (Max.)
Noise level	HI : 61dBA / LO : 55dBA
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5~40°C/ 35~65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable (1.8m)

Decay area



Accessories



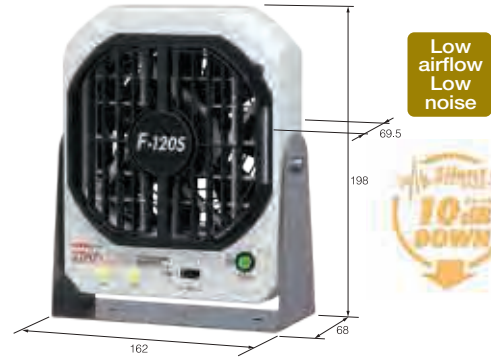
AC Adapter
AD24-ITE
EDP No.806135

I / P : 100~240VAC 0.4A
O / P : 24VDC 0.75A

Ionizing Fan

Silent fan model
with mild airflow

F120S-E



EDP No. 621646

High Voltage Transformer		Ion balance		Decay time		Directive	
Piezoelectric, AC		within ± 10 V		2.5 sec or less		CE	
Input voltage 24VDC	Fan Speed HI/MD/LO	AC adapter 100~240V included	Needle electrode unit replacement	ALARM FAN LOCKUP	ALARM H.V.	External output 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.



Butterfly Louver

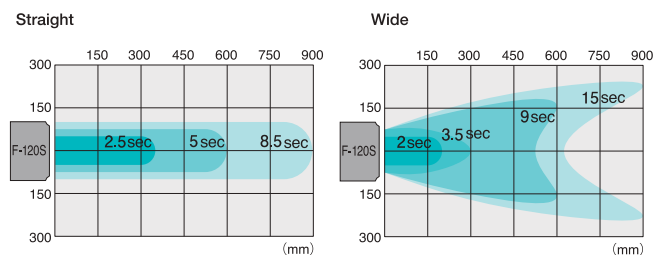
RUN lamp LED

Front cover with needle electrode

Specifications

Model No.	F120S-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/ 10kVAC (p-p) (HV power unit)
Input voltage/Current consumption	24VDC $\pm 5\%$ / 500 mA (max.)
Ion balance	within ± 10 V (airflow HI, straight, no filter, at 300mm)
Decay time	2.5 sec or less (airflow HI, straight, no filter, at 300mm)
Operating distance	150 - 900 mm
Dimensions	H198xW162xD70mm (stand included)
Weight	0,9kg
Air volume	2.21m ³ /min (Max.)
Noise level	HI : 51dBA / LO : 44dBA
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5~40°C/ 35~65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable (1.8m)

Decay area



Accessories



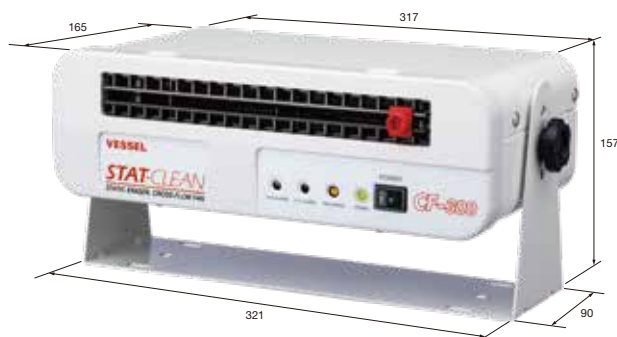
AC Adapter
AD24-ITE
EDP No.806135

I / P : 100~240VAC 0.4A
O / P : 24VDC 0.75A

Ionizing Cross-Flow Fan

Wide area neutralization
Evenly, straight, and far

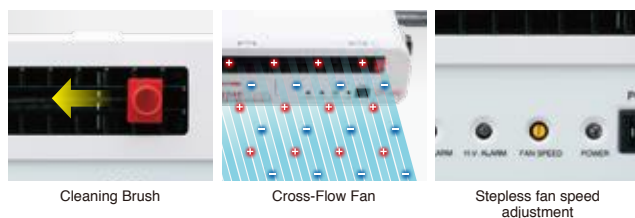
CF300-E



EDP No.621657

High Voltage Transformer	Ion balance	Decay time
Coiled, AC	within $\pm 10V$	1.5sec or less
Input voltage 24VDC	No-step airflow volume changeover	AC adapter 100-240V included
	ALARM FAN LOCKUP	ALARM H.V.
		External output 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

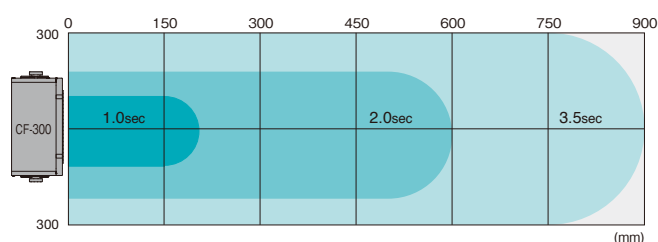
Cross-Flow Fan

Stepless fan speed adjustment

Specifications

Model No.	CF300-E
Ionizing method/ Applied voltage	AC(20kHz) corona discharge / 9.2kVAC(p-p)
Input voltage / Current consumption	24 VDC ripple (p-p) within $\pm 10\%$ / 500mA(max)
Ion balance	within $\pm 10V$ (at factory shipment, at 300mm)
Decay time	1.5 sec or less (300mm at front, max. airflow)
Operating distance	150 ~ 900 mm
Dimensions	H157xW348xD165 mm
Weight	2.9 kg
Air volume	2.5m ³ /min (Max.)
Noise level	48dBA (at 1m)
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5-40°C/ 35-65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-ITE AC cable(1.8m) Cleaning brush 1pc

Decay area



Accessories



AC Adapter
AD24-ITE
EDP No.806135
I/P : 100~240VAC 0.4A
O/P : 24VDC 0.75A

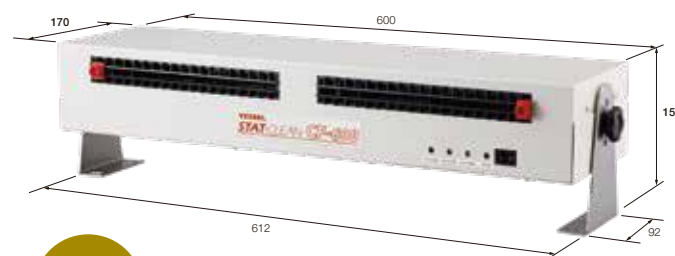


Cleaning Brush
CF-300B
EDP No.806140

Ionizing Cross-Flow Fan

Slim and wide ionizer
Best for wide area neutralization

CF-600-E



NEW

EDP No.621674

High Voltage Transformer	Ion balance	Decay time
Coiled, AC	within $\pm 10V$	1.5sec or less
Input voltage 24VDC	No-step airflow volume changeover	AC adapter 100-240V included
	ALARM FAN LOCKUP	ALARM H.V.
		External output terminal

- ▶ Space-saving ionizer, slim and 600mm wide
- ▶ 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.
- ▶ Sliding cleaning brush is equipped



Cleaning brush

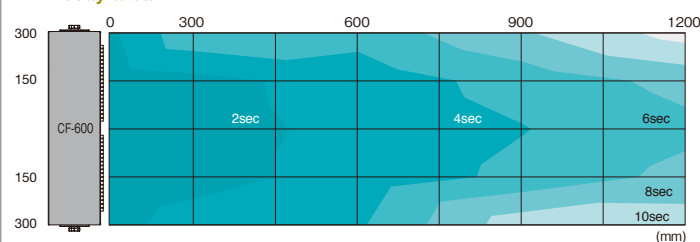
Cross-flow fan built-in

Alarm output terminals

Specifications

Model No.	CF-600-E
Ionizing method/ Applied voltage	AC(20kHz) corona discharge / 9.2kVAC(p-p)
Input voltage / Current consumption	24 VDC ripple (p-p) within $\pm 10\%$ / 900mA(max)
Ion balance	Within $\pm 10V$ (at factory shipment, at 300mm)
Decay time	1.5 sec or less (300mm at front, max. airflow)
Operating distance	Approximately 150 ~ 900mm
Dimensions	H157xW640xD170 mm
Weight	4.6kg
Air volume	2.5 m ³ (max.)
Noise level	51.7dBA(at 1m)
Ozone production	0.05 ppm or less
Operating temp./ humidity	5 ~ 40°C/ 35 ~ 65%RH (no dew condensation or freezing)
Accessories	AC adapter, AC cable(1.8m), Cleaning brush 2pcs (already mounted), Rubber washer 2pcs, Stand 2 pcs, Angle adjustmet knob 2pcs

Decay area



Accessories



AC Adapter
AD24-IT19
EDP No.806081
I/P : 100~240VAC 1.2A
O/P : 24VDC 1.9A



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, AC	within $\pm 10V$	1.5 sec or less
Input voltage 24VDC	No-step airflow volume changeover	AC adapter 100-240V included
		Needle electrode unit replacement
		ALARM FAN LOCKUP
		ALARM H.V.
		External output terminal

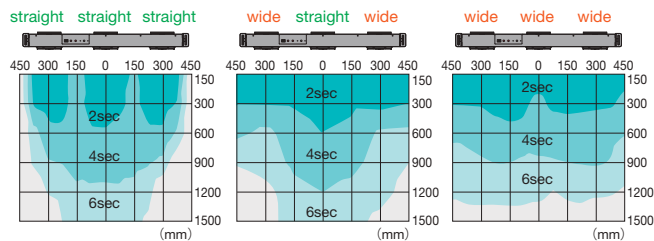
- ▶ Butterfly louver is equipped on each fan.
The direction of ion air can be changed either straight or to the wide area.
- ▶ Capacitive-coupled needles ensure stable and long-lasting ionizing performance.
- ▶ Easy maintenance: needle electrode is integrated to the front cover.



