polstar®

MEC

2026 VOL. 10

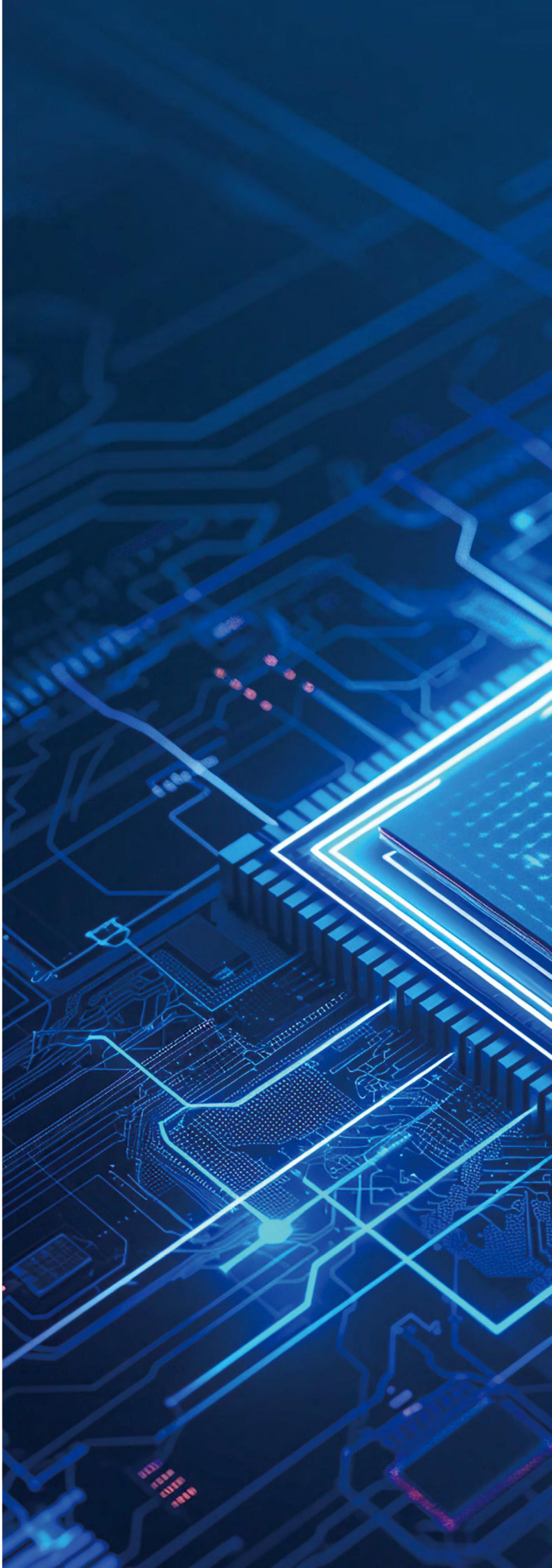
PRODUCTS

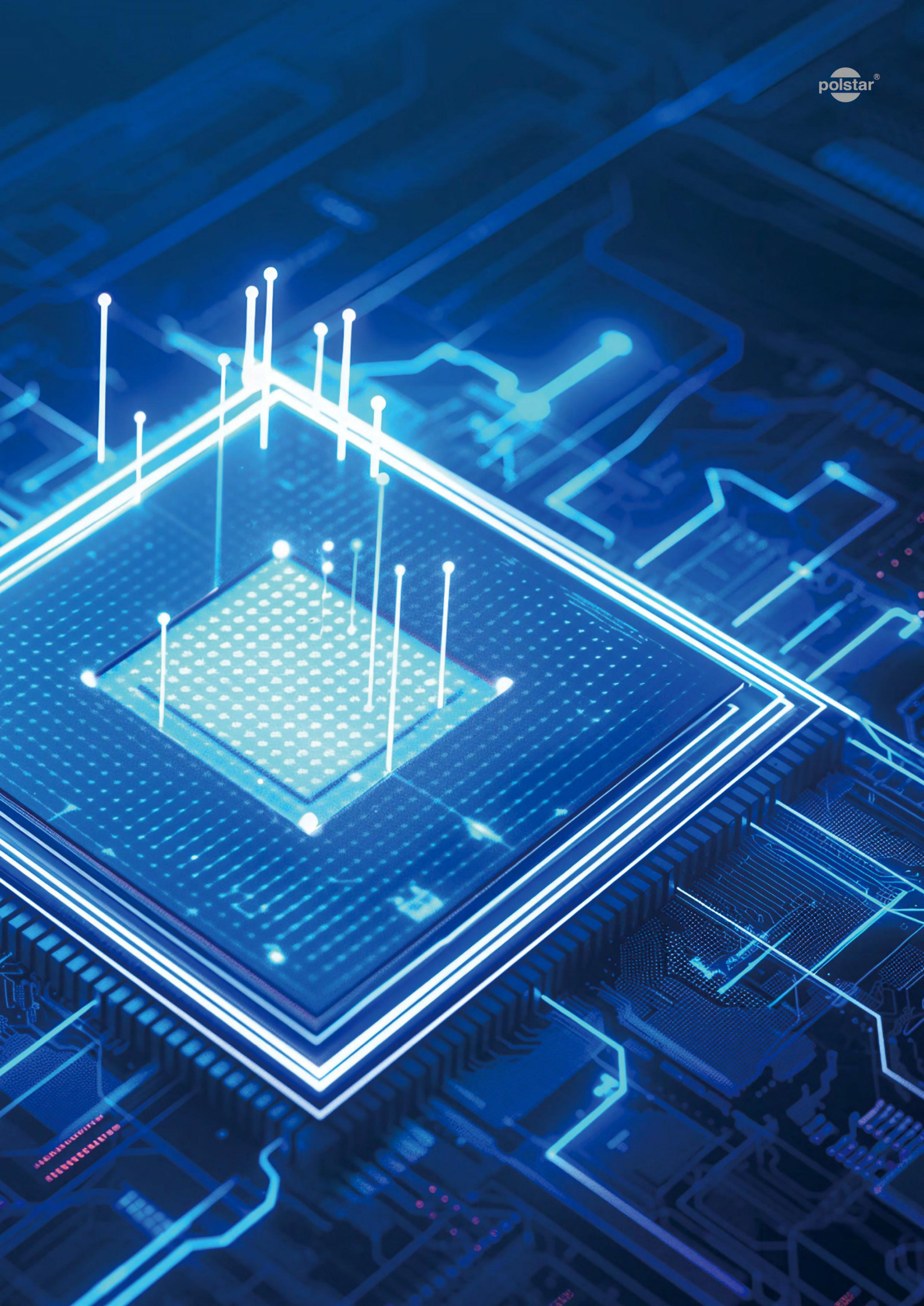
CLEANROOM & ESD



Contents

FABRICS & GARMENTS	04-29
FOOTWEAR	30-43
GLOVES	44-56
MATS & TILES	57-67
CLEAN PRODUCTS	68-81
STATIONERY	82-97
WIPERS	98-103
PACKAGING BAGS & FILM	104-111
WALLS & PARTITIONS	112-121
TAPES	122-131
EQUIPMENT & TOOLS	132-174
HANDLING & STORAGE	175-183
GROUNDINGS	184-189
DISPOSABLE	190-195
WIRE SHELVES & UTILITY CARTS	196-201
SMT PRODUCTS	202-204
COMPOUND & SHEET	205-207
FILTER	208-210




polstar®



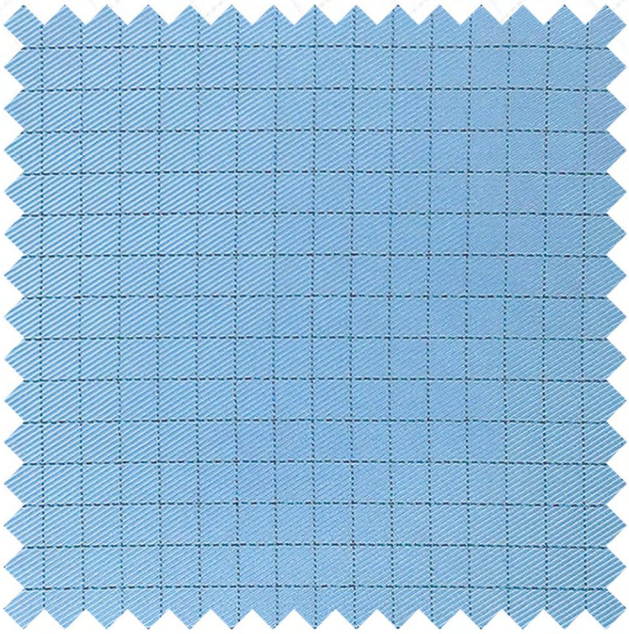
4 types of ESD Warp
Knitted Fabrics

Cleanroom & ESD

Fabrics & Garments

Recycled Cleanroom Fabric New

Recycled Cleanroom Fabric supports sustainable development goals through recycling and reuse of raw materials for sustainable consumption. The cleanroom fabrics and garments are engineered to meet the highest industry standards while ensuring a greener future. The fabrics are made with recycled multi-fi lament polyester yarn off ering excellent barrier performance.
The high-density construction provides enhanced particle filtration efficiency for critical applications in pharmaceutical, medical, biotechnology, semiconductor, and high-tech industries. The sustainable and reliable fabrics maintain superior contamination control while supporting environmental responsibility initiatives. The products demonstrate commitment to both performance excellence and environmental stewardship in manufacturing operations.



MDF-307R (M02F-036) offers excellent barrier performance with high density, made with recycled multi-filament polyester yarn, providing enhanced particle filtration efficiency. It is designed for use in cleanroom environments in the pharmaceutical, medical, biotechnology, semiconductor, and high-tech industries.

Descriptions

- Composition: 98% Polyester yarn (35% rPET), 2% Conductive carbon yarn
- Yarn count: PFY 75D x PFY 75D
- Density: 210 x 120 threads/inch
- Weave: 2/3 twill (4 mm Grid)
- Width: 58"/60"
- Weight: 115 gr/m^2



MDF-199UTR (M12F-009) is made of recycled polyester microdenieryarn and high-multi polyester textured yarn, offering a soft hand feel with added bulk, stretch, and elasticity. It undergoes a sand washing process to further enhance softness by optimizing the fiber structure, making it ideal for undergarments and scrubs while supporting sustainability.

Descriptions

- Composition: 99% Polyester yarn (65% rPET), 1% Conductive carbon yarn
- Yarn count: PHY 75D × PMY 150D
- Density: 105 × 84 threads/inch
- Weave: Taffeta (5 mm Weft Stripe)
- Width: 58"/60"
- Weight: 95 gr/m^2

Cleanroom & ESD Fabrics

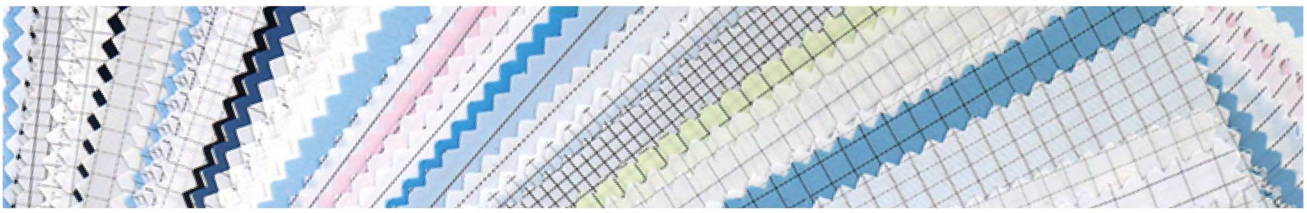
Polstar® ESD / Cleanroom Fabrics are primarily composed of high multi-filament polyester and carbon filament yarn to insure maximum protection against particle contamination and ElectroStatic Discharge (ESD). The Polstar fabrics did not neglect to consider the salient concerns of the workers including air permeability, wearability and durability.

Features

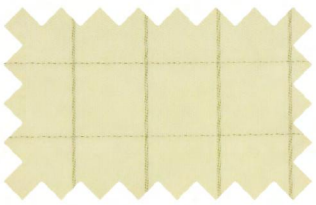
- Over 80 different fabrics
- Immediate delivery from our stock
- Strict quality control from our profound knowledge and wide experience
- Continuous development to meet customer's new requirement
- Additional treatments, such as silicon free, Teflon and antimicrobial are available.

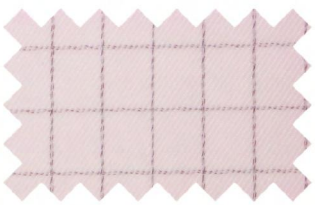
Applications

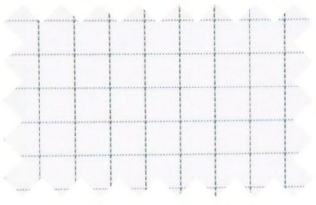
- Electronic and semiconductor Industries
- Medical and Pharmaceutical Industries
- Food Industry
- Automotive Industry
- Aerospace Industry and many others

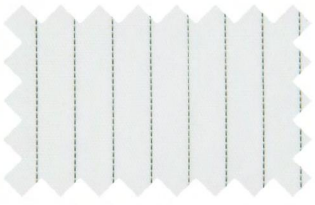


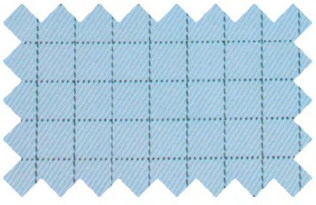
Lint Free Static Control Fabric

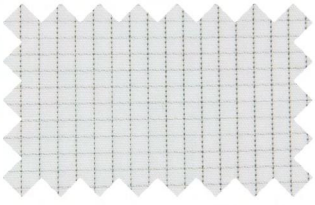

M01F-001 (MDF-140)


M01F-002 (MDF-145)

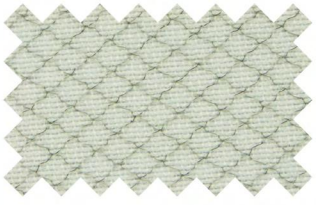

M01F-003 (MDF-160)

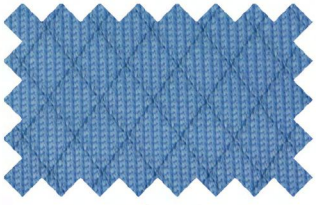

M01F-007 (MDF-170)


M01F-016 (MDF-502)

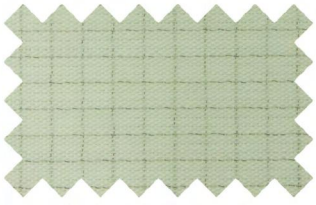

M01F-005 (MDF-167)

Conductive Fabric


M03F-001 (MDF-150)


M03F-002 (MDF-152)

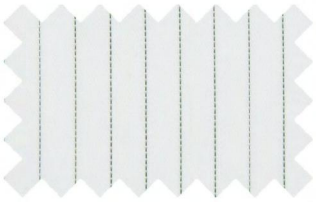

M03F-003 (MDF-153)

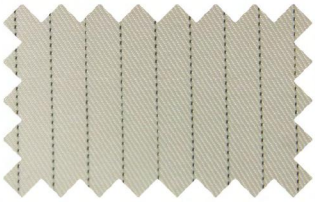

M03F-005 (MDF-156C)

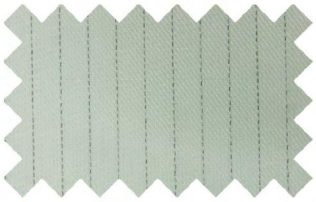

M03F-004 (MDF-155)

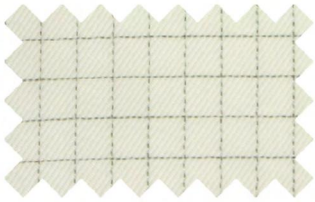

M15F-016 (MDF-286)

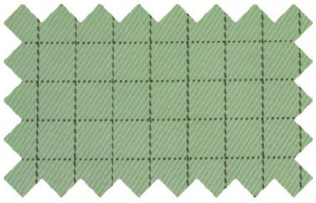
Sterilization Compatible Cleanroom Fabric

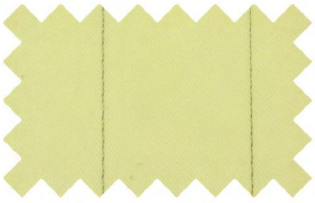

M02F-001 (MDF-110)

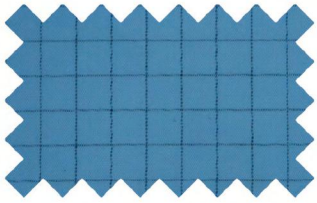

M02F-003 (MDF-120)

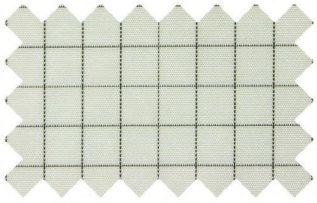

M02F-004 (MDF-125)

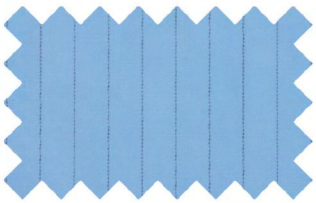

M02F-005 (MDF-127)

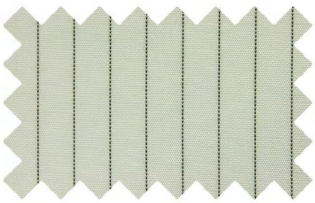

M02F-006 (MDF-130)

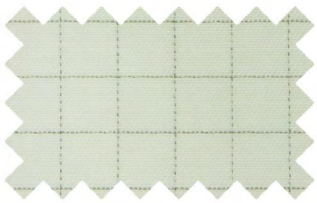

M02F-008 (MDF-190)

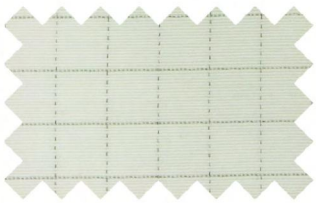

M02F-010 (MDF-210)

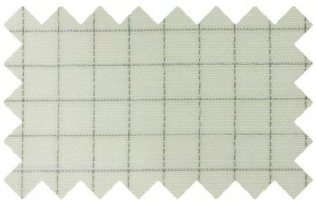

M02F-011 (MDF-211)

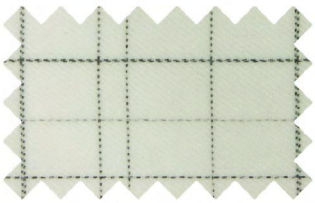

M02F-012 (MDF-220)


M02F-013 (MDF-221)

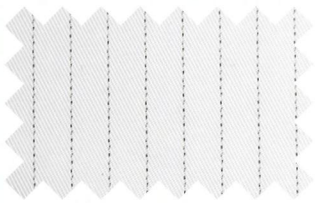

M02F-015 (MDF-146)

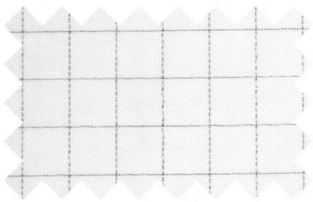

M02F-035 (MDF-149)

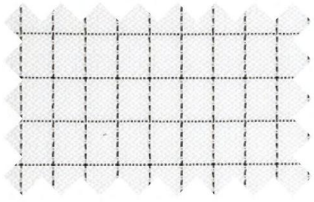

M02F-019 (MDF-165)

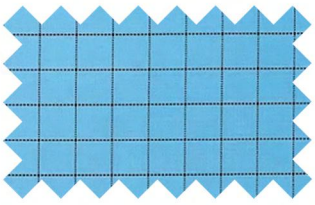

M02F-016 (MDF-305)

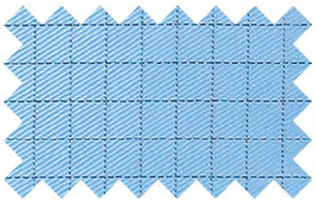

M02F-028 (MDF-304)


M02F-031 (MDF-316)


M02F-032 (MDF-164)


M02F-033 (MDF-319)


M02F-034 (MDF-336)


M02F-036 (MDF-307R)

Non-ESD Fabric


M17F-005 (MDF-215)


M12F-002 (MDF-199Micro)

M17F-015 (MDF-216)

M17F-007 (MDF-217)

ESD Knitted Fabric

4 types of ESD Warp Knitted Fabrics having low surface resistance range of 10e5~10e6 ohm are suitable for being used in ESD Category 3 garment. As they are in different patterns and density, customers can choose the most suitable fabric with wide color options for their needs.

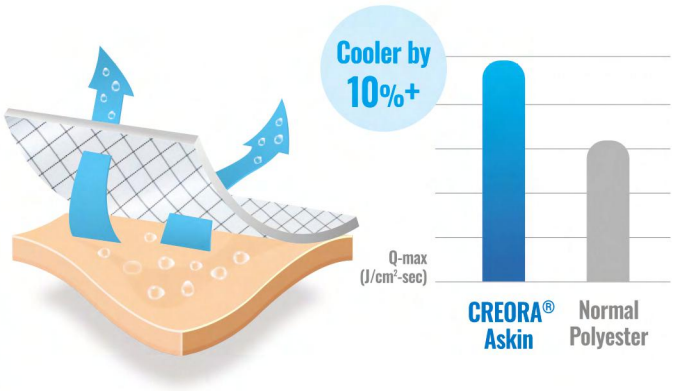


Item Code	M15F-016	M15F-013	M15F-014	M15F-015
Model (P/N)	MDF-286	MDF-283	MDF-284	MDF-285
Descriptions	6×3 mm herringbone fabric	5 mm diapered light fabric	3 mm diapered fabric	6 mm diapered fabric
Composition	Polyester yarn 87% Conductive carbon yarn 13%	Polyester yarn 91%, Conductive carbon yarn 9%	Polyester yarn 93% Conductive carbon yarn 7%	Polyester yarn 98% Conductive carbon yarn 2%
Conductive Yarn	RESISTAT® F902 F044	RESISTAT® F902 F044	RESISTAT® F902 F044	RESISTAT® F902 F044
Width	60"/61"	60"/61"	60"/61"	60"/61"
Weight	125 g/yard	118 g/yard	195 g/yard	196 g/yard
Surface Resistance	10e5 ~ 10e6 ohm	10e5 ~ 10e6 ohm	10e5 ~ 10e6 ohm	10e5 ~ 10e6 ohm

CREORA® Askin Cleanroom Fabric

The CREORA® Askin is the brand name of functional cool touch yarn developed by Hyosung TNC, one of the leading textile companies, specialized in developing various synthetic fiber in Korea. It is specially-engineered polyester fiber to improve cooling compared to natural fiber.





Descriptions

- Woven fabric with CREORA® Askin Polyester filament yarn and Kanebo Belltron® B31 conductive yarn
- Composition: Polyester filament yarn 98% & ECF 2%
- Weave: Taffeta (5 mm grid)
- Width: 58"/60"
- Weight: 85 g/sqmt

Features

- Lint-free
- Static dissipative (S/R: 10e7 ohm)
- UV Protection
- Smart Cool / Odor Removing
- Superior Sweat-absorbing property/fast drying function
- Better opacity
- Long lasting Freshness
- Gamma compatible and autoclavable

CSM Rubber Sheet for Soles



VIDEO

The CSM (Chlorosulfonated polyethylene) rubber sheet reinforced with high tenacity polyester fabric is a kind of a very particular material for the bottom soles of cleanroom overshoes or the webbing material on the overshoes. Coming in a sheet form, it can be applied to the various shapes and the sizes of the soles according to each customer's need, unlike many existing ready-made soles.

Features

- Excellent chemical resistance
- Anti-slip
- Bendable at a low temperature (-45°F)
- Strong resistance to abrasion
- Autoclavable (withstand up to 120°C)
- Gamma-ray stable at min. 737 kGy/max. 760.8 kGy
- Antistatic finish (10e10 ~ 10e11 ohm)





Item Code	M20F-001
Packing	30 yds/roll
Constructions	 Polyester fabric (front) CSM Rubber (back)

Test	Warp	Weft	Unit	Test Method
Color	Light Grey			Visual
Width (trimmed)	56		inch	ASTM D 751-19
Total Weight	1,010.8 (23.8) ±5%		g/m² (oz/yd²)	
Thickness	0.87 ± 0.10 mm		mm	
Bursting Strength	Above 1,050		kPa	
Tearing Strength	80 (18.0)	57 (12.8)	N (lbf)	FS 191A-5134 : 1978
Breaking Strength	2,092.7 (470.5)	1,463.1 (328.9)	N (lbf)	ASTM D 751-19 GRAB test method
Elongation	50.4	53.5	%	
Adhesion Strength	157.4 (30.3)		N/2.54 cm (lbf/inch)	FS 191A 5970 : 1978
Abrasion Resistance	1,066		cycles	ASTM D 3389-21







Cleanroom & ESD Garments

Cleanroom/ESD Garment is used in the place where proper protection against particle contamination and Electrostatic Discharge is required. We can supply you with this garment as well as the fabric.
We have various styles of garments such as Coverall, Gown, Lab Coat, T-shirt, etc. in our range.

Features

- Produced on your required fabric and design
- Produced by skilled workers with wide experience
- Produced with high quality fabric and sewing accessories
- Considering air permeability, comfortability, wearability and durability
- Strict quality control from fabric to finished garment
- Small quantities also can be supplied

Cleanroom Coverall



Neck Type



Mandarin (China) Collar

Closure Type



Concealed Zip Closure



Cuff Type



Knitted Cuff



Snap Button



Elastic Band

Cleanroom Hood

The Hood is required in Cleanroom together with Cleanroom garments to block particles generated from worker's head and neck. Customized fabrics and designs are available on request.



M11F-010



M11F-011

Cleanroom Gown



Neck Type



Mandarin (China) Collar

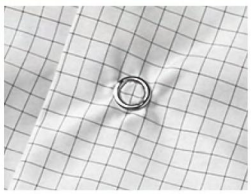


Open Collar

Closure Type



Concealed Zip Closure



Exposed Stud front

Cuff Type



Knitted Cuff



Snap Button

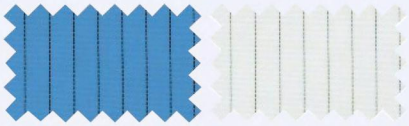


Elastic Band

Company logo printing is available.



Cleanroom & ESD Apparel (Ready-made)

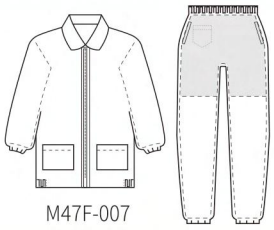


· **Fabric**: 5 mm stripe, Polyester 99%, Carbon 1% · **Color**: Sky Blue, White

· ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1) · EN 61340-5-1 · **Typical value:** < 1.0 x 10^{11}ohm (Static Control Garment)

ESD Jacket and Pants

M40F-003 (Set)



M47F-007 M48F-004

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	66.5	68
L (Back) (±1)	62	64.5	67	70	72	74	78
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±0.1)	42.5	45	47.5	50	51.5	52.5	53.5
L (Pants) (±1.5)	96.5	98.5	102	103.5	105	108	111.5
Waist (Pants) (±1)	44.5	46.5	48.5	50	52	54	56
Hips	50.5	53	55	56	58.5	60	62
Thighs	34	36	36.5	37.5	39	39.5	41

ESD Safari

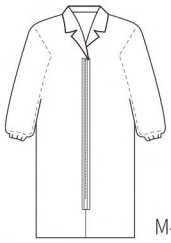


M41F-007

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	65.5	68
L (Back) (±1)	68.5	70	72	75	77.5	80.5	82.5
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±1)	42.5	45	47.5	50	51.5	52.5	53.5

ESD Gown

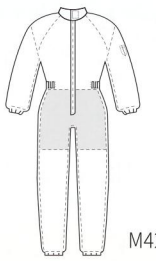


M41F-006

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	65.5	68
L (Back) (±1)	96.5	98	101.5	104.5	108.5	112.5	115
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±1)	42.5	45	47.5	50	51.5	52.5	53.5

Cleanroom Coverall

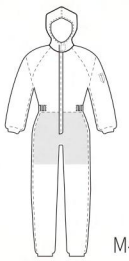


M42F-003

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	53	55.5	58.5	61	63.5	66	68.5
L (Back) (±1.5)	156	160	162.5	166.5	169	176	179
L (Sleeves) (±1.5)	80	83	84.5	87.5	89.5	91	92

Cleanroom Coverall with Hood



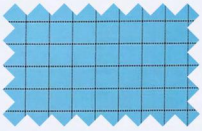
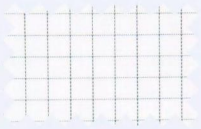
M43F-004

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	53	55.5	58.5	61	63.5	66	68.5
L (Back) (±1.5)	156	160	162.5	166.5	169	176	179
L (Sleeves) (±1.5)	80	83	84.5	87.5	89.5	91	92



Cleanroom & ESD Apparel (Ready-made)

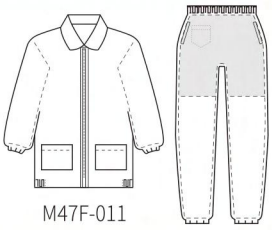



· **Fabric**: 5 mm grid, Polyester 98%, Carbon 2% · **Color**: Sky Blue, White

· ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1) · EN 61340-5-1 · **Typical value:** < 1.0 x 10^9ohm (Groundable Static Control Garment System)

ESD Jacket and Pants

M40F-004 (Set)

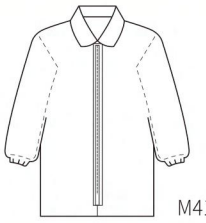


M47F-011 M48F-006

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	66.5	68
L (Back) (±1)	62	64.5	67	70	72	74	78
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±0.1)	42.5	45	47.5	50	51.5	52.5	53.5
L (Pants) (±1.5)	96.5	98.5	102	103.5	105	108	111.5
Waist (Pants) (±1)	44.5	46.5	48.5	50	52	54	56
Hips	50.5	53	55	56	58.5	60	62
Thighs	34	36	36.5	37.5	39	39.5	41

ESD Safari

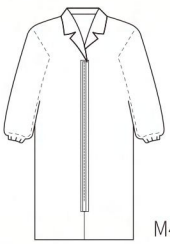


M41F-010

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	65.5	68
L (Back) (±1)	68.5	70	72	75	77.5	80.5	82.5
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±1)	42.5	45	47.5	50	51.5	52.5	53.5

ESD Gown



M41F-009

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	52	55	57.5	60.5	62.5	65.5	68
L (Back) (±1)	96.5	98	101.5	104.5	108.5	112.5	115
L (Sleeves) (±1)	52.5	54.5	56	58.5	60	62	64
W (Shoulder) (±1)	42.5	45	47.5	50	51.5	52.5	53.5

Cleanroom Coverall

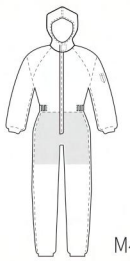


M42F-004

(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	53	55.5	58.5	61	63.5	66	68.5
L (Back) (±1.5)	156	160	162.5	166.5	169	176	179
L (Sleeves) (±1.5)	80	83	84.5	87.5	89.5	91	92

Cleanroom Coverall with Hood



M43F-005

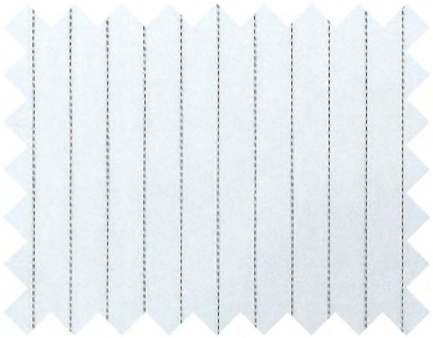
(cm)

Descriptions	S	M	L	XL	2XL	3XL	4XL
Chest (±1.5)	53	55.5	58.5	61	63.5	66	68.5
L (Back) (±1.5)	156	160	162.5	166.5	169	176	179
L (Sleeves) (±1.5)	80	83	84.5	87.5	89.5	91	92



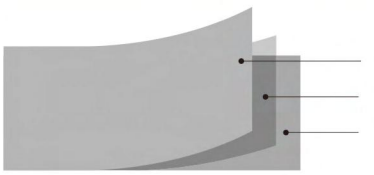
ESD Chemical Resistant Fabric

ESD Chemical Resistant Fabric (ECRF) is ideal for the environment where chemical-related products are used and handled. There is special PU coating on the fabric and the thin and chemical-proof film is laminated on the top of the coated fabric to achieve maximum chemical resistant properties. The **ECRF** can effectively protect workers from potential risks associated with exposure to dangerous and harmful chemicals and provides a particle and ESD-safe working environment. We can create a range of finished products with **ECRF**, such as ESD Arm Sleeves, ESD Aprons, ESD Open-back Coats and more.



