

STATIC SOLUTIONS

Reliable performance even in a severe environment.





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STATIC SOLUTIONS TECHNICAL

Butterfly louvers for dispersing ions toward different directions; straight or wide.



Fan type (electrostatic neutralization)

F-6

Being compact, it is suitable for incorporation into a system. The F-6 with a clip can be clipped onto pipe of a cell production area and used for static elimination of part shelves or nearby working areas.

211P

F120R/S

This is the main model of bench-top type. It supports a wide range of applications from assembling into a unit to at-hand work. It has a louver that can be switched between dispersing air and outing it straight.

211P

CF300-E

This type supports static elimination from wide areas. It adopts a cross-flow fan. It can be installed in an area close to a conveyor or transfer system to remove static electricity from charged objects.

211P



Operation lamp enabling an operation state to be seen at a glance



Nozzle type (Electrostatic neutralization and dust removal)

This type eliminates static electricity and removes dust from charged objects with pinpointing precision. It is suitable for installation in equipment or for transfer equipment such as vibratory bowl feeders

214P

Environmental measures



Pb (lead), Cd (cadmium), Hg (mercury), hexavalent chromium, PBB (polybrominated biphenyl), and PBDE (polybrominated diphenyl ether) This symbol indicates the products that conform to VESSEL's environment measure standards compliant with the restriction of the use of certain hazardous substances (six substances listed above) (RoHS directive).

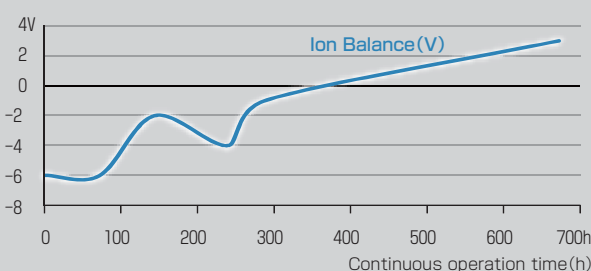


Ion creation method

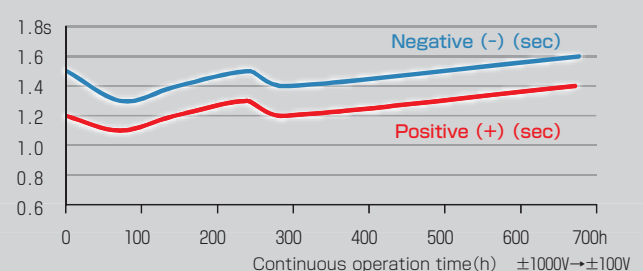
AC high frequency

Electrostatic eliminators adopting a high-frequency transformer of 20 kHz to 70 kHz have the features of stable ion balance.

Ion balance(F-120R)



Decay Time(F-120R)



Cautions : Performance varies depending on various conditions such as temperature, humidity, and atmospheric pressure. These pieces of data are our measured values for reference and do not assure the product performance.

LED light that makes dust visible.



Gun type (dust removal)

A hand-held static eliminator intended primarily for dust removal. It adopts a piezoelectric transformer that is lightweight, compact, and high safety.

213P



Bar type (Electrostatic neutralization, air assist ... dust removal)

This is a bar-type electrostatic eliminator provided with diverse width sizes. It adopts the AC pulse system, allowing you to select an optimal model according to the distance to a charged article.

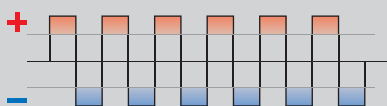
216P



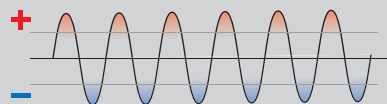
AC pulse

A pulse AC system that generates positive and negative ions alternatively from individual electrodes. It creates ions in maximum periodic widths of respective positive and negative electrodes; the amount of ions is large, enabling quick electrostatic elimination to be achieved.

AC pulse



General alternating current



Ion parts cleaner (Electrostatic neutralization, dust removal)

This is a new method of cleaning parts known as ion cleaning. It is capable of performing ion air-based static elimination and dust collection + dust absorption simultaneously.

220P



HAND TOOLS

BITS & SOCKETS

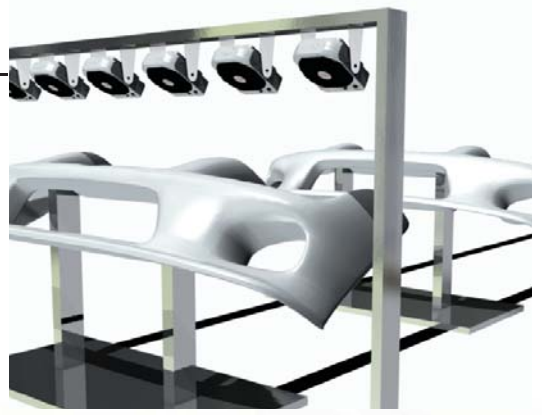
ELECTRIC TOOLS

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS

Ionizing Fan

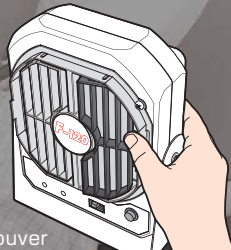


This type adopts a piezoelectric transformer that is safe and superior in ion generation. In addition, VESSEL's specific capacitive coupling method in which a discharge needle is sandwiched with resin and stainless disc, enables unmatched good ion balance.

Convenient functions such as extrenal output terminals, butterfly louver capable of switching the airflow directions, either straight or wide area.

Butterfly Louver

Press outer side to disperse air.
Press center to let air out straight.



Butterfly Louver



No. F120R-E Ionizing Fan

Cell production in which compactness and easiness to install at setup are important; Integrated In-line process that outputs alarms while maintaining ion balance; VESSEL fan-type ionizers can remove static electricity in an efficient way.

No. F-6 Ionizing Mini Fan

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 3.5kVAC

- Compact and lightweight body
- Fan speed can be adjusted in two steps.
- Provided with a clip suitable for mounting (F6CL-E)
- Provided with a general-purpose stand (F6ST-E)

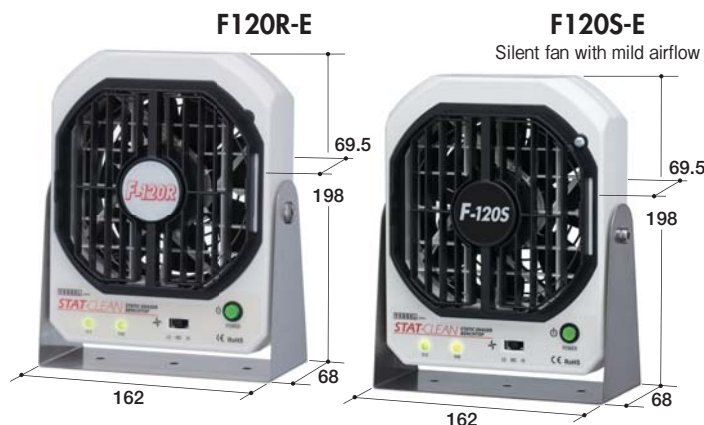
**CE RoHS**

Model No.	Power supply	Current consumption (mA) typ.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (m/min)	Weight (g)	EDP No.
F6CL-E	24VDC±5%	220	within 3.0 sec	within ±10V	53	0.78	514	621632
F6ST-E	24VDC±5%	220	within 3.0 sec	within ±10V	53	0.78	460	621631

(Decay time and ion balance: 300mm from the front of a device and max. fan speed, Noise: 1m from the front of a device and max. air speed, Weight: including clip/stand)
 *Accessories: AC adapter AD-24-ITF6-E (100 to 240V AC), AC input cable (1.8m)

No. F120R/S Ionizing FanIonizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 10kVAC (p-p) **PAT.P.**

- Newly developed piezoelectric transformer makes the slim and compact model.
- Butterfly louvers for changing the airflow directions.
- Fan speed can be adjusted in three steps.
- Improvement in maintenance by easy-replaceable electrode needle unit.
- Equipped with terminals for alarm signal output, convenient for incorporation into equipment.
- F120S-E is a silent type with mild airflow.

**CE RoHS**

Model No.	Power supply	Current consumption (mA) max.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (m/min)	Weight (g)	EDP No.
F120R-E	24VDC±5%	700	within 1.5 sec	within ±10V	61	3.66	900	621650
F120S-E	24VDC±5%	500	within 2.5 sec	within ±10V	51	2.21	900	621646

(Decay time and ion balance: 300mm from the front of a device and max. fan speed, Noise: 1m from the front of a device and max. air speed)

*Accessories: AC adapter AD-24-IT-EX (100 to 240V AC) AC cable (1.8m)
 *Option: Filter set F-120FS, Filter F-120EF

No. CF300-E Cross-flow Ionizing Fan NEW

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 9.2kVAC (p-p)

- Superior ionizing performance accomplished with the cross flow fan that sends out ions evenly and widely on the wind and the front cover design that takes the ion flow into consideration. Volume operation allows the non-step adjustment of airflow.
- Slide-type cleaning brush is mounted on the front cover to perform maintenance of needle electrodes at any time. On the bottom surface of the main body, a rough filter is used, which is easy to clean and replace.
- Monitoring functions of fan motor rotation monitoring function and high voltage output
- Shut-down function.