Specifications

Model No.	L-90-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/ 9.5kVAC(p-p) (H/V power unit)
Input voltage/ Current consumption	24VDC $\pm 5\%$ / 3.0 A (max.)
Ion balance	within $\pm 10V$ (at factory shipment, measured at 300mm)
Decay time	1.5 sec or less (at 150mm)
Operating distance	150 - 900 mm
Dimensions	H182×W814×D91 mm (with stand : H201×W880×D91 mm)
Weight	5.7kg
Air volume	7.1m ³ /min (a total of 3 fans) (max. fan speed)
Noise level	75.4 dBA (at 1m)
Ozone production	0.05ppm or less (measured 50mm)
Operating temp./ humidity	5-40°C/35-65% RH (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 : 100-240VAC 1.5A
O/P : 24VDC 3.75A

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



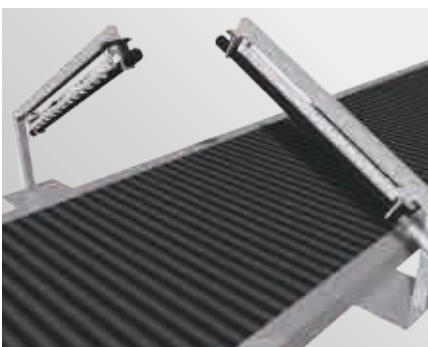
Moval in a bottle



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

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

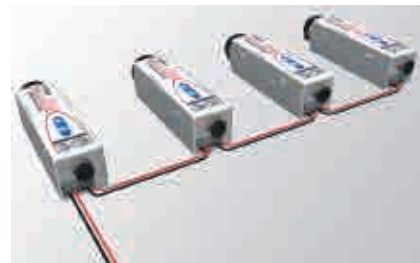
Use the optional shower nozzle or silent nozzle.



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	Ion balance	Decay time				
Piezoelectric, AC	within ± 10 V	1.0 sec or less				
Input voltage 24VDC	Air pressure max.0.6MPa	AC Adapter (Option)	Screw-type needle electrode	"ON" lamp	ALARM H.V.	External output 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.

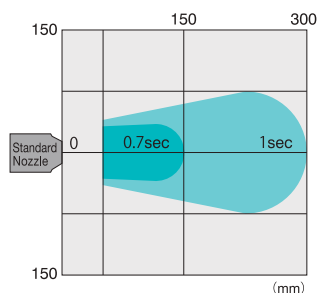


Alarm outputs and daisy chains possible.

Specifications

Model No.	N-1
Ionizing method/ Applied voltage	Piezoelectric high frequency AC corona discharge/5kVAC(p-p)
Input voltage/ Current consumption	24VDC $\pm 5\%$, ripple(p-p) 10% or less/ 100mA
Ion balance	within ± 10 V (w/standard nozzle, 0.3MPa, at 150mm)
Decay time	1.0 sec or less (0.3MPa, at 150mm)
Operating distance	50 - 600 mm
Dimensions	L109.6×W27.5×H28mm (with standard nozzle mounted)
Weight	62g (with standard nozzle mounted)
Air supply hose diameter	Tube fitting O/D6mm
Operating fluid	Clean dry air (0.1 ~ 0.6MPa), N ₂ (0.1 ~ 0.6MPa)
Air Consumption	160L/min (with standard nozzle mounted, 0.2MPa)
Noise	94.2dBA (0.3MPa)
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5-40°C/35-65% RH (no dew condensation or freezing)
Accessories	Standard nozzle (already mounted)

Decay area Air Pressure : 0.3MPa

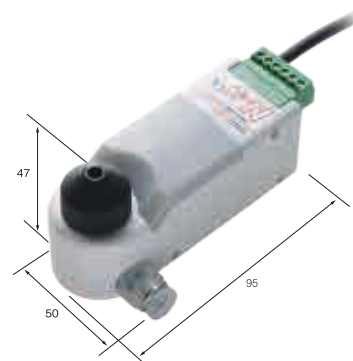


Accessories

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	Ion balance	Decay time	Directive			
Coiled, AC	within ± 10 V	1.0 sec or less	CE			
Input voltage 24VDC	Air pressure max.0.6MPa	AC Adapter (Option)	Screw-type needle electrode	"ON" lamp	ALARM H.V.	External output terminal

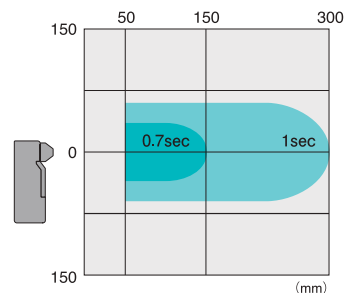
- ▶ Easy to wire with connector terminals.
- ▶ Diverse nozzles support various applications.

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

Specifications

Model No.	N-3
Ionizing method/ Applied voltage	High frequency AC corona discharge / 5.6kVAC(p-p)
Input voltage/ Current consumption	24VDC $\pm 5\%$ / 90mA(max.)
Ion balance	within ± 10 V (w/standard nozzle, 0.3MPa, at 150mm)
Decay time	1.0 sec or less (0.3MPa, at 150mm)
Operating distance	50 - 600 mm
Dimensions	L95×W50×H47mm
Weight	104g (with standard nozzle mounted)
Air supply hose diameter	Tube fitting O/D6mm
Operating fluid	Clean dry air (0.1 ~ 0.6MPa), N ₂ (0.1 ~ 0.6MPa)
Air Consumption	210L/min (with standard nozzle mounted, 0.3MPa)
Noise level	99.4dBA (0.3MPa)
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5-40°C/35-65% RH (no dew condensation or freezing)
Accessories	Standard nozzle (already mounted), Power supply harness

Decay area Air Pressure : 0.3MPa



Accessories

Standard Nozzle
N-3SN
EDP No. 806120

Gun Type



G7R-E

Compact and lightweight
High discharge air blow ionizer

Decay time 1.0 sec or less



G-2-E

Practicable handy ionizer
with flexible cable installation

Decay time 1.0 sec or less



G-9

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

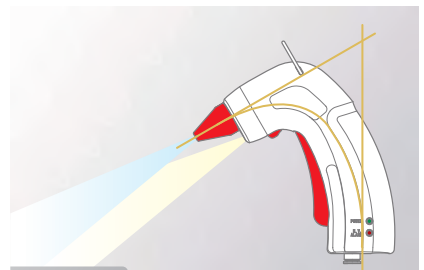
The high-voltage cable is not exposed, so there's no need to worry about current leaks or electric shock caused by wire breakage.



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	Ion balance	Decay time	Directive
Piezoelectric, AC	within ± 10 V	1.0 sec or less	CE

Input voltage 24VDC	Air Pressure max 0.6MPa	LED illumination	AC adapter 100-240V included	Screw-type needle electrode	"ON" lamp	ALARM H.V.
------------------------	----------------------------	---------------------	------------------------------------	-----------------------------------	-----------	---------------

- ▶ 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

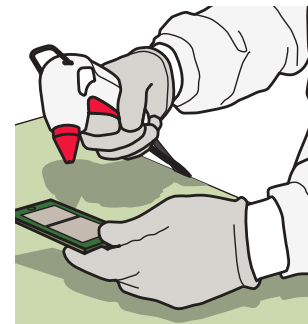
Specifications

Model No.	G7R-E
Ionizing method/Applied voltage	Piezoelectric high-frequency AC corona discharge/6.0kVAC(p-p)
Input voltage/ Current consumption	24VDC \pm 5%/ 74mA (typ. LED lamp:ON)
Ion balance	within ± 10 V (at factory shipment, input air pressure 0.3MPa, at 150mm)
Decay time	1sec. or less(0.3MPa, at 150mm)
Operating distance	50 - 300 mm (Installation: indoor, non-hazardous area)
Dimensions	L105×H150×D36mm
Weight	198g
Air supply hose diameter	Tube fitting O/D6mm
Operating fluid	Clean dry air (0.1 ~ 0.6MPa)
Air Consumption	180L/min (0.3MPa)
Noise level	92 dBA (0.3MPa)
Ozone production	0.05ppm or less(50mm)
Operating temp./ humidity	5-40°C/35-65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-ITC-E AC cable(1.8m)/ Standard Nozzle (already mounted)

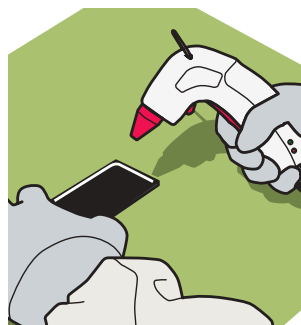
Dust removal from plastic trays



Dust removal from substrates



Dust and static-electricity removal from mobile phone parts

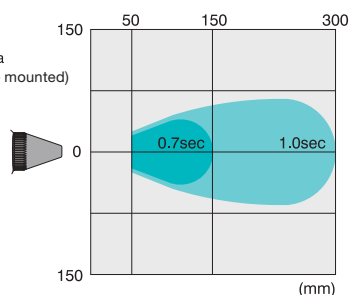


Dust and static-electricity removal from bumpers



Decay area

Air Pressure : 0.3MPa
(with Standard nozzle mounted)



Accessories



Standard Nozzle
G-7SN
EDP No. 806057



AC Adapter
AD24-ITC-E
EDP No. 806067
I / P : 100-240VAC 0.4A
O/P : 24VDC 0.75A

Ionizing Gun

Practicable handy ionizer with flexible cable installation

G-2-E



EDP No.621659

High Voltage Transformer Piezoelectric, AC	Ion balance within ± 10 V	Decay time 1 sec or less	Directive CE
--	---	------------------------------------	------------------------

Input voltage 24VDC	Air Pressure max 0.6MPa	AC adapter 100~240V included	Screw-type needle electrode	"ON" lamp	ALARM H.V.
------------------------	----------------------------	------------------------------------	-----------------------------------	-----------	---------------

- ▶ Changeable wiring direction upward or downward. This makes it easy to use the G-2-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.



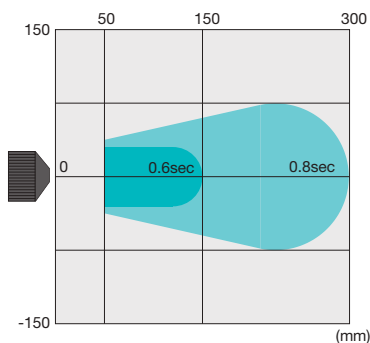
Powerful blow of ionized air through the dedicated nozzle. Can fit the cable in the groove on the grip lateral side.