M07F-004 (MDF-245)

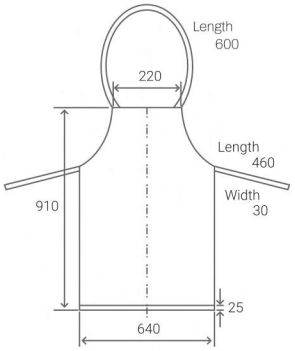
Technical Specifications

Test	Warp	Weft	Unit / Result	Test Method
Yarn	PFY 75D	PFY 100D	Denier	
ECF	F-901 (BASF)		-	
Density	192	92	Threads/Inch	
Weave	1/2 twill (5 mm stripe)			
Dimension	58" / 60"		inch × yd	
Weight	166		GR/SQMT	
Thickness	0.18 ± 0.01		mm	
Friction Static Voltage (Back)	< 100		Volts	JIS-L1094B
Surface Resistance	10e10 ~ 10e11 (front)		Ω	ASTM-D257
	10e6 ~ 10e7 (back)			
Index of Chemical Penetration	1. Sulfuric Acid (50%)	0%	Class 6	ISO 6530-2005
	2. Hydrochloric acid (36%)	0%	Class 6	
	3. Nitric Acid (50%)	0%	Class 6	
	4. Formic Acid (50%)	0%	Class 6	
	5. Hydrofluoric Acid (40%)	0%	Class 6	
	6. Sodium Hydroxide (40%)	0%	Class 6	
	7. Hydrogen Peroxide (30%)	0%	Class 6	
	8. Toluene (99.5%)	0%	Class 6	
	9. Acetone (99.5%)	0%	Class 6	
	10. Methanol (99.5%)	0%	Class 6	
	11. Hexane (95%)	0%	Class 6	
Constructions	 Chemical Resistant Film PU Coating Cleanroom Fabric (MDF-170)			

Class 6 (≤ 1%)
Class 5 (≤ 5%)
Class 4 (≤ 10%)
Class 3 (≤ 20%)
Class 2 (≤ 50%)
Class 1 (> 50%)

ESD Chemical Resistant Apron





Item Code M25F-001
Fabric MDF-245
SR 10e10 ~ 10e11 ohm (front), 10e6 ~ 10e7 ohm (back)
Size 640 mm(W)×910 mm(L)

ESD Chemical Resistant Sleeves



Item Code M24F-001
Fabric MDF-245
SR 10e10 ~ 10e11 ohm (front), 10e6 ~ 10e7 ohm (back)
Size 200 mm(W)×400 mm(L)

ESD Chemical Open-back Coat

Front



Back

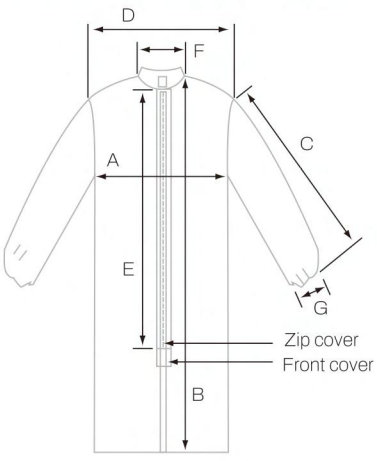


Item Code M26F-001
Fabric MDF-245
SR (front) 10e10 ~ 10e11 ohm
(back) 10e6 ~ 10e7 ohm

(cm)

Size	Chest	Length	Sleeves	Shoulder
S	57	107	61	42.5
M	60	110	62	45
L	62.5	113	63	47.5
XL	65	116	64	50
2XL	67.5	119	65	52.5
3XL	70	122	66	55

ESD Chemical Resistant Gown



Item Code M30F-001
Fabric MDF-245
SR (front) 10e10 ~ 10e11 ohm
(back) 10e6 ~ 10e7 ohm

(cm)

Size	A	B	C	D	E	F	G
S	51.5	101	57.5	39.5	53	50	19
M	54	104	58	42	53	50	19
L	56.5	107	59.5	44.5	53	50	19
XL	59	110	61.5	47	53	50	19
2XL	61.5	113	62.5	49.5	53	50	20
3XL	64	116	62.5	52	53	52	20

ESD Coolon Fabric

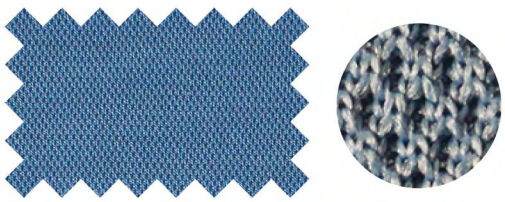
Experience Innovative Cool & Enjoy More Comfortable Life!

COOLON is a powerful performance fiber with excellent moisture dispersion creating a natural and refreshing feel. With the Cool Fiber Technology of Kolon, we have developed our own ESD Coolon Fabric with a Memory in 10 mm conductive filament stripe (MDF-320) and a Pique in 7 mm conductive filament stripe (MDF-250). The Interlocking Design, also known as Double Knitted Pattern, which is the umbrella term of Memory, Pique, etc., has different texture on both sides. The inside surface to be touched on the skin feels soft, like cotton while the surface facing outside has rough and wider in cross-section so that sweat from your skin will be evaporated and dried quickly by exposing wider surface of the fabric to the air. Our ESD Coolon Fabric is one of the best choices for making Casual wear, Shirts and Sportswear for the people who handle any ESD sensitive materials or devices in EPA (ESD Protected Area).

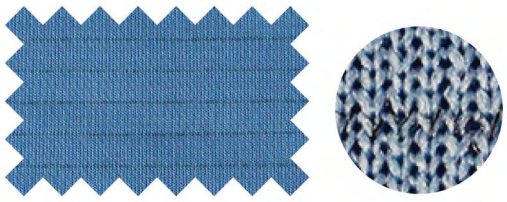


- Excellent ESD properties
- Good resistance to fading, shrinking and wrinkling.
- Improved breathability
- Quick moisture absorption
- Fast drying
- Dry and soft touch
- No particle generation
- Unique brightness
- Excellent durability
- Easy to care and handling
- All-weather fabric

Outer surface

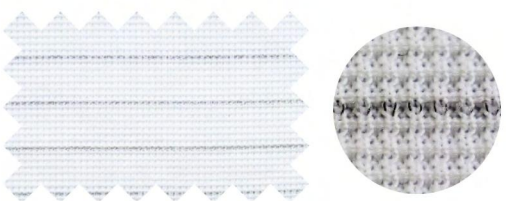


Inner surface

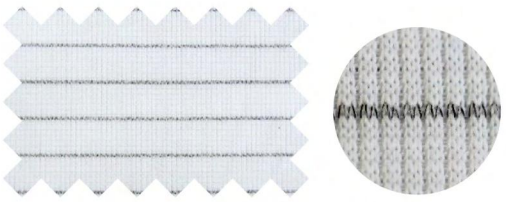


M05F-001 (MDF-250)

Outer surface



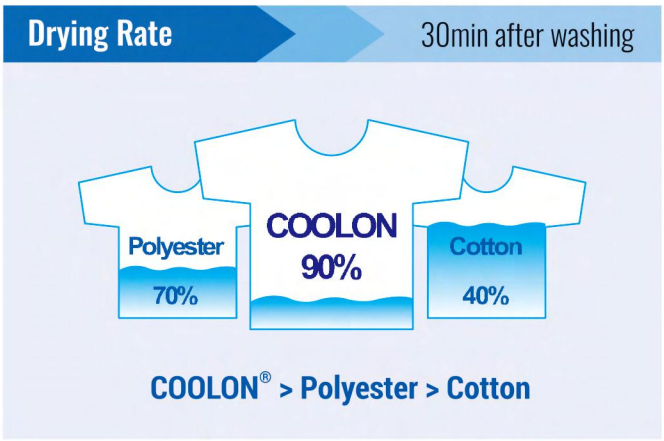
Inner surface

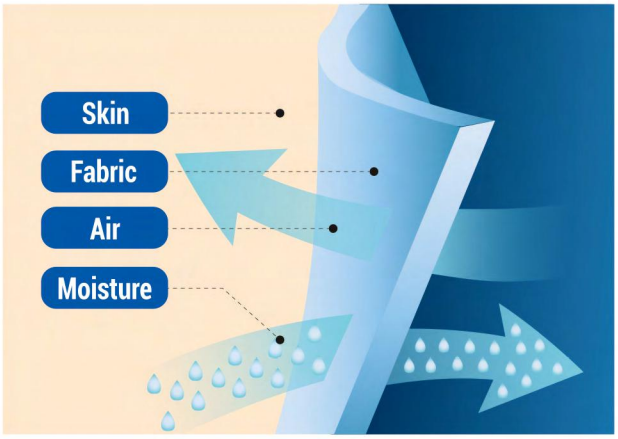


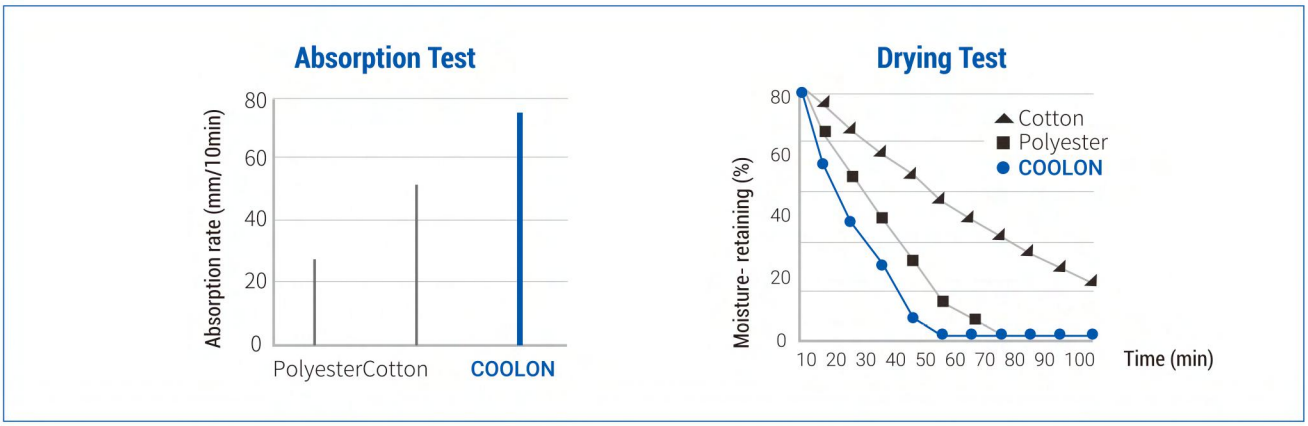
M05F-002 (MDF-320)

What is COOLON® ?

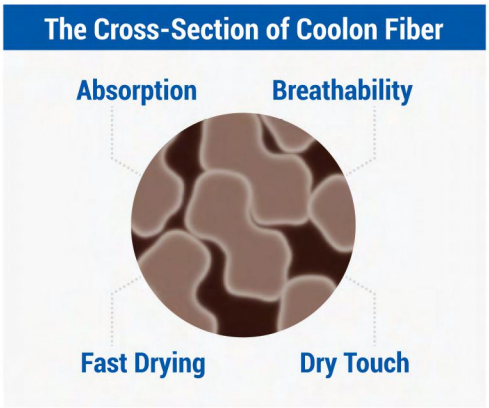
COOLON is the brand name of functional moisture-wicking fiber developed by Kolon, which is one of the leading textile companies specialized in developing various synthetic fiber in Korea. It is specially-engineered polyester fiber to improve "breathability" compared to natural fiber like cotton.

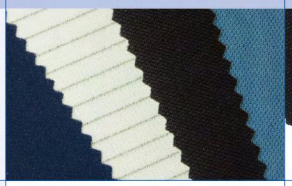






The Coolon fiber is not round, but slightly oblong in cross-section, like a peanut hull. It means that the surface of Coolon fiber in cross-section is wider than that of other fiber. This unique shape of the fiber creates capillary action that absorbs moisture through the core and out to the wider area on the surface of the fiber that increases evaporation.



Item Code	M05F-001	M05F-002
Model	MDF-250	MDF-320
Color		
Dimension	70"/72"	58"/60"
Weight	148 g/sqmt	205 g/sqmt
Compositions	Polyester (Coolon) 98%, Conductive Yarn 2%	
Surface Resistance	10e6 ~ 10e7 ohm	10e5 ~ 10e6 ohm

ESD Coolon Shirt

ESD Coolon Shirt is made of 100% polyester with embedded ECF (Electro-Conductive Fiber) in stripe pattern. This special fabric, made in Korea, is under well controlled QC, and generates significantly low lint compared to other normal fabric. It is comfortable thanks to quick sweat evaporation and good ventilation, and it has extra durability, light weight, etc. The touch is like DuPont Coolmax fabric, which is the material of popular sports wear. ESD Coolon shirt is suitable for the people working in hot and high humidity environment, and is also a good choice for the workers handling ESD sensitive products by virtue of its good ESD properties.



Item Code M06F-003-WH
Model MDF-250CL



Item Code M06F-003-RB
Model MDF-250CL

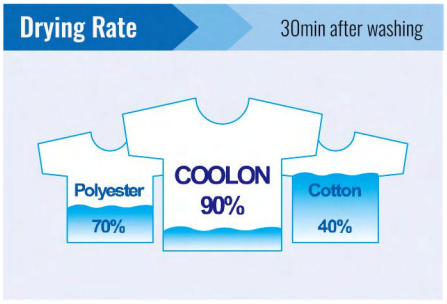


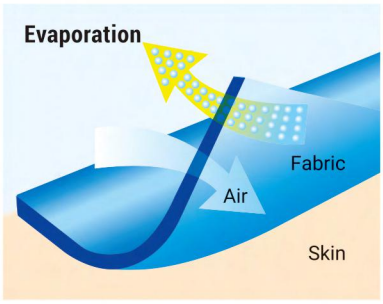
Item Code M06F-004-NA
Model MDF-250RL

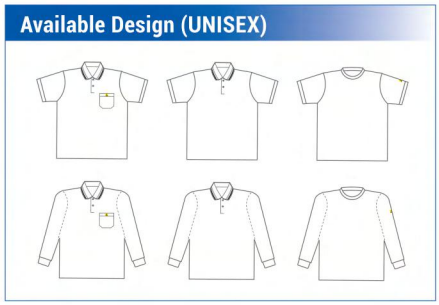


Item Code M06F-002-BK
Model MDF-250RS

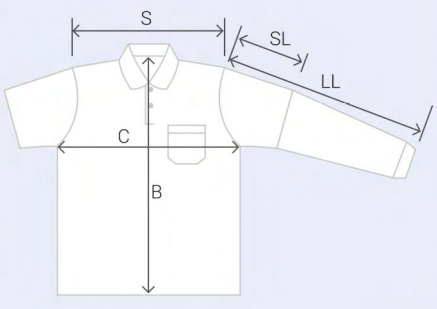
Model	Type	Fabric	Color	Composition	Weight	Option
MDF-250CS	Shirt with collar and short sleeves	M05F-001 (MDF-250)	White Royal Blue Navy Black	98% of Polyester Coolon fabric and 2% of ECF yarn	148 g / sqmt	· ESD symbol · Breast pocket
MDF-250RS	Shirt with round neck and short sleeves					
MDF-250CL	Shirt with collar and long sleeves					
MDF-250RL	Shirt with round neck and long sleeves					







Mark	Chest (C)	Back (B)	Shoulder(S)	Sleeve	
				Short (SL)	Long (LL)
XS	19.5	27	18.5	8	23.5
S	20.5	28	19	8.5	24
M	21.5	28.5	19.5	8.5	24
L	22.5	29	20	9	24.5
XL	23.5	30	21	9.5	25
2XL	24.5	31	21.5	10	25.5
3XL	25.5	32	22.5	10.5	26
4XL	26.5	33	23.5	10.5	26.5
5XL	27.5	33.8	24.5	11	26.5
6XL	28.5	34.4	25.5	11	27



(inch)

· ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1) · EN 61340-5-1 · **Typical value:** < 1.0 x 10^{11} ohm (Static Control Garment) *Allowance: ±5%

EPA Coolon Shirt



Polo Shirt
M32F-007



Round Shirt
M32F-003



V-neck Shirt
M32F-002

New Design

Women's



Polo Shirt



Round Shirt



V-neck Shirt

Men's



Polo Shirt



Round Shirt



V-neck Shirt

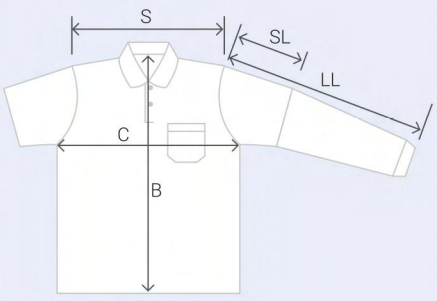
Descriptions

- Designed for using in EPA area with excellent ESD properties.
- No static, quickly disperse the sweat.
- Soft and dry touch like cotton
- Tailored in UNISEX Design.
- Colored conductive sewing thread
- Color: White, Royal Blue, Black
- Fabric: M05F-002 (MDF-320)

Features

- ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)
- Groundable Static Control Garment System (EN 61340-5-1)
- Typical value: < 1.0 x 10^9 ohm

Item / Gender	Size	Chest (C)	Back (B)	Shoulder (S)	Sleeve		
					Short (SL)	Long (LL)	
						Polo	Round V-neck
Women's	3XS	46.5	60.7	39.3	20.5	60.1	
	2XS	49.0	62.0	40.5	21.5	61.1	
	XS	51.5	63.5	41.8	22.5	62.1	
	S	54.0	65.0	43.0	23.5	63.1	
	M	56.5	66.5	44.2	24.5	64.1	
Men's	S	53.0	66.0	48.0	21.7	67.1	62.6
	M	55.5	68.0	49.2	21.7	67.6	62.6
	L	58.0	70.0	50.4	23.0	69.3	63.8
	XL	60.5	72.0	51.6	24.2	71.2	65.2
	2XL	63.0	74.0	52.8	25.5	73.0	66.5
	3XL	65.5	76.0	54.0	26.7	74.8	67.8



(cm)

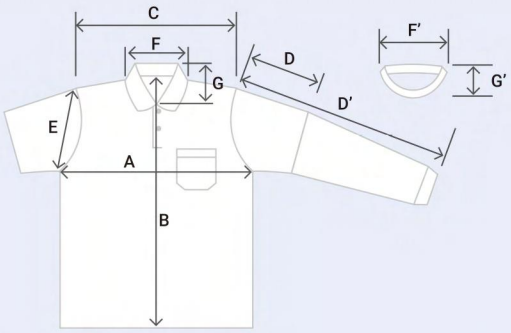
*Allowance: ±5%

ESD Cotton Shirt



M21F-006

- **Composition**: 96% of Cotton and 4% of ECF
- **Weight**: 185 g/sqmt
- **ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)**
- **EN 61340-5-1**
- **Typical value:** < 1.0 x 10^{11}ohm (Static Control Garment)



(cm)

Size	Descriptions	S	M	L	XL	2XL	3XL	4XL	5XL
A	Chest	49	51	53.5	56	58.5	61.5	64.5	67.5
B	Height	70	72	74	77	79	81	83	85
C	Overarm	41.5	43	45	47	49	51	53	55
D	Sleeve	24	25	26	27	28	30	31	32
D'	Sleeve	57	58	59	60	61	62	63	64
E	Sleeve/W	21	22	24	26	27.5	29	30	31
F	Neck	17	17	17	18	18	18	18	19
F'	Neck	18	18	19	19	20	20	21	21
G	Neck/H	9	9	9	10	10	10	10	10
G'	Neck/H	10	10	10	10.5	10.5	10.5	11	11

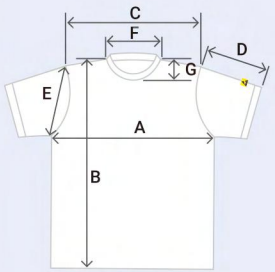
*Allowance: ±5%



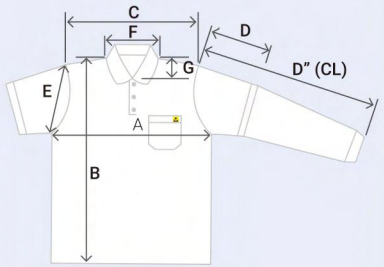
M21F-002

Model	Type
MDF-270CS	T-shirt with collar and short sleeves
MDF-270RS	T-shirt with round neck and short sleeves
MDF-270CL	T-shirt with collar and long sleeves
MDF-270RL	T-shirt with round neck and long sleeves

- **Composition:** 80% of Cotton, 16.4% of Polyester & 3.6% of ECF
- **Weight:** 172 g/sqmt
- **ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)**
- **EN 61340-5-1**
- **Typical value:** < 1.0 x 10^{11}ohm (Static Control Garment)



MDF-270RS



MDF-270CS / MDF-270CL

(cm)

Size	A	B	C	D	D"	E	F		G	
				RS/CS	CL		RS	CS/CL	RS	CS/CL
XS	47	63	41	22.5	57	21.5	18	17	9.5	9.6
S	49.5	65	42.5	23.5	57	22	18.5	17	9.8	9.6
M	52	67	44	24.5	58	23	19	17	10.1	9.6
L	54.5	69	45.5	24.5	60	24	19.5	18	10.4	10.3
XL	57	71	47	25.5	60	25	20	18	10.7	10.3
2XL	59.5	73	48	26.5	62	25.5	20.5	18	11	10.3
3XL	62	75	50	26.5	62	26	21	19	11.3	10.3
4XL	64.5	77	52	27.5	63	26.5	21	19	11.3	10.3
5XL	67	79	54	28.5	63	27	21	19	11.3	10.3

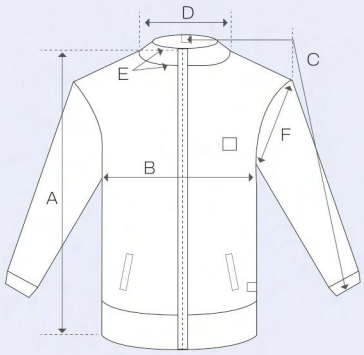
*Allowance: ±5%

ESD Cardigan



M21F-005

- **Composition:** 90% of Cotton, 8% of Polyester and 2% of ECF
- **Weight:** 300 g/sqmt
- **ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)**
- **EN 61340-5-1**
- **Typical value:** < 1.0 x 10^{11}ohm (Static Control Garment)



(cm)

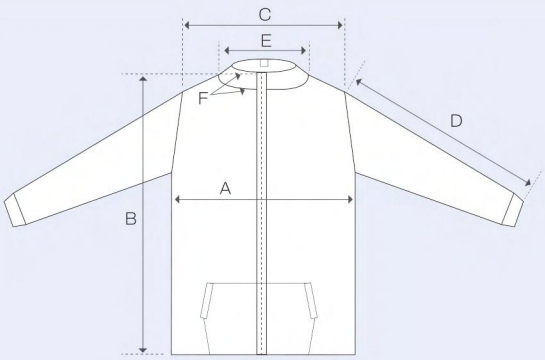
Size	Descriptions	XS	S	M	L	XL	2XL	3XL	4XL	5XL
A	Back	63	65	67	69	71	73	75	77	79
B	Chest	50	53	56	59	62	65	68	71	74
C	Sleeve	88	89.25	90.5	91.75	93	95.25	95.5	96.75	98
D	Back Neck	19	19.5	20	20.5	21	21.5	22	22.5	23
E	Depth of Neck	7.5	8	8.5	9	9.5	10	10.5	11	11.5
F	Sleeve at Widest	21.5	22.5	23.5	24.5	25.5	26.5	27.5	28.5	29.5

*Allowance: ±5%



M35F-001

- **Composition:** 91% of Polyester (Polar fleece) and 9% of ECF
- **Weave:** Terry
- **Weight:** 250 g/sqmt
- **ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)**
- **EN 61340-5-1**
- **Typical value:** < 1.0 x 10^{11}ohm (Static Control Garment)



(cm)

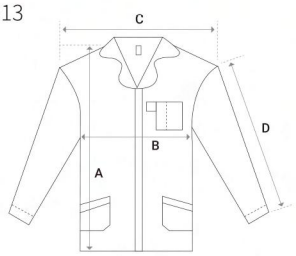
Size	Descriptions	XS	S	M	L	XL	2XL	3XL	4XL	5XL
A	Chest	53	54	55	57.5	60	62.5	64	65.5	67
B	Back	63.5	65	66.5	69	71.5	74	75.5	77	78.5
C	Shoulder	41	43	45	47	48.5	50	52	54	55
D	Arm	57	58	59	60	61	62	63	64	65
E	Back Neck	17	17	17	17	18	18	18	19	19
F	Depth of Neck	9	9	9	9	9	9	9	9	9

*Allowance: ±5%

ESD Light Gown



M04F-013



Descriptions

- Designed for using in EPA with excellent ESD properties.
- Light weight: 79 g/sqmt
- ESD logo and a pen slot on the pocket
- Grounding studs (Left & Right)
- Cuff snap buttons (Front & Right)
- Fabric: MDF-153U (90% Polyester & 10% Carbon)
- Made In Korea

Features

- ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)
- EN 61340-5-1
  Groundable Static Control Garment System
- Typical value: < 1.0×10^9 ohm

(cm)

Size	XS	S	M	L	XL	2XL	3XL
A	72	74	76	78	80	82	84
B	96	104	114	124	134	144	154
C	40	44	49	54	59	64	69
D	58.5	61	63.5	66	68.5	71	73.5

*Allowance: ±5%

ESD Lab Coat



M04F-002

Descriptions

- Hip length, shirt collar
- 3patch pocket & color combination
- Exposed Stud front
- Cuff snap button
- Fabric : MDF-150 (96% Polyester & 4% Carbon)
- Conductive sewing thread was used
- Made in Korea

Features

- ANSI/ESD S20.20-2021 (ANSI/ESD STM2.1)
- EN 61340-5-1
  Groundable Static Control Garment System
- Typical value: < 1.0×10^9 ohm

(cm)

Size	Chest	Sleeve	Center Back	Shoulder
XXS	101	46	66	47
XS	107	48	69	48
S	112	51	71	51
M	119	55	76	52
L	123	57	77	55
XL	131	58	80	58
2XL	135	60	83	61
3XL	140	63	86	63

*Allowance: ±5%

Cleanroom Underwear

VIDEO

Features

- Sand Wash treatment
- Soft touch and Lightweight
- Comfortable and Breathable
- Free from particle generation
- Pre-filtration of skin flakes generated from human body
- Autoclavable
- Gamma-ray, EtO sterilization Compatible
- ESD type (MDF-304, MDF-309, MDF-199UT) and Non-ESD type (MDF-199Micro)