**CE RoHS**

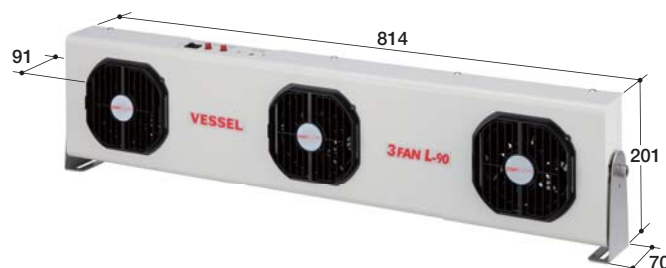
Model No.	Power supply	Current consumption (mA) max.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (m/min)	Weight (g)	EDP No.
CF300-E	24VDC ±10%	500	within 1.5 sec	within ±10V	52.5	2.5	2.9	621657

(Decay time and ion balance: 300mm from the front of a device and max. fan speed, Noise: 1m from the front of a device and max. air speed)

*Accessories: AC adapter AD-24-IT-EX (100 to 240V AC) AC cable (1.8m) Cleaning brush

No. L-90-E Overhead Ionizing Triple-Fan NEWIonizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 10kVAC (p-p) **PAT.P.**

- Butterfly louver for changing the angle of wind direction from the front cover. Each front cover can be set for a desired direction - high speed spot elimination and/or wide area elimination respectively, corresponding to various applications.
- Unique capacitive-coupled needle electrodes maintain superior ion balance and long term performance.
- Lightweight design.
- Front cover can be removed by one-touch operation. Easy maintenance.

**CE RoHS**

Model No.	Power supply	Current consumption (A) max.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (m/min)	Weight (g)	EDP No.
L-90-E	24VDC±5%	3.0	within 1.5 sec	within ±10V	72	4.7	4.7	621628

(Decay time and ion balance: 300mm from the front of a device and max. fan speed, Noise: 1m from the front of a device and max. air speed)

*Accessories: AC adapter AD-24-IT37 (100 to 240V AC) AC cable (1.8m)

Ionizing Gun



Wiring can be modified according to the real working area environment.
Not obtrusive on the cell production bench.
Uses cables with superior durability and flexibility.



No. G2-E

Ionizing Gun

Ion air flowing out eliminates static electricity.
Built-in 70 kHz piezoelectric transformer!
Outstanding ion balance within ± 10 V
Safe circuit with low voltage of DC 24 V

No. G7R-E Ionizing Gun

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 2kVAC

- Compact and lightweight.
- Ergonomically designed grip that fits your hand.
- Equipped with a green LED light facilitating visual check of dust, and with operating status and alarm lamps.
- Interchangeable nozzles for various applications (option)
- Needle electrode can be easily replaced with a dedicated tool.



CE RoHS

Model No.	Power supply	Current consumption (mA) typ.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (l/min)	Weight (g)	EDP No.
G7R-E	24VDC±5%	85	within 1.0sec	within ±10V	92	200	200	621621

(Decay time and ion balance: 150mm from the front of a device, at 0.3MPa, and when equipped with the standard nozzle)
 (Noise: 1m from the front of a device and at 0.3MPa, Air flow: At 0.3MPa)
 ·Air supply pressure: 0.1MPa to 0.6MPa, Air supply hose diameter $\Phi 6 \times \Phi 4$ mm
 ·Accessories: AC adapter AD24-ITCE (100 to 240V AC), AC cable (1.8m), Standard Nozzle G-7SN
 ·Option: Joint Connection Needle G-7THN, Needle Electrode GN-H, Needle Electrode Replacement Screwdriver G-7DR, Straight Silent Nozzle BB-ZSN, Silent Nozzle N-2WN, Flared Nozzle N-2FN, Tube-Fitting Nozzle N-2TN, Brush (60mm bristles) G-7B, Soft Brush (60mm bristles) G-7SB, Speed Controller G-7SC, Microfilter G-7F, Relay Cable (5m) G-7EC5, Relay Cable (10m) G-7EC10

No. BBZ-E Ionizing Gun

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 2kVAC

- Built with high-intensity white LED light for clear dust detection.
- Reinforced connector applying a ring tightening type.
- Silent and high jetting air nozzle for concentrated dust removal.
- Black colored body in which stain is less conspicuous
- Long power cable (5m), enabling the model to be moved in a wider area.
- Light-weight body, alleviating an operator's fatigue.



CE RoHS

Model No.	Power supply	Current consumption (mA) typ.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (l/min)	Weight (g)	EDP No.
BBZ-E	24VDC±5%	85	within 0.7sec	within ±10V	81	200	210	621638

(Decay time and ion balance: 150mm from the front of a device, at 0.6MPa, and when equipped with a silent, straight nozzle)
 (Noise: 1m from the front of a device and at 0.3MPa, Air flow: At 0.3MPa)
 ·Air supply pressure: 0.1MPa to 0.6MPa, Air supply hose diameter $\Phi 6 \times \Phi 4$ mm
 ·Accessories: AC adapter AD24ITB-E (100 to 240V AC), AC cable (1.8m), Straight Silent Nozzle BB-ZSN
 ·Option: Needle Electrode Replacement Screwdriver G-7DR, Nozzle for Tube Fitting G-7THN, Silent Nozzle N-2WN, Flared Nozzle N-2FN, Speed Controller G-7SC, Microfilter G-7F, Needle Electrode GN-H

No. G2-E Ionizing Gun NEW

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 2kVAC

- Compact and lightweight.
- Ergonomically designed grip that fits your hand.
- Equipped with a green LED light facilitating visual check of dust, and with operating status and alarm lamps.
- Interchangeable nozzles for various applications (option)
- Needle electrode can be easily replaced with a dedicated tool.



CE RoHS

Model No.	Power supply	Current consumption (mA) typ.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (l/min)	Weight (g)	EDP No.
G2-E	24VDC±5%	100	within 0.8sec	within ±10V	94	153	260	621659

(Decay time and ion balance: 300mm from the front of a device, at 0.3MPa, and when equipped with the standard nozzle)
 (Noise: 1m from the front of a device and at 0.3MPa, Air flow: At 0.3MPa)
 ·Accessories: AC adapter AD24-ITCE (100 to 240V AC), AC cable (1.8m), Standard Nozzle N-15N

One point

Pipe arrangement and wiring can be changed depending on the work

Use by hanging above cell production benches



Static Elimination of the Tray



No. N-1 Super Slim Ionizing Nozzle

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 10kVAC

- Compact design permitting placement anywhere and in any direction. Newly developed high-voltage transformer and control circuit enables unprecedented ease of use to be realized.
- Screw type nozzle is removed easily, making both nozzle replacement and cleaning of the needle electrode easy.
- Equipped with six-pole terminals enabling an abnormally high-voltage signal to emit or 24 V DC power to be daisy-chained.
- Blue lamp lights up during normal operations.

When there occurs errors in high voltage, a red lamp flashes.



CE RoHS

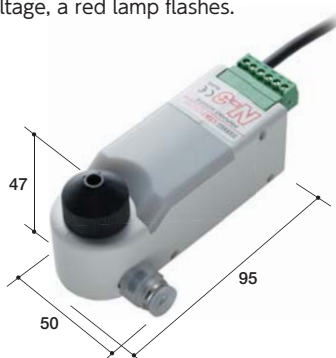
Model No.	Power supply	Current consumption (mA) typ.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (l/min)	Weight (g)	EDP No.
N-1	24VDC±5%	58	within 1.0sec	within ±10V	96	190	80	621639

(Decay time and ion balance: 150mm from the front of a device, at 0.3MPa, and when equipped with the standard nozzle)
 (Noise: at a measurement distance of 1m and 0.3MPa, Air flow: when equipped with the standard nozzle and at 0.3MPa)
 • Accessories: Standard nozzle N-1SN
 • Options: Tube-fittig Nozzle N-2TN, Silent Straight Nozzle BB-ZSN, Silent Wide Nozzle N-2WN, Flair Nozzle N-2FN, Speed Controller G-7SC, Micro-Filter G-7F, Needle Replacement Screwdriver G-7DR, Needle Electrode GN-H

No. N-3 Pinpoint Ionizing Nozzle

Ionizing method: Piezoelectric high-frequency AC corona discharge Applied voltage: 5.6kVAC

- Compact and lightweight. Equipped with screw holes for a mounting to a system.
- Offers various nozzles as options that can be used in a variety of applications
- Screw type nozzle is removed easily, making both nozzle replacement and cleaning of the needle electrode easy.
- Automatically stops in the event of high voltage. Equipped with alarm output terminals.
- Equipped with six-pole terminals enabling an abnormally high-voltage signal to emit or 24 V DC power to be daisy-chained.
- Green lamp lights up during normal operations. When there occurs errors in high voltage, a red lamp flashes.