Specifications

Model No.	G-2-E
Ionizing method/Applied voltage	Piezoelectric high frequency AC corona discharge / 4.5kVAC(p-p)
Input voltage/ Current consumption	24VDC $\pm 5\%$ / 100mA(typ.)
Ion balance	Within ± 10 V
Decay time	1sec. or less (0.3MPa, at 150mm)
Operating distance	50 ~ 300 mm (Installation:Indoor, non-hazardous area)
Dimensions	L 148mm x H 157mm x D 44mm
Weight	260g
Air supply hose diameter	Tube fitting O/D6mm
Operating fluid	Clean dry air (0.1 ~ 0.6MPa)
Air Consumption	153L /min (0.3MPa)
Noise level	94dBA (0.3MPa)
Ozone production	0.05ppm or less (50mm)
Operating temp./ humidity	5~40°C/35~65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-ITCS-E, AC cable (1.8m), Standard nozzle (already mounted)

Decay area

Air Pressure:0.3MPa



Use by hanging above cell production benches



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



Removal of static electricity from plastic trays



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

Accessories



AC Adapter
AD24-ITCS-E (Length 1.5m)
EDP No. 806084

I/P : 100~240VAC 0.4A
O/P : 24VDC 0.75A

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

Pneu-Power Ion Gun

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

G-9



EDP No.621670

High Voltage Transformer	Ion balance	Decay time	Directive
Coiled, AC	within $\pm 30V$	1 sec. or less	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.



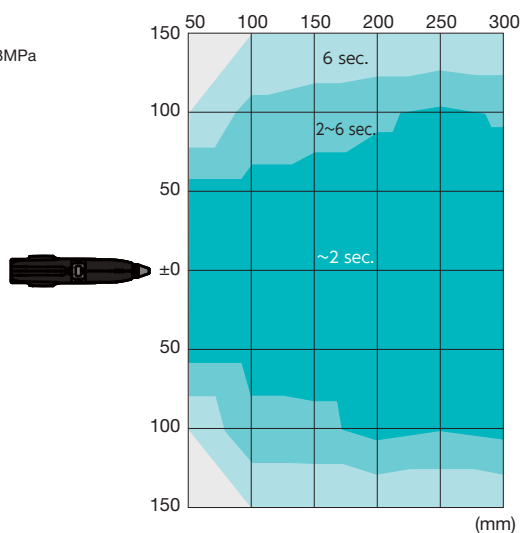
Air turbine rotates the motor,
and this generates the power for ion generation.

Specifications

Model No.	G-9
Ionizing method/Applied voltage	High frequency AC corona discharge / 8kVAC(p-p)
Ion balance	within $\pm 30V$
Decay Time	1sec. or less $\pm 1000V \rightarrow \pm 100V$ (0.5MPa, 200L/min, at 150mm)
Operating distance	50-300mm (distance between the charged product and the tip of the G-9)
Air connection	$\Phi 8$ mm with one-touch joint
Operating fluid	Clean dry air / 0.3 ~ 0.6MPa (rated 0.5MPa)
Dimensions	W 232.5mm x H 191mm x W 50.6mm
Weight	470 g
Air consumption	200L/min (0.5MPa)
Noise	About 104.8dBA (0.5MPa, 200L/min, at 0.6m) About 83.1dBA (0.3MPa, 160L/min, at 0.6m) About 77dBA (0.3MPa, 155L/min, at 0.6m) *When using an optional silent nozzle G-9WN
Operating temperature and humidity	0-45°C/10-90% RH (no dew 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: $\Phi 8 \times \Phi 5$ mm
Length: 3m

Bar Type



C-series

Compact and clean design
Super-high speed ionizer

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



SJ-series*/SL-series

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

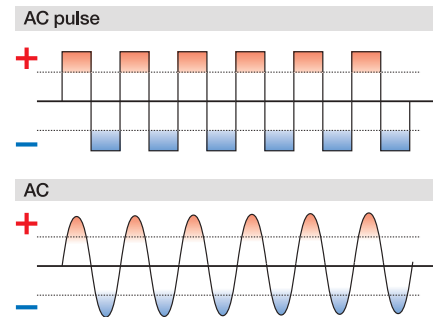
Decay time 2.0 sec. or less

1

High Speed Static Electricity Removal

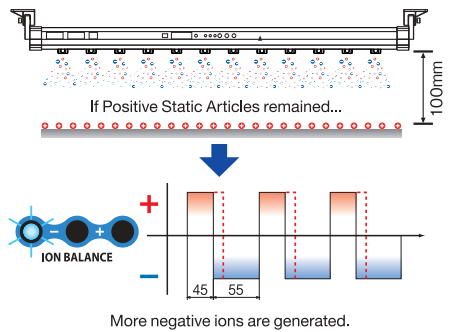
AC pulse method

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.



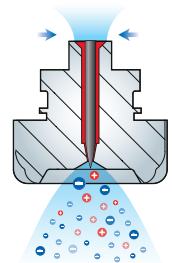
Auto Balance Mode

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

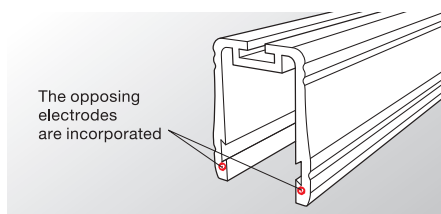
Needle cleaning time notified

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



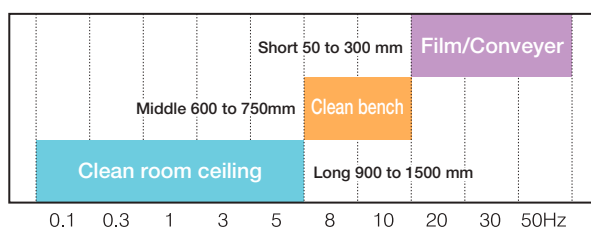
Body contamination prevention

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

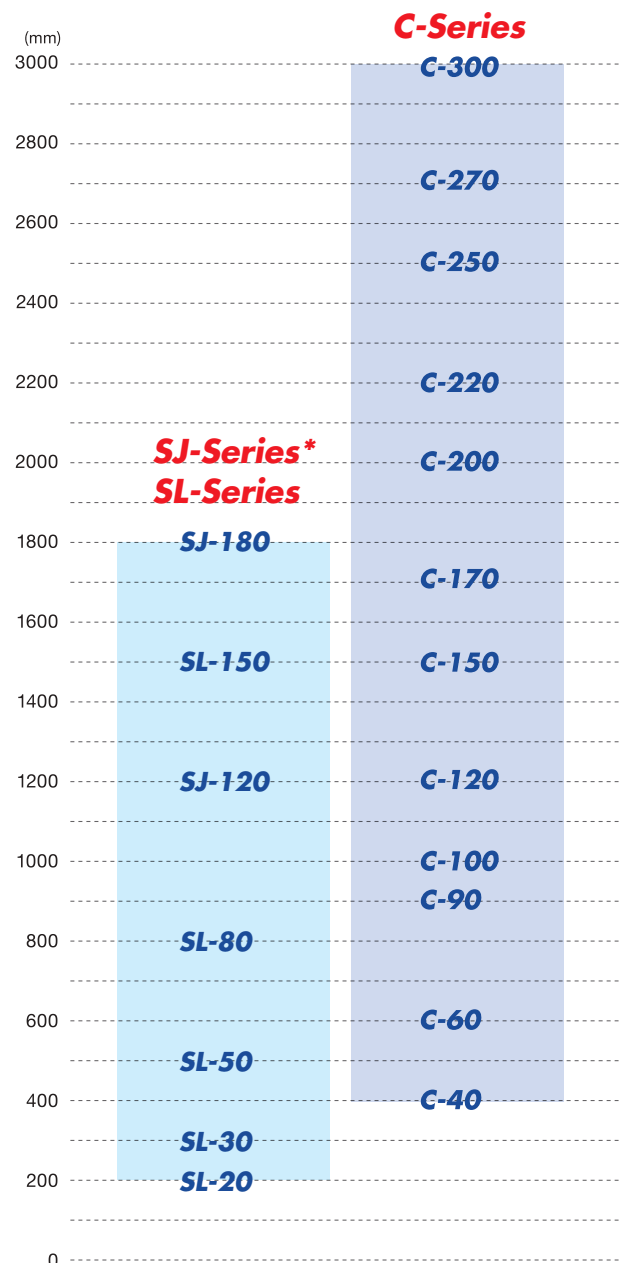
Line-up at a glance

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

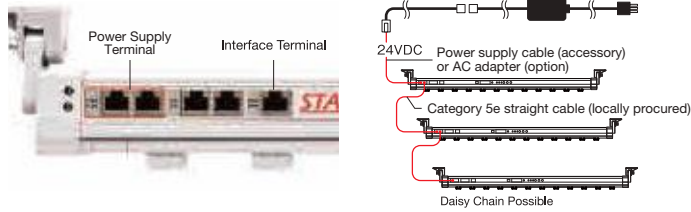


- | | |
|----------------------------|----------------------------|
| C-40 EDP No.621857 | C-170 EDP No.621855 |
| C-60 EDP No.621858 | C-200 EDP No.621856 |
| C-90 EDP No.621851 | C-220 EDP No.621859 |
| C-100 EDP No.621852 | C-250 EDP No.621860 |
| C-120 EDP No.621853 | C-270 EDP No.621861 |
| C-150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

High Voltage Transformer		Ion balance					
Pulse AC		within $\pm 30V$ (at 1000mm)					
Input voltage 24VDC	Air Pressure max 0.3MPa	LCD Display	Needle electrode unit replaceable	Adjustable Ion Balance	Needle Cleaning Timer (1 to 60 days)※	ALARM H.V.	External output LAN Terminal

※ except C-40, C-60

- ▶ Ultra high speed discharge ports of ionized air are newly designed.
- ▶ Auto Balance Mode (Target distance: 50~100mm) ※Except C-40, C-60
- ▶ Terminals are grouped on one side, enabling a daisy-chain connection.