Applications

- Worn underwear with laboratory coverall in Cleanroom
- Worn as an easywear in white gown at hospitals



Item Code	M46F-000	
Type	Long sleeve top	Short sleeve top
	Long pants	Short pants



M02F-028 (MDF-304) (3-8)



M02F-017 (MDF-309) (3-16)



M12F-001 (MDF-199UT) (3-20)



M12F-002 (MDF-199Micro) (5-4)

*Sample book No. 3-8, 3-16, 3-20, 5-4







Garment Accessories

Lint-free Sewing Thread



M13F-001



M13F-004



M13F-006

Product	Non-ESD polyester sewing thread	Conductive stainless steel yarn thread	Conductive carbon yarn thread
Item Code	M13F-001	M13F-004	M13F-006
Composition	Polyester 100%	Polyester 93%, Stainless 7%	Polyester 93%, Carbon 7%
Surface Resistance	-	10e3 ohm	10e6 ohm
Thickness	300 denier (2 ply)	466 denier (3 ply)	322 denier (3 ply)
Color	White, Sky Blue, Navy Blue and Olive Green	Grey	Grey
Packing	245 g/cone, 7350 m/cone 10 cones/box, 10 boxes/carton	245 g/cone, 4700 m/cone 10 cones/box, 10 boxes/carton	143 g/cone, 4004 m/cone 10 cones/box, 10 boxes/carton

Conductive Lint-free Ribbon



M14F-001



M14F-002

Item Code	M14F-001	M14F-002
Surface Resistance	10e6 ohm	
Color	Grey	
Width	13 mm	3.2 mm
Composition	Polyester yarn 93%, Carbon yarn 7%	
Packing	100 yards/bundle, 10 bundles/box	500 yards/bobbin, 10 bobbins/box

Conductive Spiral Cuff Fabric



Item Code	M15F-009
Yarn (Denier)	DTY 150D
ECF (BASF)	Silver Plated Yarn (39/10 dtex)
Density (Threads/Inch)	22W × 29C
Weave	1×1 RIB
Dimension (cm×yd)	6 pcs (3 pairs)/yd × 100 yds
Weight (g/liner yd)	54
Surface Resistance (ohm)	10e3 ~ 10e4

Conductive Knitted Cuff Fabric



Item Code	M15F-001	M15F-012
Yarn (Denier)	DTY 300D	
ECF (BASF)	F-901 (BASF)	
Density (Threads/Inch)	18W×32C	
Weave	1×1 RIB	
Dimension (cm×yd)	8 Tube × 100	10 Tube × 100
Weight (g/liner yd)	54	67.5
Surface Resistance (ohm)	10e6 ~ 10e7	
Color	Grey	

Non-ESD Knitted Cuff Fabric



Item Code	M17F-004-NA	M17F-004-WH
Yarn (Denier)	DTY 300D	
ECF (BASF)	-	
Density (Threads/Inch)	22W×28C	
Weave	1×1 RIB	
Dimension (cm×yd)	8 Tube × 100	
Weight (g/liner yd)	55	
Surface Resistance (ohm)	-	
Color	White, Navy	

Grosgrain Polyester Tape



Item Code	M31F-004
Size	15 mm (W) x 200 yards/roll
Applications	hang loop, snap button reinforcement

Non-ESD Polyester Fabric



Item Code	M17F-008 (MDF-219)
Applications	barcode patch

Standard Socks (Mid-calf length)

VIDEO

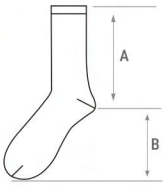


Item Code	M28F-001-color-size
Material	Polyester
Color	White (WH), other colors are available on request
Packing	1 pair/individual bag, 10 pairs/bag, 20 bags/carton
Size	S, M, L, XL

(cm)

Size	S	M	L	XL
A	23	24	25	25
B	25	26	27	28

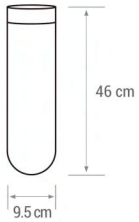
*Allowance: ±10%



Tube Socks with no heel



Item Code	M28F-002-color
Material	Polyester
Color	White (WH), Pink (PK), etc.
Packing	1 pair/bag
Size	9.5 cm(W) × 46 cm(L) with 5.3 cm cuff



*Allowance: ±10%

Disposable Socks

Item Code	M28F-005-WH	M28F-006-WH
Material	Polyester + Nylon	Polyester
Color	White	
Packing	1 pair/bag, 20 pairs/double bag, 20 double bags/ctn	
Size	9 cm(W)×29.5 cm(L)	

*Allowance: ±10%



Features

- Cleanroom compatible
- Autoclavable
- EU GMP Annex 1, Section 7.14
- Unisex
- Mid-calf length (M28F-001)
- One-size-fits-all (M28F-002, 005, 006)
- Tube socks with no heel (M28F-002, 005, 006)
- Reusable (M28F-001, 002)
- Single use only (M28F-005, 006)

ESD Socks

ESD Socks will be a good choice for any employees working in the manufacturing process of electronic components where static control is required.

Item Code	M27F-001-GR-size
Materials	Cotton 81%, Spandex 16%, Carbon yarn 3%
Surface Resistance	10e5 ~ 10e7 ohm
Size	M, L, XL
Color	Light Grey
Packing	1 prs/Bag



Features

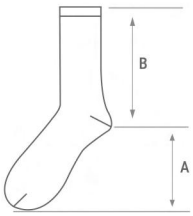
- Good ESD properties
- Low particles generation

Applications

- Assembly work in electronic production and semiconductors

(cm)

Size	M	L	XL
A	20	23	25
B	13	14	15



Test Results

(ohm)

Testers	A1	A2	B1	B2
SRM200	5×10e6	6×10e6	5×10e6	5×10e6
METRISO 3000	4.3×10e6	1×10e6	4.25×10e6	1.95×10e6

Test Conditions

- Temperature: 18°C
- RH: 35~37%
- Testers: SRM200 / METRISO 3000

Test Areas



METRISO 3000



SRM200



ESD Tool Vest





M36F-001

Descriptions

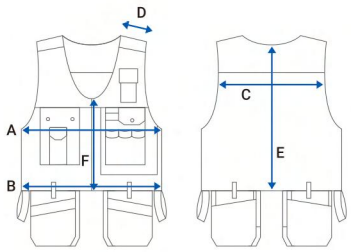
- **Composition**: 62% of Polyester, 34% of Cotton & 4% of ECF
- **Weight**: 208 g/sqmt
- **Typical point to point resistance**: 10e6 ~ 10e7
- Numerous tool pockets & holders











(cm)

Size	Descriptions	42	44	46	48	50	52	54	56	58	60	62	64	66
A	1/2 chest	47.0	49.0	51.0	53.0	55.0	57.0	59.0	61.0	63.0	65.0	67.0	69.0	71.0
B	1/2 bottom	46.0	48.0	50.0	52.0	54.0	56.0	58.0	60.0	62.0	64.0	66.0	68.0	70.0
C	Back width	34.0	35.0	36.0	37.0	38.0	39.0	40.0	41.0	42.0	43.0	44.0	45.0	46.0
D	Shoulder	9.8	10.1	10.4	10.7	11.0	11.3	11.5	11.9	12.2	12.5	12.8	13.1	13.4
E	Back length	54.0	55.0	56.0	57.0	58.0	59.0	60.0	61.0	62.0	63.0	64.0	65.0	65.0
F	Zipper length	32.0	32.0	32.0	34.0	34.0	34.0	34.0	36.0	36.0	36.0	38.0	38.0	38.0



MEC Fabric Collection

No.	Model	ECF	Weave	Width (inch)	Weight (g/sqmt.)
▼ **Lint Free Static Control Fabric**					
1-1	MDF-507	F-901 (BASF)	1/2 twill (3.5 mm stripe)	58"/60"	96
1-2	MDF-170	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	107
1-3	MDF-235	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	129
1-4	MDF-245	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	166
1-5	MDF-171	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	107
1-6	MDF-503	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	79
1-7	MDF-157	F-901 (BASF)	1/2 twill (5 mm stripe)	58"/60"	175
1-8	MDF-501	F-901 (BASF)	2/3 twill (5 mm stripe)	58"/60"	107
1-9	MDF-195	F-901 (BASF)	Taffeta (20 mm stripe)	58"/60"	83
1-10	MDF-167	F-901 (BASF)	1/2 twill (2.5 mm stripe)	58"/60"	109
1-11	MDF-505	F-901 (BASF)	1/2 twill (2.5 mm grid)	58"/60"	109
1-12	MDF-160	F-901 (BASF)	1/2twill (5 mm stripe)	58"/60"	107
1-13	MDF-161	F-901 (BASF)	1/2 twill (5 mm grid)	58"/60"	107
1-14	MDF-512	F-901 (BASF)	Taffeta (5 mm grid)	58"/60"	104
1-15	MDF-162	F-901 (BASF)	2/3 twill (5 mm grid)	58"/60"	107
1-16	MDF-502	F-901 (BASF)	2/3 twill (5 mm grid)	58"/60"	107
1-17	MDF-166	F-901 (BASF)	2/2 twill (5 mm grid)	58"/60"	120
1-18	MDF-169	F-901 (BASF)	2/2 twill (5 mm grid)	58"/60"	107
1-19	MDF-145	F-901 (BASF)	2/3 twill (7 mm grid)	58"/60"	109
1-20	MDF-506	F-901 (BASF)	2/3 twill (3×10 mm grid)	58"/60"	107
1-21	MDF-509	F-901 (BASF)	2/3 twill (5×3.5 mm grid)	58"/60"	107
1-22	MDF-140	F-901 (BASF)	1/2 twill (10 mm grid)	58"/60"	116
1-23	MDF-513	F-901 (BASF)	1/2 twill (10 mm grid)	58"/60"	109
1-24	MDF-156C	F-901 (BASF)	Taffeta (4 mm grid)	58"/60"	170
1-25	MDF-156CU	F-901 (BASF)	Taffeta (3.5 mm grid)	58"/60"	127
1-26	MDF-514	F-901 (BASF)	Taffeta (5 mm check)	58"/60"	118
1-27	MDF-515	F-901 (BASF)	Pique (4 mm stripe)	55"	236
▼ **Conductive Fabric**					
2-1	MDF-150	F-901 (BASF)	4bar net (diamond)	58"/60"	165
2-2	MDF-153	F-901 (BASF)	4bar net (diamond)	58"/60"	79
2-3	MDF-152	F-901 (BASF)	4bar net (diamond)	58"/60"	100
2-4	MDF-155	F-901 (BASF)	4bar net (diamond)	58"/60"	155
2-5	MDF-250	F-901 (BASF)	7 mm stripe	70"/72"	148
2-6	MDF-320	F-901 (BASF)	10 mm stripe		205
2-7	MDF-270	F-901 (BASF)	Pique	60"	172
2-8	MDF-270S	F-901 (BASF)	Pique	68"	323
2(new)	MDF-283	F-902 F044	4bar net (diamond)	60"/61"	85
2(new)	MDF-284	F-902 F044	4bar net (diamond)	60"/61"	140
2(new)	MDF-285	F-902 F044	4bar net (diamond)	60"/61"	140
2(new)	MDF-286	F-902 F044	4bar net (herringbone)	60"/61"	90
▼ **Sterilization Compatible Clearnoom Fabric**					
3-1	MDF-221	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	92
3-2	MDF-220	B-31 (Kanebo)	1/2 twill (5 mm stripe)	58"/60"	93

No.	Model	ECF	Weave	Width (inch)	Weight (g/sqmt.)
3-3	MDF-301	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	95
3-4	MDF-110	B-31 (Kanebo)	1/2 twill (5 mm stripe)	58"/60"	112
3-5	MDF-302	B-31 (Kanebo)	2/2 twill (5 mm stripe)	58"/60"	102
3-6	MDF-125	B-31 (Kanebo)	2/3 twill (5 mm stripe)	58"/60"	118
3-7	MDF-303	B-31 (Kanebo)	Taffeta (8 mm stripe)	58"/60"	115
3-8	MDF-304	B-31 (Kanebo)	Taffeta (12 mm stripe)	58"/60"	112
3-9	MDF-190	B-31 (Kanebo)	1/2 twill (20 mm stripe)	58"/60"	107
3-10	MDF-306	F-901 (BASF)	Taffeta (2.5 mm check)	58"/60"	97
3-11	MDF-142	B-31 (Kanebo)	1/2 twill (4 mm check)	58"/60"	169
3-12	MDF-307	B-31 (Kanebo)	2/3 twill (4 mm check)	58"/60"	115
3-13	MDF-211	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	93
3-14	MDF-210	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	96
3-15	MDF-308	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	100
3-16	MDF-309	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	90
3-17	MDF-310	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	71
3-18	MDF-311	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	133
3-19	MDF-312	B-31 (Kanebo)	Taffeta (5 mm check)	58"/60"	104
3-20	MDF-199UT	B-31 (Kanebo)	Taffeta (5 mm stripe)	58"/60"	95
3-21	MDF-118	B-31 (Kanebo)	1/2 twill (5 mm check)	58"/60"	113
3-22	MDF-165	B-31 (Kanebo)	1/2 twill (5 mm check)	58"/60"	119
3-23	MDF-313	B-31 (Kanebo)	1/2 twill (5 mm check)	58"/60"	105
3-24	MDF-314	B-31 (Kanebo)	2/1 twill (5 mm check)	58"/60"	102
3-25	MDF-315	B-31 (Kanebo)	2/2 twill (5 mm check)	58"/60"	108
3-26	MDF-316	B-31 (Kanebo)	2/2 twill (5 mm stripe)	58"/60"	148
3-27	MDF-127	B-31 (Kanebo)	2/3 twill (5 mm check)	58"/60"	119
3-28	MDF-130	B-31 (Kanebo)	2/3 twill (5 mm check)	58"/60"	107
3-29	MDF-148	B-31 (Kanebo)	2/3 twill (5 mm check)	58"/60"	115
3-30	MDF-317	B-31 (Kanebo)	Taffeta (6 mm check)	58"/60"	140
3-31	MDF-164	B-31 (Kanebo)	1/2 twill (7 mm check)	58"/60"	120
3-32	MDF-318	B-31 (Kanebo)	Rib (7 mm check)	58"/60"	110
3-33	MDF-146	B-31 (Kanebo)	1/2 twill (8 mm check)	58"/60"	151
3-34	MDF-149	B-31 (Kanebo)	1/2 twill (8 mm check)	58"/60"	182
3-35	MDF-305	B-31 (Kanebo)	2/2 twill (Tartan check)	58"/60"	160
3-36	MDF-319	B-31 (Kanebo)	2/2 twill (Variative)	58"/60"	130
3(new)	MDF-336	B-31 (Kanebo)	Taffeta (5mm check)	58"/60"	85
3(new)	MDF-307R	B-31 (Kanebo)	2/3 twill (4mm check)	58"/60"	115
3(new)	MDF-199UTR	B-31 (Kanebo)	Taffeta (5mm weft stripe)	58"/60"	95
▼ **Non-ESD Fabric**					
5-1	MDF-216	Non	Herringbone twill	58"/60"	140
5-2	MDF-215	Non	Taffeta	58"/60"	89
5-3	MDF-217	Non	1/2 twill	58"/60"	151
5-4	MDF-199Micro	Non	Taffeta	58"/60"	95
5-5	MDF-218	Non	Taffeta	58"/60"	92
5-6	MDF-219	Non	Taffeta	58"/60"	145



Cleanroom & ESD

Footwear

Conductive Shoes

Out Sole	PVC outsole	**Inner Sole**	ESD insole
Upper	PVC Synthetic Leather	**Volume Resistance**	10e4 ~ 10e6 ohm
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	・Reliable steady resistance (conductive) ・No marking on the floor		



Item Code M07A-009
Model BCS-320



Item Code M07A-012
Model BCS-321



Item Code M07A-013
Model BCS-322



Item Code M07A-014
Model BCS-323



Item Code M07A-015
Model BCS-324



Item Code M07A-011
Model BCS-328

Static Dissipative Shoes

Out Sole	PVC outsole	**Inner Sole**	ESD insole
Upper	PVC Synthetic Leather	**Volume Resistance**	10e6 ~ 10e8 ohm
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	· Cost - effective and popular design · Anti-slip · Abrasion resistant · Low particle generation · Durable and long-lasting · Good wearability		



Item Code M01A-002
Model BSS-311



Item Code M01A-003
Model BSS-312



Item Code M01A-005
Model BSS-314



Item Code M01A-007
Model BSS-318

Out Sole	PU outsole	**Inner Sole**	ESD insole
Upper	PU Synthetic Leather	**Volume Resistance**	10e6 ~ 10e8 ohm
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300, 310, 320 mm		
Features	· Light weight · Recyclable PU outsole · Comfortable cushion · Abrasion resistant · Low particle generation		



Item Code M01A-008
Model BUS-370



Item Code M01A-009
Model BUS-371



Item Code M01A-011
Model BUS-374



Item Code M01A-012
Model BUS-378

VIDEO

Static Dissipative Shoes

Out Sole	PU outsole	Inner Sole	ESD Fabric + Soft EVA Sponge
Upper	Different by each model	Volume Resistance	10e6 ~ 10e8 ohm
Color	White (WH), Green (GE), Grey (GR), Navy (NA)		
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	・High density PU foam out sole ・Excellent shock absorption ・New ergonomic design ・Direct injection moulding ・Durable and long-lasting ・Anti-slip ・Low particle generation		



Item Code M01A-024
Upper PVC Synthetic Leather



Item Code M01A-025
Upper PVC Synthetic Leather
+Polyester Mesh



Item Code M01A-026
Upper PVC Synthetic Leather
+ Polyester Mesh
+ 20 mm Nylon Velcro



Item Code M01A-027
Upper PVC Synthetic Leather
+ Polyester Mesh
+ 20 mm Nylon Velcro



Item Code M01A-028
Upper PVC Synthetic Leather
+ 20 mm Nylon Velcro





*Air Cushion (TPU)

Item Code M01A-029
Upper PU Synthetic Leather
+ Polyester Mesh
+ Air cushion included



Item Code M01A-030
Upper Polyester two-fold Mesh
+ PVC Leather tape

Design for good ventilation

(M01A-025 / M01A-026 / M01A-027 / M01A-028 / M01A-029 / M01A-030)

Velcro for easy wearing & taking off

(M01A-026 / M01A-027 / M01A-028)

Static Dissipative Shoes New

(Mesh Standard Type, Mesh Velcro Type, Closed Type)



M01A-031 M01A-032 M01A-033

Out Sole	Anti-static PU outsole
Insole	ESD Insole
Upper	PVC Upper
Volume Resistance	10e6 ~ 10e8 ohm
Size	230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 290, 300 mm
Features	· The midsole is made with check conductive fabric, providing more stable resistance values compared to standard striped types, making it ideal for electrostatic control. · The lightweight PU outsole minimizes worker fatigue during extended use. · A protective heel pad is added to increase durability and extend product life.

Static Dissipative Safety Shoes

Out Sole	PU outsole	Inner Sole	T/C fabric insole
Upper	PU Synthetic Leather	Toe cap	Steel toe cap
Color	White (WH), Black (BK)	Volume Resistance	10e7 ~ 10e9 ohm
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	· Recyclable PU outsole · Durable and long-lasting · Anti-slip · Oil resistant · Abrasion resistant · Shock absorption		



Item Code M05A-001-WH
Model BTU-510



Item Code M05A-002-WH
Model BTU-515



Item Code M05A-001-BK
Model BTU-510



Item Code M05A-002-BK
Model BTU-515

Out Sole	PU outsole	Taping	PVC
Inner Sole	Small diaper grid fabric + Conductive Thread	Toe cap	Steel toe cap
Upper	Wet PU (Polyurethane) + Non-woven + Merry Mesh Lining	Volume Resistance	10e6 ~ 10e8 ohm
Size	230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		



M05A-012-WH



M05A-013-WH



M05A-012-BK



M05A-013-BK

Item Code	M05A-014
Out Sole	PU with ESD Compound
Midle Sole	Penetration Resistant Inserted Insole
Inner Sole	Static Control Polyester fabric + E.V.A.
Upper	Synthetic Leather + Merry Mesh Lining
Toe cap	Steel toe cap (604H)
Volume Resistance	10e7 ~ 10e9 ohm
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, 295, 300, 310 mm



Item Code	M05A-015
Out Sole	ESD PU (PU + ESD Material)
Midle Sole	Boi-ceramic ESD fiber (3 mm Latex)
Upper	PU Synthetic Leather (1.4 mm Thickness)
Pad	PU Interlock 5 mm Latex Cushion
Toe cap	Steel toe cap (604H)
Volume Resistance	10e7 ~ 10e9 ohm
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm



Static Dissipative Safety Shoes

Item Code	M05A-011
Out Sole	PU outsole & Air cushion
Inner Sole	Polyester + PVC Dots
Upper	Wet PU 1.5 mm + Non-Woven 0.9 mm(T) + Merry Mesh Lining
Toe cap	Steel toe cap
Volume Resistance	10e7 ~ 10e9 ohm
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm





*Air Cushion (TPU)

Static Dissipative Slippers

Out Sole	PU outsole	Inner Sole	ESD PU or PVC insole
Upper	PU Synthetic Leather	Volume Resistance	10e6 ~ 10e8 ohm
Size	220, 230, 240, 250, 260, 270, 280, 290 mm		
Features	· Good wearability for daily use · Durable and long-lasting · Low particle generation		



Item Code M03A-001
Model BPU-420



Item Code M03A-006
Model BPU-426



Item Code M03A-007
Model BPU-427

Out Sole	PU outsole	Color	Black (BK), Grey (GR)
Upper	PVC Synthetic Leather + PVC 0.4 mm tape	Volume Resistance	10e6 ~ 10e8 ohm
Size	230, 240, 250, 260, 270, 280, 290, 300 mm		
Features	· Good wearability for daily use · Durable and Long-lasting · Low particle generation		

VIDEO



Item Code M03A-014-BK-size



Item Code M03A-014-GR-size



*Air Cushion (TPU)

ESD Anti-Fatigue Slippers

Out Sole	Foamed PU and Conductive NBR pad
Upper	Laminated wet PU + 4 mm PU sponge laminated polyester fabric
Volume Resistance	10e5 ~ 10e6 ohm
Size	220, 230, 240, 250, 260, 270, 280, 290 mm
Features	· Ease the stress on feets · Ergonomic designed sole



Item Code M25A-002

Static Dissipative Boots

Out Sole	PVC outsole	Inner Sole	ESD insole
Upper	PVC Synthetic Leather	Volume Resistance	10e6 ~ 10e8 ohm
Leggings	Lint free ESD fabric leggings		
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	· Cost - effective · Anti-slip · Abrasion resistant · Low particles generation · Durable and long-lasting · Good wearability · Cleanroom applicable		



Item Code M02A-001
Model BSB-330



Item Code M02A-002
Model BSB-333

Out Sole	PU outsole	Inner Sole	T/C fabric insole
Upper	PU Synthetic Leather	Volume Resistance	10e7 ~ 10e9 ohm
Leggings	Lint free ESD fabric leggings		
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300, 310, 320 mm		
Features	· Cost - effective design · Light weight · Durable and long-lasting · Cleanroom applicable		



Item Code M02A-003
Model BUB-381S



Item Code M02A-004
Model BUB-382



Item Code M02A-005
Model BUB-383

Static Dissipative Boots

Out Sole	PU outsole
Inner Sole	ESD insole
Upper	1.4 mm (T) PVC Synthetic Leather 0.5 mm (T) PVC Synthetic Leather Tape
Leggings	Static Dissipative Lint Free Fabric
Others	Sewing Thread made of Filament Yarn, Zipper, Elastic Band
Volume Resistance	10e6 ~ 10e8 ohm
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm



Item Code M02A-025
Model BUB-391

Static Dissipative Safety Boots

Out Sole	PU outsole	Inner Sole	T/C insole
Upper	PU Synthetic Leather	Leggings	Lint free ESD fabric leggings
Toe cap	Steel toe cap	Volume Resistance	10e7 ~ 10e9 ohm
Size	225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm		
Features	・Recyclable PU outsole ・Durable and long-lasting ・Anti-slip ・Oil resistant ・Abrasion resistant ・Shock absorption ・Low particle generation ・Cleanroom applicable		



Item Code M06A-001
Model BTU-530



Item Code M06A-002
Model BTU-533



Out Sole	PU outsole
Inner Sole	Small diaper grid fabric + Conductie Thread
Upper	Wet PU (Polyurethane) + Non-woven + Merry Mesh Lining
Leggings	Lint free ESD fabric leggings
Toe cap	Steel toe cap
Volume Resistance	10e6 ~ 10e8 ohm
Size	230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm

New



Item Code M06A-009

Conductive Boots

Out Sole	Conductive PVC outsole
Inner Sole	ESD insole
Upper	PVC Synthetic Leather
Leggings	Lint free ESD fabric leggings
Volume Resistance	10e4 ~ 10e6 ohm
Size	220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 290, 300 mm
Features	· Reliable steady resistance (conductive) · No marking on the floor · Cleanroom applicable



Item Code M08A-001
Model BCB-340

Conductive Overboots

Out Sole	Conductive PVC outsole
Leggings	Lint free ESD fabric leggings + Nylon strap and buckle
Volume Resistance	10e4 ~ 10e6 ohm
Size	XS, S, M, L, XL
Features	· Cost-effective · Soft and flexible · Reliable steady resistance (conductive) · No marking on the floor



Item Code M10A-001
Model BCO-360

Static Dissipative Overboots

Out Sole	Static dissipative fishbone designed hypalon sole (Chlorosulfonated Polyethylene (CSM) + Natural rubber + Conductive Compound)
Leggings	Lint-free cleanroom fabric + Polyester strap with snap buttons and buckle
Volume Resistance	10e7 ~ 10e9 ohm
Size	XS, S, M, L, XL, 2XL, 3XL
Features	· Autoclavable · Sterilization compatible · Soft and flexible · Gamma radiation compatible · Slip resistant · Oil & chemical resistant · High washing temperature



Item Code M04A-002
Model NHB-370

Static Dissipative Hypalon Soles

RTG (ohm)	10e7 ~ 10e9
Material	• Chlorosulfonated Polyethylene (CSM) • Natural Rubber
Features	• Cleanroom Applicable • Gamma Radiation Compatible • Sterilization Compatible • Slip Resistant • Autoclavable



Item Code M11A-002
Model PHS-110F

Size	XS	S	S/M	M	M/L	L	L/XL	XL	2X	3XL
Length × Width (mm)	245×100	265×108	275×110	290×118	302.5×123	315×128	327.5×133	340×138	365×148	375×150
Weight (g/pr) ± 5%	220	255	270	320	345	365	380	410	465	530

RTG (ohm)	10e7 ~ 10e9
Materials	• Chlorosulfonated Polyethylene (CSM) • Natural Rubber
Features	• Cleanroom Applicable • Gamma Radiation Compatible • Sterilization Compatible • Slip Resistant • Autoclavable



Item Code M11A-003
Model PHS-120P

Size	XS	S	S/M	M	M/L	L	L/XL	XL	2X	3XL
Length × Width (mm)	-	265×108	-	290×118	-	315×128	-	340×138	365×148	375×150
Weight (g/pr) ± 5%	-	255	-	320	-	365	-	410	465	530

Conductive NBR Soles

RTG (ohm)	10e6 ~ 10e7
Materials	• Synthetic Rubber (NBR-35L) • Natural Rubber
Features	• Cleanroom Applicable • Sterilization Compatible • Autoclavable • Gamma Radiation Compatible • Silicone & Phthalate Free • Slip Resistant



Item Code M11A-006
Model PRS-140C

Size	XS	S	S/M	M	M/L	L	L/XL	XL	2X	3XL
Length × Width (mm)	245×100	265×108	275×110	290×118	302.5×123	315×128	327.5×133	340×138	365×148	375×150
Weight (g/pr) ± 5%	220	255	270	320	345	365	380	410	465	530

Static Dissipative Flat Soles

RTG (ohm)	10e6 ~ 10e7
Materials	• Synthetic Rubber (NBR-35L) • Natural Rubber
Features	• Cleanroom Applicable • Sterilization Compatible • Autoclavable • Gamma Radiation Compatible • Soft & Flexible • Light Weight • Slip Resistant



VIDEO

Item Code M11A-004
Model PRS-130E

Size	XS	S	S/M	M	M/L	L	L/XL	XL	2X	3XL
Length × Width (mm)	278×120	298×117	-	317×125	-	330×132	-	348×135	357×140	370×147
Weight (g/pr) ± 5%	148	156	-	180	-	194	-	236	256	260

Conductive Grey Soles

RTG (ohm)	10e4 ~ 10e6
Material	PVC
Features	• Reliable steady resistance (conductive) • Slip Resistant



Item Code M11A-001
Model SUO-442

Size	XS	S	S/M	M	M/L	L	L/XL	XL	2X	3XL
Length × Width (mm)	260×108	290×110	-	310×118	-	330×128	-	350×133	-	-
Weight (g/pr) ± 5%	270	330	-	370	-	400	-	410	-	-

Accessories for Overboots

Polyester Strap for Buckles
M16A-001



Size: 20 mm x 100 m/roll

Reinforced ESD Fabric
M03F-006



Size: 60" x 100 m/roll



Autoclavable Buckles (2pcs)
M16A-004



20 mm(W), white

Webbing for Overboots
M16A-002



Size: 40 mm x 100 m/roll

CSM Rubber Sheet for Soles

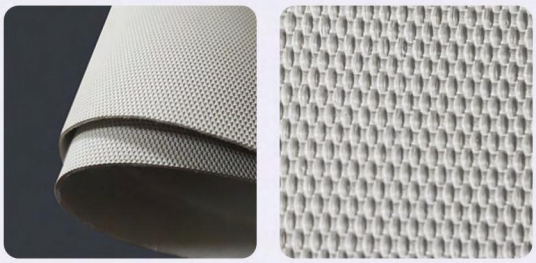


VIDEO

The CSM (Chlorosulfonated polyethylene) rubber sheet reinforced with high tenacity polyester fabric is a kind of a very particular material for the bottom soles of cleanroom overshoes or the webbing material on the overshoes. Coming in a sheet form, it can be applied to the various shapes and the sizes of the soles according to each customer's need, unlike many existing ready-made soles.