CE RoHS

Model No.	Power supply	Current consumption (mA) max.	Decay time	Ion balance	Noise level (dBA)	Fan speed (max) (l/min)	Weight (g)	EDP No.
N-3	24VDC±5%	90	within 1.0sec	within ±10V	99.4	210	104	621654

(Decay time and ion balance: 150mm from the front of a device, at 0.3MPa, and when equipped with the standard nozzle)
 (Noise: At a measurement distance of 1m and 0.3MPa, Air flow: When equipped with the standard nozzle and at 0.3MPa)
 • Air supply pressure: 0.1MPa to 0.6MPa, Air supply hose diameter $\phi 6 \times \phi 4$ mm
 • Accessories: Standard Nozzle N-1SN
 • Option: Flared Nozzle N-2FN, Tube-Fitting Nozzle N-2TN, Shower Tube N-2C6B, Straight Silent Nozzle BB-ZSN, Silent Nozzle N-2WN, Speed Controller G-7SC, Microfilter G-7F, Electrode Needle Replacement Screwdriver G-7DR, Electrode Needle GN-H

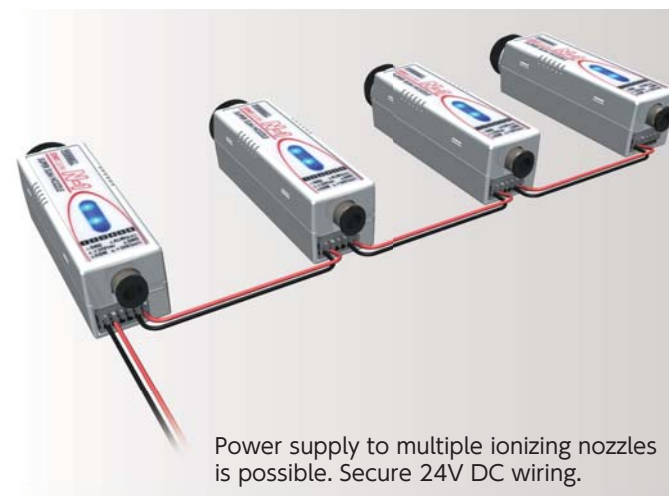
One point

Interchangeable nozzles for various applications (option)



Shower Nozzle and Silent Nozzle are available as options.

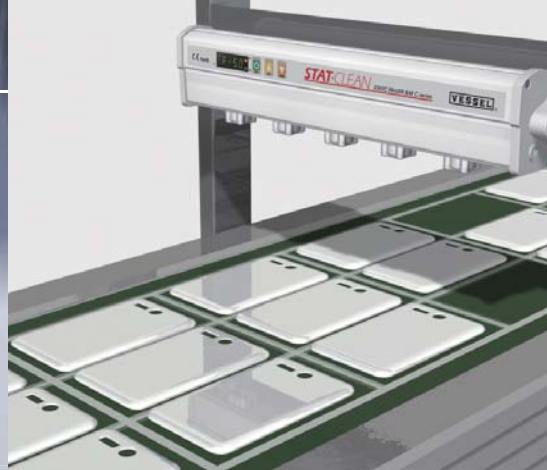
Daisy-chain wiring. High voltage cables stay inside the product.



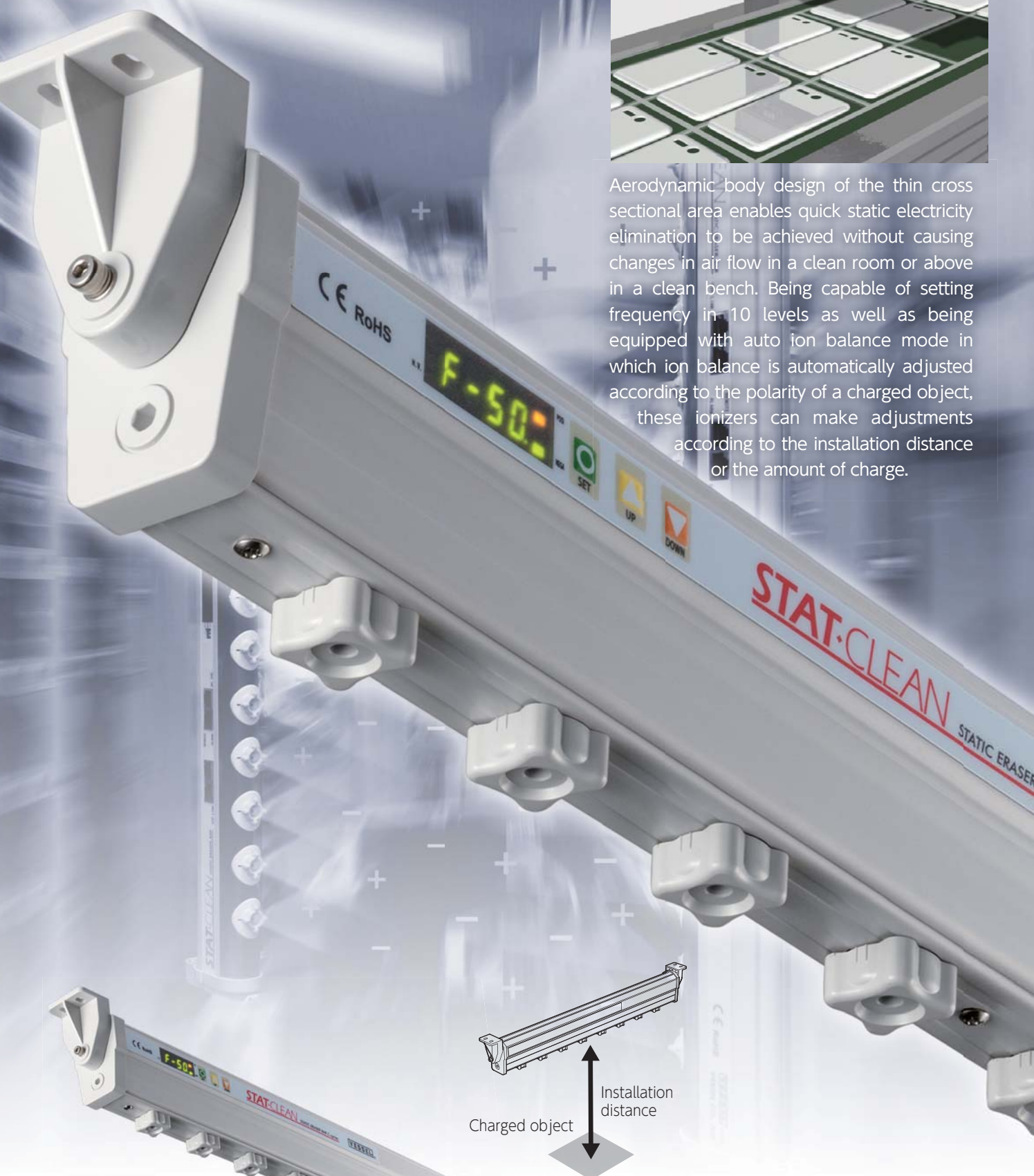
Power supply to multiple ionizing nozzles is possible. Secure 24V DC wiring.

No. C-40

AC Pulse Ionizing Clean Bar



Aerodynamic body design of the thin cross sectional area enables quick static electricity elimination to be achieved without causing changes in air flow in a clean room or above in a clean bench. Being capable of setting frequency in 10 levels as well as being equipped with auto ion balance mode in which ion balance is automatically adjusted according to the polarity of a charged object, these ionizers can make adjustments according to the installation distance or the amount of charge.



No. C-40

AC Pulse Ionizing Clean Bar

Bar-type ionizers best suited to mounting to a variety of equipment. Air purge construction enables super-fast static electricity removal to be accomplished. With a lineup of abundant sizes, they respond to various applications.

Frequency setting

Installation place	Location	mm	Frequency, Hz
Film/conveyor	Close distance	50~300	20~50
Clean bench	Intermediate distance	600~750	8~10
Clean room ceiling	Long distance	900~1500	0.1~5

HAND TOOLS

BITS & SOCKETS

ELECTRIC TOOLS

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS

C-series

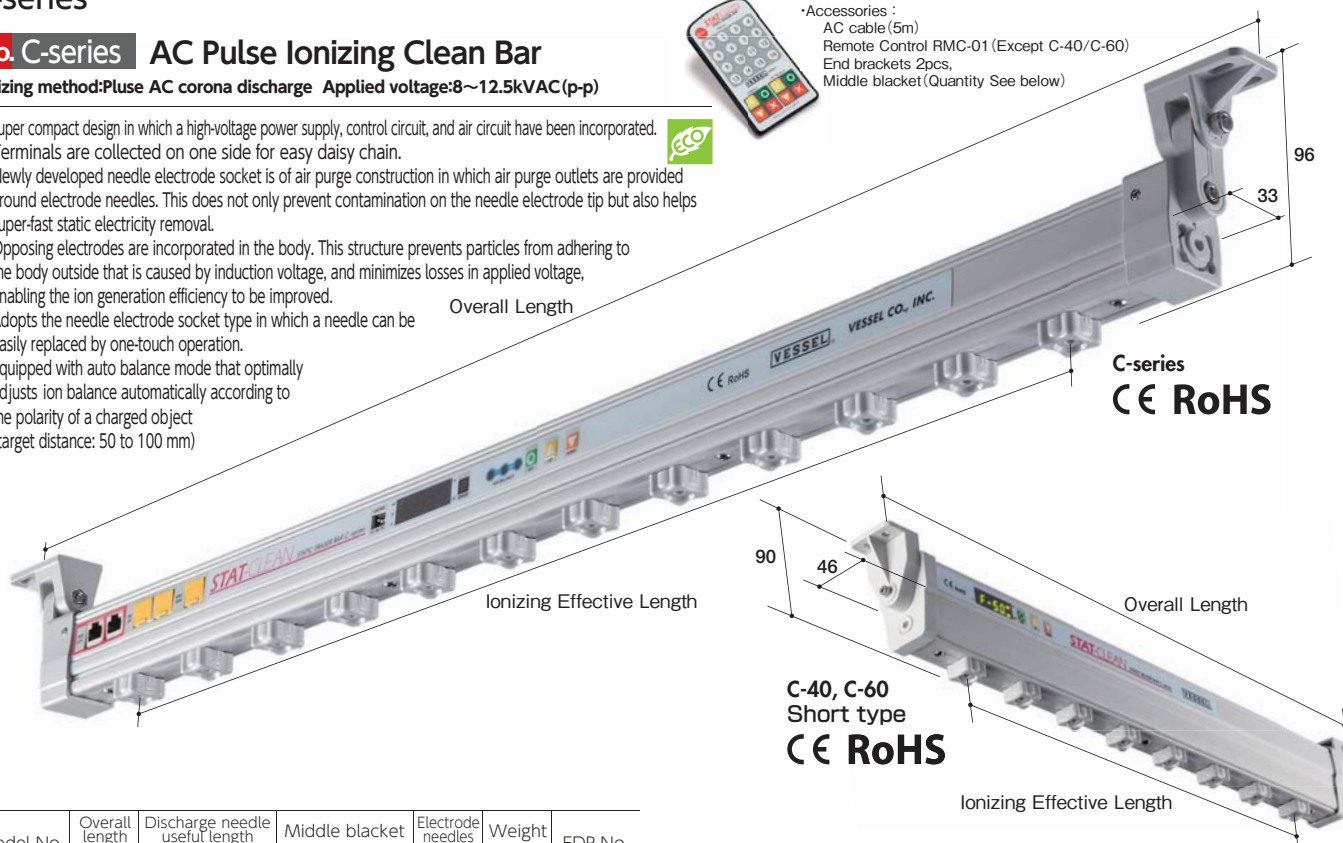
No. C-series AC Pulse Ionizing Clean Bar