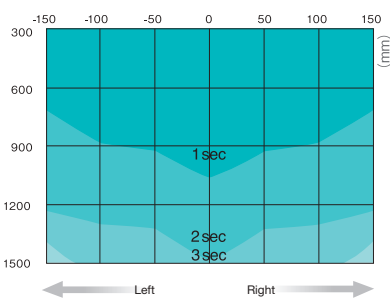
Common Specifications

Model No.	C-40 ~ C-300
Ionizing method/Applied voltage	Pulse AC Corona discharge / 8~12.5kVAC (p-p)
Frequency	0.1 ~ 50Hz (C-40/60: 10 steps, C-90 or longer types: 13 steps)
Pulse ratio	Positive side 40~70%, adjustable in 0.1% increment
Input voltage(Current consumption)	24VDC $\pm 5\%$ (C-40/60: max.7.8W, C-90 or longer types: max.14.4W)
Ion balance	within $\pm 30V$ (at 1000mm)
Decay time	See below
Operating distance	50 ~ 2000mm
HxWxDmm	See the table on the right
Weight	See the table on the right
Air supply hose diameter	PT1/8 (I/D 6mm or larger recommended)
Operating fluid	Clean dry air or N ₂ (0.3MPa or less)/(0.2MPa or less for intermittent supply)
Operating temp./ humidity	0.05ppm or less (50mm)
Operating environment temperature and humidity	0~50°C / 35~85% RH (no dew condensation or freezing)
Accessories	Remote controller (except C-40/60) / Power cable 10m / Signal cable 10m (C-40/60 only) / End bracket (already attached) / Middle bracket (already attached, see the next page for more detail)

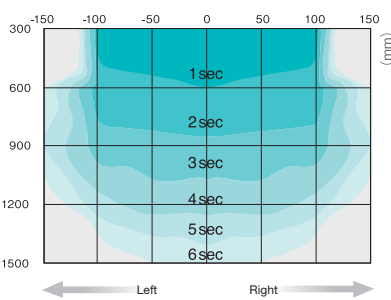
*Silicon discharge needles also available. For more detail please contact us.

Decay area Measurement conditions •Product : C-150 •Voltage : 10.5kV(P-06 N-06) •Air pressure : 0.3MPa
•Decay time : $\pm 1000V \rightarrow \pm 100V$

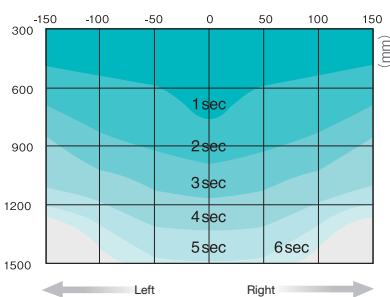
Frequency: 0.1Hz



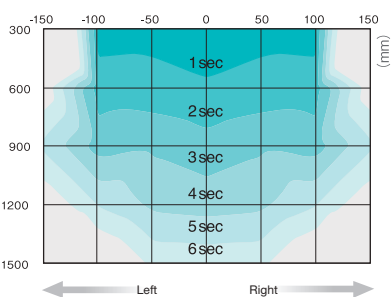
Frequency: 30Hz



Frequency: 1Hz



Frequency: 50Hz



Options

Adapter specification



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

I / P : 100~240VAC 0.4A
O/P : 24VDC 0.75A
Operation : One bar



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

I / P : 100~240VAC 1.2A
O/P : 24VDC 1.9A
Operation : 2 or 3 bars
(Please consult us for more detail)

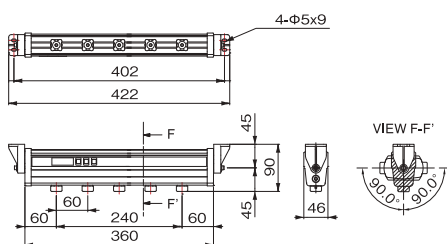
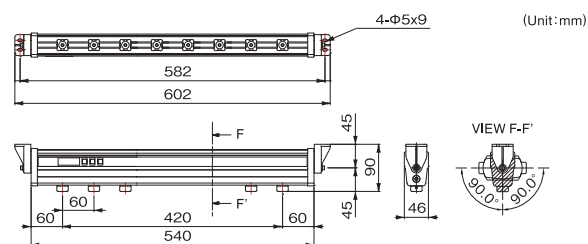


Power Supply Cable (5m)
For AC adapter
CT-5
EDP No. 621709

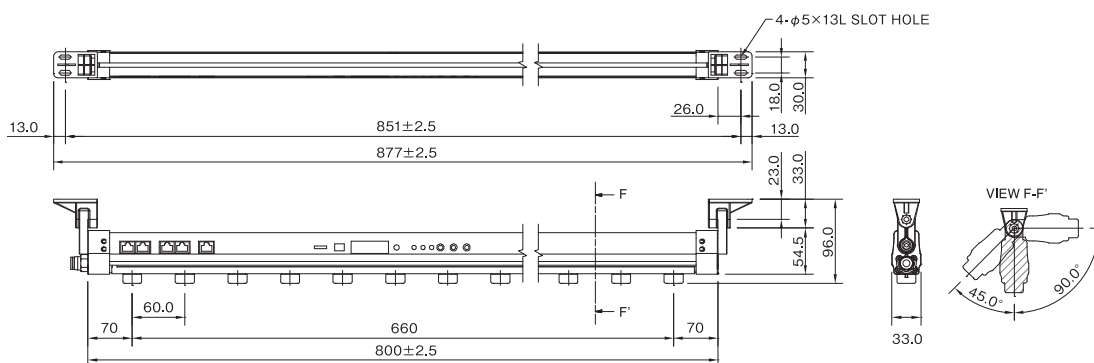
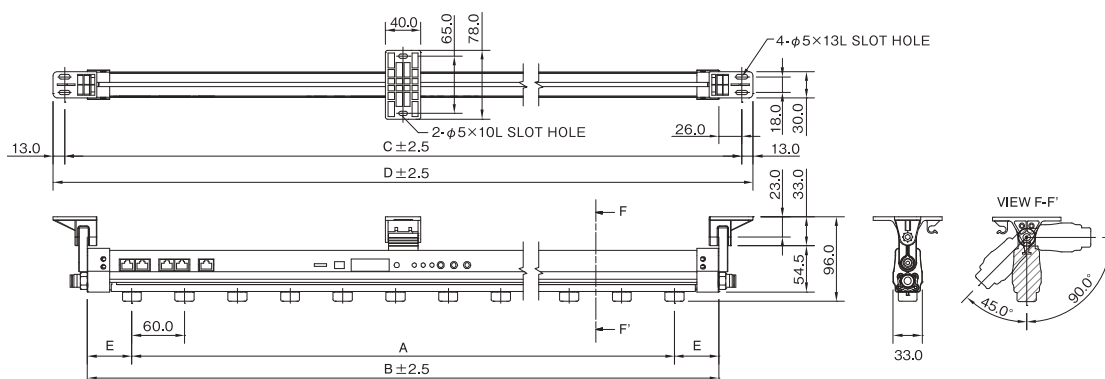
※When using AC adapter, Power Supply Cable (CT-5) is necessary.



Remote Control
RMC-01
EDP No. 806104

C-40**C-60**

(Unit:mm)

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.

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).

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	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

High power bar
For highly charged or fast moving products

SJ-series*/SL-series



- ▶ Effective high speed neutralization with air assist system.
- ▶ Bracket enables to adjust the angle of the bar after installation.
- ▶ Needle electrodes can be detached for replacement or maintenance without taking out the bar from the installed place.
- ▶ The high voltage cable with silicone cable is detachable.
- ▶ In combination with the optional high voltage power supply unit and the branch box, upto 3 bars can be simultaneously used (with condition, see the right).

SL-20 EDP No.621877 **SL-80** EDP No.621594 **SJ-180** EDP No.621597
SL-30 EDP No.621878 **SJ-120** EDP No.621595
SL-50 EDP No.621879 **SL-150** EDP No.621882

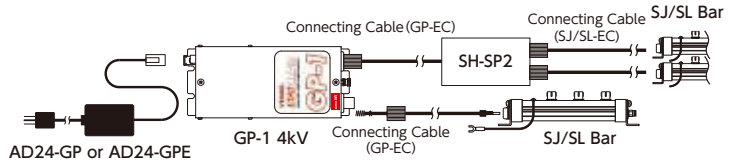
* Note
 1)SJ series switches to SL series after the stock of SJ is over. The model code changes as below:
 Example: SJ-20 ⇒ SL-20, SJ-EC2.5 ⇒ SL-EC2.5
 2)SL series are CE compliant.

Using the optional High Voltage Power Supply Unit GP-1, upto 2 ionizing bars can be connected.
 Adding the Branch Box SH-SP2, 3 bars in total can be connected.

*Note:the total length of cables must be less than 10m.
 If you require more length, please contact us.