Features

- Excellent chemical resistance
- Anti-slip
- Bendable at a low temperature (-45°F)
- Strong resistance to abrasion
- Autoclavable (withstand up to 120°C)
- Gamma-ray stable at min. 737 kGy/max. 760.8 kGy
- Antistatic finish (10e10 ~ 10e11 ohm)



Item Code	M20F-001
Packing	30 yds/roll
Constructions	 Polyester fabric (front) CSM Rubber (back)

Test	Warp	Weft	Unit	Test Method
Color	Light Grey			Visual
Width (trimmed)	56		inch	ASTM D 751-19
Total Weight	1,010.8 (23.8) ±5%		g/m^2 (oz/yd^2)	
Thickness	0.87 ± 0.10 mm		mm	
Bursting Strength	Above 1,050		kPa	
Tearing Strength	80 (18.0)	57 (12.8)	N (lbf)	FS 191A-5134 : 1978
Breaking Strength	2,092.7 (470.5)	1,463.1 (328.9)	N (lbf)	ASTM D 751-19 GRAB test method
Elongation	50.4	53.5	%	
Adhesion Strength	157.4 (30.3)		N/2.54 cm (lbf/inch)	FS 191A 5970 : 1978
Abrasion Resistance	1,066		cycles	ASTM D 3389-21







Antimicrobial EVA Clogs New

Features

- Eco-Friendly EVA material
- Good Ventilration (E01A-001)
- Antimicrobial (99.9%) treated Insole
- Slip-resistant Outsole
- Foldable rear Strap (E01A-001)
- Washable & Quick dry
- Lightweight & Soft feeling
- Waterproof (E01A-002)

Applications

- Hospital, Kitchen, etc.



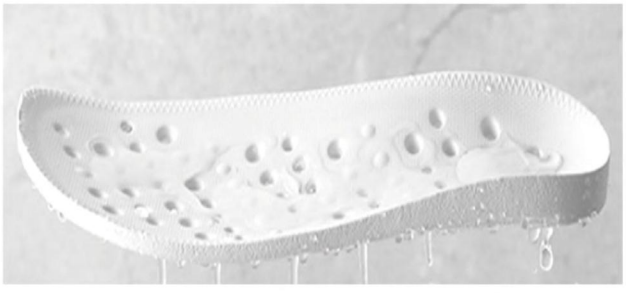


Item Code		E01A-001
Material	Upper & Outsole	EVA (White - Antimicrobial)
	Insole	EVA (Antimicrobial)
Strap		PVC
Size		230, 240, 250, 260, 270, 280 mm
Width		9.5 cm (230 mm)
Height		9.0cm (230 mm)
Heel height		2 cm
Colors		White, Grey, Navy

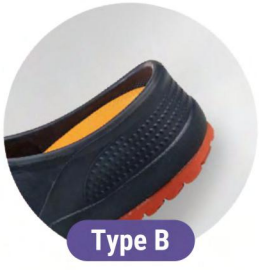


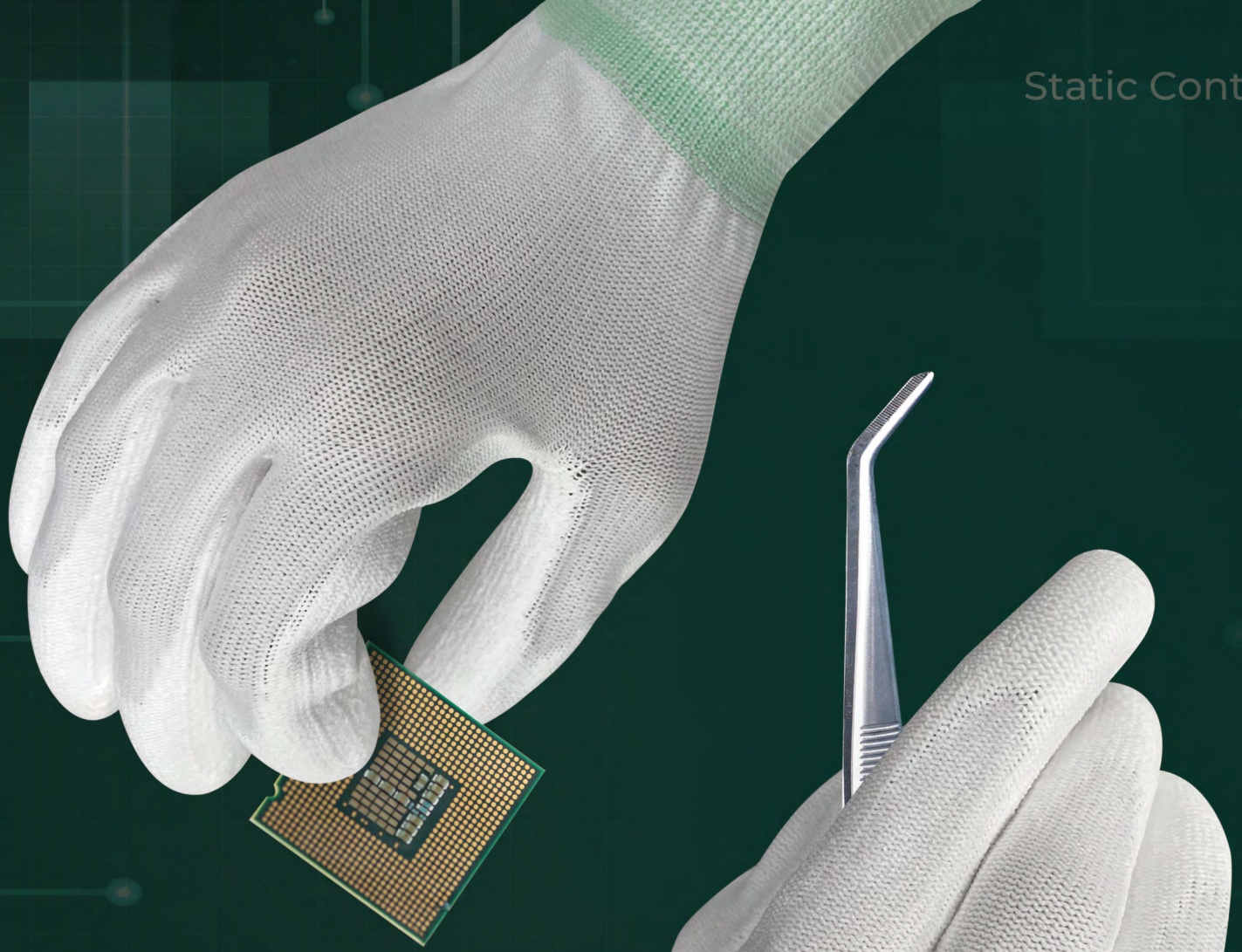
Item Code		E01A-002 (type A)	E01A-003 (type B)
Material	Upper	EVA (White - Antimicrobial)	
	Insole	EVA (Antimicrobial)	
	Outsole	PVC foam, Rubber (Non Slip)	
Size		230, 240, 250, 260, 270, 280 mm	
Width		9.5 cm (230 mm)	
Height		9.8 cm (230 mm)	
Heel height		1.5 cm	
Colors		White, Purple, Navy, Wine, Black	











Cleanroom & ESD Gloves

High Tech Assembly Gloves

Our High Tech Assembly Gloves are Polyamide Fiber Gloves, which are popular for their durability, and comfortability.

Features

- Polyurethane coating provides super grip and abrasion resistance.
- Polyurethane coating alleviates fingers fatigue associated with finger cots and allows handling small parts without fingerprint contamination.
- Protects handling products from sweat and dust.
- Optimum comfortability and dexterity
- Low lint · Knit wrist, Seamless
- Oil resistant (NBR)

Applications

- General assembly
- Electronics, Component handling
- Light engineering work
- Maintenance or micro-mechanical tasks
- Pharmaceutical processing
- Inspecting precise parts, articles, etc.
- Delicate and precise operations, such as assembly jobs in electronic, semiconductor, micro-processor and compact disk lines.



M01G-001 (SHG-100)



M02G-001 (SFG-110)



M03G-001 (TFG-121)



M03G-004 (TGG-122)



M04G-001 (PFG-131)



M04G-005 (PGG-132)

Item Code	Product	Liners		Coating			EN388
		Material	Color	Material	Color	Area	
M01G-001	Half Elastic Fit Gloves	Nylon	White				
M02G-001	Elastic Fit Gloves	Nylon	White				
M03G-001	Top PU Gloves	Nylon	White	PU	White	Finger tips	
M03G-004	Top PU Gloves	Nylon	Grey	PU	Grey	Finger tips	
M04G-001	Palm PU Gloves	Nylon	White	PU	White	Palm	
M04G-005	Palm PU Gloves	Nylon	Grey	PU	Grey	Palm	
M53G-001	Palm NBR Foam Gloves	Nylon, Spandex	Black	NBR Foam	Black	Palm	4121



M53G-001 (PBG-139)

Cut Resistant Gloves

Features

Lightweight HPPE blended Nylon and Spandex

- Seamless Stretchable Liner with Good Dexterity
- Comfortable Fit with High Strength
- Cutting Hazard Protection

Soft PU Palm Finished
Oily Away Palm NBR Finished (C15G-002)

- Provide Secure Grip in Dry and Wet Environments
- Great Abrasion Resistant

Applications

- Working with Sharp Metal, Glass, Ceramic, etc.
- Automobile Industries / Mechanical Assembly
- Construction / Wiring Operation / Manufacturing



C14G-013-WH



C14G-014-WH



C14G-009-MI



C15G-002-MI

Item Code		C14G-013-WH	C14G-014-WH	C14G-009-MI	C15G-002-MI
Descriptions		White, White Palm PU	White, Grey Palm PU	Mélange, Grey Palm PU	Mélange, Black Palm NBR
Liners	Material	HPPE/Nylon/Spandex	HPPE/Nylon/Spandex	HPPE/Nylon/Spandex	HPPE/Nylon/Spandex
	Color	White	White	Grey	Grey
Coating	Material	PU	PU	PU	NBR Normal
	Color	White	Grey	Grey	Black
	Area	Palm	Palm	Palm	Palm
Knitting		13 gauge	13 gauge	13 gauge	13 gauge
Size		S / M / L / XL / XXL	S / M / L / XL / XXL	S / M / L / XL / XXL	S / M / L / XL / XXL
EN388		4X42B	3X42B	4X43B	4344B



Features

Glass Fiber blended HPPE and Polyester

- Seamless Stretchable Liner with Dexterity
- Comfortable Fit with High Strength
- Cutting Hazard Protection

Oily Away Palm NBR Foam Finised (C16G-002)

- Provide Secure Grip in Oil Applications
- Light with Unique Breathable and Soft Tactility

Applications

- Oily Working / Heavy Industrial Jobs
- Ideal for Handling Sharp Metal, Glass, Ceramic, etc.
- Automobile Industries / Mechanical Assembly
- Construction / Wiring Operation / Manufacturing



C14G-016-WH



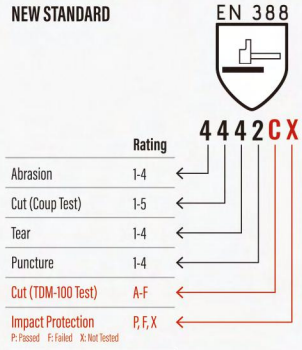
C14G-006-MG



C16G-002-MG

Item Code		C14G-016-WH	C14G-006-MG	C16G-002-MG
Descriptions		White, Grey Palm PU, Glass Fiber	Mélange, Grey Palm PU, Glass Fiber	Mélange, Black Palm NBR Foam, Glass Fiber
Liners	Material	HPPE/Nylon/Glass Fiber/Spandex	HPPE/Nylon/Glass Fiber/Spandex	HPPE/Nylon/Glass Fiber/Spandex
	Color	White	Grey	Grey
Coating	Material	PU	PU	NBR Foam
	Color	Grey	Grey	Black
	Area	Palm	Palm	Palm
Knitting		13 gauge	13 gauge	13 gauge
Size		S / M / L / XL / XXL	S / M / L / XL / XXL	S / M / L / XL / XXL
EN388		4X42C	4X42D	4X44D

EN 388 PERFORMANCE MARKINGS



The EN 388 performance score appears in markings as such. Each number is representative of a specific performance characteristic. The 2016 revision included two more positions. The fifth position indicates the TDM test score and the sixth position indicates the impact resistance test score.

CONVERTING NEWTONS TO GRAMS

EN388 RATING	RANGE (NEWTONS)	CONVERTED RANGE (GRAMS)	ANSI/ISEA 105 LEVEL	RANGE (GRAMS)
A	2 - 4.9	204 - 508	A1	200 - 499
B	5 - 9.9	509 - 1,019	A2	500 - 999
C	10 - 14.9	1,020 - 1,529	A3	1,000 - 1,499
D	15 - 21.9	1,530 - 2,242	A4	1,500 - 2,199
E	22 - 29.9	2,243 - 3,058	A5	2,200 - 2,999
F	30+	3,059+	A6	3,000 - 3,999
---	---	---	A7	4,000 - 4,999
---	---	---	A8	5,000 - 5,999
---	---	---	A9	6,000+

Static Control Gloves

Features

- Made of static control carbon yarn mixed nylon (ESD) and copper yarn mixed nylon (Conductive)
- Excellent when handling small parts with great tactile sensitivity
- Suitable for the places where cleanliness and ESD control are required
- Provides protection to operator's hands and products being handled
- Good elasticity, air permeability and minimizing sweat build up
- Good grip
- Stable ESD properties

Applications

- Good for handling electronic instruments, circuit boards and components.
- Prevent products from miscellaneous disturbances or accidents caused by static electricity.
- Antistatic treated surface semiconductors, micro-processors and compact disks.
- Assembling LSI, VLSI, Semiconductors as well as computers and precise instruments


M07G-003 (WKG-220)


M08G-002 (WKT-223)


M08G-004 (TDK-299)


M08G-008 (UKT-821)


M08G-009 (UKT-921)


M09G-002 (WKP-234)


M09G-008 (UKL-832)


M09G-010 (NPA-220)


M10G-001 (SCG-310)


M11G-001 (TCG-321)


M13G-001 (PCG-331)


M67G-001 (TDC-391)

Item Code	Product	Liners		Coating			Dots			Surface Resistance (ohm)
		Material	Color	Material	Color	Area	Material	Area	Color	
M07G-003	ESD Elastic Fit Gloves	Carbon yarn, Nylon	Grey							10e7 ~ 10e9
M08G-002	ESD Top PU Gloves	Carbon yarn, Nylon	Grey	PU	White	Finger tips				10e7~ 10e9
M08G-004	ESD Top PU Gloves	Copper yarn, Nylon	Grey	PU	Grey	Finger tips	PVC	Whole	Grey	10e7 ~ 10e9
M08G-008	ESD Top PU Gloves	Carbon yarn, Nylon	White, Grey	PU	White	Finger tips				10e7 ~ 10e9
M08G-009	ESD Top PU Gloves	Carbon yarn, Nylon	White, Grey	PU	White	Finger tips				10e7 ~ 10e9
M09G-002	ESD Palm PU Gloves	Carbon yarn, Nylon	Grey	PU	White	Palm				10e7 ~ 10e9
M09G-008	ESD Palm PU Gloves	Nylon, Spandex	Grey	PU	Grey	Palm				10e7 ~ 10e9
M09G-010	ESD Palm PU Gloves	AS coating, Nylon	White	PU	White	Palm				10e6 ~ 10e8
M10G-001	Conductive Elastic Fit Gloves	Copper yarn, Nylon	Copper							10e3 ~ 10e4
M11G-001	Conductive Top PU Gloves	Copper yarn, Nylon	Copper	PU	White	Finger tips				10e3 ~ 10e4
M13G-001	Conductive Palm PU Gloves	Copper yarn, Nylon	Copper	PU	White	Palm				10e3 ~ 10e4
M67G-001	Conductive Dot Gloves	Copper yarn, Nylon	Copper	PU	White	Finger tips	PVC	Palm	White	10e3 ~ 10e4

Antistatic Polyester & Microfiber Gloves



M22G-001 (WTG-410)



M22G-004 (WTG-420)



M22G-013 (WTG-431)



M22G-012 (WTG-440)



M35G-001 (WTG-460)



M36G-003

Item Code	Model	Product	Material	Surface Resistance (ohm)
M22G-001	WTG-410	Antistatic Polyester Gloves	Tricot knitted polyester with ECF	10e7 ~ 10e9 ohm
M22G-004	WTG-420	Antistatic PVC Dot Gloves	Tricot knitted polyester with ECF, PVC Dot on Palm	10e7 ~ 10e9 ohm
M22G-013	WTG-431	Antistatic PU ECF Gloves	Tricot knitted polyester with ECF, PU coated on Palm	10e7 ~ 10e9 ohm
M22G-012	WTG-440	Antistatic PU Thick Gloves	Tricot knitted polyester, with ECF PU laminated on TC fabric on Palm	10e7 ~ 10e9 ohm
M35G-001	WTG-460	Antistatic Microfiber Gloves	Tricot knitted polyester with ECF, microfiber fabric	10e7 ~ 10e9 ohm
M36G-003	-	Microfiber Gloves	Microfiber fabric	

Heat Resistant Gloves

Features

- Ultra High Molecular Material is Used
- Strong and low lint
- Light weight polyethylene for delicate and precise operation
- Designed to protect hands from various damage by sharp materials
- Excellent resistance to abrasion and cuts
- Cut resistant (HPPE)
- Heat resistant (Kevlar)

Applications

- Glass handling
- Recycling
- Sheet metal work
- Cutting
- Bottling and Canning
- Heating and air conditioning

Dupont™ Kevlar®

Kevlar Gloves



C02G-001 / C02G-008 / C02G-009



C09G-001 / C09G-002



C10G-001 / C10G-002



C10G-003



C11G-001



C21G-001

Item Code	Product	Liners		Gauge	Length	Dot			Coating		
		Material	Color			Material	Color	Area	Material	Color	Area
C02G-001	Kevlar Gloves	Kevlar yarn, Spandex	Yellow	7 gauge	23 cm (M) 24 cm (L) 25 cm (XL)						
C02G-008				10 gauge							
C02G-009				13 gauge							
C09G-001	Kevlar Cotton Gloves	[OUT] Kevlar yarn, Spandex [IN] Cotton, Polyester	Yellow	7 gauge	25 cm						
C09G-002					28 cm						
C10G-001	Kevlar Dot Gloves	Kevlar yarn, Spandex	Yellow	7 gauge	23 cm (M) 24 cm (L) 25 cm (XL)	PVC	Black	Palm			
C10G-002				10 gauge							
C10G-003				13 gauge							
C11G-001	Kevlar Palm NBR Gloves	Kevlar yarn, Spandex	Yellow	13 gauge	22 cm (S) 23 cm (M) 24 cm (L) 25 cm (XL)				NBR Foam	Black	Palm
C21G-001	Kevlar Oven Gloves	[OUT] Kevlar yarn, Nomax [IN] Cotton, Polyester	Yellow	7 gauge (In) 5 gauge (out)	24.5 cm(M)	PVC	Blue	Both			
					27 cm(L)						

ESD Heat Resistant Gloves



M24G-006 (EHR-150N)



M24G-008 (EHR-150/45N)



M24G-007 (EHR-300N)



M24G-009 (EHR-300/45N)

Item Code	M24G-006	M24G-008	M24G-007	M24G-009
Model	EHR-150N	EHR-150/45N	EHR-300N	EHR-300/45N
Surface Resistance (ohm)	< 10e11	< 10e11	< 10e11	< 10e11
Heat Resistance	Up to 150°C	Up to 150°C	Up to 300°C	Up to 300°C
Length	280 mm	450 mm	280 mm	450 mm

Materials and Layer Constructions

Palm + Back



Palm



Back



① Polyurethane film laminated nylon tricot fabric with Beltron conductive fiber in 5 mm stripe
② Heat insulating felt (polyester)
③ Nylon Tricot inner
④ Conductive yarn integrated with DuPont Nomex fabric

※ Silicone free type is available on request.

Seamless Gloves

Seamless Gloves is breathable Gloves. It consists of polyester knitted fabric and laminated with breathable polyurethane film, which combines friendly feel of fabric with the protection of elastomer. Its moisture permeability helps protect operators from skin rash by harsh chemicals.





Features

- Seamless high frequency welding instead of sewing
- Antistatic properties
- Can operate smart phone touch screen your gloves on
- Laundered with 18Mohm deionized water twice and packed in Cleanroom
- Excellent comfortability
- No inner gloves wear needed
- Water proof and vapor permeability
- No skin irritation and eczema
- Improve work efficiency
- Reusable

Materials

- Polyurethane Coated Knitted Polyester
  (Inner layer – Knitted Polyester / Outer layer – Polyurethane)

Applications

- Pharmaceutical, Medical and Hospital Industries
- Semiconductor and Electronic Industries

Properties		Unit	Result	Test Method
Thickness		mm	0.23±0.05	JIS L 1018
Weight	Small (S)	(g/piece)	72±2	
	Medium (M)	(g/piece)	82±2	
	Large (L)	(g/piece)	92±2	
Elongation		%	83.8	
Tensile Strength		(kPa)	553	
Moisture Permeability		(g/㎡/24hr)	2,012	JIS L 1099
Water Resistance		(Mm/H2O)	8,000↑	JIS L 1092

Descriptions		Glove Length	Cuff Width
Size (mm)	Small (S)	258	115
	Medium (M)	265	120
	Large (L)	300	132
Packing		10 pairs/bag, 50 bag/carton	

Ion	Unit	Result	Test Method
DOP	(mg/kg)	N/D	KS M 0027(GC/MS)
DOP	(mg/l)	N/D	KS M 0027(GC/MS)
NA	(mg/l)	0.7	ICP
Mg	(mg/l)	N/D	ICP
K		N/D	ICP
Ca		N/D	ICP
NH4		N/D	UV/Vis
NO2		N/D	ICP
NO3		N/D	ICP
SO4		N/D	ICP
Cl		0.8	ICP

Latex Gloves



M28G-025-YE

Item Code		M28G-013-YE-size	M28G-017-YE-size	M28G-021-YE-size
Material		Natural High Grade Rubber Latex		
Color		Natural		
Length (All sizes)		12" (300 mm) ± 10 mm		
Palm Width (XS/S/M/L)		76/84/94/105 ± 3 mm		
Thickness (single wall)	Finger	0.15 ± 0.02 mm	0.16 ± 0.02 mm	0.17 ± 0.02 mm
	Palm	0.13 ± 0.02 mm	0.14 ± 0.02 mm	0.15 ± 0.02 mm
Weight (g/pc) (M)		7.2	8.0	9.5
Features		Cleanroom Compatible, Powder free, Full textured, Beaded cuff, Non-sterile, Double Chlorinated		
Packing		100 pcs/ double bag, 10 bags/carton		
Shelf Life		5 years		

Item Code		M28G-025-YE-size	M28G-032-YE-size	M28G-037-YE-size
Material		Natural High Grade Rubber Latex		
Color		Natural		
Length (All sizes)		9"(240 mm) ± 10 mm	12" (300 mm) ± 10 mm	11.5" (292 mm) ± 10 mm
Palm Width (XS/S/M/L)		76/84/94/105 ± 3 mm	73/83/93/103 ± 3 mm	- /85/96/109 ± 3 mm
Thickness (single wall)	Finger	0.13 ± 0.02 mm	0.18 ± 0.02 mm	0.22 ± 0.02 mm
	Palm	0.12 ± 0.02 mm	0.13 ± 0.02 mm	0.20 ± 0.02 mm
Weight (g/pc) (M)		6.4	9.9	9.2
Features		Powder free, Full textured, Beaded cuff, Non-sterile, Single Chlorinated	Cleanroom Compatible, Powder free, Full textured, Beaded cuff, Double Chlorinated	Cleanroom Compatible, Powder free, Silicone Free, Beaded cuff, Finger textured, Double Chlorinated
Packing		100 pcs/dispenser, 10 dispensers/carton	100 pcs/ double bag, 10 bags/carton	100 pcs/bag, 10 bags/carton
Shelf Life		5 years		

Halogen Free Nitrle Gloves New



Item Code		M27G-030-WH-size	M27G-058-WH-size	M27G-060-WH-size	M27G-061-WH-size
Class		1000	1000	1000	
Material		100% Pure Nitrile	100% Synthetic Nitrile Latex	100% Synthetic Nitrile Latex	
Color		Natural White	Natural White	Natural White	
Length (All sizes)		12" (300 mm) ± 10 mm	12" (300 mm) ± 10 mm	240 mm ± 10 mm	12" (300 mm) ± 10 mm
Palm Width (XS/S/M/L/XL)		78/85/95/105/115 ± 5 mm	-/85/98/108/- ± 3 mm	76/84/94/105/113 ± 3mm	
Thickness (single wall)	Finger		0.14 ± 0.02 mm	0.09 ± 0.02 mm	0.11± 0.02 mm
	Palm	0.07 ± 0.02 mm	0.08 ± 0.02 mm	0.07 ± 0.02 mm	0.07 ± 0.02 mm
	Cuff		0.06 ± 0.02 mm		
Weight (g/pc) (M)		4.5	7.6	3.5	4.5
Features		Halogen Free, Sulphur, Accelerator, Zinc free, Plasticizers, Phthalates, Esters, Silicone oil, Amide free, Beaded cuff, Powder free, Textured,	Halogen Free, Accelerator Free, Silicone, Amide, DOP free Sulphur free Powder free Textured, Beaded cuff	Halogen Free, Polymer Coated, Silicone Free, Non-Sterile Powder free, Finger Textured, Beaded cuff	
Packing		100 pcs/bag, 10 bags/carton Single pack, Vacuum Sealed	100 pcs/bag, 10 bags/carton	100 pcs/bag, 10 bags/carton	

Nitrile Gloves



Item Code		M27G-018-WH-size	M27G-022-WH-size	M27G-026-WH-size
Class		1000	1000	
Material		100% Pure Nitrile	100% Pure Nitrile	
Color		White	White	
Length (All sizes)		12" (300 mm) ± 10 mm	12" (300 mm) ± 10 mm	
Palm Width (XS/S/M/L)		78/85/95/105 ± 5 mm	75/85/95/105 ± 5 mm	
Thickness (single wall)	Finger			
	Palm	0.07 ± 0.02 mm	0.08 ± 0.02 mm	
	Cuff			
Weight (g/pc) (M)		4.8	7.0	
Features		No Sulphur, Accelerator, Zinc, No Plasticizers, Phthalates, Esters, Silicone oil, Amide, Beaded cuff, Powder free, Finger textured	Non-tacky	Tacky
			No Sulphur, Accelerator, Zinc, No Plasticizers, Phthalates, Esters, Silicone oil, Amide, Beaded cuff, Powder free, Finger textured	
Packing		100 pcs/ double bag, 10 bags/carton	100 pcs/ double bag, 10 bags/carton	

Item Code		M27G-054-WH-size	M27G-036-WH-size	M27G-040-WH-size	M27G-033-WH-size
Class		1000	1000		100
Material		Nitrile (NBL)	100% Synthetic Nitrile Latex		100% Synthetic Nitrile Latex
Color		White	White		White
Length (All sizes)		12" (300 mm) ± 10 mm	12" (300 mm) ± 10 mm		12" (300 mm) ± 10 mm
Palm Width (XS/S/M/L)		- /85/95/105 ± 2.5 mm	76/84/94/105 ± 3 mm		77/84/94/105 ± 3 mm
Thickness (single wall)	Finger	0.1 ± 0.01 mm	0.13 ± 0.02 mm		0.13 ± 0.02 mm
	Palm	0.08 ± 0.01 mm	0.12 ± 0.02 mm		0.12 ± 0.02 mm
	Cuff	0.06 ± 0.01 mm			
Weight (g/pc) (M)		4.5	6.2		6.2
Features		Powder free, Finger textured, Beaded cuff	Non-tacky	Tacky	Non-tacky
			Silicone, Amide, Phthalates Free, Powder free, Finger textured, Beaded cuff		Silicone, Amide, Phthalates Free, Powder free, Finger textured, Beaded cuff
Packing		100 pcs/ double bag, 10 bags/carton	100 pcs/ double bag, 10 bags/carton		100 pcs/ double bag, 10 bags/carton

Nitrile Gloves





Item Code		M27G-044-BL-size	M27G-052-BL-size
Material		100% Synthetic Nitrile Latex	100% Synthetic Nitrile Latex
Color		Blue (BL)	Blue (BL)
Length (All sizes)		240 mm ± 10 mm	240 mm ± 10 mm
Palm Width (XS/S/M/L/XL)		76/84/94/105/113 ± 3 mm	76/84/94/105/113 ± 3 mm
Thickness (single wall)	Finger	0.10 ± 0.02 mm	0.12 ± 0.02 mm
	Palm	0.07 ± 0.02 mm	0.10 ± 0.02 mm
Weight (g/pc) (M)		3.5	5.0
Features		Powder Free Full textured, Beaded cuff, Single Chlorinated	Powder Free Finger textured, Beaded cuff, Single Chlorinated
Packing		100 pcs/dispenser, 10 dispensers/carton	100 pcs/dispenser, 10 dispensers/carton