Ionizing method:Pluse AC corona discharge Applied voltage:8~12.5kVAC(p-p)

- Super compact design in which a high-voltage power supply, control circuit, and air circuit have been incorporated.
- Terminals are collected on one side for easy daisy chain.
- Newly developed needle electrode socket is of air purge construction in which air purge outlets are provided around electrode needles. This does not only prevent contamination on the needle electrode tip but also helps super-fast static electricity removal.
- Opposing electrodes are incorporated in the body. This structure prevents particles from adhering to the body outside that is caused by induction voltage, and minimizes losses in applied voltage, enabling the ion generation efficiency to be improved.
- Adopts the needle electrode socket type in which a needle can be easily replaced by one-touch operation.
- Equipped with auto balance mode that optimally adjusts ion balance automatically according to the polarity of a charged object (target distance: 50 to 100 mm)



Accessories :
AC cable (5m)
Remote Control RMC-01 (Except C-40/C-60)
End brackets 2pcs,
Middle bracket (Quantity See below)



Model No.	Overall length (mm)	Discharge needle useful length (mm)	Middle bracket (pcs)	Electrode needles (pcs)	Weight (kg)	EDP No.
C-90	877	660	0	12	0.9	621851
C-100	1078	900	1	16	1	621852
C-120	1318	1140	1	20	1.2	621853
C-150	1558	1380	1	24	1.4	621854
C-170	1798	1620	2	28	1.6	621855
C-200	2038	1860	2	32	1.8	621856
C-220	2278	2100	2	36	2.3	621859
C-250	2518	2340	3	40	2.6	621860
C-270	2758	2580	3	44	2.8	621861
C-300	2998	2820	3	48	3.1	621862

Power supply	Current consumption (mA) max.	Decay time ※	Frequency	Pulse ratio	Voltage level
24VDC±5%	600	within 0.8sec	10steps (0.1~50Hz)	+ : 40~70% - : 60~30%	±10steps each

※Decay time :30Hz 10.5kVp-p 300mm directly below at 0.3MPa
 •Air supply pressure: 0 to 0.3MPa, Air supply hose diameter $\Phi 8 \times \Phi 6$ mm (Air supply port: PT1/8)
 •Accessories: Remote controller, Power cable (5m), End brackets (included with device), Middle brackets (included with device)
 •Option: AC Adapter AD24-IT-EX, AD24-ITCF-EX, AD24-IT19-EX, Power Supply cable (5m)CT-5

No. C-40/C-60 AC Pulse Ionizing Clean Bar

Ionizing method:Pluse AC corona discharge Applied voltage:8~12.5kVAC(p-p)

- Short type optimal for installation on a conveyor or in equipment.
- Consolidated terminals on the back side. Power can be supplied by daisy chain wiring.

Model No.	Overall length (mm)	Discharge needle useful length (mm)	Electrode needles (pcs)	Weight (kg)	EDP No.
C-40	422	240	5	0.78	621857
C-60	602	420	8	1.08	621858

Power supply	Current consumption (mA) max.	Decay time ※	Frequency	Pulse ratio	Voltage level
24VDC±5%	600	within 0.8sec	10steps (0.1~50Hz)	+ : 40~70% - : 60~30%	±10steps each

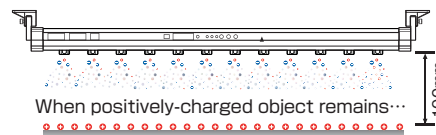
※Decay time :30Hz 10.5kVp-p 300mm directly below at 0.3MPa
 •Air supply pressure: 0 to 0.3MPa, Air supply hose diameter $\Phi 8 \times \Phi 6$ mm (Air supply port: PT1/8)
 •Accessories: Remote controller, Power cable (5m), End brackets (included with device),
 •Option: AC Adapter AD24-IT-EX, AD24-ITCF-EX, AD24-IT19-EX, Power Supply cable (5m)CT-5

One point

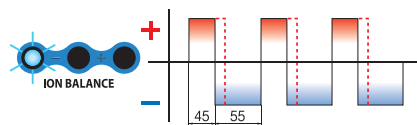
AC Pulse Auto Balance Mode

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

※C-series



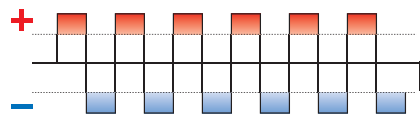
When positively-charged object remains...



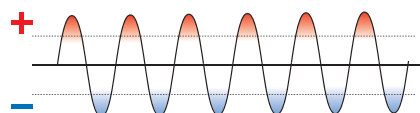
More negative ions are generated.

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.



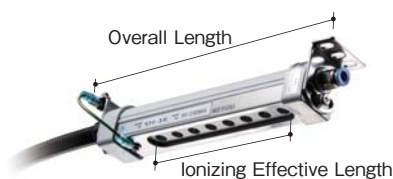
Typical alternating current



SH-series

No. SH-series Compact AC Pulse Ionizing Bar (separate power supply type)

- Ion balance can be adjusted by changing a pulse ratio.
- The main body is as compact as 30 × 33 mm, ideal for installation in cramped spaces.
- Use of a branch box enables multiple bars to be operated from one power supply equipment.
- High-voltage cable can be attached/detached from the bar's main body.



HAND TOOLS

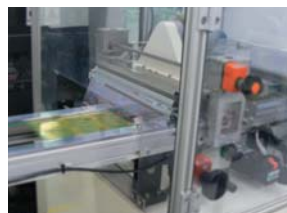
BITS & SOCKETS

ELECTRIC TOOLS

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS



エアージェット機能

CE RoHS

Model No.	Overall length (mm)	Discharge needle useful length (mm)	Decay time ※ (sec.)	Electrode needles (pcs)	Weight (kg)	EDP No.
SH-16	218	105	within 0.5	8	0.36	621541
SH-20	258	135	within 0.5	10	0.40	621542
SH-30	338	210	within 0.5	7	0.42	621543
SH-40	443	315	within 0.5	10	0.50	621544
SH-50	548	420	within 0.5	13	0.57	621545
SH-60	653	525	within 0.5	16	0.63	621546
SH-70	758	630	within 0.5	19	0.70	621547

Decay time: 30Hz 10.5kVp-p Straight down 300mm at 0.3MPa
Air supply pressure: 0 to 0.5MPa, Air supply hose diameter $\Phi 6 \times \Phi 4$ mm
Options: Branch box SH-SP2, Relay cable (3m) SH-EC3, Relay cable (5m) SH-EC5

No. SH-G3 Power supply units

Ionizing method : Pluse AC corona discharge Applied voltage: 10.5kVAC p-p

- Equipped with two sockets for connecting the SH ionizing bars. They can be installed and wired easily.
- With the ion balance adjustment function (pulse ratio).
- Equipped with a safety circuit that shuts down the output if overcurrent or high-voltage error occurs.
- Lightest-weight body in the industry: 1.5kg.