Specifications

Model No.	SL-20/ SL-30/ SL-50/ SL-80/ SJ-120/ SL-150/ SJ-180*
Type	High voltage applied type ionizer (bar type)
Structure	Direct-coupled
Power supply	High Voltage Power Supply Unit GP-1 4kV/SH-G3
Ionizing method	AC corona discharge
Applied voltage/ Frequency	10.5kVAC(p-p)/ 30Hz (when connecting to SH-G3)
Operating temp./ humidity	5 ~ 55°C, 25 ~ 85%RH (no dew condensation or freezing)
Installation distance	50 ~ 2000mm or around (Air supply is indispensable when the bar is installed at 100mm or more away from the charged product)
Decay time	within 1sec. (Air pressure 0.3MPa, at 300mm)
Ion balance	Adjustable on GP-1 4kV/ SH-G3
Installation place	Indoor
Protective circuit	High Voltage Power Supply GP-1 4kV has voltage anomaly detection function and automatic stop circuit. The SH-G3 has a fuse of 250V 1A inside.
End connector	High voltage connector CON-4
Air connection	PT1/8 with one-touch joint
Air hose	SJ-80 or shorter: O/D6mm, SJ-120 or longer: O/D8mm
Air supply	Clean dry air or nitrogen gas (0.3MPa or less)
Air consumption	135L/min (SL-30, air pressure 0.3MPa)
Material	Body:flame-retardant ABS resin+SUS304, Discharge needle: Tungsten (W.99.99%)
Size	See the table below.
Accessories	Instruction manual, Grounding wire



Options



Branch Box
SH-SP2
 EDP No. 621552

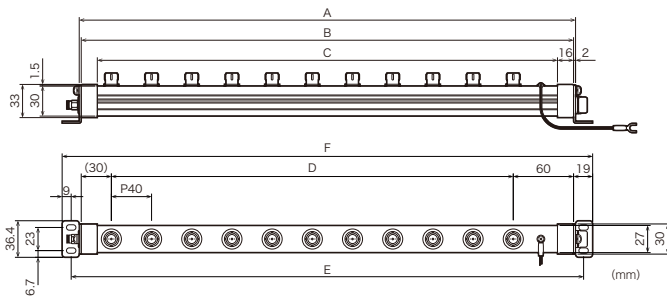
Connecting cable (2.5m)
GP-EC2.5
 EDP No. 623053

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

Connecting cable (2.5m)
SL-EC2.5
 EDP No. 621884

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

Needle electrode
SJ-00HR*
 EDP No. 623055

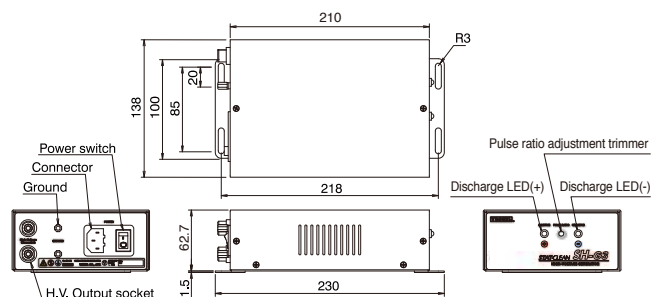


Dimensions / Needle Electrodes

Model No.*	A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	Needle Electrode	Weight (kg)
SL-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
SL-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
SL-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

Power Supply Unit

Power Supply units supporting 100 to 240 VAC

SH-G3

Directive



EDP No. 621555

- ▶ 2 sockets equipped for connection with ionizing bars.
Easy installation and wiring with ionizing bars.
- ▶ Ion balance adjustment function (pulse ratio)
- ▶ Most lightweight body in the industry: 1.35kg

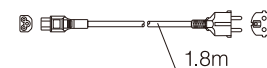
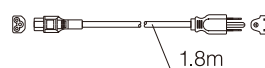
Specifications

Model No.	SH-G3
Output voltage	5kVAC
Input voltage	100 ~ 240VAC, 50/60Hz
Dimensions	W138 x D210 x H62.7 mm
Weight	1.35 kg

AC power cable

For 100VAC

For 240VAC



Power Supply Unit

High Voltage Power Supply Unit

GP-1 4kV

OUTPUT 4kV

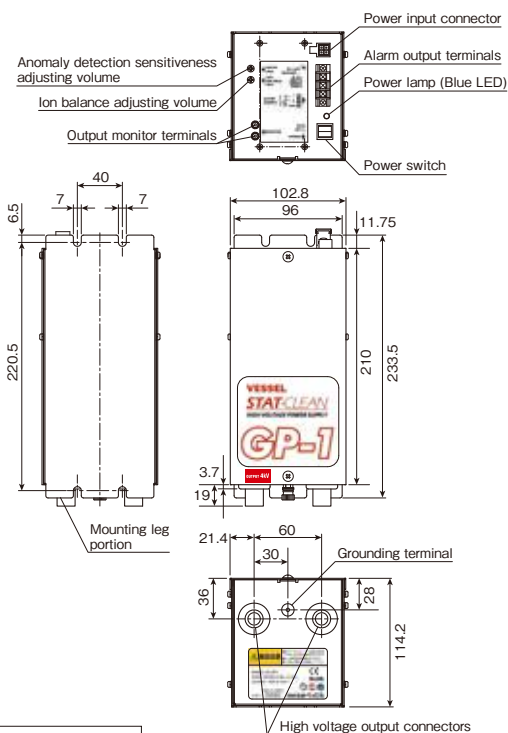


EDP No. 623044

- ▶ 24VDC input voltage. Safety with low voltage operation.
- ▶ Ion balance can be accurately adjusted with the dedicated volume.
- ▶ The output stops automatically when the short-circuit or overcurrent occurs.
- ▶ Upto 2 pcs of ionizing bar can be connected.

Specifications

Model No.	GP-1 4kV
Installation Place	Indoors
Rated input voltage	24V DC±10%
Rated temporary current	0.75A or less
Output voltage (no-load)	AC output range 4kV/5kV/7kV (3-step change/adjustment with built-in switch)
Offset voltage	-150 ~ +550V (adjustable with external volume)
Secondary short circuit current	5 mA or lower
Output monitor	1/1000V±5% of the output voltage is output to the monitor terminals.
Low-voltage detection	Anomaly detection function will activate when the actual 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 activate when the output current is about 4mA or more.
Anomaly detection sensitivity adjustment	The anomaly detection response speed can be adjusted (adjustable with external volume)
Power input connector	Molex 5569-04A1-210
High voltage output connector	Ceramic high voltage output terminal×2
Alarm output terminal	C contact relay output
Contact rating	125VAC, 0.4A or 30VDC, 2A (resistance loaded)
Switches and displays	On-off rocker switch. Blue LED power indicator lamp (goes off when anomaly is detected)
Material	Housing SPCC, painted white
Size	W102.8×D233.5×H114.2mm
Weight	Approx. 4.5kg
Operating temp./ humidity	0 ~ 40°C/10 ~ 85%RH (no dew condensation or freezing)



Option

Adapter specification



AC Adapter

AD24-GP

● EDP No. 806049

AD24-GPE

● EDP No. 806048

I / P : 100~240VAC 0.4A
O/P : 24VDC 0.75A

Ion Parts Cleaner



IPC-A4

Ideal A4 size
for cell workbenches



IPC-A3

Ideal A3 size
for cell workbenches



IPC-250CR

New concept of neutralization



IPC-V4 **NEW**

Foot-installed type
Static eliminator / Dust collector

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

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

IPC-A4

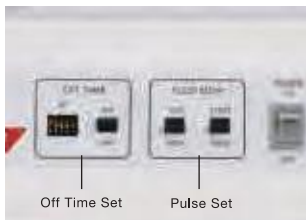
EDP No. 621610

Sensor Diffused reflection type	Air blow Continuous/ Pulse	Off timer 1 to 30 seconds (5 steps)
Input voltage 24VDC	Air Pressure max 0.6MPa	Ionizer N-3x1pc
AC adapter 100-240V included	Airflow adjustment	Gel sheet + fan filter
Integrated hood/dust collector		

- ▶ Since a dust collector is not needed, the current consumption is greatly reduced.
- ▶ Built-in ionizing nozzle emits air for removal of dust and static electricity in either continuous or pulse mode.
- ▶ Urethane gel sheet can be washed for repeated use.



Self Adhesive GEL collects dust.



Specifications

Model No.	IPC-A4
Ionizing method/Applied voltage	High voltage AC corona discharge/ 5.6kVAC(p-p)
Input voltage	24VDC ±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
Dimensions	H361xW314xD253mm
Weight	6kg
Air supply hose diameter	Tube fitting O/D8mm
Air consumption	147L/min(0.3MPa, Continuous mode)
Operating fluid	Clean dry air (0.1 ~ 0.6MPa)
Ozone production	0.05ppm or less(50mm)
Operating temp./ humidity	5-40°C / 35-65% RH (no dew condensation or freezing)
Accessories	Adhesive gel sheet plate (2pcs)(Already mounted) Non-woven simplified filter (Already mounted)/ AC adapter AD24-IT19

Accessories/ Replacements

Adhesive gel sheet
IPC-A4G
EDP No. 806091AC Adapter
AD-24-IT19
EDP No. 806081
I/P : 100~240VAC 1.2A
O/P : 24VDC/1.9A
(AD24-IT19E is available on request.)Unwoven fan filter (5pcs.)
IPC-A4F
EDP No. 806092
Needle Electrode
GN-H
EDP No. 806124

Ion Parts Cleaner

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

IPC-A3

EDP No. 621612

Sensor Diffused reflection type	Air blow Continuous/ Pulse	Off timer 1 to 30 seconds (5 steps)
Input voltage 24VDC	Air Pressure max 0.5MPa	Ionizer N-3x2pcs
AC adapter 100-240V included	Airflow adjustment	Gel sheet + fan filter
Integrated hood/dust collector		

- ▶ Since a dust collector is not needed, the current consumption is greatly reduced.
- ▶ Built-in ionizing nozzle emits air for removal of dust and static electricity in either continuous or pulse mode.
- ▶ Either paper pack filter or duct can be attached.



Regulator Built-in



Specifications

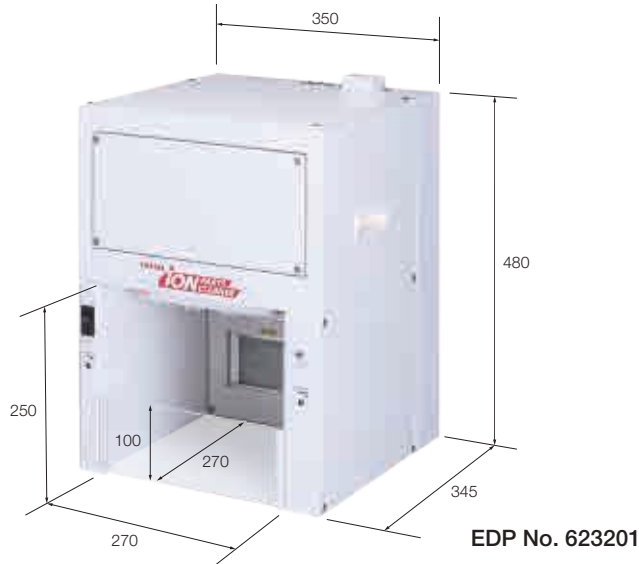
Model No.	IPC-A3
Ionizing method/Applied voltage	High voltage AC corona discharge/ 5.6kVAC(p-p)
Input voltage	24VDC ±5%
Current consumption	900mA or less
Dust collection airflow	1.13 m ³ /min (Built-in fan)
Static pressure	460Pa (Built-in fan)
Dust collection filter	Self-adhesive polyurethane gel sheets and paper pack filter
Dimensions	H411xW420xD300mm
Weight	9.5kg
Air supply hose diameter	Tube fitting O/D10mm
Air consumption	265L/min(0.3MPa, Continuous mode)
Operating fluid	Clean dry air (0.1 ~ 0.6MPa)
Ozone production	0.05ppm or less(50mm)
Operating temp./ humidity	5-40°C / 35-65% RH (no dew condensation or freezing)
Accessories	AC adapter, Adhesive gel sheet plate (Already mounted) x 2pcs, Duct flange (for φ75mm), Paper pack filter (6pcs)

Accessories/ Replacements

Adhesive gel sheet
IPC-A4G
EDP No. 806091AC Adapter
AD-24-IT19
EDP No. 806081
I/P : 100~240VAC 1.2A
O/P : 24VDC/1.9A
(AD24-IT19E is available on request.)Paper pack filter (6pcs.)
IPC-A3F
Needle Electrode
GN-H
EDP No. 806124

Effective ion cleaning with HEPA filter and ionizer

IPC-250CR



Air blow
Continuous

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

- ▶ Built-in HEPA filter emits clean air that removed 99.97% of particles 0.3µm and larger.
- ▶ Compressed air is not needed. Air circulation system does not exhaust air to the outside of the machine.