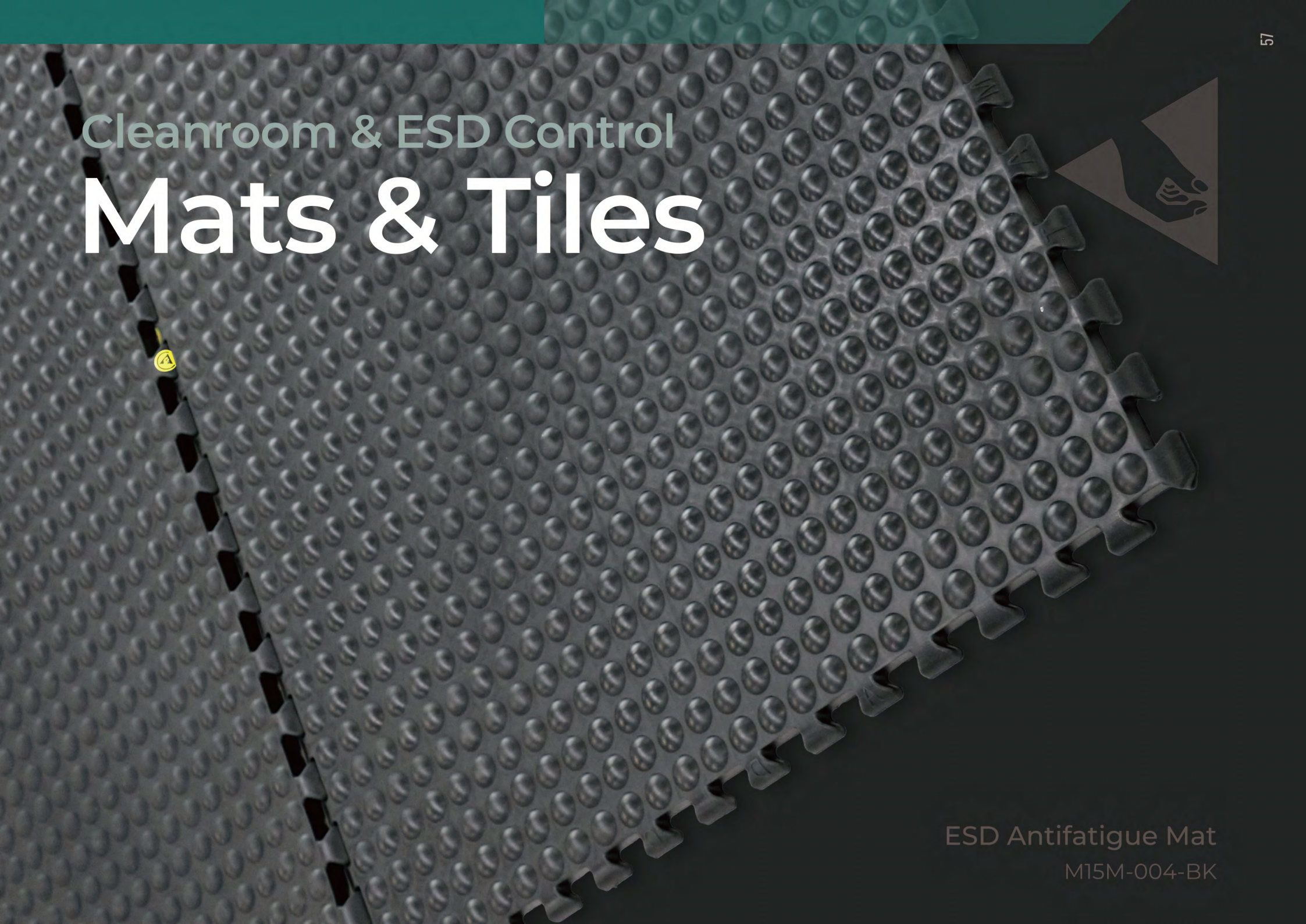
Vinyl Gloves

Item Code		M25G-004-TP-size
Material		Polyvinyl Chloride
Color		Clear
Length (All sizes)		290 mm ± 5 mm (min)
Palm Width (XS/S/M/L/XL)		75/85/95/105/115 ± 5 mm
Thickness (single wall)	Finger	0.12 ± 0.03 mm
	Palm	0.10 ± 0.03 mm
	Cuff	0.08 ± 0.03 mm
Weight (g/pc) (S/M/L)		6.5/7.0/7.5 ± 0.3
Features		Powder-free, Ambidextrous, Beaded cuff, Smooth external finish, DOP, DEHP, PDMS free
Packing		100 pcs/bag, 10 bags/carton



Cleanroom & ESD Control

Mats & Tiles



ESD Antifatigue Mat

M15M-004-BK

ESD Antifatigue Mat

Type A



Item Code	M15M-002-BK	M15M-003-BK
Size	60 cm×90cm	45 cm×60 cm
Weight/mat	3.6 kg	1.8 kg
Material	Conductive NBR + High Elastic PU Foam	
Thickness	16 mm	
Color	Black	
Surface Resistance	10e5 ~ 10e6 ohm	

Type E



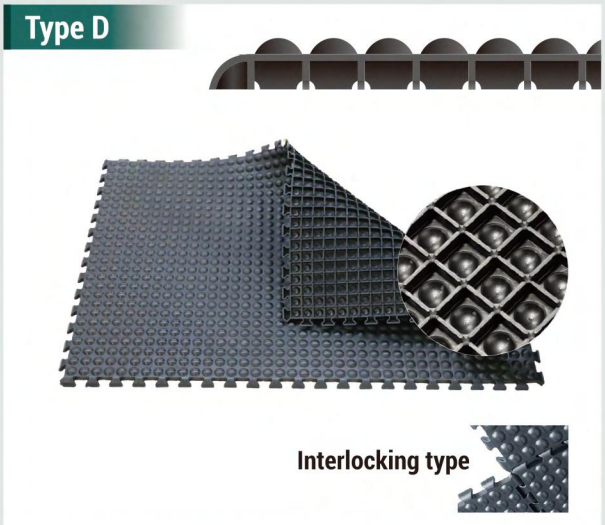
Item Code	M15M-011-BK	M15M-012-BK
Size	60 cm×90 cm	45 cm×60 cm
Weight/mat	3.4 kg	2.1 kg
Material	Conductive NBR + High Elastic PU Foam	
Thickness	13 mm	
Color	Black	
Surface Resistance	10e5 ~ 10e6 ohm	

Type C



Item Code	M15M-005-BK
Size	60 cm×90 cm
Weight/mat	3.5 kg
Material	Conductive NBR
Thickness	16 mm
Color	Black
Surface Resistance	10e5 ~ 10e6 ohm

Type D



Item Code	M15M-004-BK
Size	60 cm×90 cm
Weight/mat	2.7 kg
Material	Conductive NBR
Thickness	16 mm
Color	Black
Surface Resistance	10e5 ~ 10e6 ohm

ESD Antifatigue Mat New

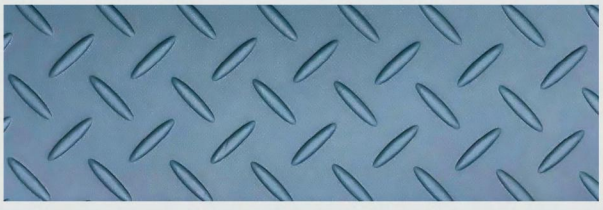
The ESD Antifatigue Mat consists of foam layers, that would absorb and distribute weight of the worker to relieve fatigue that may build througout the standing hours. This mat also has strong ESD properties to effectively ground static electricity, which is an essential property to have in semiconductor fabs and any static electricity-sensitive facilities.



Item Code	M15M-030-LN
Size	610×920 mm
Weight/mat	3 kg
Material	PVC
Thickness	19 mm
Color	Light Navy(LN)
Surface Resistance	10e5~6 ohm
Packing Details	5 mats/ctn, 980×680×125 mm

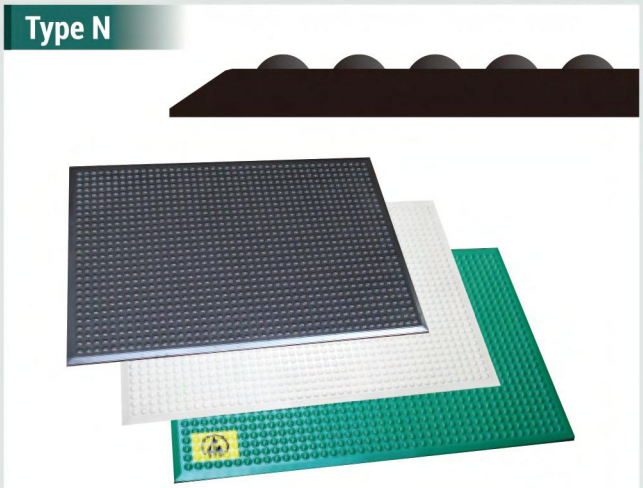
Features

- Developed in accordance with ASTM F150-06 International Standards.
- Excellent antifatigue effect
- Made out of non-toxic, non-heavy metal, safe raw materials
- Little to no odor/smell



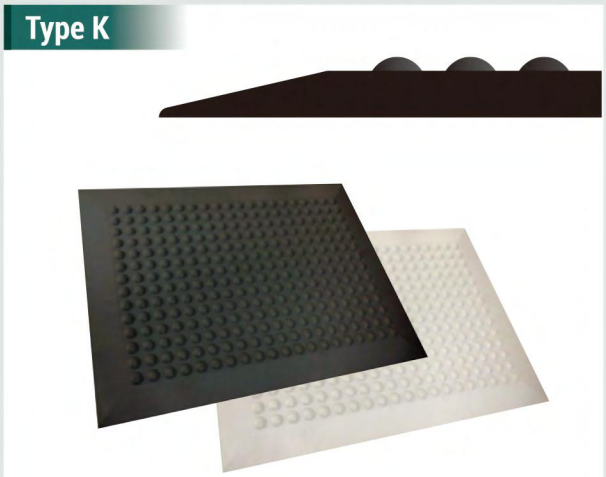


Type N



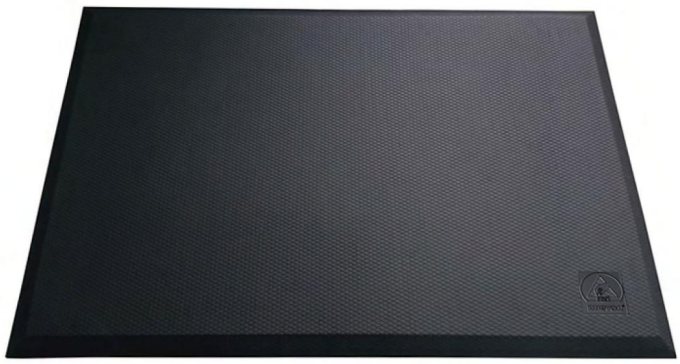
Item Code	M15M-023-BK	M15M-023-WH	M15M-023-GE
Color	Black	White	Green
Size	60 cm×90 cm		
Material	Polyurethane		
Thickness	15 mm		
Weight/mat	2.7 kg		
Surface Resistance	10e8 ~ 10e9 ohm		

Type K



Item Code	M15M-021-BK	M15M-021-GR
Color	Black	Grey
Size	45 cm×60 cm	
Material	NBR	
Thickness	15 mm	
Weight/mat	2.3 kg	
Surface Resistance	10e5 ~ 10e6 ohm	10e7 ~ 10e9 ohm

Type H





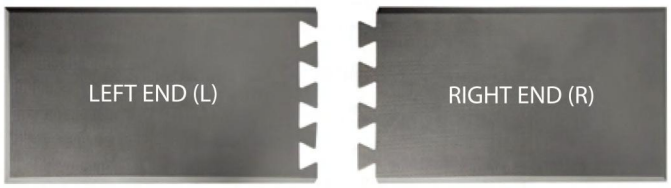


Item Code	M15M-014-BK	M15M-015-BK	M15M-016-BK
Size/mat	500×900 mm (20”×36”)	600×900 mm (24”×36”)	900×1500 mm (35”×59”)
Material	Foamed rubber		
Color	Black		
Weight/mat	-	1.6 kg	-
Thickness	17 mm		
Surface Resistance	10e6 ~ 10e9 ohm		

Type T

[Double Set]

500 mm × 1,700 mm



Item Code M05M-017 Item Code M05M-019

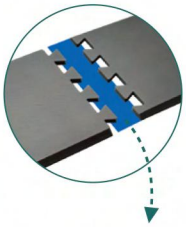
[Triple Set]

500 mm × 2,500 mm



Item Code M05M-017 Item Code M05M-018 Item Code M05M-019





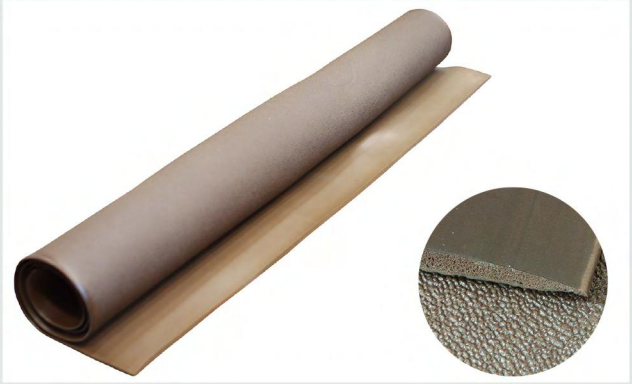
Sticky Pad
(Size: 120 mm×480 mm)

Item Code	M15M-017-BK	M15M-018-BK	M15M-019-BK
Size/mat	500×869 mm	500×865 mm	500×869 mm
Material	Foamed rubber		
Color	Black		
Weight/mat	1.3 kg		
Thickness	17 mm		
Surface Resistance	10e6 ~ 10e9 ohm		

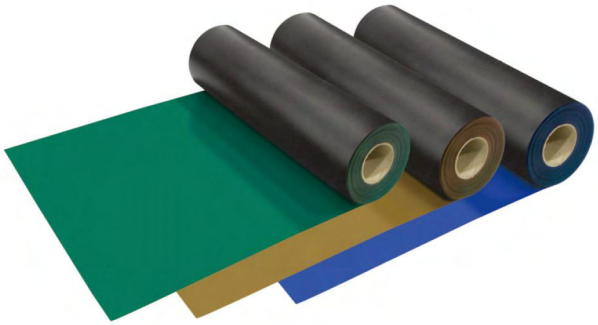
* The length can be extended by connecting additional center mats.

ESD Antifatigue Mat In Roll

Item Code	M30M-002-BR	M30M-002-GR
Color	Brown	Grey
Material	Foamed PVC	
Weight / Roll	35 kg	
Thickness	8 mm	
Size	1 m×10 m	
Surface Resistance	≤ 10e9 ohm	



ESD Control Table Mat



[Standard]

Item Code	M11M-000	
Thickness	1.5 mm, 1.8 mm, 2 mm, 3 mm	
Width	60, 70, 80, 90, 100, 120 cm	
Length	10 m / roll	
Surface Resistance	Top	10e8 ~ 10e9 ohm
	Bottom	10e3 ~ 10e6 ohm
Color	Green/Black, Dark Green/Black, Blue/Black, Sky Blue/Black, Grey/Black, Brown/Black, Beige/ Black	
Layer	2 mm — Static Dissipative Rubber (30~20% in thick) — Conductive Rubber (70~80% in thick)	

Variations

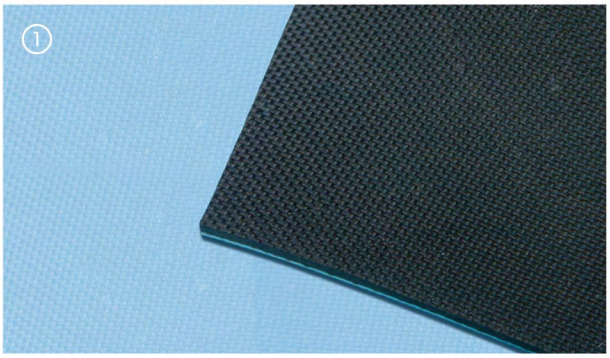
· Flame Retardant · Halogen-Free (Cl-Free) · Sulfur-Free (S-Free)

[Low S/R]

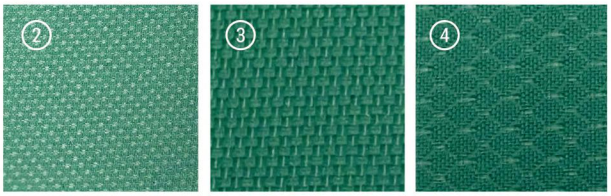
Item Code	M11M-000	
Thickness	2 mm, 3 mm	
Width	60, 70, 80, 90, 100, 120 cm	
Length	10 m / roll	
Surface Resistance	Top	10e6 ~ 10e8 ohm
	Bottom	10e3 ~ 10e6 ohm
Color	Green/Black, Blue/Black , Grey/Black * Other colors are also available on request	
Layer	2 mm — Static Dissipative Rubber (30~20% in thick) — Conductive Rubber (70~80% in thick)	

Embossed ESD Rubber Mat

* Embossed pattern option: ①②③④



Item Code	M14M-000	
Thickness	1.8 mm	
Width	60, 70, 80, 90, 100, 120 cm	
Length	10 m / roll	
Surface Resistance	Top	10e8 ~ 10e9 ohm
	Bottom	10e3 ~ 10e6 ohm
Color	Sky Blue/Black	
Layer	1.8 mm — Static Dissipative Rubber (30~20% in thick) — Conductive Rubber (70~80% in thick)	



Item Code	M14M-000	
Thickness	1.8 mm, 2 mm, 3 mm	
Width	60, 70, 80, 90, 100, 120 cm	
Length	10 m / roll	
Surface Resistance	Top	10e6 ~ 10e8 ohm
	Bottom	10e3 ~ 10e6 ohm
Color	Green/Black	
Layer	2 mm — Static Dissipative Rubber (30~20% in thick) — Conductive Rubber (70~80% in thick)	

Conductive Black Mat

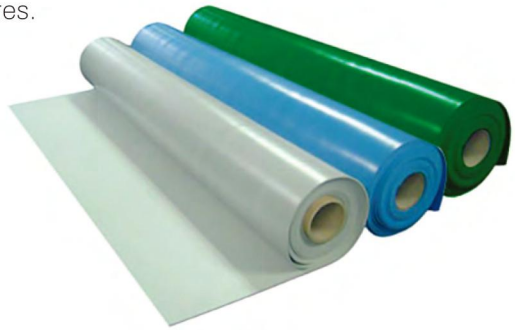
Homogenous black rubber

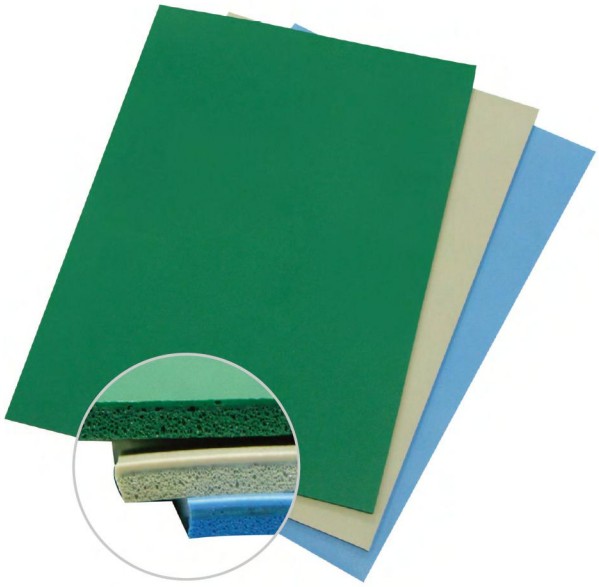
Item Code	M13M-000-BK
Thickness	1.3, 1.5, 2, 3 mm
Width	60, 70, 80, 90, 100, 120 cm
Length	10 m / roll
Surface Resistance (Top / Bottom)	10e3 ~ 10e6 ohm



3 Layer Static Dissipative Mat

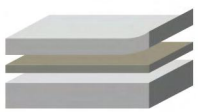
The 3 layer Static Dissipative Mat consists of a smooth PVC top, perforated PVC bottom layer and a conductive grid mesh layer in the middle. The conductive mesh layer provides a fast discharge path to ground and the energy absorption of components susceptible to physical shock by its unique structures.





Features

- Smooth surface
- Easy to pick up small components on the mat
- Excellent electrical properties and performance
- Carbon free constructions
- Easy cleaning with soap and water without affecting its static dissipative properties

Item Code	M16M-000		
Width (Inch, cm)	24", 36", 48", 60 cm, 90 cm, 100 cm, 120 cm	Material	PVC + conductive grid mesh + foamed PVC
Length (m)	10, 15	Thickness (mm)	3 ± 5%
Color	Light Blue, Grey, Green	Constructions	 • Dissipative Layer • Conductive Layer • Dissipative Cushion Layer
RTT (Ω)	≤ 10e9		
RTG (Ω)	≤ 10e9		
Heat Resistance (℃)	Max 90		

ESD Microfiber Mats

The tabletop of assembly lines or worktables for sensitive electronic parts.

ESD Microfiber Mat (EVA)



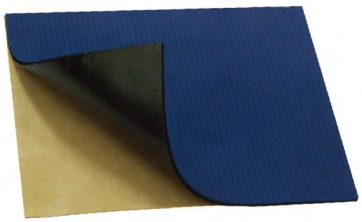
Item Code	M23M-001-color	
Thickness	2.5 mm	
Size	0.96 m×9.5 m	
Surface Resistance	Top	10e6 +/- 1 ohm
	Bottom	10e5 +/- 1 ohm
Color	Dark Blue (DL)	Yellow Green (YG)
Packing	4 rolls/carton, 27.20 kg/carton (ctn size: 400 mm×400 mm×1115 mm)	
Constructions		• ESD Microfiber fabric (4 mm stripe) • Conductive EVA foam

ESD Microfiber Mat (EVA with Adhesive)



Item Code	M23M-002-color	
Thickness	2.7 mm	
Size	0.96 m×9.5 m	
Surface Resistance	Top	10e6 +/- 1 ohm
	Bottom	10e5 +/- 1 ohm
Color	Dark Blue (DL)	Yellow Green (YG)
Packing	4 rolls/carton, 30 kg/carton (ctn size: 400 mm×400 mm×1150 mm)	
Constructions		• ESD Microfiber fabric (4 mm stripe) • Conductive EVA foam • Acrylic adhesive • Releasing paper

ESD Microfiber Mat (Non-woven, with Adhesive)



Item Code	M23M-003-color	
Thickness	0.9 mm	
Size	0.7 m×10 m	
Surface Resistance	Top	10e6 +/- 1 ohm
	Bottom	10e5 +/- 1 ohm
Color	Dark Blue (DL)	Yellow Green (YG)
Packing	4 rolls/carton, 18.3 kg/carton (ctn size: 320 mm×320 mm×720 mm)	
Constructions		• ESD Microfiber fabric (4 mm stripe) • Conductive Non-woven fabric • Acrylic adhesive • Releasing paper

ESD Microfiber Fabric (with Adhesive)



Item Code	M32M-000-color	
Thickness	0.7 mm	
Size	1.37 m×23~37 m	
Surface Resistance	Top	10e6 +/- 1 ohm
	Bottom	10e5 +/- 1 ohm
Color	Dark Blue (DL)	Yellow Green (YG)
Packing	4 rolls/carton, 18.3 kg/carton (ctn size: 360 mm×360 mm×1570 mm)	
Constructions		• ESD Microfiber fabric (4 mm stripe) • Acrylic adhesive • Releasing paper

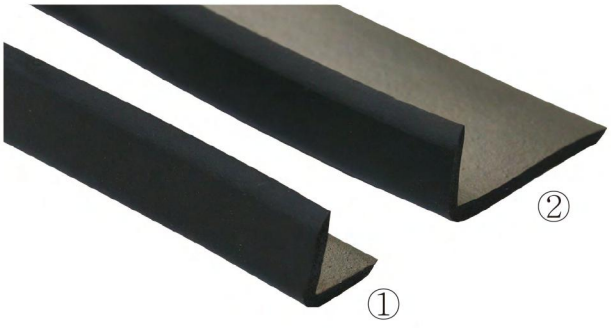
ESD Fabric Tape



Edge covering for ESD Microfiber Mats

Item Code		M24T-001-color
Thickness		200 μm
Size		40 mm×30 m, 1000 mm×20, 50, 100 mm (jumbo roll)
Surface Resistance	Top	10e6 ~ 10e8 ohm
	Bottom	10e5 ~ 10e7 ohm
Color		Dark Blue (DL), Green (GE), Yellow Green (YG), Black (BK)
Packing		40 rolls/carton

ESD Edge Protector

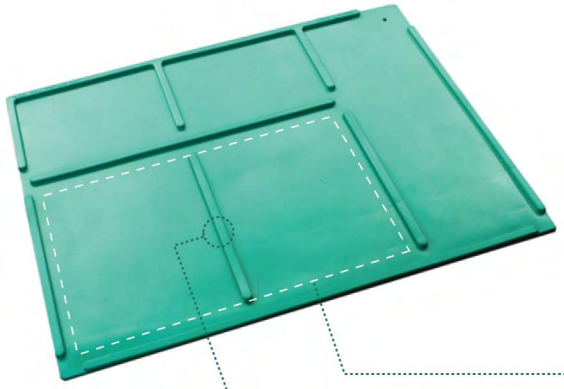




Item Code	M37M-001-BK ①	M37M-002-BK ②	M37M-003-BK ③	M37M-004-BK ④	M37M-005-BK ⑤
Size	15 mm×15 mm×100 m	15 mm×38 mm×50 m	10 mm×2.5 mm×100 m	15 mm×5 mm×100 m	15 mm×9 mm×100 m
Material	Foam Rubber (EPDM)		Rubber (EPDM)		
SR (ohm)	10e8 ~ 10e9		10e4 ~ 10e5		
Hardness	40		70		
Heat Resistance	100°C		120°C		

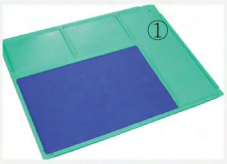
Secondary Table Mats

ESD Repair Mat



Item Code		M35M-001-GE	M35M-002-GE
		Option ①	Option ②
Size		7 mm×320 mm×410 mm	
Material		NBR	
Color		Green / Black	
Surface Resistance	Top	10e7 ~ 10e8 ohm	
	Bottom	10e4 ~ 10e5 ohm	

Patch

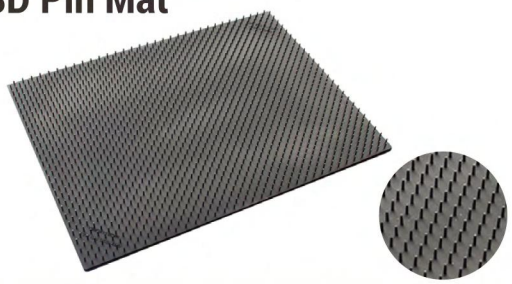


ESD Microfiber Mat
(0.9 mm×189 mm×287 mm)



ESD Silicon Mat
(2.3 mm×189 mm×285 mm)

ESD Pin Mat



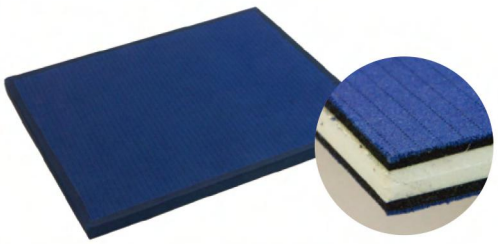
Item Code	M34M-002-BK
Size	11 mm×300 mm×400 mm
Material	Silicon
Surface Resistance	10e5 ~ 10e8 ohm (top)

ESD Silicon Mat



Item Code	M36M-001-BK
Size	2.3 mm×300 mm×420 mm
Material	Silicon
Surface Resistance	10e5 ~ 10e8 ohm

ESD Microfiber Pad



Item Code	M26M-001-DL	M26M-002-DL
Size	320 mm×240 mm	220 mm×170 mm
Thickness	10 mm	
Surface Resistance	10e6 ± 1 ohm	
Material	ESD Microfiber EVA Mat on top and bottom, Foam Board (5T), ESD Microfiber Tape	
Color	Dark Blue (DL)	

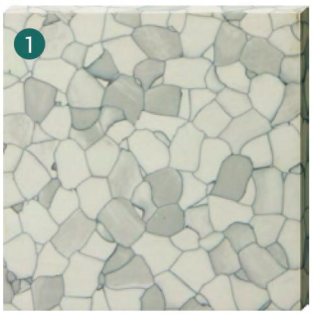
ESD Microfiber Mat

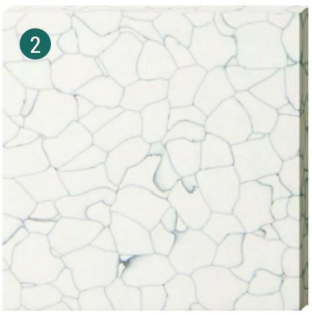


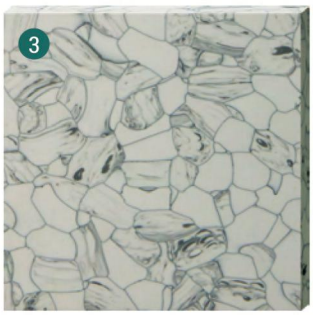
Item Code		M23M-005-DL
Size		1.4 mm×300 mm×400 mm
Surface Resistance	Top	10e6 ~ 10e7 ohm
	Bottom	10e4 ~ 10e5 ohm
Material		Microfiber fabric + conductive rubber
Color		Dark Blue (DL)

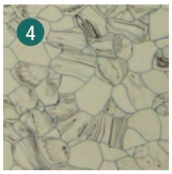
Conductive/Dissipative Tiles

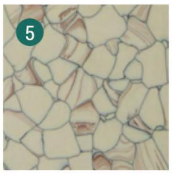
Conductive & Static Dissipative Vinyl Flooring Tiles are the best solution for making a ESD safe floor, which reduces static build up on the people and the materials on the floor. The Tiles are directly installed on the ground floor and they are also commonly used as the finishing material of Raised (Access) Floor System.
The electrical properties are permanent and they are not affected by ambient humidity. High contents of poly vinyl and high-pressure manufacturing process provide an excellent indentation, wear and chemical resistances.