PS E CE RoHS

Model No.	Input power supply	Power consumption (W)	Frequency (Hz)	Plus ratio	Weight (kg)	EDP No.
SH-G3	100~240V AC (50/60Hz)	10	30	+ : 40~70% - : 60~30%	1.5	621555

Accessories: AC Power cable 1.8m (for 100VAC and input) 2cables



HAND TOOLS



Dust prevention on molded parts



Cell production table

BITS & SOCKETS

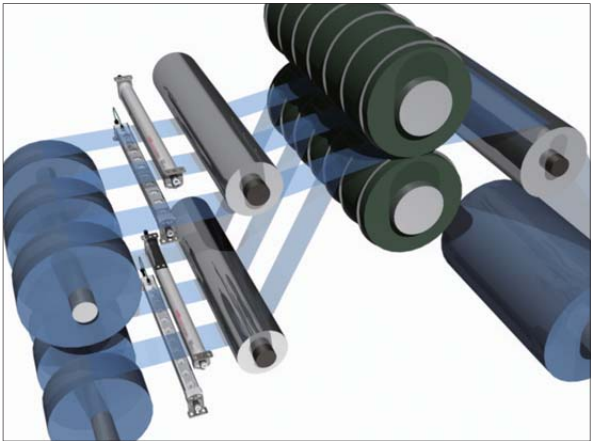


Static electricity removal in a bottle

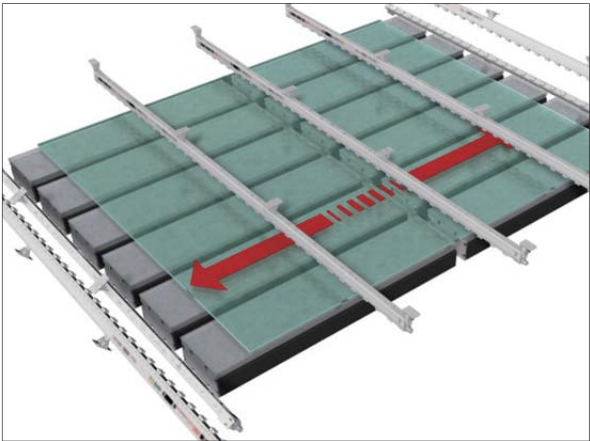


Vibratory bowl feeder (joint nozzle + shower tube)

ELECTRIC TOOLS



Film unwinding and widing

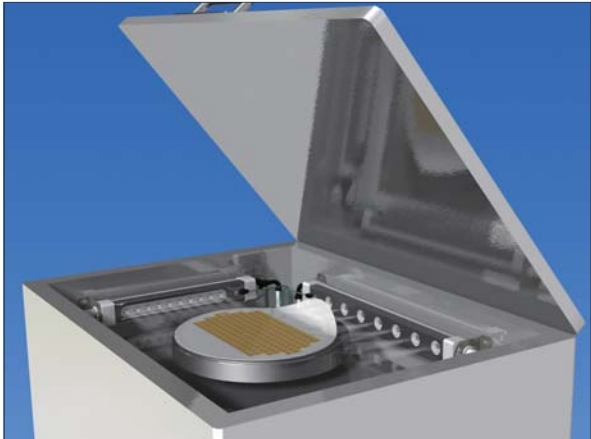


Glass substrate transfer

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS



Production of the water film



Filling pills or capsules into a package

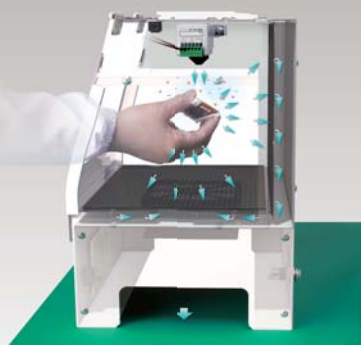
No. IPC-A4

Ion Parts Cleaner



With the Ion parts cleaner applying a unique dust capturing method with an adhesive gel sheet, an installation space for a dust collector or a dust is no longer needed. This gel sheet can be repeatedly used after cleaning off dust.

We provide A4 and A3 sizes on the assumption of cell production work. This allows efficient dust removal work to be done according to line design.



Static electricity elimination and dust removal in a hood. Dust adhered by static electricity is neutralized in the ionized hood and then removed by powerful automatic air blow.



No. IPC-A4

Ion Parts Cleaner

Ion parts cleaners playing an important role in line design of cell production. Assembled parts and devices can be cleaned on the spot and flowed to the next process, enabling line design to be smart.



HAND TOOLS

BITS & SOCKETS

ELECTRIC TOOLS

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS

No. IPC-A4 Ion Parts Cleaner

Ionizing method : Piezoelectric high-frequency AC corona discharge Applied voltage: 10kVAC (p-p)

- Compact bench-top type of 314 mm wide and 253 mm deep
- Eliminates static electricity and removes dust with air controlled by an infrared sensor.
- Time to stop ion blow after sensing a workpiece by a sensor is settable. (1, 3, 5, 10, or 30 sec)
- Adhesive gel collects blown-off dust assuredly.
- Dust on the adhesive gel mat can be washed off with water and the gel mat can be used repeatedly.
- Dust collector is not required; This reduces power consumption significantly and, in the end, the total running cost. Moreover, pulse blow also cuts the amount of air usage.
- In the pulse mode, air is blown intermittently, exerting force of blowing off dust by vibration. It allows low- and high-speed pulses to be selected according to workpiece.
- Incorporates an air regulator.



RoHS

Model No.	Power supply	Power consumption (W)	Current consumption (mA)	Dust collection airflow (m³/min)	Airflow (ℓ/min)	Weight (kg)	EDP No.
IPC-A4	24VDC±5%	17	700	3.5	150	6	621610

(Noise: 0.3MPa Airflow: 0.3MPa)
Operating fluid: Clean dry air (0.1 to 0.5MPa), Air supply hose diameter Φ8mm
Accessories: AC Adapter AD24-IT19E(100~240VAC), AC power cable 1.8m,
Adhesive gel sheet/plate(attached on the product)(2pcs.)

No. IPC-A3 Ion Parts Cleaner

Ionizing method : Piezoelectric high-frequency AC corona discharge Applied voltage: 10kVAC (p-p)

- Equipped with two ionizing nozzles N-1, blowing air downward from the top side of the hood
- Eliminates static electricity and removes dust with air controlled by an infrared sensor.
- Time to stop ion blow after sensing a workpiece by a sensor is settable. (1, 3, 5, 10, or 30 sec)
- Adhesive gel collects blown-off dust assuredly.
- Dust on the adhesive gel mat can be washed off with water and the gel mat can be used repeatedly.
- Dust collector is not required; This reduces power consumption significantly and, in the end, the total running cost. Moreover, pulse blow also cuts the amount of air usage.
- In the pulse mode, air is blown intermittently, exerting force of blowing off dust by vibration. It allows low- and high-speed pulses to be selected according to workpiece.
- Incorporates an air regulator.



RoHS

Model No.	Power supply	Power consumption (W)	Current consumption (mA)	Dust collection airflow (m³/min)	Airflow (ℓ/min)	Weight (kg)	EDP No.
IPC-A3	24VDC±5%	22	900	1.13	190	9.5	621612

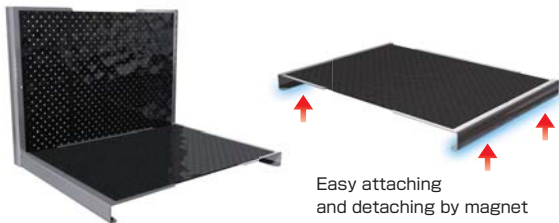
(Noise: 0.3MPa airflow: 0.3MPa)
Operating fluid: Clean dry air (0.1 to 0.7MPa), Air supply hose diameter Φ10mm
Accessories: AC Adapter AD24-IT19E(100~240VAC), AC power cable 1.8m,
Adhesive gel sheet/plate(attached on the product)(2pcs.), Duct flange(For Φ75mm),
Paper pack filter(6pcs.)

One point

Features of IPC-A4 and -A3

Dust capturing gel sheet for IPC-A4 and -A3

Dust capturing using self-adhesive urethane gel
Adhesiveness is restored by cleaning such as washing in water.



Paper-pack filter for IPC-A3

A paper-pack filter can be attached to the exhaust port in the back of the cleaner (Standard specifications). Replacement of a flange enables the cleaner to be connected to an exhaust duct of Φ75 mm.



Air regulator equipped

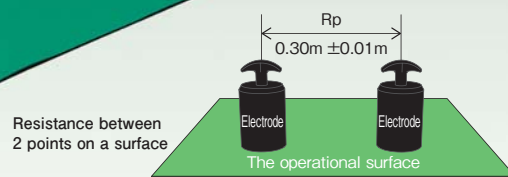
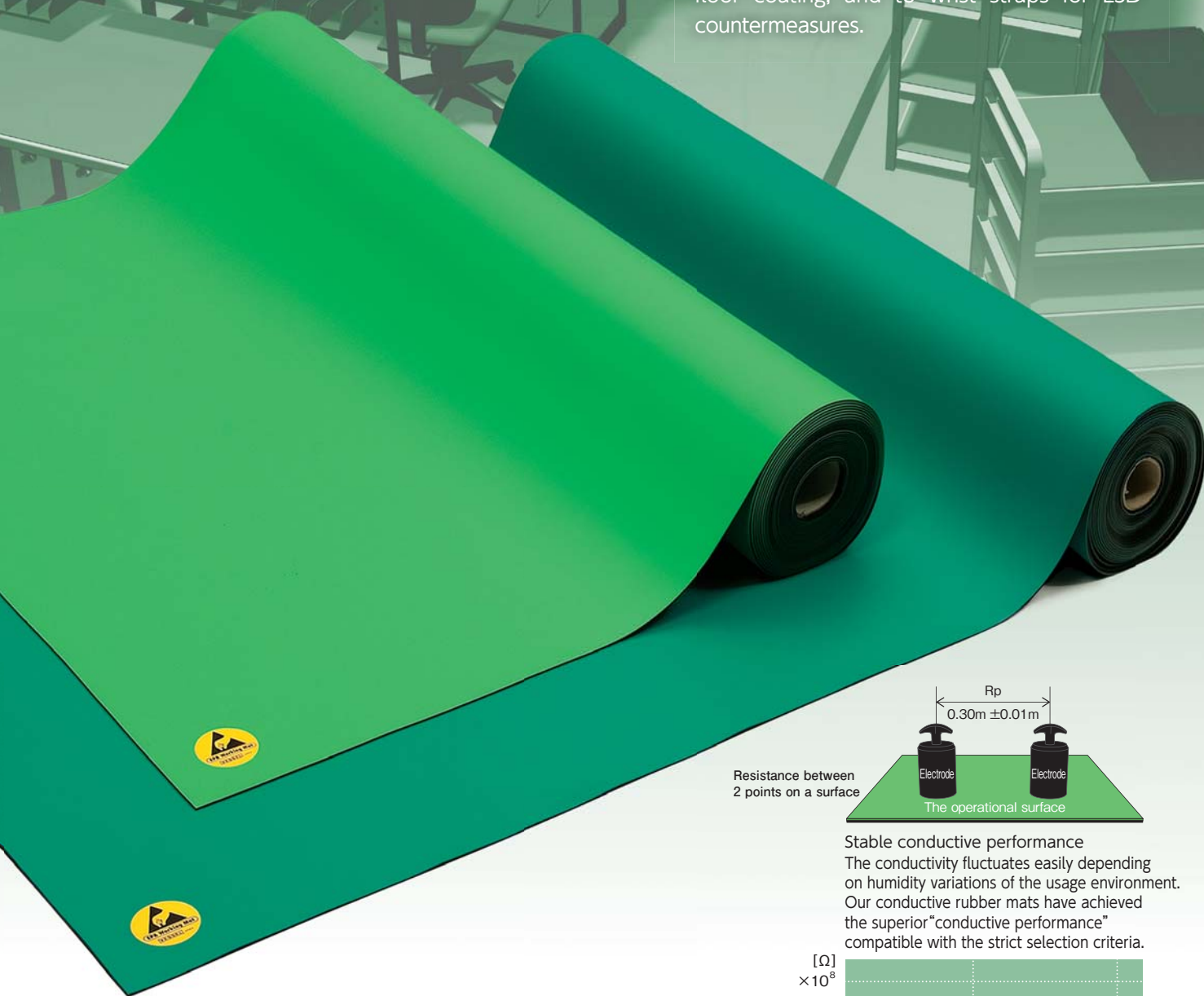
The ion parts cleaners incorporate an air regulator, allowing you to adjust the flow rate of ion air.