Built-in HEPA filter unit. Replaceable.



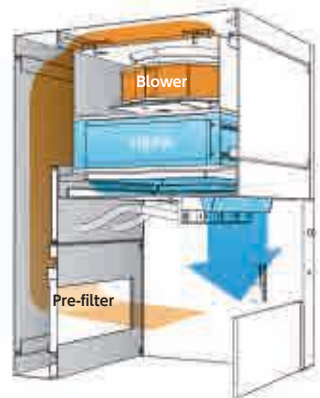
Specifications

Model No.	IPC-250CR
Ionizing method/Applied voltage	DC corona discharge / +6 kV, -3 ~ -7 kV
Input voltage	24V DC ±5%
Current consumption	4.5 A max. (except inrush)
Air volume	Max.1.5m ³ /min. (blower output value, provided that the built-in filter is not clogged)
Fan speed	Max.25m/sec. (blower output value, provided that the built-in filter is not clogged)
Dust collection filter	HEPA filter
Dimensions	H515 x W350 x D345 mm
Weight	Approx. 22kg
Noise	74 dBA (Maximum air flow, no clogging of built-in filter or deterioration of blower)
Operating temp./ humidity	+5 ~ +40°C 35 ~ 65% RH (no dew condensation or freezing)
Accessories	Warning/caution label sticker

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.



Ion parts cleaner Vertical Type

Dust Box Type Ion Cleaner
Small footprint design saves the desk space**IPC-V4**

NEW



EDP No. 621611

Sensor	Air blow	Off timer
Diffused reflection type	Continuous/pulse blow selection	1 to 30 seconds (5 steps)
Input voltage 24VDC	Air Pressure max 0.6MPa	Ionizer N-3x1 pc
	AC adapter 100~240V included	Gel sheet + fan filter
		Integrated hood/dust collector

- ▶ Insert the charged item through the opening at the top, and the ion air is automatically blown out.
- ▶ The transparent hood makes the internal side look bright to see well contamination.
- ▶ Adhesive gel sheet increases efficiency in dust collection.
- ▶ Compact design for easy installation/relocation of the machine.

Model No.	IPC-V4
Ionizing method/Applied voltage	High-frequency AC corona discharge (No.N-3 ionizer)/5.6kVAC p-p
Input voltage	24VDC±5% (when using the enclosed power adapter 100~240VAC, 50/60Hz)
Current consumption	18W
Dust collection speed	1.13 m³/min (Built-in fan)
Static pressure	460 Pa (Built-in fan)
Dimensions	W200 x D289 x 297mm (without protrusions)
Weight	3.8 kg
Operating fluid	Clean air (CDA)
Air consumption	161L/min (0.3MPa, Continuous mode)
Noise	88.3 dBA (0.3MPa, (0.3MPa, measured at 600mm)
Ozone production	0.05 ppm or less (50mm)
Operating temp./ humidity	5~40°C/ 35~65% RH (no dew condensation or freezing)
Accessories	AC adapter AD24-IT19 or AD24-IT19E, Adhesive gel sheet for internal wall side (w/magnet sheet) IPC-V4GB (already installed), Adhesive gel sheet plate for bottom side, Paper pack filter (6pcs) IPC-A3F, 2P-3P conversion adapter, Tilt adjustment spacer (2pcs), Instruction manual (IPC-V4, N-3)



Less dust reattachment

Place the machine between the legs or between 2 workers to share.



Small footprint design saves the desk space.

Accessories

**AD-24-IT19**

EDP No. 806081

I/P : 100~240VAC 1.2A

O/P : 24VDC 1.9A

(AD24-IT19E is available on request.)

Tilt adjustment
spacer (2 pcs)Adhesive gel sheet
for internal wall side
(with magnet sheet)**IPC-V4GB**

EDP No.806152

Adhesive gel sheet
for bottom side**IPC-V4GD**

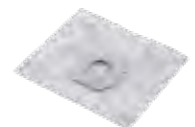
EDP No.806153



Needle electrode

GN-H

EDP No.806124

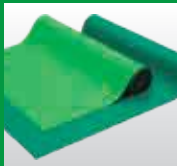


Paper pack filter (6-pc set)

IPC-A3F

EDP No.806126

EPA Working Mat



Mat

Ideal for workbenches needing static-erasing measures



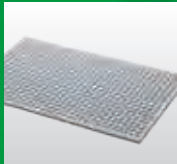
EPS-5

Anti-Static Wrist Strap



EPS-GK

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



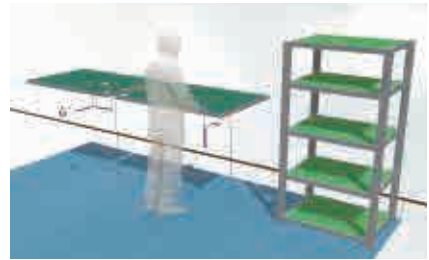
Electrostatic Field Meter

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.

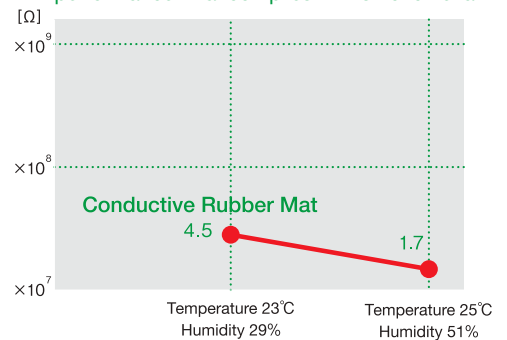
Our IEC61340-5-1 compliant products include the ESD protection items, the EPA working mats for workbenches, storage shelves, or trolleys, the EPA floor material for vinyl or painted floors, and the anti-static wrist straps.



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

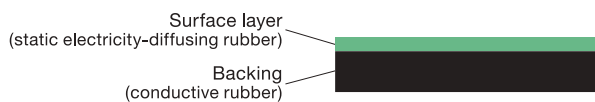
LG-100 EDP No. 621464
SG-100 EDP No. 621461



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

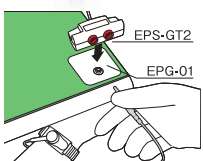


Common Specifications

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	27kg/roll	27kg/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
Cord length	3.0m (with crimp terminal)
Resistance value	1M Ω
Material	ABS

Grounding Cord

Connect to mat-connecting gel with a single touch

EPC-18

Specifications EDP No. 621393

Model No.	EPC-18
Cord length	Max. 1.8m (0.5m when shrunken)
Resistance value	1M Ω
Accessories	Alligator clip

Wrist strap

Anti-Static Wrist Strap (10pcs/box)

EPS-05

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	38g per piece, including alligator clip
Band length	Approx. 190mm
Resistance	Approx. 1M Ω between the body and the ground cord
Contents	Wrist strap, Ground cord, Alligator clip, Instruction manual
Box size	H140xW115xD140mm(10pcs./ box)

Replacement

Wrist Strap Cord

No.EPS-05-C

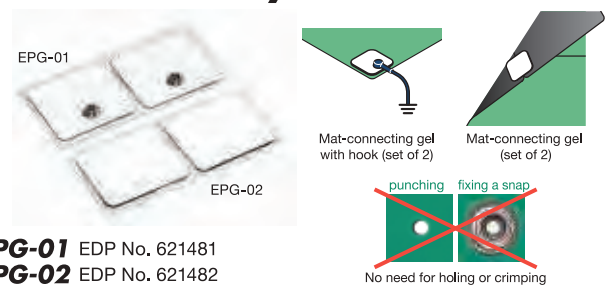
EDP No.621472



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

Common Specifications

Model No.	EPG-01	EPG-02
Size	50×50mm	
Conductivity	10 ⁴ Ω or less	
Operating environment temperature and humidity	5°C ~ 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

RoHS



- ▶ Grounding kit for a conductive rubber mat.

Specifications

EDP No. 621484

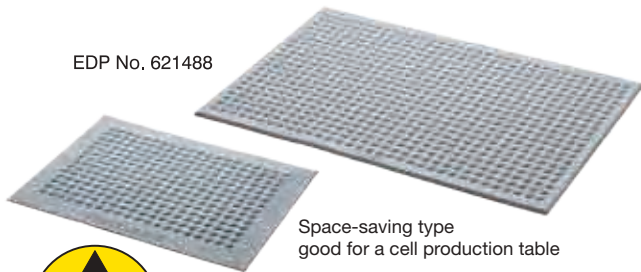
Model No.	EPS-GK
Ground cord	Approx. 240cm (with crimp terminal)
Weight	45g
Resistance	1M Ω between the body and the crimp terminal of the ground cord
Contents	Ground cord with snap, Snap hardware/ Screw, Single-use punch, Instruction manual

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
For floor	$R \leq 1.0 \times 10^9 \Omega$	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 included in the product.