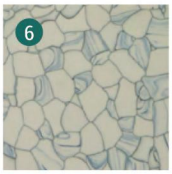


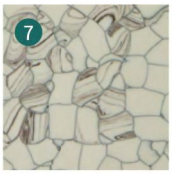


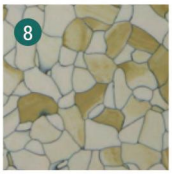


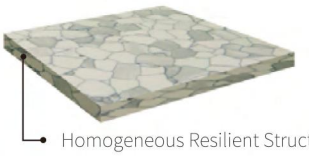












Item Code		M01M-000 (Conductive)	M02M-000 (Static Dissipative)
Thickness		2 mm, 3 mm	
Size		600×600, 610×610, 900×900 in mm	
Surface Resistance	Conductive	2.5×10e4 ~ 1×10e6 ohm	
	Static Dissipative	10e6 ~ 10e8 ohm	

Installation Accessories

Conductive Adhesive

Item Code M10M-005
* Carbon Fiber Type

Copper Tape



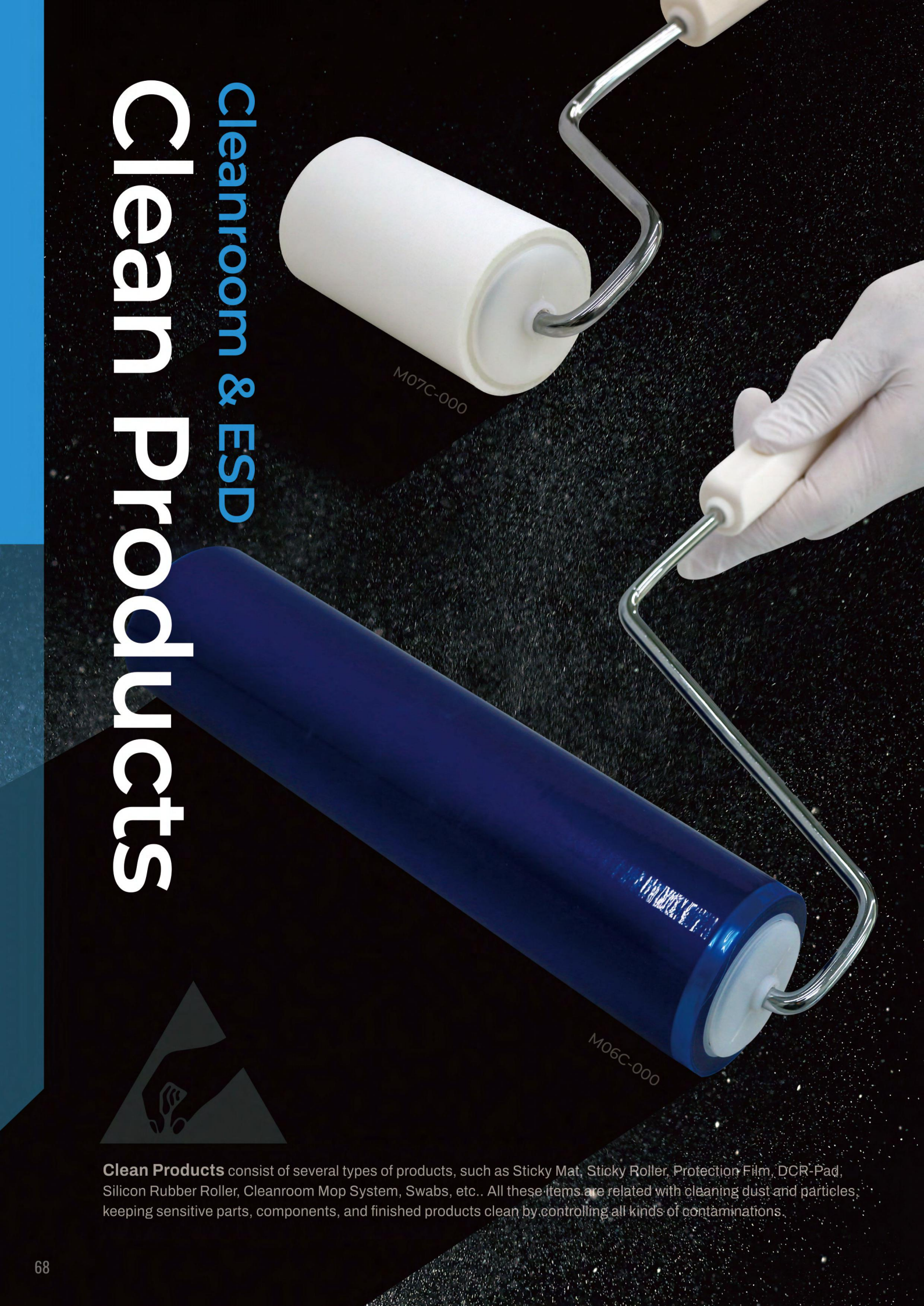
Item Code M07M-004
Size 0.038 mm(T)×10 mm W)
Packing 30 m/roll

Welding Rod

M06M-011
M06M-012
M06M-013
M06M-014
M06M-015
M06M-016
M06M-017
M06M-018
M06M-019
M06M-020

Clean Products

Cleanroom & ESD



Clean Products consist of several types of products, such as Sticky Mat, Sticky Roller, Protection Film, DCR-Pad, Silicon Rubber Roller, Cleanroom Mop System, Swabs, etc.. All these items are related with cleaning dust and particles, keeping sensitive parts, components, and finished products clean by controlling all kinds of contaminations.

PE Sticky Roller & Antistatic PE Sticky Roller





Product	PE Sticky Roller	Antistatic PE Sticky Roller
Item Code	M05C-000	M06C-000
Color	Blue, White, Transparent	
Size	100, 150, 160, 200, 250, 300, 450, 500 mm, etc.	
Length	20 m/roll	
Core	38 mm, 76 mm (3")	
Packing	200 mm x 20 m (100 rolls/ctn) Carton size: 540×330×420 mm / Weight: 25.5 kg	100 mm x 20 m (100 rolls/ctn) Carton size: 540×330×220 mm / Weight: 14 kg

Non-Woven Sticky Roller

Item Code	M07C-000
Color	White
Size	80, 160, 320 mm
Length	10, 20 m/roll
Core	38 mm, 76 mm (3")
Packing	80 mm x 20 m (100 rolls/ctn) 160 mm x 20 m (50 rolls/ctn) Carton size: 540×320×340 mm / Weight: 22 kg



Roller Handle



M09C-004 M09C-003 M09C-002 M09C-001

Descriptions	Size			Material			Packing
Item Code	Core dia.	Head	Length	Handle	Frame	Head	
M09C-001	38 mm	8 cm	25 cm	PP	Steel chrome (Cr) Plating	PE	10 pcs/carton (1.4 kg/CTN) Size: 220×350×220 mm(H)
M09C-002	38 mm	16 cm	29 cm				10 pcs/carton (1.7 kg/CTN) Size: 220×350×220 mm(H)
M09C-003	38 mm	16 cm	107 cm				10 pcs/carton (4.5 kg/CTN) Size: 230×1100×230 mm(H)
M09C-004	76.2 mm	32 cm	120 cm				5 pcs/carton

Sticky Mat

Features

- 99.80% of dust collection at several steps on the mats.
- Collected dust on the mats is not migrated.
- Comfortable walking and smooth passing of hand carts.
- Mat can be used with/without the frame.
- Adhesive level can be adjusted on request.
- Antimicrobial sticky mat is available for pharmaceutical, biological and medical areas.
- ESD sticky mat is available for static sensitive areas.
- Thin film sticky mat at economical price is another option.



Item Code	M01C-000
Film Thickness	30 μm, 35 μm, 40 μm, 45 μm (±5 μm)
Size	18"×36", 18"×45", 24"×36", 26"×45", 36"×45", etc.
Color	Blue, White, Grey, Green, etc.
Adhesive (g/25 mm)	350 ± 50 g (surface) – adjustable 700 ± 50 g (bottom)
Material	Polyethylene (LDPE)
Packing	30 sheets or 60 sheets/mat, 4 mats, 8 mats, 10 mats/case, etc.
Surface Resistance (M02C-000/E10S-000)	10e9 ~ 10e11 ohm
Reduction of Bacteria (E01S-000 / E10S-000)	99.9%

Variations

M01C-000 Standard Sticky Mat
M02C-000 ESD Sticky Mat
E01S-000 Antimicrobial Sticky Mat
E10S-000 ESD Antimicrobial Sticky Mat



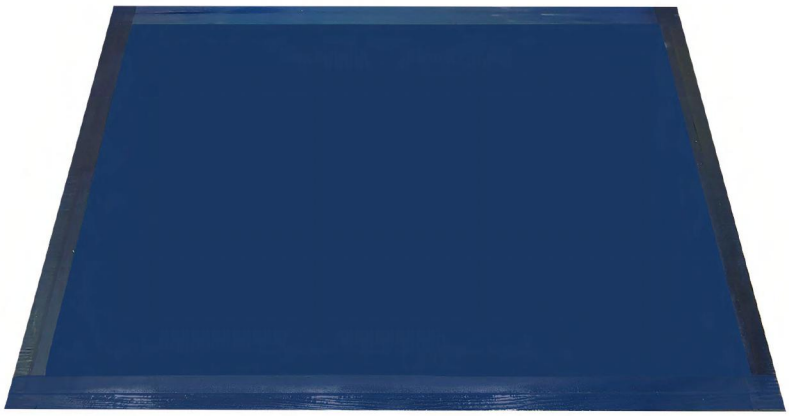
Frame For Sticky Mat

Item Code	M04C-007	M04C-008
Material	Rubber	
Color	Green	
Size	600×900 mm	600×1200 mm

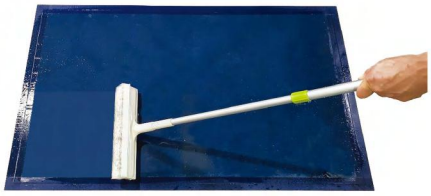


ESD Washable Sticky Mat

VIDEO







Features

- Service life: 1 year under normal traffic & maintenance
- Homogeneous & excellent ESD properties
- Environment: Friendly & cost-effective
- Fixed by double sided tape

Applications

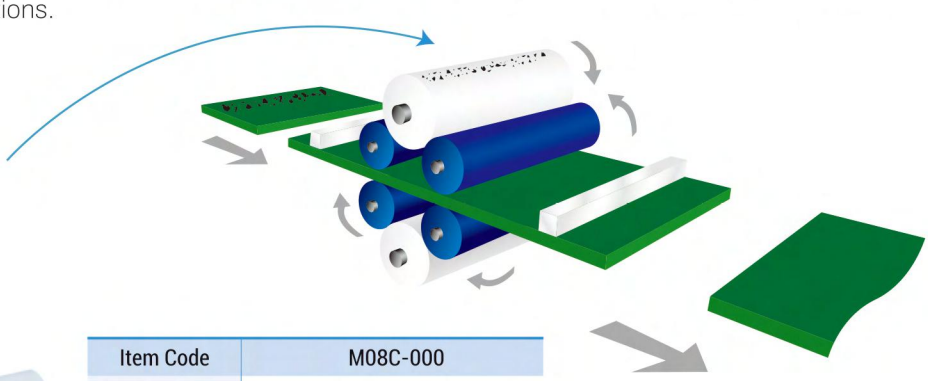
- Entrances & exits of cleanroom labs and manufacturing facilities
- Changing rooms, air showers
- Static sensitive areas

Item Code		M35C-001-DL	M35C-002-DL	M35C-003-DL	M35C-004-DL	M35C-600-DL
Size (mm)		600×900×0.7(T)	600×1800×0.7(T)	660×1140×0.7(T)	900×3320×0.7(T)	1200×600×0.7(T)
Material	Upper	ESD homogeneous sticky PU sheet with surface resistance: 10e7~10e8 ohm				
	Bottom	PET sheet / double-sided tape				
	Side Cover	ESD Fabric Tape with surface resistance: 10e6~10e7 ohm				
Adhesive Level		550 ± 50 gf/25 mm	Color	Dark Blue	Packing	5 mats/box

PCB Cleaning Roll

PCB Cleaning Roll usually goes with machine, not with a handle, and this roll is mainly designed to clean PCB. To clean the surface of PCB effectively, perfect flat conditions of the roll is essential. Several different adhesive levels are available for different applications.





Item Code	M08C-000
Material	PP
Color	White
Size	3″×600 mm×20 m or 25 m

ESD PET Adhesive Film

ESD PET Adhesive Film is a great option to make ESD surface economically by simply attaching high quality ESD treated adhesive film on the surface on glass, acrylic, PC, etc.. This film can also be used as a protection film for protecting the surfaces or devices from scratches during handling, transportation, etc..



Features

- Good ESD properties on backing side.
- Semi-permanent ESD properties.
- No migration.
- Very low removal adhesive.

Item Code	M13C-005
Size	1 m×100 m
Constructions	 • ESD hard coated PET Film (100 ㎛) • Silicone Adhesive (20 ㎛) • Release Film (25 ㎛)

Physical Properties

Properties		Unit	Value	Test Method
Film		-	ESD hard coated PET	
Adhesive		-	Silicone	
Thickness	Film	㎛	50 ± 2, 75 ± 2, 100 ± 2	
	Adhesive		20 ± 3	
Color		-	Clear	
Adhesion		gf/25 mm	20 ± 3	ASTM D 1000
Surface Resistance	Adhesive	Ω/25 mm	-	ASTM D 257
	Backing		Max. 10e5 ~ 10e8	
Electrostatic Discharge		sec.	Max. 0.1	
Size		mm, m	1000~1200 mm × 100 m, 200 m	

How to apply the film on the surface effectively

1. Keep the surface free of dust, dirts, moisture, etc.
2. Measure the area where the film is applied and cut the film with extra 1~3 cm.
3. Prepare spray bottle with purified water mixing water-soluble detergent, like shampoo(8~10 drops of detergent for 1 litter water).
4. Spray the prepared water on the surface to make the surface wet and slippery.
5. Remove the releasing sheet from the film and also spray the water on the adhesive area of the film.
6. Attach the film on the surface from the center of the area and press the film out from the center to edge sides smoothly several times by using of a flat and soft scoop until the moisture and the air bubbles are completely removed.
7. Cut the film fitting in the surface perfectly. Please do not press or wipe edge side strongly until the margin of the film is cut-off

* Please do not press or wipe edge side strongly until the margin of the film is cut-off
* Please do not use any kinds of chemicals and solvents for cleaning.
* Use soft wiper with water soluble detergent for surface cleaning.

ESD PET Film

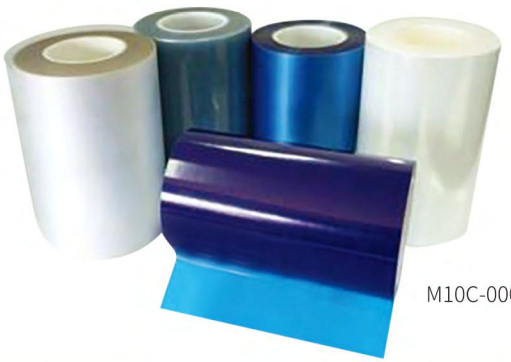
ESD PET Film is suitable for PCB manufacturing assembly lines for PCB testing, and this film will also be used as a transparent copy film. Antistatic treatment on both surface offers semi-permanent ESD properties.

Item Code	M22C-004
Thickness	100 ㎛
Size	1 m×200 m
Surface Resistance (both sides)	10e5 ~ 10e8 ohm
Constructions	 • Antistatic Treatment • PET Film (50 ㎛, 75 ㎛, 100 ㎛) • Antistatic Treatment



Protection Film

Protection Film is widely used in various objects that need surface protection from outer impact, contaminations, scratches, etc. They are used on stainless steel, AL sheet, acrylic sheet, powder coated steel, wooden flooring, PVC sheet and many others.



M10C-000

Item	Material	Adhesive	Thickness (um)	Adhesive (g/25 mm)	Width (mm)	Length (m)	Elongation (%)	Applications
Surface Protection Film	Polyethylene	Acrytlic	40-150	30, 100, 200, 300, 400, 500, 600, 700	100-1800	100-2000	over 250	PVC & Aluminium & ABS Panel, Melanin board, SUS Panel, Fabric Sheet
PE Protection Film	Polyethylene	Acrytlic	50, 60, 70, 80, 100, 150	10, 30, 50, 100, 300	100-1800	100-2000		Back Light, Touch Screen, LCD/PD Panel, Optical, FIlm&Resin Plate
PE Protection Film (Silicone Adhesive)	Polyethylene	Silicone	50-250	1-3	100-1800	100-2000		Glass, Plastics, Touch Screen, Optical Film
PE Protection Film (Urethane Adhesive)	Polyethylene	Urethane	50, 60, 80, 150	10-30	100-1800	100-2000		Back Light Unit, LCD, PC, PMMA, Glass, Diffusion Film, Polarizing Film

Item	Material	Adhesive	Features	Thickness (um)	Peel Strength (mm)	Re-Adhesive Value (%)
PET Release Liner	Clear PET	Silicone	One-sided/Double-sided coating	22-188	1-180	80-97

Item	Thickness (um)	Tensile Strength (kg/cm²)	Elongation (%)	Tear Strength (kg/cm)	Adhesive (g/25mm)	Applications
EVA Protection Tape	50	300-350	450-600	110, 120, 130	30℃ - 15, 20, 30, 40 80℃ - 30, 40, 50 120℃ - 35, 45, 60	PC, PMMA, PET, PVC, ABS, Glossy surface steel, Plastic themal forming

* Available Width: 1,600 mm
* Available Length: 200 m ~ 3,000 m

Glove Cleaner

VIDEO

Wearing on and off the gloves every time you clean them is not the most efficient way to work with them. The Glove Cleaner, however, will make it significantly easy and time-saving. The workers can put their hands on the cleaner while wearing the gloves, and simply push or pull their hands as the cleaner does its job. The cleaner serves numbers of purposes in various manufacturing process, and it does not matter where you put the cleaner as long as it is close enough to the workers.



M30C-001

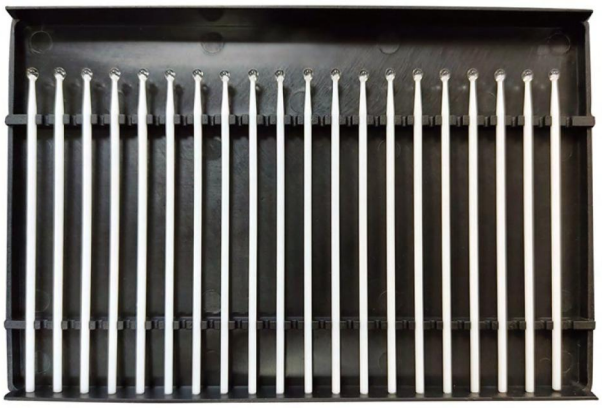
Features

- Stainless Steel Body offers great durability
- Can be placed on either table or wall
- The adhesive rolls have cutting lines to make them easy to peel off (M07C-011-WH, M05C-035-WH)
- Non-woven, PE and PP rollers are available

Roller Variations

Refill Roll	Non-woven Sticky Roller	PE Sticky Roller	PCB Cleaning Roller
Item Code	M07C-011-WH	M05C-035-WH	M08C-023-WH
Material	Non-woven	Polyethylene	PP Synthetic Paper
Core	3" PE Core, 155 mm×15 m	3" PE Core, 155 mm×20 m	3" PE/ABS Core, 155 mm×20 m
Thickness	180 μm	47 μm	80 μm
Adhesion	250 ~ 350 g/25 mm	400 ~ 500 g/25mm	600 ~ 800 g/25 mm

Gel Stick



Variations and Specifications

Item Code	Head Diameter	Length	Rod Diameter	Adhesive Level
M27C-002	2.5 mm	75 mm	1.6 mm	15 g
M27C-003	1.7 mm	70 mm	1.6 mm	12 g
M27C-004	1.3 mm	70 mm	1.6 mm	10 g
M27C-005	0.8 mm	70 mm	1.6 mm	8 g

Features

- Sticky, non-volatile, non wire-drawing glue
- Soft, resilient, flexible
- Odorless, harmless, environment-friendly
- Used on electrostatic sensitive products and semiconductor assembly lines
- Suitable for high-class cleanrooms (up to 10~100 class)
- Clean, non-allergic, no particle-generating raw materials were used
- Anti-chemical, anti-corrosion, anti-static

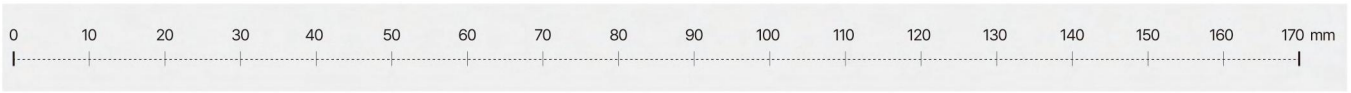
Cleaning Application

- Laser head, mobile camera lenses
- Particles on the surface of LED/LCD
- Glass and plastic debris from lenses
- Dirts on the surface of CD/disk

Storage Conditions

- Keep away from direct light
- Temperature below 30°C
- Two months shelf-life

PU Swab




M16C-017


M16C-018


M16C-023


M16C-024


M16C-025


M16C-027


M16C-033

M16C-034


M16C-035


M16C-036

M16C-037

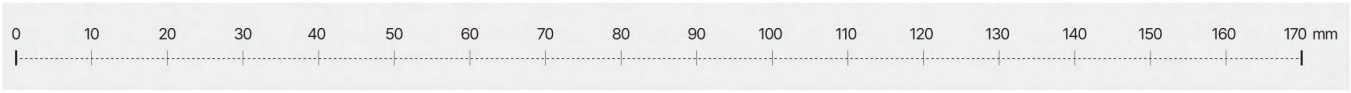

M16C-038


M16C-039


M16C-040


M16C-041

Polyester Swab





M16C-028 ● ●

M16C-030 ● ●

M16C-031

M16C-042

M16C-043

M16C-044

M16C-045

M16C-046

M16C-047

ESD Swab



M17C-006 ○ ●

M17C-007 ○ ●

M17C-008 ○ ●

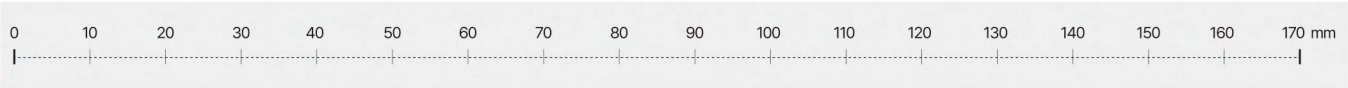
M17C-009 ○ ●

Cotton Swab



M18C-001

M18C-004



M18C-017


M18C-018

M18C-019

M18C-020

M18C-021

M18C-022

M18C-023

Item Code	Materials		Size		Packing
	Tip	Stick	Tip (W × L)	Total Length	
M16C-017	PU	PP	3 mm×13 mm	68 mm	100 pcs/bag, 40 bags/l.box, 12 i.boxes/case
M16C-018			4 mm×10 mm	68 mm	100 pcs/bag, 40 bags/l.box, 12 i.boxes/case
M16C-023			15 mm×25 mm	132 mm	50 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-024			11 mm×23 mm	134 mm	50 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-025			11mm×22 mm	148 mm	50 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-027			6 mm×17 mm	163 mm	100 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-033	PU	PU	3.5 mm×12 mm	71 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-034			3.2 mm×11 mm	77 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-035			3.5 mm×11 mm	70 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-036			3.7 mm×15 mm	65 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-037			4 mm×21 mm	70 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-038			4.5 mm × 18 mm	163 mm	100 pcs/bag, 200 bags/ctn
M16C-039			8 mm × 23 mm	110 mm	100 pcs/bag, 200 bags/ctn
M16C-040			15 mm × 25 mm	130 mm	50 pcs/bag, 50 bags/ctn
M16C-041			20 mm × 27 mm	133 mm	50 pcs/bag, 100 bags/ctn
M16C-028	Knit Polyester	PP	3 mm × 13 mm	68 mm	100 pcs/bag, 40 bags/l.box, 12 i.boxes/case
M16C-030	Polyester	PP	3 mm × 17 mm	163 mm	100 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-031	Micro Denier Fabric with PP Tube	PP	8 mm × 20 mm	153 mm	100 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M16C-042	Polyester	PU	3.5 mm×11 mm	70 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-043			3.2 mm×11 mm	75 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-044			3.8 mm×12 mm	71 mm	100 pcs/s.bag, 5 s.bags/bag, 50 bags/ctn
M16C-045			7.0 mm×17 mm	93 mm	100 pcs/bag, 200 bags/ctn
M16C-046			7.0 mm×17 mm	163 mm	100 pcs/bag, 200 bags/ctn
M16C-047			13 mm×25 mm	125 mm	100 pcs/bag, 50 bags/ctn
M17C-006	PU	A/S PP	3 mm × 13 mm	68 mm	100 pcs/bag, 40 bags/l.box, 12 i.boxes/case
M17C-007	PU	Con. PP	11 mm × 22 mm	148 mm	50 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M17C-008	PU	Con. PP	6 mm × 17 mm	163 mm	100 pcs/bag, 10 bags/l.box, 12 i.boxes/case
M17C-009	Knit Polyester	Con. PP	3 mm × 13 mm	68 mm	100 pcs/bag, 40 bags/l.box, 12 i.boxes/case
M18C-001	Cotton	Wood	2.5 mm × 9 mm	74 mm	100 pcs/bag, 50 bags/l.box, 20 i.boxes/ctn
M18C-004	Cotton	Wood	2.5 mm × 15 mm	153 mm	100 pcs/bag, 12 bags/l.box, 20 i.boxes/ctn
M18C-017	Cotton	Paper	4.4 mm × 12 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-018	Cotton	Paper	4.7 mm × 11 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-019	Cotton	Paper	3.2 mm × 12 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-020	Cotton	Paper	2.6 mm × 11 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-021	Cotton	Paper	3 mm × 11 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-022	Cotton	Paper	2.0 mm × 7.5 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn
M18C-023	Cotton	Paper	2.2 mm × 7.5 mm	80 mm	25 pcs/bag, 100 bags/box, 20 boxes/ctn

Silicone Rubber Roller

VIDEO

Stick Type



Item Code	Dia. (mm)	Width (mm)	Length (mm)
M15C-001	5	-	120

Handy Type

Silicone Rubber Roller is a dust & particle cleaning roller, which can be used in vast range of industries. This product especially shines where you need a cleaning roller that leaves absolutely no residue behind where heat & chemical resistant roller is needed.
This roller may reduce your long-term cost of using disposable variants. You can simply wash and dry the roller after using, but more common way is to use it with DCR-Pad as it cleans the roller very quickly, making the whole work process super efficient.



Item Code	Dia. (mm)	Width (mm)	Length
M15C-002	20	30 mm	90 mm
M15C-003	25	50 mm	90 mm
M15C-004	30	100 mm	150 mm
M15C-005	30	150 mm	150 mm
M15C-006	30	200 mm	150 mm
M15C-007	30	250 mm	150 mm
M15C-008	30	300 mm	150 mm



Materials	Silicone Roller, Aluminium Handle
Width	30, 50, 100, 150, 200, 250, 300 mm
Diameter	20, 30 mm
Adhesive Level / Hardness	Weak/40
	Medium/30

Item Code	Size	Adhesive type
M15C-027	30 mm	weak adhesive
M15C-028	50 mm	weak adhesive
M15C-029	100 mm	weak adhesive
M15C-030	100 mm	medium adhesive
M15C-031	150 mm	weak adhesive
M15C-032	150 mm	medium adhesive
M15C-033	200 mm	weak adhesive
M15C-034	200 mm	medium adhesive
M15C-035	250 mm	weak adhesive
M15C-036	250 mm	medium adhesive
M15C-037	300 mm	weak adhesive
M15C-038	300 mm	medium adhesive

Floor Type



Item Code	Dia. (mm)	Width (mm)	Length
M15C-009	50	250 mm	1~2 m
M15C-010	50	300 mm	1~2 m
M15C-011	50	500 mm	1~2 m
M15C-012	50	600 mm	1~2 m

DCR-PAD

DCR-Pad and the variations offer a great time-saving, efficient way to clean and re-use the rollers such as silicone rubber rollers.