No. LG-100/ SG-100

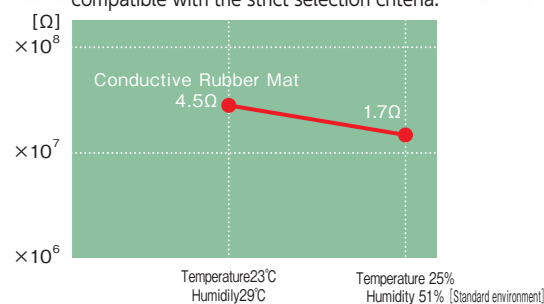
Conductive Rubber Mat



We provide IEC standards-compatible ESD protection items ranging from EPA working mats laid on workbenches, storage racks, and trolley surfaces, EPA flooring for PVC floors or floor coating, and to wrist straps for ESD countermeasures.



Stable conductive performance
The conductivity fluctuates easily depending on humidity variations of the usage environment. Our conductive rubber mats have achieved the superior "conductive performance" compatible with the strict selection criteria.



No. LG-100/ SG-100

Conductive Rubber Mat

Special mats through our unique and strict conductivity standards within 10^7 . They maintain stable conductivity even if humidity and temperature change. Available in two colors: light green and green. A wide choice of accessories such as mat connecting gel and ground taps is also available.

HAND TOOLS

BITS & SOCKETS

ELECTRIC TOOLS

AIR TOOLS

STATIC SOLUTIONS

GASOLINE ENGINE TOOLS

EPA Working Mat

Conductivity $10^6 \leq R \leq 10^7 \Omega$ ※

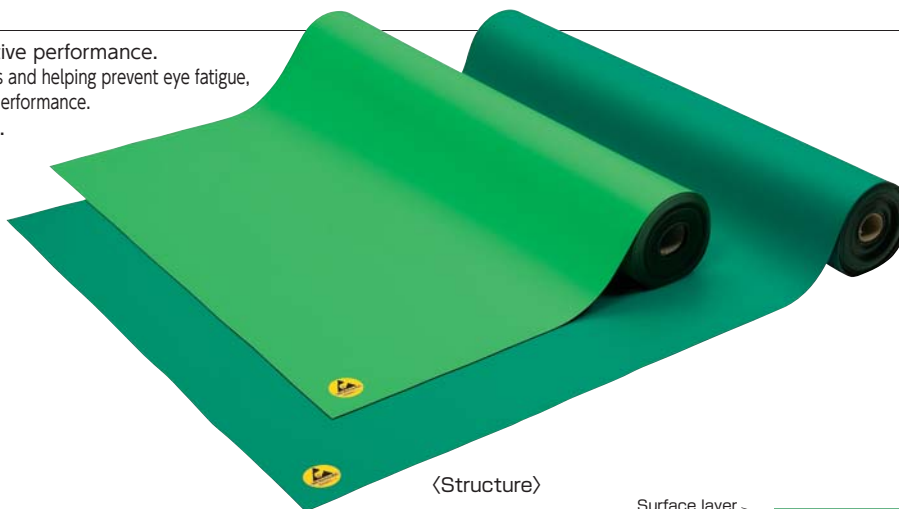
Work benches-storage shelves-trolley-Wagon, etc.

No. LG-100/SG-100 Conductive Rubber Mat

Designed for workbenches that require anti-static measures, such as in the semi-conductors industry, electronic components assembly, and others.

Heat-resistant, ideal for soldering work

- Uniform and consistent conductive performance.
- Matte surface finish, reducing reflections and helping prevent eye fatigue, for the aim at the satisfactory working performance.
- Soft surface that resists bending.
(Hardness A type 64)



(Structure)

Surface layer
(static electricity-diffusing rubber)
Backing
(conductive rubber)



LG-100 Light green



SG-100 Green

RoHS2

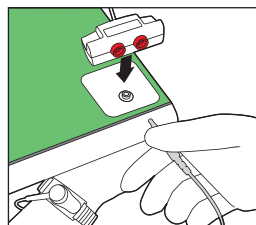
Model No.	Color	Size (Length×Width×Thickness)	Weight	EDP No.
LG-100	Light green	10.0m×1.0m×2.0mm	35kg/roll	621464
SG-100	Green	10.0m×1.0m×2.0mm	35kg/roll	621461

Please contact VESSEL for availability of other colors.

※Resistance value may vary depending on the conditions of the measurement environment such as the temperature and humidity.

No. EPS-GT2 Ground Tap

- Provides ground connection points for anti-static wrist straps and conductive rubber mats.
- Attach the tap to the surface, the lateral or the back side of a workbench when using.



Model No.	Grounding cord (m)	Resistance value	Contents (quantity)	EDP No.
EPS-GT2	Approx. 3.0 (with round jack)	Approx. 1MΩ between device and grounding cord (round jack)	20	621402

Material: Core/ABS plastic Connection hardware /Stainless steel

No. EPC-18 Ground Cord

- Designed to connect to a mat-connecting gel (includes a hook) or grounding tap.

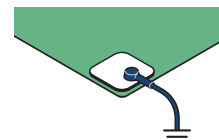
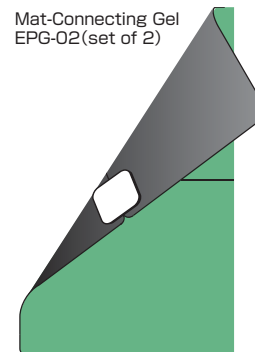


Model No.	Resistance value	Length (m)	Contents (quantity)	EDP No.
EPC-18	1MΩ	Max. length of 1.8m (when contracted 0.5m)	20	621393

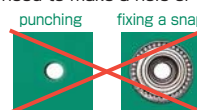
Accessory: 1 alligator clip

No. EPG-01/EPG-02 Mat-connecting gel

- Made from medical-grade conductive gel.
- No need for grommet; easy to ground and connect multiple mats.

Mat-Connecting Gel (with hook)
EPG-01 (set of 2)Mat-Connecting Gel
EPG-02 (set of 2)

No need to make a hole or crimp



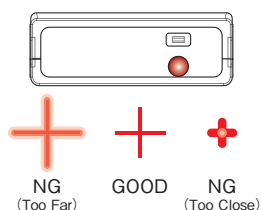
Model No.	Product name	Size (mm)	Contents (quantity)	EDP No.
EPG-01	Mat-connecting gel with hook (set of 2)	50×50	20	621481
EPG-02	Mat-connecting gel (set of 2)	50×50	20	621482

No. Eye-02 Electrostatic Field Meter

- A hand-held measuring instrument enabling you to measure an invisible electrostatic charge condition or ion balance of the ionizer easily.
- Maximum value (peak value) / pause can be displayed.
- LED cross mark as an index for correct measurement distance.
- Equipped with a female thread for camera screws; using with a tripod or jig enables measurements in stable state. Also provided with a plate for ion balance measurements.
- LCD has backlight and provides a bright, easy-to-see display in low light.
- Provided with a soft housing carrying case.
- Compatible with ISO 9000 traceability. A calibration table and certificate can be issued.