Surface Resistance Checker

Easy measurement of surface resistance
on a floor or mat

SRC-01



EDP No. 621604

Measurement

4 types

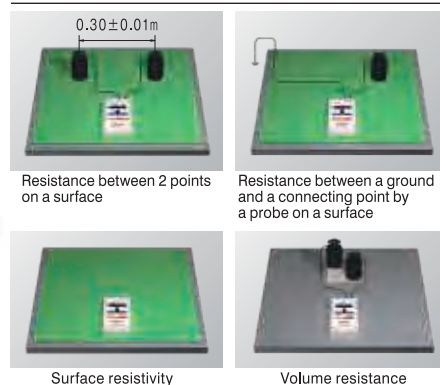
- One 9V battery
- With probes
- With a carrying case
- Auto-off

- ▶ 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 ($R < 1.0 \times 10^9 \Omega$ 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 x 1 (Type: 006P, recommended alkaline battery)
Dimensions	L190 x W101.5 x D54.7mm
Weight	Body: around 340 g (including a battery); gross weight: around 6.2 kg (including the carrying case)
Operating temp./ humidity	15 ~ 40°C / 60% RH or less
Material	Body case: ABS resin 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 x 67mm): 1 Carrying case: 1, 9 V battery (006P type: manganese dry battery): 1 Manuals
Accessories	

The calibration certificate can be issued (option).

Electrostatic Field Meter

Visualizing invisible static electricity
Peak hold supports long-time measurements

Eye-02



EDP No. 621603

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	

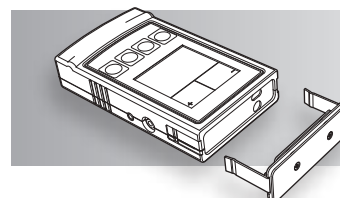
- ▶ Easily establish measurement distance with cross mark LED.
- ▶ Color LCD clearly shows the polarity.
- ▶ Mountable onto a tripod.



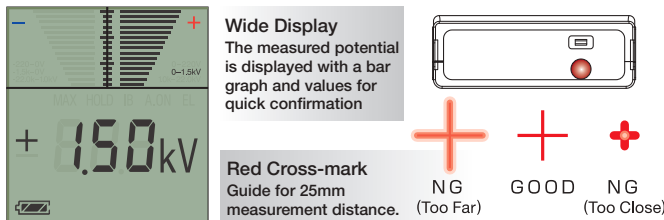
Charged Potential Measurement
Check anywhere with this handy tester.



Ion Balance Measurement
Can check the performance of the ionizer in a cell production table or the one installed in an in-line equipment.



Ion Balance Plate
Mount the enclosed plate to measure ion balance.



Wide Display
The measured potential is displayed with a bar graph and values for quick confirmation

Red Cross-mark
Guide for 25mm measurement distance.



NG (Too Far) GOOD NG (Too Close)

Specifications

Model No.	EYE-02
Charge potential measurement	$\pm 0 \sim \pm 1.50$ kV (LO range) / $\pm 1.0 \sim \pm 20.0$ kV (HI range)
Ion balance measurement	0 ~ ± 200 V
Response time	within 1sec
Accuracy	$\pm 10\%$ (Indicated value)
Power	9VDC (006P battery x 1pc)
Charged potential measurement distance	25mm \pm 0.5mm
Dimensions	L123xW70xD25mm
Weight	170g / ion balance measurement plate 30g
Operating temp./ humidity	0 ~ 50°C / 80% RH or less
Accessories	Ion balance measurement plate, Grounding cord, alligator clip, Soft case

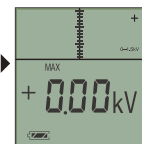
◆Complies with ISO 9000 traceability standards.

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

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.



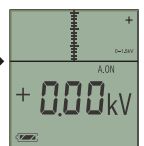
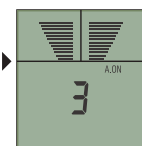
HOLD

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

Automatic power OFF / continuous measurement

A.ON

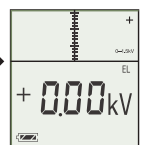
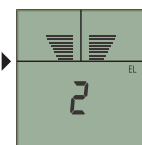
The power turns OFF in five minutes to save the battery (default). This automatic power OFF function can be disabled during "continuous" measurement.



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).



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

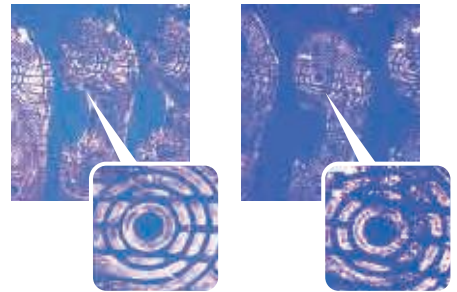
There's no need sacrifice cleanliness by limiting the number of sheets peeled to save costs.



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

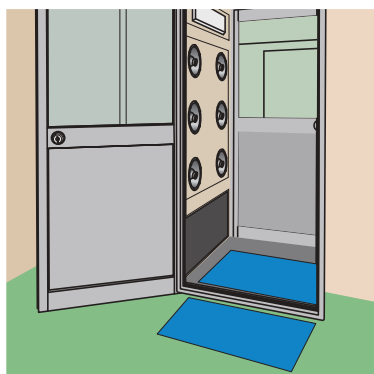
High elasticity.
Outstanding dust collection performance

CW-900B

EDP No. 621485

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

- ▶ The 5mm high elasticity mat.
- ▶ Powerfully catches dust from shoe soles.
- ▶ Collected dust can be easily wiped off with a wet cloth.
(Wash with water containing alcohol or neutral detergent, if dust remains.)



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

EDP No. 621486

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

- ▶ Non-woven textiles are sandwiched with a 3mm thickness to attain a high strength
- ▶ High elasticity mat, which stands with the trolley passage.
- ▶ Take the mat out of the floor and wash it with water only.
Hang it on the hook to dry as the mat has a hole for the hook.
(Wash with water containing alcohol or neutral detergent, if dust remains.)



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

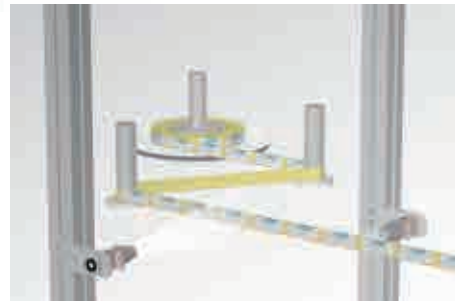


EDP No. 623043



High Voltage Transformer	Ion balance	Decay time
Coiled, AC	Adjustable on the GP-1	0.5 sec or less
Input voltage 3.5kVAC	Air Pressure max 0.7MPa	GP-1 Option
		AC adapter Option

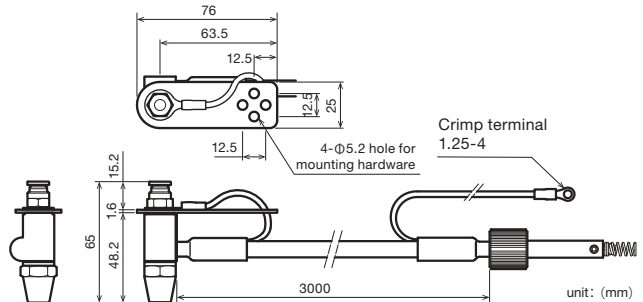
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ High speed ionizing performance with compressed air.
- ▶ Ultra-compact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



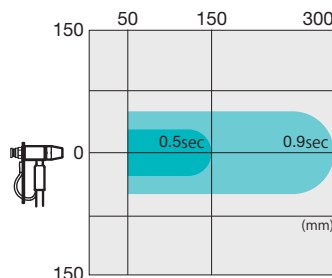
Specifications

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	3.5kVAC / 50/60Hz *2
Operating fluid / Input pressure	Clean air/Max.input pressure: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 the charged product and the nozzle tip of the ionizer)
Decay time	Approx. 0.5 sec. (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 (Applicable tube O/D 6mm)
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 consumption	Approx. 100L/min (Air pressure:0.3MPa)
Accessories	High voltage warning sticker, Instruction manual

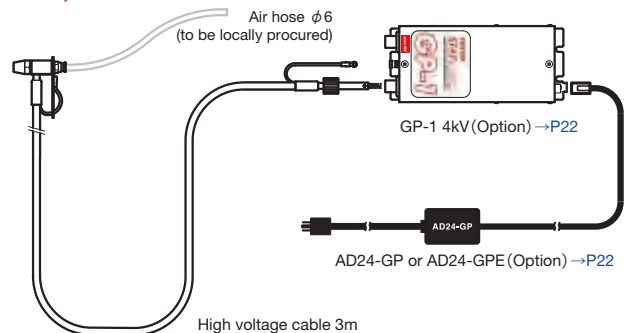
*1: Do not touch the electrode when applying current; otherwise it may bring electric shocks. *2: Use the high voltage power supply unit GP-1 4kV. *3: DO NOT SUPPLY AIR WITH MORE THAN THE DESIGNATED PRESSURE, BECAUSE OF SERIOUS RISK OF DAMAGE OR BREAKAGE ON THE BODY AND OTHER PARTS. *4: Charged plate 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 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	Ion balance	Decay time
Coiled, AC	Adjustable on the GP-1	1sec. or less

Input voltage	Air Pressure	GP-1	AC adapter
3.5kVAC	max 0.4MPa	Option	Option

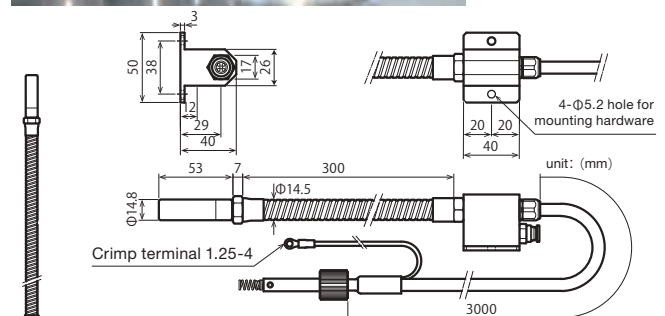
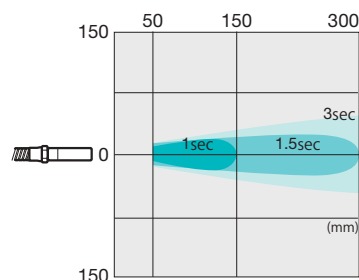
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ Free angle adjustment and pin-point ionizing from a distant place. 300mm 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