Technical Specifications

Descriptions	Adhesive Paper	Release Paper
Materials	Paper, Adhesive	Silicone coated paper
Adhesion (gf/25 mm)	Weak: 800 g ± 100 Standard: 1100 g ± 100 Strong: 1250 g ± 100	
Thickness	80 μm / sheet	117 μm / sheet
Total Thickness	13.0 mm/pad (50 sheets)	
Packing	50 sheets/pad, 20 pads/box (330 mm) 50 sheets/pad, 40 pads/box (165 mm)	
Constructions		• Release paper • Adhesive • Base paper

Features

- Use with reusable Rubber Rollers
- Excellent cleaning guaranteed
- Cost-effective

1) DCR-Pad with full adhesive area (standard)

Item Code	M14C-005	M14C-006
Size	330 mm×240 mm	165 mm×240 mm
Adhesive Area	330 mm×180 mm	165 mm×180 mm
Color	White (base paper)	
Descriptions	Full adhesive	



2) Black colored DCR-Pad for better dust visibility

Item Code	M14C-009	M14C-010
Size	330 mm×240 mm	165 mm×240 mm
Adhesive Area	330 mm×180 mm	165 mm×180 mm
Color	Black (base paper)	
Descriptions	Full adhesive Improved dust visibility	



3) BCR-Pad with adhesive free area

Item Code	M14C-007	M14C-008
Size	330 mm×240 mm	165 mm×240 mm
Adhesive Area	330 mm×180 mm	165 mm×180 mm
Color	White (base paper)	
Descriptions	Adhesive free on one End Easier to peel-off	



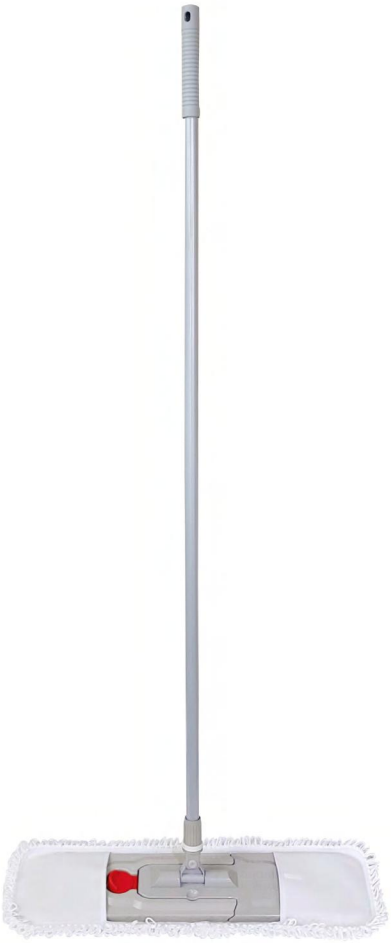
Cleanroom Mop



M19C-001



M19C-003



M19C-013



M19C-019

Wet Mop

Wet Mop is the most popular 1/4" knitted tube mop that MEC supplies. The mop is made of 100% microfiber polyester, makes it incredibly liquid-absorbent while particle generation is suppressed at the reasonable level. It is cost-effective, easy to use and works great for the application.

Item Code		M19C-001	Wet Mop Set
		M19C-004	Wet Mop Refill
		M19C-011	Wet Mop Handle
Size	Mop	16 cm×35 cm	
	Handle	80 cm ~ 150 cm (Adjustable)	
Material	Mop	100% Microfiber Polyester	
	Handle	Aluminum	

Flat Mop with SUS Plate

SUS Flat Mop is the best cleanroom mop MEC has to offer. The mop is made 1/4" knitted tube yarn, cleanroom-laundered as well as packaged in cleanroom, plus stainless steel handle makes it extremely low particle-generating mop. High-class cleanrooms, hospitals and labs will be excellent applications for Flat Mop.

Item Code		M19C-003	SUS Flat Mop Set
		M19C-008	SUS Flat Mop Refill
		M19C-010	SUS Flat Mop Handle
Size	Mop	12 cm×40 cm	
	Handle	80 cm ~ 150 cm (Adjustable)	
Material	Mop	100% Microfiber Polyester	
	Handle	Stainless Steel	

Flat Mop with Plastic Plate

Plastic Flat Mop is edgeless knitted tube mop that is made of 100% microfiber polyester. This mop comes with simple, solid handle that provides excellent durability, while the mop frame has a foot-press button on top for easier mop replacement, making it one of the most convenient mops to work with.

Item Code		M19C-013	Plastic Flat Mop Set
		M19C-006	Plastic Flat Mop Refill
		M19C-015	Plastic Flat Mop Handle
Size	Mop	12.5 cm× 60 cm	
	Handle	125 cm (Non-adjustable)	
Material	Mop	100% Microfiber Polyester	
	Handle	Galvanized Steel	

T Mop

T Mop is designed for cleaning windows, walls and ceilings because of the shape as well as lightweight aluminum frame. Cleanroom-laundered 100% microfiber polyester mop will be very effective at cleaning places your hands won't reach, and adjustable handle will make it even more viable.

Item Code		M19C-019	T Mop Set
		M19C-020	T Mop Refill
		M19C-021	T Mop Handle
Size	Mop	8 cm×40 cm	
	Handle	80 cm ~ 150 cm (Adjustable)	
Material	Mop	100% Microfiber Polyester	
	Handle	Aluminium	

Wet Mop Refill
M19C-004



Size: 16 cm×35 cm
100% Microfiber Polyester

SUS Flat Mop Refill
M19C-008



Size: 12 cm×40 cm
100% Microfiber Polyester

Plastic Flat Mop Refill
M19C-006



Size: 12.5 cm×60 cm
100% Microfiber Polyester

T Mop Refill
M19C-020



Size: 8 cm×40 cm
100% Microfiber Polyester

Mop Trolley

Mop Trolley provides the utmost convenience and work efficiency to workers. All the components including buckets, wringer and casters are fully autoclavable to help maintain the trolley always clean. In addition, the whole trolley was designed around touchless mopping system, so workers wouldn't have to touch the mop refills throughout the entire cleaning stages.

Item Code	M31C-002
Main Material	Stainless Steel 304
Casters Material	Phenolic
Dimension	700×540 (mm) with handle and caster

Features

- Fully compatible with following sterilizations; autoclaving, ETO, Gamma Irradiation
- Removable handle for easier sterilization and storage
- 3 Buckets





Cleanroom & ESD

Stationery

Cleanroom Paper

Polstar Cleanroom Paper is specially designed for writing, printing and photocopying in Cleanroom environments. Through a polymerization process, fiber lint and particulates are tightly bound to each other. This reduces electrostatic buildup and ultimately minimizes the scrap rate of the copy paper. Polstar Cleanroom Paper provides a variety of colors, sizes and weights.

Features

- Low Talc
- Recyclable
- Clear writing
- Double packing (Single packing – option) in cleanroom
- Ultra-low particle generation, extractable chemical substances and metallic ion content
- High opacity and durability
- Good tear and tensile strength
- Smooth feeding and superior toner adherence in laser printers and PPC copiers



Clean Paper (Roll type)



Item Code	Product	Weight (g)	Size (mm)		Packing
M01S-000	Cleanroom Paper	72 80 100 250	A3	420×297	250 sheets/pk, 5 pks/ctn
			A4	210×297	250 sheets/pk, 10 pks/ctn
			A5	210×148	250 sheets/pk, 20 pks/ctn
			B4	257×364	250 sheets/pk, 5 pks/ctn
			B5	182×257	250 sheets/pk, 10 pks/ctn
			Full Size	645×900	9 sheets of A4 size are available
				850×900	12 sheets of A4 size are available
	Cleanroom Paper (Roll type)		2", 3" (core)×30~1600 mm(W) ×30~10,000 m(L)		

* **Color:** M01S-000 - White, S. Blue, R. Blue, L. Blue, Green, Pink, Yellow, Orange

M01S-000 (100 gsm) - White, S. Blue, R. Blue



TF Clean Paper



M21S-000

Features

- Talc Free
- Recyclable
- Clear writing
- Double packing (Single packing - option) in cleanroom
- Ultra-low particle generation, extractable chemical substances and metallic ion content
- High opacity and durability
- Good tear and tensile strength
- Smooth feeding and superior toner adherence in laser printers and PPC copiers

Continuous Printing Clean Paper



M04S-000

Features

- Made of polstar clean paper
- Recyclable
- Suitable for Cleanroom environments

Clean Notebook



M05S-000

Features

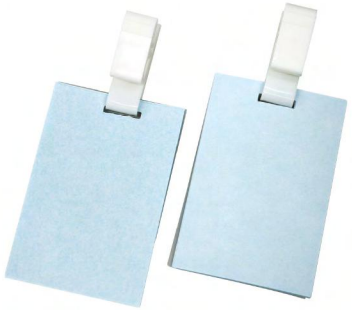
- Easy to write on
- Good Tear resistance
- High-density polyethylene cover and plastic spirals (a spiral type)

* Type: Spiral or Stapler
* Line: Ruled, Checked
* Size: A4, A5, A6 (Custom sizes are also available)

Item Code	Product	Weight (g)	Size (mm)		Packing
M21S-000	TF Clean Paper	72	A3	420×297	250 sheets/pk, 5 pks/ctn
			A4	210×297	250 sheets/pk, 10 pks/ctn
			A5	210×148	250 sheets/pk, 20 pks/ctn
M04S-000	Continuous Printing Clean Paper	72, 80, 100	9.5″×11″		2,000 sheets/ctn
			15″×11″		2,000 sheets/ctn
M05S-000	Clean Notebook	72, 80	Spiral / A4	210×297	50 sheets/book
			Spiral / A5	210×148	50 sheets/book
			Spiral / A6	105×148	50 sheets/book
			Stapler / A4	210×297	30 sheets/book
			Stapler / A5	210×148	30 sheets/book

* **Color:** M21S-000 - White, L. Blue M04S-000, M05S-000 - White, S. Blue, R. Blue, L. Blue, Green, Pink, Yellow, Orange

Clip-on Notepads New



Item Code	M55S-001	M55S-002
Material	Cleanroom Paper (10 Sheets) + PE back cover	
Size	2”×3”	4.75”×3”

* Class 10 Cleanroom Packed. * Made for garments with no pockets.
* Item can be Sterilized.

Clean Sticky Notes



Item Code	M06S-001	M06S-002	M06S-003
Material	Clean Paper (72 g)		
Size	2”×3”	3”×3”	4”×3”

Lead Frame Separator

Item Code	M22S-000
Material	Clean Paper, PP
Weight	250 g

Interleaf



Cleanroom Paper



Tyvek Paper



Cleanroom Paper/PP

Item Code	Material	Shape	Size (inch, mm)	Weight (g)	Thickness (㎛,+/-3)	Application
M09S-001	Cleanroom Paper	Circle	6“ (dia.)	72	91	Wafer
M09S-002	Cleanroom Paper	Circle	8“ (dia.)	72	91	Wafer
M09S-006	Tyvek Paper	Circle	8“ (dia.)	72	191	Wafer
M09S-003	Cleanroom Paper	Circle	12“ (dia.)	72	91	Wafer
M09S-009	Cleanroom Paper	Tetragon	55×210	72	91	PCB
M09S-010	Cleanroom Paper	Tetragon	120×120	72	91	PCB
M09S-011	Cleanroom Paper	Tetragon	123×123	72	91	PCB
M09S-014	Cleanroom Paper	Tetragon	420×510	72	91	PCB
M09S-012	Cleanroom Paper	Octagon	156×156	72	91	Solar glass
M09S-013	Cleanroom Paper	Tetragon	182×182	72	91	Solar glass
M09S-016	Cleanroom Paper	Tetragon	210×297	72	91	Printed form
M09S-000	PP	Tetragon	on demand	95		High-end

Security Paper, Printer and Gate

Structures of Security Solution



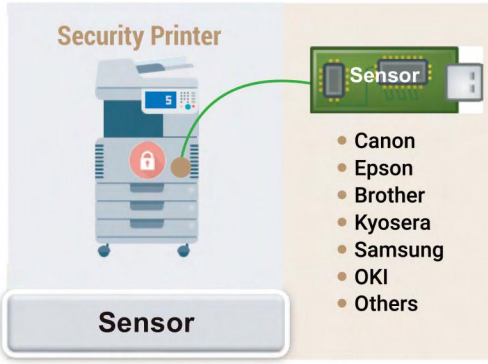
Security Paper Item Code C04C-000, C05C-000 (Cleanroom Type)

Security paper is made of micro wire materials which are virtually impossible to remove. With the same thickness as a plain paper, it is designed to trigger a detection alarm at the security gate when any confidential document is attempted to be carried out.

C04C-000

C05C-000 (Cleanroom Type)

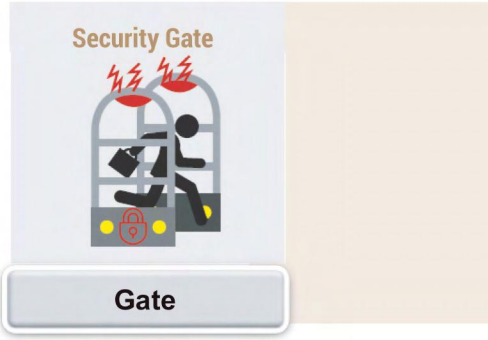




- Canon
- Epson
- Brother
- Kyosera
- Samsung
- OKI
- Others

Printer Sensor Item Code C01C-000

The self-developed mini security sensor embedded in any multi-function printers allows for a relatively low initial cost by ensuring a single sensor installation on a printer with two or more trays. Any regular printer can be transformed to a security printer by simply installing the security sensor. The security sensor embedded in the printer only works with the security paper and rejects regular paper without printing.

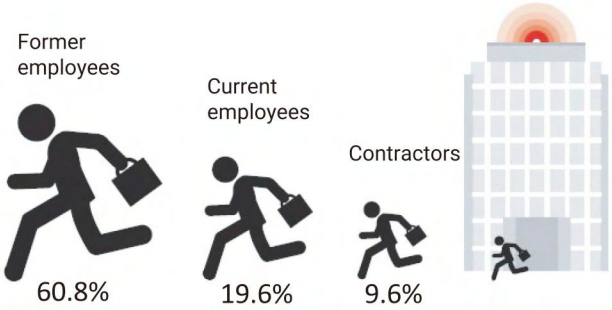


Security Gate Item Code C02C-000

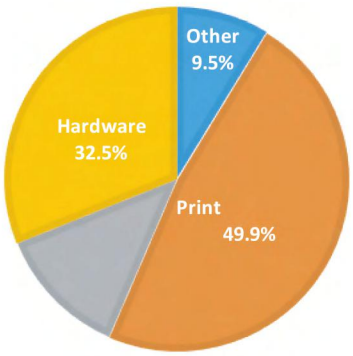
Security gate is custom engineered with the security paper to maximize detection sensitivity to protect your confidential documents from information theft.

How important is the security of hardcopy documents?

Data Leakage Status



Stakeholder cases take up 80% of information leakage



Data Source: Japan Network Security Association

Hard Copy Document take up 50%

Hard Copy Document Leakage Cases

- National Security Agency (NSA) contactor put the printed top-secret document in her stockings and later gave it to news outlet – The Washington Post. June 2, 2016
- Former FBI has been charged for leaking secret document to news outlet. He allegedly continued cutting, pasting screen shots and printing some out – Star Tribune. March 29, 2018
- Fund operation document leaked – Special Economics. February 2, 2017





Clean Label

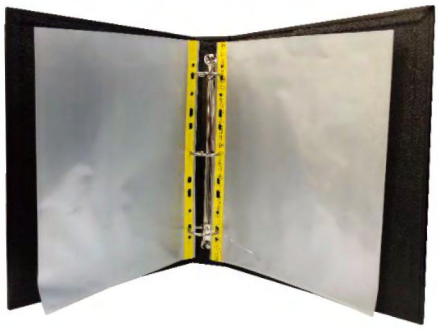
Polstar Clean Label is used for the purpose of memo, data writing or bar coding on wafer carriers or boxes. It is made of particle-free PP film with an acrylic based adhesive. It minimizes contamination and leaves no residue on the surface after the label is removed. As the film is chemical treated for bar code printing, the frequency of error from a bar code reader is reduced.

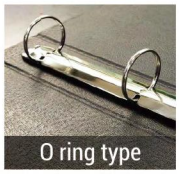


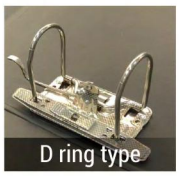
M07S-000

ESD Ring Binder









Item Code	M15S-001	M15S-002	M15S-003	M15S-004	M15S-005	M15S-006
Material	PVC	PVC	PVC	PVC	PU	Paper
Color	Black	Black	Black	Black	Black	Blue
Thickness	45 mm	45 mm	75 mm	75 mm	45 mm	45 mm
Size	A4	A4	A4	A4	A4	A4
Ring	2 rings	3 rings	2 rings	3 rings	3 rings	3 rings
Surface Resistance	10e5 ~ 10e8 ohm					

Cleanroom Ring Binder New





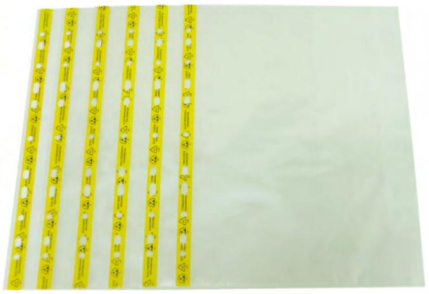


Item Code	M54S-001-color	M54S-002-color	M54S-003-color	M54S-004-color
Material	PE Cover + Metal or Plastic Ring			
Color	White(WH), Blue(BL), Red(RE), Black(BK)			
Ring	3 rings (Plastic)	3 rings (Metal)	3 rings (Metal)	3 rings(Metal)
Size	1"	1"	2"	3"

* Class 10 Cleanroom Packed. * Poly Pocket on the front cover for documentation or labeling * Each binder is individually double- bagged.

ESD Clear File

Item Code	M10S-001-TP-A4	M10S-002-TP-A3
Material	PP	
Size	A4	A3
Thickness	0.05 mm	
Surface Resistance	10e9 ~ 10e11 ohm	



ESD Clipboard

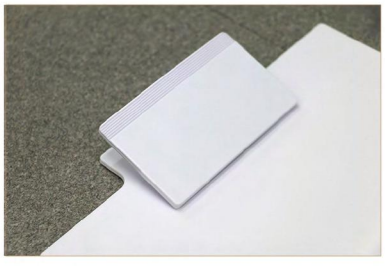


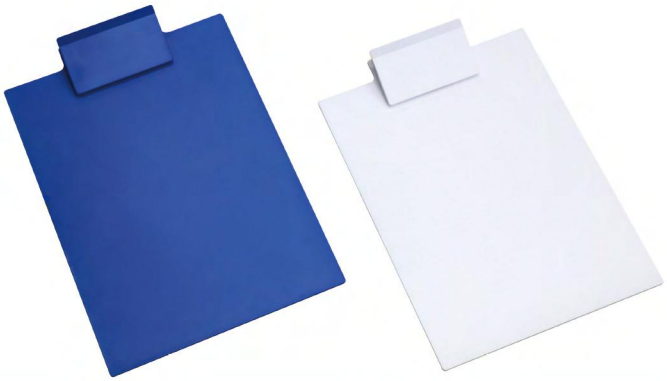
Item Code		M11S-001-TP-A4	M11S-002-TP-A5
Material	Body	Static Dissipative PMMA (Acrylic) / PC	
	Clip	S/Steel + Plastic	
Size		A4	A5
Surface Resistance		10e6 ~ 10e8 ohm	



Item Code		M11S-006-BK-A4
Material	Body	Static Dissipative Synthetic Leather / PC
	Clip	S/Steel + Plastic
Size		A4
Color		Black
Surface Resistance		10e5 ~ 10e8 ohm

Cleanroom Clipboard New





Item Code	M55S-001	M55S-002
Material	PE	PE
Color	White, Navy, Green, Red, Yellow, Orange	White, Navy, Green, Red, Yellow, Orange
Size	1.25"×9.125"×13" (for 8.5 x 11 sheet)	1.25"×9.125"×16" (for 8.5 x 14 sheet)
Packing	10 per pack	11 per pack

* Class 10 Cleanroom Packed. * 95% post-industrial recycled material (BK, NA, GE)

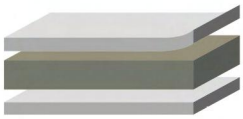
ESD Document Holder



Item Code	M14S-004
Material	PET
Size	A4
Thickness	0.2 mm
Surface Resistance	10e5 ~ 10e7 ohm (both sides)

Features

- Protect documents, especially thinner files
- Cleanroom compatible
- Open 2 ways (top & right side)



- ESD Treatment
- PET (125 ㎛)
- ESD Treatment



Item Code	M14S-008	M14S-009
Width	20 mm	30 mm
Material	PETG	
Size	A4	
Color	Black	
Surface Resistance	10e5 ~ 10e8 ohm	



M14S-007



M14S-010



M14S-011

Item Code	M14S-007	M14S-010	M14S-011
Material	ABS	ABS	ABS
Paper Size	A4	A4	A4
Color	Black	Black	Black
Surface Resistance	10e5 ~ 10e8 ohm	10e5 ~ 10e8 ohm	10e5 ~ 10e8 ohm

ESD Laminating Film

Features

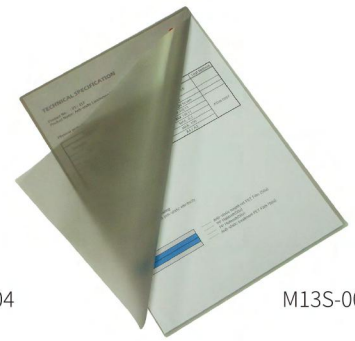
- Transparent
- 2 Colors
- Good performance in Laminating
- Semi-permanent surface resistivity
- Film in roll type is also available on request

Applications

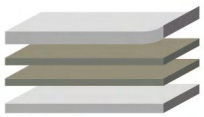
- Protect documents with ESD laminating.



M13S-004



M13S-009



- ESD treatment PET film (50㎛)
- PP Hotmelt (50㎛)
- PP Hotmelt (50㎛)
- ESD treatment PET film (50㎛)

Physical Properties		Unit	Value			Test Method
			M13S-004-TP-A4	M13S-006-TP-A3	M13S-009-GR-A4	
Thickness	Base Film	㎛	50±2			
	PP Hotmelt	㎛	50±3			
Total Thickness		㎛	200±10			
Size			A4	A3	A4	
Color			Clear		Light Grey	
Surface Resistance (Out)		Ω	Max.10e6		Max.10e6	ASTM D257
Surface Resistance (In)			Max.10e6		Max.10e6	
Triboelectricity		V	Max.300		Max.500	

ESD Mouse Pad

Item Code	M20S-001	M20S-002
Size	1.4(T)×170×210 mm	1.4(T)×200×250 mm
Material	Top: Microfiber ESD fabric Bottom: Conductive rubber	
Color	Dark Blue / Black	
Surface Resistance	Top: 10e6 ~ 10e7 ohm Bottom: 10e4 ~ 10e5 ohm	







Features

- Made of ESD microfiber fabric & Conductive NBR Rubber
- Excellent ESD properties
- Dual layer structure
- Embossed bottom
- Easy Mouse operating
- Smooth surface
- ESD logo printed

Item Code	M20S-004
Material	Black Lycra Fabric + PU Gel
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm



M20S-004



ESD Puncher



Item Code	M28S-002
Material	ABS (Plastic Part)
Color	Black (Plastic Part)
Surface Resistance	10e5 ~ 10e8 ohm

ESD Stapler



Item Code	M29S-001
Material	ABS
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Telephone



Item Code	M35S-001
Material	ABS
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Calculator



Item Code	M23S-001
Material	ABS
Surface Resistance	10e5 ~ 10e8 ohm

ESD Keyboard



M24S-001



M24S-002

Item Code	M24S-001	M24S-002
Type	Wireless	Wired
Material	ABS	
Color	Black	
Specifications	USB Port	
Surface Resistance	10e5 ~ 10e8 ohm	

ESD Mouse



M25S-001



M25S-002

Item Code	M25S-001	M25S-002
Type	Wired	Wireless
Material	ABS	
Color	Black	
Specifications	USB Port	
Surface Resistance	10e5 ~ 10e8 ohm	

ESD Scissors



Item Code	M27S-002
Material	ABS (Plastic Part)
Color	Black (Plastic Part)
Surface Resistance	10e5 ~ 10e8 ohm

ESD Cutter



Item Code	M32S-002
Material	ABS (Plastic Part)
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Ruler



Item Code	M26S-001
Material	ABS
Color	Clear
Length	30 cm
Surface Resistance	10e5 ~ 10e8 ohm

ESD Clip



Item Code	M33S-001	M33S-002
Material	Metal	
Size	M	L
Color	Opaque	
Surface Resistance	10e5 ~ 10e9 ohm	

ESD Tape Cutter



M36S-001



* Handheld type
M36S-003

Item Code	M36S-001	M36S-003
Material	ABS	ABS
Size	25 mm, 75 mm	2”/2.5”
Color	Black	Black
Surface Resistance	10e5 ~ 10e8 ohm	10e5 ~ 10e8 ohm

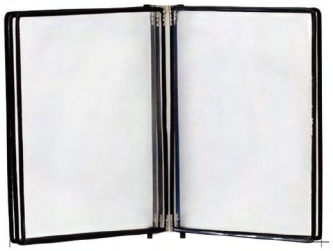
ESD File Cabinet



* Spec. 1: Index Stick Place on Every Drawer
* Spec. 2: With lock and Key

Item Code	M52S-001
Material	PP + GPPS
Size	270×360×260 mm
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Display Rack



Item Code	M34S-001
Type	Wall Mounting type
Material	ABS base + PP
Paper Size	A4
Leaf	10 pockets
Color	Black, Black leaflets
Surface Resistance	10e7 ~ 10e9 ohm



Item Code	M34S-002
Type	Desktop type
Material	ABS base + PP + Metal
Paper Size	A4
Leaf	20 pockets /40 sheets
Color	Black stand, Black leaflets
Surface Resistance	10e7 ~ 10e9 ohm

* Can be rotated in 360℃ by hand * Half moon handle

ESD Pen Stand



Item Code	M31S-002
Material	ABS
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Scanner



Item Code	M37S-001
Material	ABS (Plastic Part)
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm

ESD Pen



Item Code	M30S-001
Material	ABS
Color	Black
Surface Resistance	10e5 ~ 10e8 ohm
Packing	10 pcs/bag

ESD Pen



Item Code	M30S-002
Material	Metal
Color	Black
Surface Resistance	10e8 ~ 10e9 ohm
Packing	12 pcs/bag

Cleanroom Pen









Features

- Ball size: 0.8 mm
- Double poly packed in Class 10 (ISO 3)
- Low Sodium, Chloride and Heavy Metal used Ink
- Non-smearing permanent Ink
- Low outgassing and particulate generation material is used
- Barrel is made of HDPP (high-density polypropylene)
- Rectangular clip design

Item Code	Type	Color	Packing
M39S-004-BK	Stick type	Black	12 pcs/bag
M39S-004-BL		Blue	
M39S-004-RE		Red	
M39S-005-BK	Click type	Black	12 pcs/bag
M39S-005-BL		Blue	
M39S-005-RE		Red	

Cleanroom Maker New



Item Code	M53S-001-BK	M53S-001-BL	M53S-001-RE	M53S-002-BK	M53S-002-BL	M53S-002-RE
Color	Black	Blue	Red	Black	Blue	Red
Descriptions	Dry erase, Chisel tip			Dry erase, Bullet tip		
Packing	12 markers per box			12 markers per box		





Item Code	Color	Descriptions	Packing
M53S-003-BK	Black	Felt tip, Water proof, Smear & fade-Resistant	12 markers per box
M53S-003-BL	Blue		
M53S-003-RE	Red		
M53S-003-GE	Green		

Item Code	Color	Descriptions	Packing
M53S-004-BK	Black	Chisel tip Permanent, Quick-drying, IPA-Resistant,	12 markers per box

ESD Cleanroom Bags (Fabric type)

VIDEO



Features

- Surface resistance: 10e6 ~ 10e8 ohm
- ESD Cleanroom fabric material
- Excellent durability
- Expandable (backpack and cross bag)
- Adjustable shoulder straps
- Suitable for Cleanroom and ESD environments
- Opaque bag
- Name card holder

Style	Item Code	Pictures	Dimensions (mm)
Backpack	M38S-013-SB M38S-013-GR		310×430×100 (160) *expandable (60 mm) *Zip Pocket ① 310×310×50 ② 310×190
Cross bag	M38S-016-SB M38S-016-GR		390×290×80 (140) *expandable (60 mm) *Zip Pocket ① 390×190×60 (front) ② 390×190 (back)
	M38S-019-SB M38S-019-GR		230×260×55 *Zip Pocket ① 230×160×45 (front) *Open Pocket ① 230×160 (back)








ESD Cleanroom Bags (TPU type)



Features

- Surface resistance: 10e4~10e6 ohm
- TPU(Thermoplastic Polyurethane) material
- Excellent durability and elasticity
- Wear, cold, chemical and oil resistance
- Odorless
- ECO friendly and no harmful to human body
- Expandable (backpack and cross bag)
- Adjustable shoulder straps
- Suitable for Cleanroom and ESD environments
- See-through bag
- Name card holder

Style	Item Code	Pictures	Dimensions (mm)
Backpack	M38S-012-TP		310×430×100 (160) *expandable (60 mm) *Zip Pocket ① 310×310×50 ② 310×190
Cross bag	M38S-015-TP		390×290×80 (140) *expandable (60 mm) *Zip Pocket ① 390×190×60 (front) ② 390×190 (back)
	M38S-018-TP		230×260×55 *Zip Pocket ① 230×160×45 (front) *Open Pocket ① 230×160 (back)
Pouch	M38S-007-HZ-S M38S-007-HZ-M M38S-007-HZ-L		S: 215×155 M: 315×215 L: 330×245







Microfiber Cleanroom Wiper
INOX-1008



Cleanroom & ESD
Wipers

Microfiber Cleanroom Wiper New

A High-Performance Wiper for Critical Applications

The Microfiber Wiper, INOX-1008, represents the next generation of cleaning solutions, carefully designed to meet the high standards of modern high-tech industries. This product offers comparable performance to leading wipers such as S***na MX, making it a reliable and cost-effective alternative for cleanrooms and other sensitive environments. Engineered with a high-density structure, it delivers superior cleaning performance and durability to meet the most strict cleanliness standards.