Measurement of charged potential



Ion balance measurement

CE RoHS

Model No.	Measurement range		Measuring distance
	Static charge voltage measuring	Ion Balance voltage measuring	
Eye-02	$\pm 0 \sim \pm 1.50 \text{ kV}$ (LO range) $\pm 1.0 \sim \pm 22.0 \text{ kV}$ (HI range)	$0 \sim \pm 220 \text{ V}$	$25 \text{ mm} \pm 0.5 \text{ mm}$ (between charged object and the Eye-02)

Power source	Weight	EDP No.
9V DC (006 battery 1 pce.)	170g: without Ion Balance plate 30g: Ion Balance plate	621603

Accessories: Ion Balance Plate×1, Ground Cord w/alligator clip×1, Carrying Case×1

No. SRC-01 Surface Resistance Checker **NEW**

- Surface resistance checker that facilitates the surface resistance measurement of floor, mat, desk and chair.
- Press and hold the measurement button switch, and the measurement value appears on the display. Automatic power off function is available.
- Voltage can be switched to measure a broad range of resistance values.
- Can measure temperature/humidity at the same time as the surface resistance value.
- Supplied with probes to measure "point-to-point resistance", "resistance to ground" and "volume resistance".
- Comes with a carrying case useful to carry all necessary items for measurement.

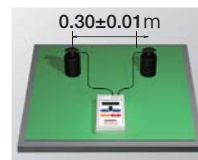
Accessories:

- Probe (outer diameter: about $\phi 6 \text{ mm}$, about 2.3 kg): 2
- Curled cord for a body grounding (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 ($185 \text{ mm} \times 100 \text{ mm}$): 1
- Carrying case: 1
- 9V battery (006P type: manganese dry battery): 1
- Manuals



With a carrying case

Useful to carry all necessary items for measurement



Resistance between 2 points on a surface.



Resistance between a ground and a connecting point by a probe on a surface



Surface resistivity



Volume resistance

CE RoHS

Model No.	Measurement standard	Measurement range	Applied voltage
SRC-01	IEC61340-4-1 JIS-C2170	$10^3 \sim 10^{12} \Omega$ (Ω/sq)	10V ($R < 1.0 \times 10^6 \Omega$ or Ω/sq) 100V ($R \geq 1.0 \times 10^6 \Omega$ or Ω/sq)

Power source	Weight	EDP No.
9V battery (006P type)	Main body: Approx. 340g (including battery) Total weight: Approx. 6.2kg (including carrying case)	621604

※A battery (accessory) is included as a sample. It may be out of use before the estimated number of use with one battery. Replace with a new one in this case.
※Calibration certificate can be issued as option (payable).

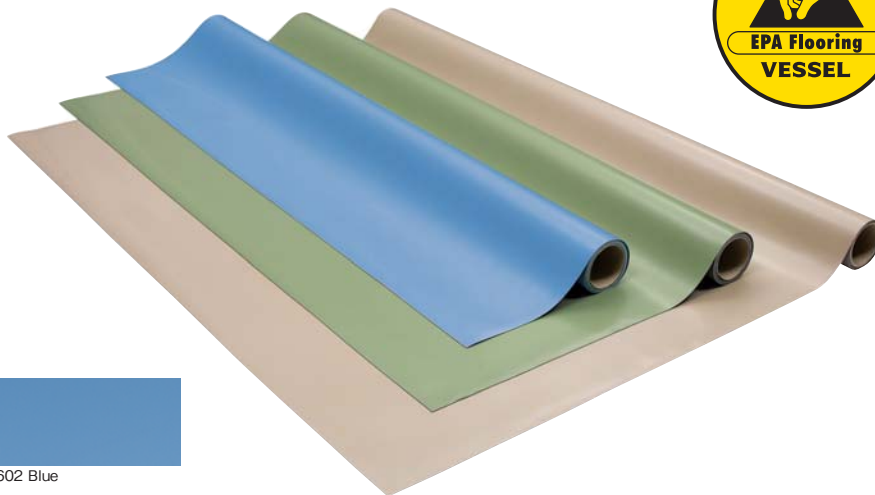
EPA Floor Sheet

No. CD-134/CD-138/CD-602 Conductive Vinyl Floor Sheet CD-leum**Conductivity** $10^6 \sim 10^7 \Omega$ ※

Vinyl floor sheet with uniform and consistent anti-static performance. Optimal for locations where static electricity is especially harmful, such as semi-conductor plants and clean rooms.



- Uniform and consistent conductive performance.
- Using a dedicated welding wand, the floor can be laid seamlessly.
- Dust-resistant surface facilitates cleaning and maintenance.
- High level of chemical resistance to acids, alkaline substances, disinfectants, etc.



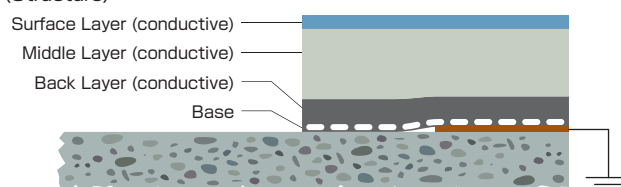
Optimal for clean rooms in semi-conductor plants, electronics plants, assembly plants, and pharmaceutical plants, or hospitals, sterile rooms, etc.



Model No.	Color	Size (Length×Width×Thickness)	Weight	EDP No.
CD-134	Beige	9.0m×1.82m×2.0mm	3.1kg/m ² 51kg/roll	621492
CD-138	Green			621493
CD-602	Blue			621491

Optional: earth plate/welding wand. If you would like to have colors other than the above, please contact us.
※Resistance value may vary depending on the conditions of the measurement environment such as the temperature and humidity.

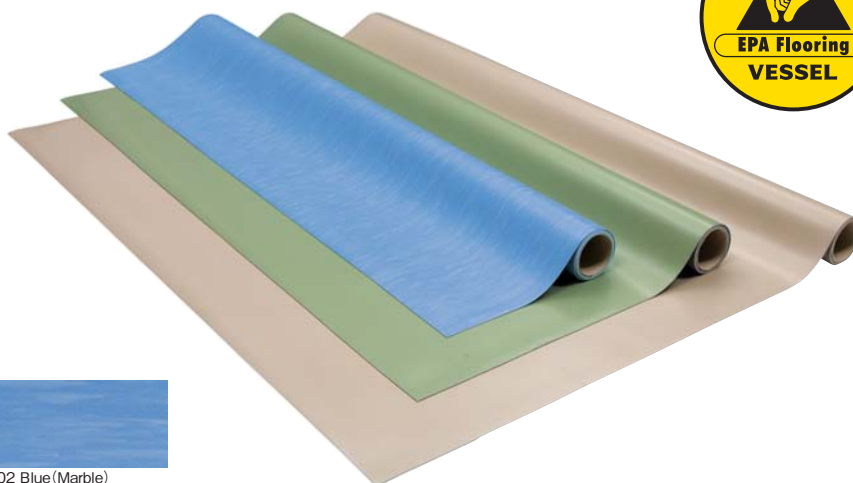
〈Structure〉

**No. LS-134/LS-138/LS-5602** Anti-Static Vinyl Floor Sheet Lonstack**Conductivity** $10^8 \Omega$ ※

Vinyl floor sheet with uniform and consistent anti-static performance. This prevents static electricity from being generated, resulting in prevention of adhesion of dust and device malfunction.



- Uniform and consistent conductive performance.
- Using a dedicated welding wand, the floor can be laid seamlessly.
- Dust-resistant surface facilitates cleaning and maintenance.
- High level of chemical resistance to acids, alkaline substances, disinfectants, etc.



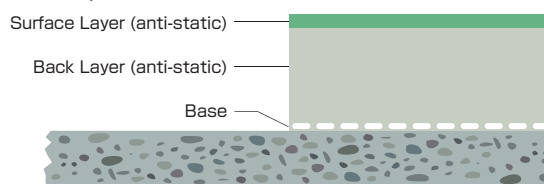
Optimal for electronics assembly plants, computer rooms, computer rooms of banks, etc.



Model No.	Color	Size (Length×Width×Thickness)	Weight	EDP No.
LS-134	Beige	9.0m×1.82m×2.0mm	3.2kg/m ² 52kg/roll	621495
LS-138	Green			621496
LS-5602	Blue(Marble)			621494

Optional: earth plate/welding wand. If you would like to have colors other than the above, please contact us.
※Resistance value may vary depending on the conditions of the measurement environment such as the temperature and humidity.

〈Structure〉



List of EPA Flooring Properties

※All data given in the following table are test values, not value of standard.

Item		CD-leum	Lonstack	Standard	[Standard value]
Dent size (mm)	23℃	0.73	0.70	JIS A5705	(0.3 or larger)
	45℃	1.18	0.96		(1.5 or smaller)
Remaining dent size (mm)		0.32	0.20	JIS A5705	(25 or smaller)
Change rate of length due to heating (%)	Vertical	-1.40	-0.70	JIS A5705	(2.0 or smaller)
	Horizontal	0.30	0.20		
Thickness reduced by abrasion (mm)		0.06	0.06	Weight 1.0kg, rotate 1000times	
Hardness	[A type]	83	80	ASTM D2240 value at 15seconds, 20℃	
	[D type]	34	34		
Staining properties	Solution containing sodium hydroxide 2%	◎	◎	JIS A1454, drop 2ml of reagent, leave for 24 hours ◎ indicates no change ○ indicates change in appearance [There must be no significant color or luster change and swelling]	
	Hydrochloric acid 5%	○	○		
	Cement paste	◎	◎		

Construction [Please note that the construction should be performed by an authorized constructor. Please consult us for more detail, before order.]

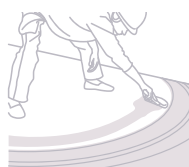
Investigation and analyses

Investigate the current floor conditions (material, cracks, smoothness, surface strength, area and earth connected terminal) and make an estimate. (To the basic price per square meter, expenses for extra work such as crack repair are added).