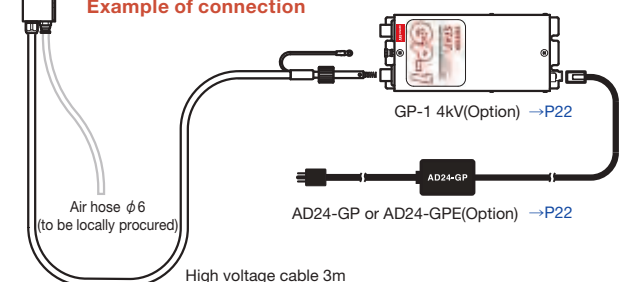
Model No.	HPF-1
Applied high voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing method	AC corona discharge (Structure: Direct-coupled *1)
Applied voltage / Frequency	3.5kVAC / 50/60Hz *2
Operating fluid / Input pressure	Clean air/Max.input pressure:0.4MPa *3
Operating temp./ humidity	0~45°C/10~90%RH (without freezing or dew condensation)
Installation distance	Approx.50~300mm (between the charged product and the nozzle tip of the ionizer)
Decay time	Approx. 1 sec. (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 (Applicable tube O/D 6mm)
Weight	Approx.690g, including high pressure cable(3m) and high pressure connector
Noise	Approx. 86 dBA (Air pressure:0.3MPa, Distance: 1m)
Air consumption	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. 623050
(High voltage cable 4.5m)

HPG-1S-E EDP No. 623047
A set of high voltage power supply unit + AC adapter (High voltage cable 3m)

High Voltage Transformer	Ion balance	Decay time
Coiled, AC	Adjustable on the GP-1	0.5 sec or less
Input voltage	Air Pressure	GP-1 Option
3.5kVAC	max 0.7MPa	(Except HPG-1S)
AC adapter	Option	
(Except HPG-1S)		

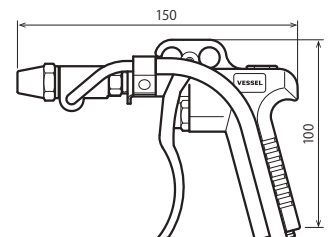
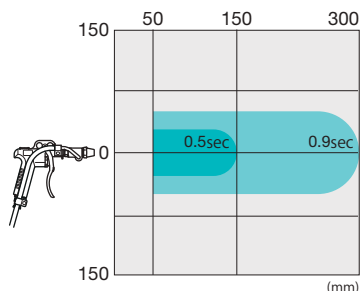
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance.
- ▶ The high voltage cable is shielded so that it is less affected by the external electrical noises.
- ▶ Robust and easy handling ionizing gun. The body of the ionizing gun 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

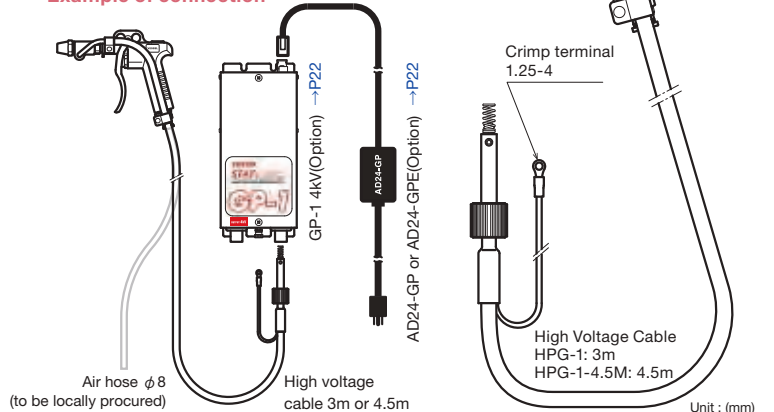
Model No.	HPG-1
Applied high voltage	High Voltage Power Supply Unit GP-1 4kV
Ionizing method	AC corona discharge (Structure: Direct-coupled *1)
Applied voltage / Frequency	3.5kVAC / 50/60Hz *2
Operating fluid/ Input pressure	Clean air/Max.input pressure:0.7MPa *3
Operating temp./ humidity	0~45°C/10~90%RH (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 the charged product and the nozzle tip of the ionizer)
Decay time	Approx. 0.5 sec. (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 (Applicable tube O/D 8mm)
Weight	Approx. 550g,including high voltage cable (3m) and high voltage connector.
Noise	Approx. 95dBA (Air pressure:0.3MPa, Distance: 1m)
Air consumption	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

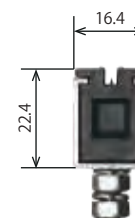
Good for Highly Charged Products

Super slim model, designed for installation in a cramped space



High Power 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



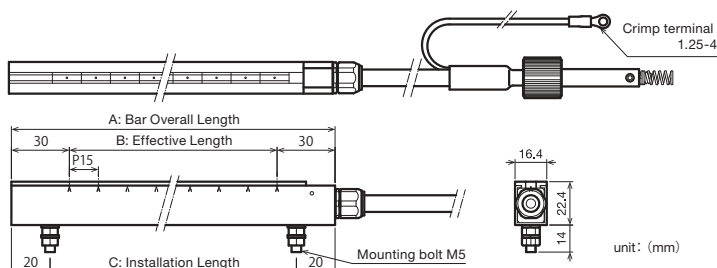
- ▶ Titanium discharge needle (discharge electrode). Less-wearing titanium provides the long-term stable ionizing performance. The needles are allocated every 15mm on the bar, allowing to generate many ions effectively. Optimum for a high speed film transfer application.
- ▶ The high voltage cable is 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	Ion balance	Decay time
Coiled, AC	Adjustable on the GP-1	2 sec or less
Input voltage 3.5kVAC	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	3.5 kVAC / 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 the charged product and the nozzle tip of the ionizer)
Decay time	Approx. 2 secs. (No compressed air, Distance: 100mm)
Ion balance	Adjustable on GP-1 4kV *3
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 *4 (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: Charged plate monitor or an equivalent is required for ion balance adjustment. *4: A custom-made cable is available on request. When connecting 2 HPB bars, the total length of the bars and the cables should be 9m or shorter.

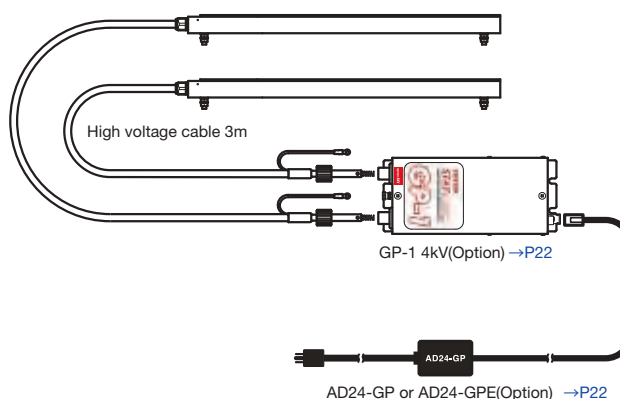


Dimensions/No. of Needle Electrode

Model No.	A (mm)	B (mm)	C (mm)	No. of Discharge Needle	Weight (kg)
HPB-300	300	240	260	17	0.16
HPB-600	600	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



Example of connection



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: F6RCLE, F6RST-E



Front cover w/needle electrode
F-120RCH
EDP No.806129
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: F6RCLE, F6RST-E



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



L-90F
EDP No.806133
Use with: L-90-E, F120R-E, F120S-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: F6RCLE, F6RST-E
I / P : 100~240VAC 0.4A
O/P : 24VDC 0.75A



AD24-IT
● EDP No. 806051
AD24-ITE
● EDP No. 806135
Use with: F120R-E, F120S-E
I / P : 100~240VAC 0.4A
O/P : 24VDC 0.75A



AD-24-IT37
● EDP No. 806131
AD24-IT37E
● EDP No. 806139
Use with: L-90-E
I / P : 100~240VAC 1.5A
O/P : 24VDC 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



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*, G2-E, G7R-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.



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 : 100~240VAC 0.4A
O/P : 24VDC 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 : 100~240VAC 0.4A
O/P : 24VDC 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 : 100~240VAC 0.4A
O/P : 24VDC 0.75A

Operation : One bar



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

I / P : 100~240VAC 1.2A
O/P : 24VDC 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)

SL-EC2.5

EDP No. 621884

Connecting cable (5m)

SJ-EC5*

EDP No. 623052

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



Plug for
the SJ,SL,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

GN-H

EDP No. 806124
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 : 100~240VAC 1.2A
O/P : DC24V 1.9A



Pre-filter

IPC-250CRPF

EDP No. 623203
Use with : IPC-250CR



HEPA filter

IPC-250CRHF

EDP No. 623202
Use with : IPC-250CR



Needle electrode

SDJ-05RH

EDP No. 806044
Use with : IPC-250CR



AC adapter

AD24-150-PD4

● EDP No. 806146
I / P : 100~240VAC, 50/60 Hz
O/P : 24V DC 5A
Use with : IPC-250CR

For CF300/ 600

Contact us for replacement of the needle electrodes.



Cleaning Brush
CF-300B
EDP No. 806140
Use with: CF-300/600



Rough Filter
CF-300F
EDP No. 806141
Use with: CF-300/600



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

I / P : 100~240VAC 0.4A
O/P : 24VDC 0.75A
Use with: CF-300



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

I / P : 100~240VAC 1.2A
O/P : 24VDC 1.9A
Use with: CF-600

VESSEL Co., Inc.

17-25, Fukae-Kita 2-chome, Higashinari-ku, Osaka 537-0001 JAPAN
Tel : +81(0)6 6976 7778 Fax : +81(0)6 6972 9441
E-mail : export@vessel.co.jp URL : www.vessel.co.jp/english

VESSEL EUROPE

E-mail : contact@vessel-europe.com URL : www.vessel-europe.com

Distributed by

21062900.00

- 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.
The result may differ depending on the actual operating environments.