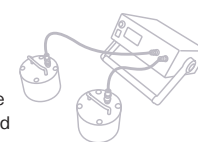
Construction

EPA flooring contractor performs the construction. (Please finish removal of equipment and cure application before construction starts)



Inspection

Within certain period after installation ends, the point-to-point resistance value and resistance value to ground are measured, and a floor installation completion certificate is issued.



Conductivity $R \leq 1.0 \times 10^9 \Omega$

No. AF-45 Conductive Anti-Fatigue Mat **NEW**

- Same characteristics as the AF-90.
- Space-saving 600x477mm good for one person.
- Inclined marginal area prevents workers from stumbling or falling.



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



Air pockets on the back surface distributes the load, to alleviate fatigue.



RoHS2

Model No.	Color	Size (mm) (Length×Width×Thickness)	Resistance value	Weight (kg)	EDP No.
AF-45	Gray	600×447×15	$R \leq 1.0 \times 10^9 \Omega$	2.0	621489

※Ground wire is not attached.

Conductivity $R \leq 1.0 \times 10^9 \Omega$

No. AF-90 Conductive Anti-Fatigue Mat **NEW**

- 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×600mm convenient size for the working stand for cell production.



RoHS2

Model No.	Color	Size (mm) (Length×Width×Thickness)	Resistance value	Weight (kg)	EDP No.
AF-90	Gray	900×600×15	$R \leq 1.0 \times 10^9 \Omega$	4.2	621488

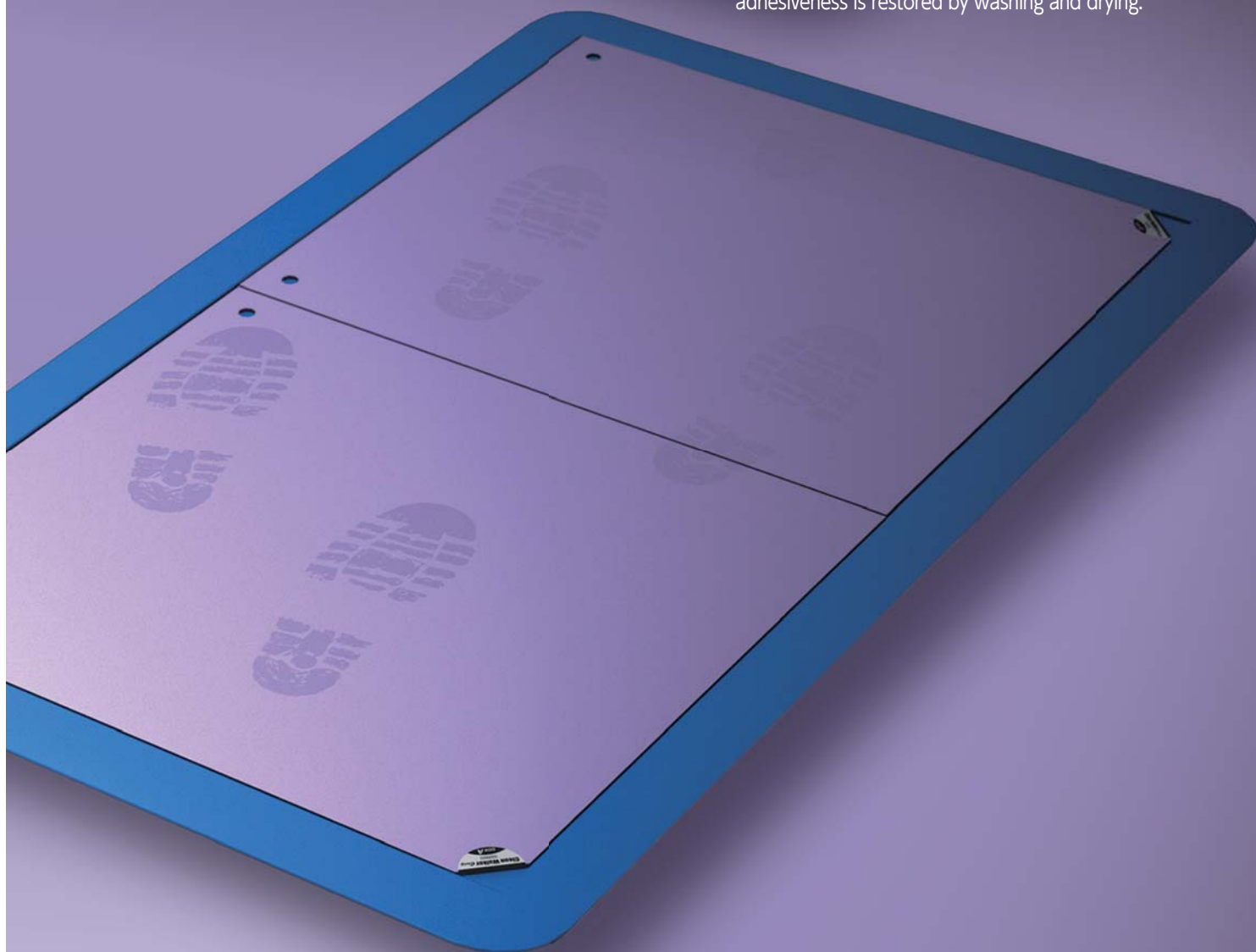
※Ground wire is not attached.

No. CW-900EZ

Clean Walker Easy



No more need to peel off films! This is a self-adhesive mat made of high quality urethane gel. Place this mat indoor such as entrance to a clean room, and the dust and dirt adhered to shoes soles or trolley wheels are easily captured. The adhesiveness is restored by washing and drying.




No. CW-900EZ

Clean Walker Easy

This product is a sticky mat that utilizes the self-adherence property of urethane gel. It flexibly changes its shape against dents and projections of shoe soles and wheels of carts, collecting grit and dust well. Dirt can be removed by washing with water.

No. CW-900B Clean Walker

For indoor use only (for example, entrance to a clean room).
Urethane gel adheres to shoe soles and catches dusts.

- High elasticity mat of 5 mm thick. Catches dust on shoes soles. 
- Dust adhered on the CW-900B can be easily taken off by wiping with a damp cloth.
- Reversible (both sides can be used); running costs can be reduced.
- Indoor use only (most recommended to use at an entrance to a clean room)




If the surface gets contaminated, simply wipe it with a damp cloth.

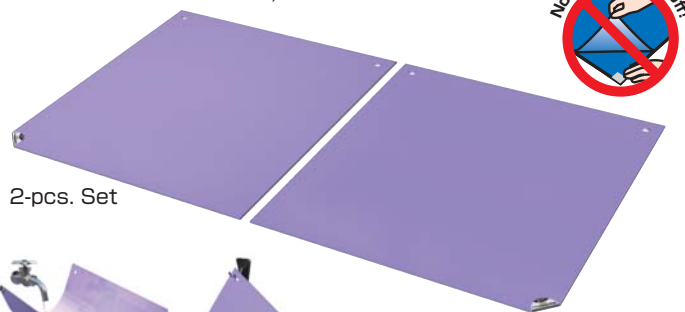
RoHS

Model No.	Color	Conductivity	Size (mm) (Length×Width×Thickness)	Weight (kg)	EDP No.
CW-900B	Blue	Insulator	500×900×5	2.4	621485

No. CW-900EZ Clean Walker Easy

For dust removal from shoes soles in cleanrooms, entrance to air shower booth, or in a factory. Also good for cleaning of trolley wheels.

- Non-woven textiles are sandwiched by the urethane gel layers. A 3mm thickness, providing high strength and resistant to tears under the pressure of trolleys. It can be stuck together like floor tiles. 
- 2pcs of 450×500mm; Easy to take the mats off the floor and to clean with water.
- Provided with hook holes: hang and leave the mat dry, and the mat restores the adhesiveness.
- Indoor use only (most recommended to use at an entrance to a clean room)



2-pcs. Set

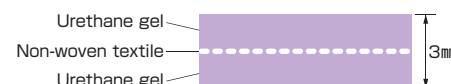


Take the mat out of the floor and wash it with water



Hang from hook holes to dry off


<Structure>

**RoHS**

Model No.	Color	Conductivity	Size (mm) (Length×Width×Thickness)	Weight (kg)	EDP No.
CW-900EZ	Light purple	Insulator	500×450×3	1.6 (2pcs.)	621486

No. CW-T900 Clean Walker Tray

Inclined tray for easy trolley access. Dedicated to Clean Walker

- Designed to be suitable for the Clean Walker size. 
- The inclination allows trolleys to pass over without being jammed.
- Clean Walker mats can be removed from this tray with a little pulling force.

**RoHS**

Model No.	Color	Conductivity	Size (mm) (Length×Width×Thickness)	Weight (kg)	EDP No.
CW-T900	Blue	Insulator	600×1000×5	2.45	621487

One point**Clean Walker**

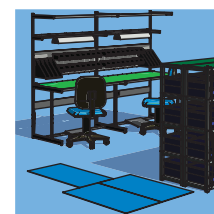
It is an adhesive mat that applies the self-adhesive properties of urethane gel. It deforms flexibly along with the unevenness of shoes soles or trolley wheels; dust is reliably captured. Dust and contamination can be washed off with water.

**Applications**

Ideal for removing dust off shoes soles or cleaning trolley wheels indoor

CW-900B

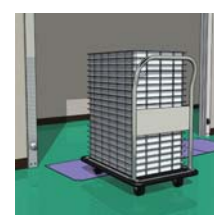
Air shower booths



Inside the plant

CW-900EZ

Entrance to clean rooms



For cleaning trolley wheels