Unlike many other typical microfiber wipers that use 75 denier, 36-filament fabric, our Microfiber Wiper is made with 75 denier, 48-filament fabric, resulting in a significantly higher density. This advanced structure ensures enhanced cleaning efficiency, outperforming conventional wipers.

VIDEO



Model	Item Code	Size
Inox-1008	M02W-041	9″×9″
	M02W-042	5″×5″

Technical Specifications

Item	Unit	Specifications
Material	-	Knitted Polyester + Micro Denier Nylon (High Density)
Cutting		By Laser
Size	inch	9 x 9, 5 x 5
Weight	g/m²	Min. 180
Thickness	mm	0.45 ± 0.03
Air Particles	ea/sh(≥0.3μm)	Max. 30 (9"x9")
Absorption Amount	g/m²	Min. 350
Absorption Rate	sec	Max. 10
Cleanroom Grade	-	Class 100 (ISO 5)

Features

- High-Density Construction
- Negligible Lint Generation
- Excellent Water Absorbency
- Low Ion Dissolution
- Exceptional Cleaning Power

Applications

Ideal for critical environments such as:

- Semiconductor and LCD manufacturing.
- Laboratories requiring strict dust control.
- Cleanrooms for pharmaceutical and medical device production.

Microfiber Woven Wiper New

Technical Specifications

Item	Unit	Specifications
Material	-	Polyester 80% + Micro Denier Nylon 20% (Woven type)
Cutting		By Laser
Size	inch	9 x 9, 5 x 5
Weight	g/m²	Min. 120
Thickness	mm	0.3± 0.26
Air Particles	ea/sh(≥0.3μm)	Max. 30 (9"x9")
Absorption Amount	g/m²	Min. 230
Absorption Rate	sec	Max. 10
Cleanroom Grade	-	Class 100 (ISO 5)



Model	Item Code	Size
Inox-1002	M02W-039	9″×9″
	M02W-040	5″×5″

Polyester Knit Wiper

Features

- 100% Polyester continuous yarn
- Cost-effective solution
- Good absorption capacity
- Low particle generation
- Double packed in Class 100~1000 Cleanroom



Model	Item Code	Size
Inox-3140	M01W-025	9″×9″
	M01W-039	6″×6″
	M01W-038	4″×4″
	M01W-037	2″×2″
Inox-3070	M01W-026	9″×9″

Micro-Denier Fiber Wiper

Features

- Excellent wiping without scratches
- Extremely low non-volatile residues and ions
- Excellent absorption capacity
- Suitable for sensitive surface by its soft texture
- Double packed in Class 10~100 Cleanroom



Model	Item Code	Size
Inox-1003	M02W-004	9″×9″
	M02W-005	6″×6″
	M02W-006	4″×4″



Model	Item Code	Size
Inox-1006	M02W-007	9″×9″
	M02W-008	6″×6″
	M02W-009	4″×4″



Model	Item Code	Size
Inox-1050	M02W-027	9″×9″



Model	Item Code	Size
Inox-1080	M02W-028	9″×9″

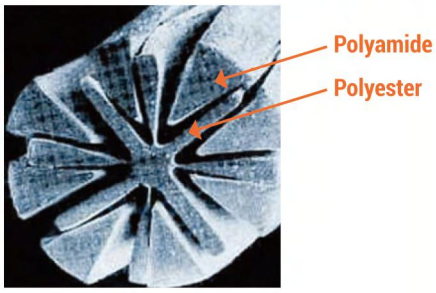


Item Code	Size
M06W-020	9″×9″
M06W-021	6″×6″
M06W-022	4″×4″

Differences between microfiber wipers and polyester wipers

Materials

Microfiber wipers: microscopic polyester(70~80%) and polyamide(20~30%) fiber
Polyester wipers: 100% polyester yarn



Touch

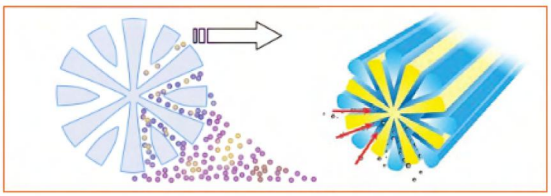
Microfiber wiper is much softer than Polyester wiper.

Absorbency

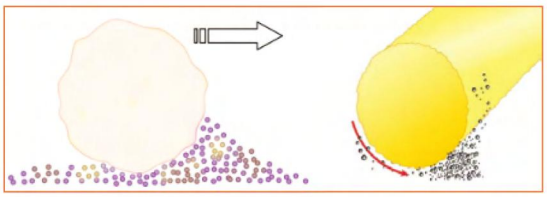
Microfiber wiper has a better absorbency thanks to its unique fiber structure.

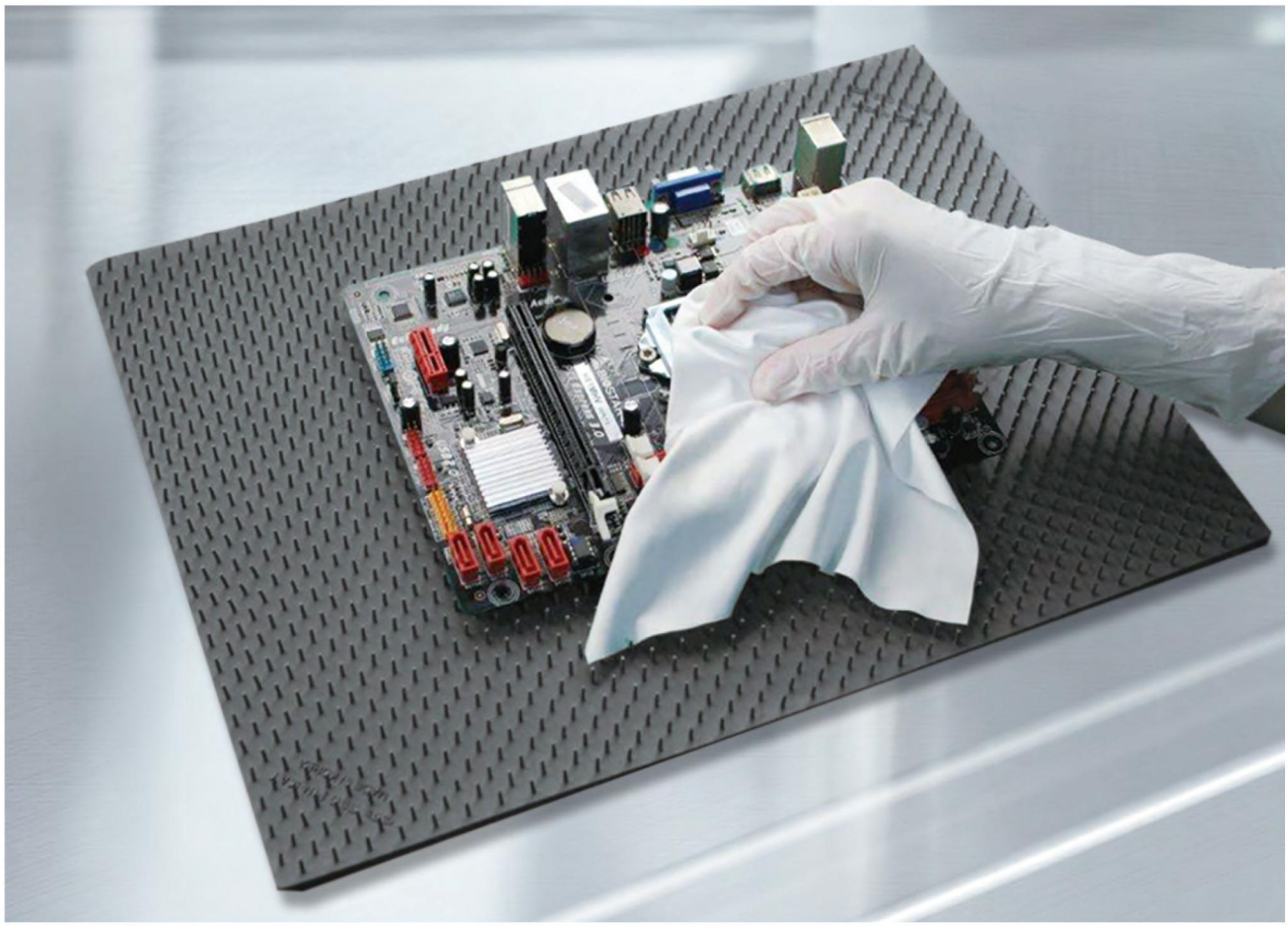
The Cross Section of a single fiber

① Microfiber



② Polyester fiber





PVA Sponge Wiper

What is a PVA Sponge?

The PVA Sponge is a kind of wiper that is composed of uniform and continuous foamed open cells made by aged Poly Vinyl Alcohol as a raw material. The PVA Sponge has an excellent chemical resistance. It is lint & dust free and soft. The PVA Sponge can be used in many industries, such as a sophisticated cleaning sector in semiconductor industry or health & beauty industries. With being able to adjust its absorption, elasticity, size, density, color and shape, PVA sponge is highly versatile, which easily fits in any industrial fields.

Features

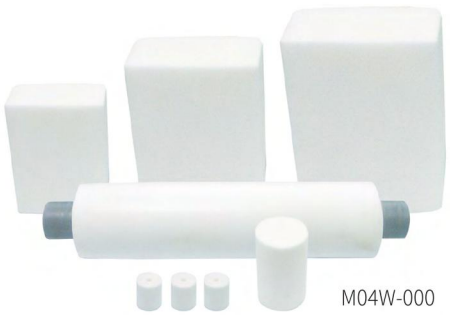
- Excellent ability to remove moisture due to a strong hydrophilic properties, allowing it to absorb water more than 10 times of its own weight.
- Soft and elastic in wet texture
- No lint or dust is generated during the cleaning.
- Excellent chemical resistance & abrasion resistance

General use (sheet or blocks)

Widely used in various industrial fields, such as Cleanroom, PCB, Glass, Mirror, Optical instrument and many others. Other types (block, roller, sheet, etc.) are available.



M04W-001



M04W-000

Packing 2 mm (T) x 9" x 9" 10 sheets/pack, 20 packs/ctn

Used in FPD & Semiconductor industries

Cleaning wafer surface after Chemical Mechanical Polishing (CMP) process.



PVA Sponge Roller (Embossing Type)



PVA Sponge Roller (Flat Type)



PVA Sponge Roller (Spur Type)



PVA Sponge Roller (Disk Type)

Non-Woven Wiper

Features

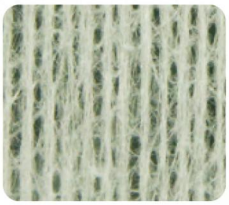
- High absorbency
- Low particle generation & non-volatile residues

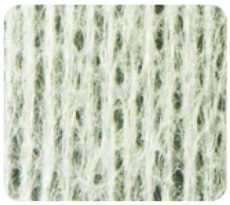
Applications

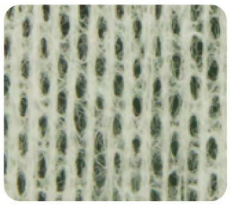
- Pre-cleaning for spare parts of equipment
- Cleanroom wall
- Cleanroom access floor
- Applicable for cleanroom environments



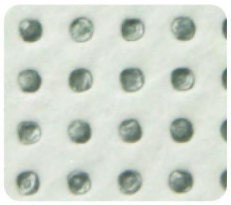
M05W-000


M05W-009


M05W-010


M05W-011


M05W-012


M05W-013

Item Code / Parts No. / General Information		M05W-009		M05W-010		M05W-011		M05W-012		M05W-013	
		2025		2125		2225		2323		2429	
Weight	g/m²	30	± 3	30	± 3	35	± 3	68.2	± 3	80	± 3
Thickness	mm	0.25	± 0.02	0.25	± 0.02	0.3	± 0.02	0.264	± 0.02	0.5	± 0.01
Width	mm	250	± 2	250	± 2	250	± 2	230 (9")	± 2	290	± 2
Length	mm	250	± 2	250	± 2	250	± 2	230 (9")	± 2	300	± 2
Compositions	%	Rayon 70 PET 30		Rayon 70 PET 20 / *LMP 10		Rayon 100		Polyester 45 Cellulose 55		PP Non-Woven 100	
Standard Packing		100pcs/bag 30bags/carton		100pcs/bag 30bags/carton		100pcs/bag 30bags/carton		300pcs/bag 10bags/carton		50pcs/bag 10bags/carton	
Vital Statistics											
Fibers	(ea/m²)	9.5		9.2		< 30		-		3.2	
Particles	≥ 0.3μm	-		-		20-50	Biaxial Shake	-		-	
	≥ 0.5μm	25	Biaxial Shake	13	Biaxial Shake	250	LPC	7×10^8	TM-107 (Air)	≥ 30	Biaxial Shake
	cu.ft	980	Helmke Drum	83	Helmke Drum	-		-		-	
Absorbency	cc/m², sec.	337		313		380		< 4	TM-108 (sec.)	320	
Time to 1/2 sorption	sec	2		2		1		-		2	
2-Propanol	%	0.011		0.017		0.017		-		0.017	

*LMP(Low Melt Polyester)

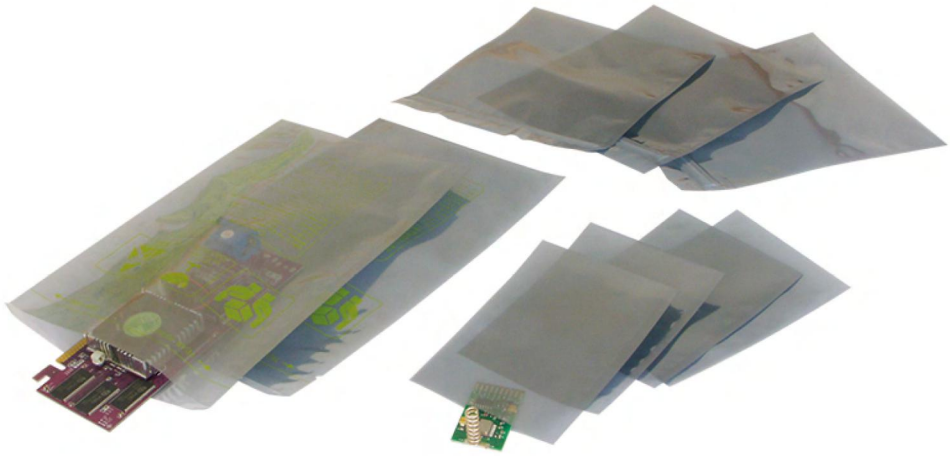
Ions						
Na	ppm	98	99	23	61	25.34
K	ppm	8.5	9.1	0.7	7	4.18
Ca	ppm	ND	ND	< 0.15	-	1.13
Mg	ppm	ND	ND	-	-	0.25
Cl	ppm	-	-	5.3	18	15.99
NO2	ppm	-	-	-	-	4.45
NO3	ppm	-	-	-	-	7.83
SO4	ppm	-	-	-	-	21.02
NH3	ppm	-	-	-	-	5.42
Fe	ppm	-	-	-	-	0.15
Cu	ppm	-	-	-	-	0.1
Al	ppm	-	-	-	-	0.098
Ni	ppm	-	-	-	-	ND
Zn	ppm	-	-	< 0.15	-	0.15
Mn	ppm	-	-	-	-	0.15
Residue/Water	ppm	-	-	180	-	0.10
Residue/IPA	ppm	-	-	50	-	-


Static Shielding Bag
M04P-000
Cleanroom & ESD
Packaging Bags & Film

Electro Static Discharge (ESD) is nothing new, but its effect on electronic components and devices is serious if it is not properly controlled. Uncontrolled ESD not only causes partial damage to electronic components, but also sometimes destroys electronic components and devices totally. Together with controlling of ESD, moisture is also essential to be controlled for sensitive devices or components. Apart from personal grounding, sensitive goods should also be well protected from ESD and moisture during transportation and storage. There are several types of packaging bags in the market. The most important thing is to select a suitable bag for each application.

Static Shielding Bag (SSB)

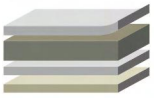
SSB is manufactured by depositing a thin metal coating, like aluminum over an antistatic polyester film substrate. This metalized layer protects the devices or the components in the bag from electrostatic fields. According to the position of the metalized layer, there are two types of metalized shielding bags, "Metal-In" and "Metal-Out", in the market. A metal-in bag or a buried metal shielding bag is the most commonly used and recommended for packaging of static-sensitive components. It also tends to be superior to a metal-out bag in durability and cost. A metal-out shielding bag also protects the devices in the bag against static-induced damage. As the metal layer is closer to the outside surface, the metal-out shielding bag has lower ESD reading than a metal-in bag. The SSB we offer is a metal-in type, which has the metalized layer inside.



Regular Sizes in Stock

Product	Item Code	Size(O.D), W(O) x L
Static Shielding Bag	M04P-069	3mils x 90 x 120mm
	M04P-070	3mils x 130 x 200mm
	M04P-071	3mils x 160 x 250mm
	M04P-072	3mils x 180 x 280mm
	M04P-073	3mils x 200 x 300mm
	M04P-074	3mils x 250 x 350mm
	M04P-075	3mils x 300 x 400mm
	M04P-076	3mils x 350 x 450mm
	M04P-077	3mils x 400 x 500mm

*W/O logo printings

Item Code	M04P-000
Thickness	55 ~ 200 μm (Common: 75 μm)
Maximum Width	1,250 mm
Surface Resistance	10e9 ~ 10e11 ohm
Constructions	 • Antistatic coating • Metalized (Aluminized) PET • LLDPE • Antistatic coating

Static Shielding Bag (SSB) New

*Protect your sensitive electronic components with our New Static Shielding Bag (SSB).
*Engineered to complies with the following Standards:

- ANSI/ESD S20.20-2021
- ANSI/ESD S541-2019
- ANSI/ESD STM11.31-2018

Test Conditions and Specifications

Product		Moderate Humidity	Low Humidity
Temperature		23 ± 3	23 ± 3
Humidity		50% ± 5%	12 ± 3%
Time		48h (min.)	48h (min.)
SR	Outer surface	RTT < 100 gohm	RTT < 100 gohm
	Inner surface	10 kohm ≤ RTT < 100 gohm	10 kohm ≤ RTT < 100 gohm
Energy	nJ	< 20	< 20

Why Choose Our NEW Static Shielding Bag?

When the integrity of your electronic components cannot be compromised, our NEW Static Shielding Bag offers the ultimate solution. Its compliance with the latest industry standards and proven performance in limiting discharge energy make it the ideal choice for manufacturers, assemblers, and anyone handling ESD-sensitive devices. Elevate your ESD protection strategy with our NEW Static Shielding Bag.

Features

- Superior Dissipative Performance (1 x 10e4 < SSB < 1 x 10e11 ohm)
- Advanced Discharge Shielding: A critical feature for protecting highly sensitive devices, our SSB guarantees that the energy inside the bag remains less than 20 nanojoules, as mandated by ANSI/ESD STM11.31-2018. This ultra-low energy transmission provides an exceptional level of protection against direct electrostatic discharges.
- Reliable Protection: Designed to safeguard your components from all three forms of ESD threats: direct discharge, tribocharging, and electrostatic fields.

Conductive Black PE Bag (CBPB)

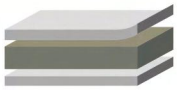
Item Code	M06P-000
Thickness	40 ~ 200 ㎛ (Common: 80 ㎛, 100 ㎛)
Maximum Width	700 mm
Surface Resistance	10e3 ~ 10e6 ohm
Constructions	 PE resin + conductive carbon

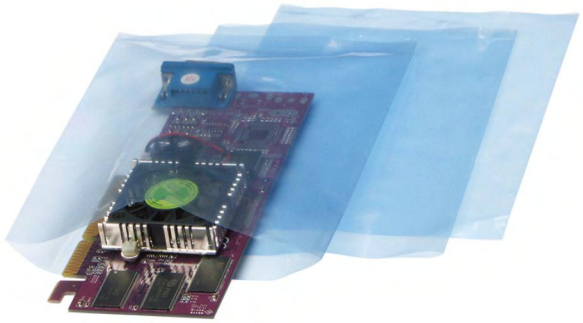


Features

- Cost-effective bag
- Low surface resistance

Antistatic PE Bag (APB)

Item Code	M07P-000
Thickness	40~200 μm (Common: 50 μm, 80 μm)
Maximum Width	1,000 mm
Color	Pink, Blue, etc.
Surface Resistance	10e9 ~ 10e11 ohm
Constructions	 • Antistatic coating • PE resin+color pigment • Antistatic coating



Features

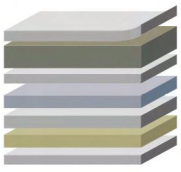
- Cost-effective bag
- Suitable for less sensitive components for ESD

Moisture Barrier Bag (MBB)

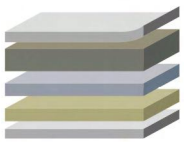
It is essential to keep Surface-Mount Devices (SMDs) dry from manufacturing point to the time of reflow soldering. Moisture Barrier Bag, also known as Vapor Barrier Bag, is made by multiple layers of plastic and a thin aluminium layer or aluminized layer that controls moisture vapor leakage. Basically, there are 3 kinds of Moisture Barrier Bags (MBBs), Tyvek MBB, AMBB and ANMBB, in the market. The key factor of moisture barrier function of the bag is a metal layer or a metalized layer, like thickness of the foil layer, metalized layer, etc., but the thickness or the material of other layers also affects the quality of MBB as well.



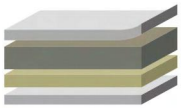


Product	Tyvek Moisture Barrier Bag (Tyvek MBB)
Item Code	M01P-000
Thickness	307 μm, 247 μm
MVTR*	< 0.02 g/100 sqinch/24h
Constructions	 • Antistatic coating • Tyvek Paper • PE • AL Foil • PE • LLDPE • Antistatic coating

Tyvek MBB is ideal for moisture sensitive devices or components, and especially suitable for sharp-shape components thanks to its excellent puncture resistance.

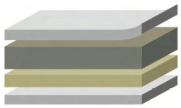
Product	Aluminum Moisture Barrier Bag (AMBB)
Item Code	M02P-000
Thickness	307 μm, 247 μm
MVTR*	< 0.02 g/100 sqinch/24h
Constructions	 • Antistatic coating • Nylon or PET • AL Foil • LLDPE • Antistatic coating

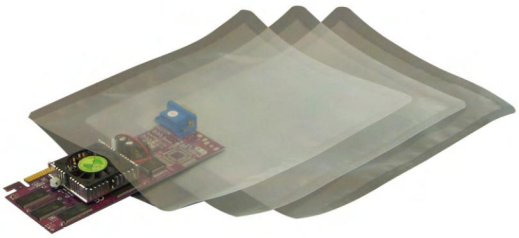
AMBB is a good choice for moisture sensitive devices and components. Depending on the products stored in the bag and the periods of storage, you have several selections on AMBB by adjusting the total thickness of the bag, the thickness of AL foil layer, etc.

Product	Aluminized Moisture Barrier Bag (ANMBB)
Item Code	M03P-000
Thickness	62 ~ 200 μm (Common: 90 μm, 100 μm)
MVTR*	1,250 mm
Constructions	 • Antistatic coating • Metalized (Aluminized) PET • LLDPE • Antistatic coating



ANMBB is a new technology for barrier materials, which reduces material cost. Aluminium is vapor-deposited onto the polyester film or the nylon film.

Product	Transparent Moisture Barrier Bag (TMBB)
Item Code	M05P-000
Thickness	62 ~ 200 μm
MVTR*	1,250 mm
Constructions	 • Antistatic coating • Nylon or Polyester • LLDPE • Antistatic coating



TMBB has a no metal layer, but it can be used for less moisture sensitive devices and this bag can be a good choice for foods packing too, which requires clean and good vacuum properties.

Features

- Suitable for less moisture sensitive devices
- Suitable for food industries
- Visible bag inside
- No metal layer, but good moisture resistance and vacuum properties.

Packaging Film

Item Code	Product Name	Width (mm)	Length/roll (m)	Thickness (μm)
M08P-000	Film for TyvekMBB	200~900	1000	247~307
M09P-000	Film for AMBB	200~1200	1000	62~200
M10P-000	Film for ANMBB	200~1200	1000	62~200
M11P-000	Film for SSB	200~1500	1000	55~200
M17P-000	Film for TMBB	200~1200	1000	62~200
M12P-000	Film for CBPB	50~700	1000	40~200
M13P-000	Film for APB	50~1000	1000	40~200

Thickness units
Mil - 0.001 inch, ex) 3 mils = 0.003 x 25.4 mm = 0.0762 mm = 76.2 microns
Micron - 1/1,000,000 m (1/1,000 mm = 0.001 mm), ex.) 100 microns = 100/25.4 = 3.93 mils
MM - 0.15 mm = 150 microns
MVTR
The Moisture Vapor Transmission Rate (MVTR) is the rate that water vapor passes through a specific area of barrier material. MVTR is measured in grams of water vapor per 100 square inches of barrier per 24 hours (g/100 in.2/24 h).
EIA 583 Packaging Material Standards for Moisture-Sensitive Items defindes a Class 1 barrier as having an MVTR of <0.02 g/100 in.2/24 h. A Class 2 barrier is set at <0.08 g/100 in.2/24 h.



Alll types of pre-laminated packaging films, thicknesses and sizes are available.

Cleanroom Packaging Bags New

- Manufactured in class 100 cleanroom
- Ultra-clean materials
- Low LPC, IC, NVR & Outgassing

Cleanroom LDPE Bag

Item Code M20P-000

- Clean material up to class 10 compatible
- Heat sealable
- FDA approved grades are available
- IPA resistant printings are available



Cleanroom Nylon Bag

Item Code M24P-000

- Excellent puncture resistant and tensile strength
- Heat sealable
- High transparency



Cleanroom Aluminum Bag

Item Code M25P-000

- Excellent moisture and oxygen barrier
- Ideal for vacuum packing



Cleanroom Static Shielding Bag

Item Code M26P-000

- Excellent ESD shielding properties



Humidity Indicator Card (HIC)

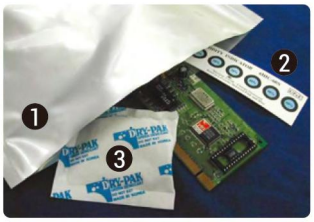
Item Code M14P-000

HIC allows fast visual inspection of the Relative Humidity(RH) in sealed packaging and containers. As the humidity increases, the chemically impregnated spots will be changed traditionally from blue to pink (Cobalt-HIC), blue to pink (CDF-HIC), brown to green (CB-HIC), yellow to green (CF-HIC) and green to purple (MF-HIC). Our HICs have 3 spots or 6 spots, but we also have a one spot type. It contains 3 spots, but only one spot is chemically impregnated and other two spots are just printed with reference colors for "OK" and "NG" (not good) so that user can easily check if it is failed or passed according to acceptable preset limit (ex. Semiconductor -10% RH, PCB/LED – 30% RH, etc.) in each industry.

We also have a plug type in round shape different from most other square designs in the market. Especially, if we use it with a specially designed plug case, it will become a lot easier and effective to check the humidity conditions inside of the bags without opening them.

Features

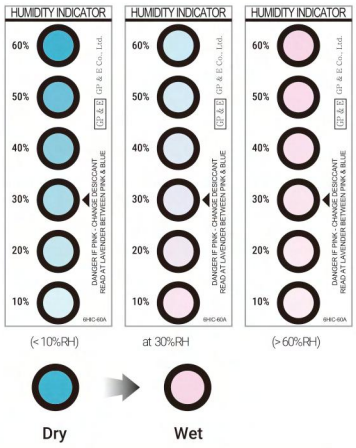
- Eco-friendly products
- Various types and designs (custom sizes and designs are also available on request)
- Meet MIL-I-8835A&IPC/JEDEC J-STD-033B.1
- Indication of warning point (option)



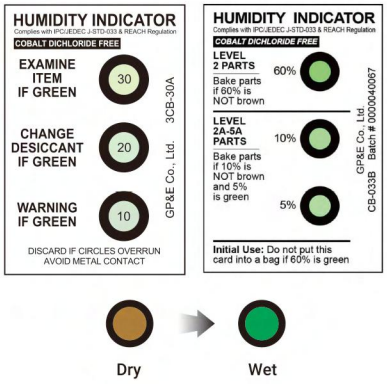
① Moisture Barrier Bag
② Humidity Indicator Card (HIC)
③ Desiccant

• Standard type (3 spots, 6 spots)

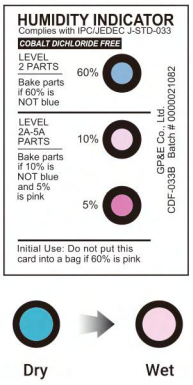
Cobalt-HIC (Regular type)



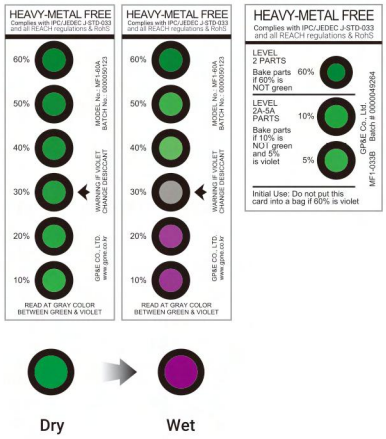
Cobalt Free-HIC (CB type)



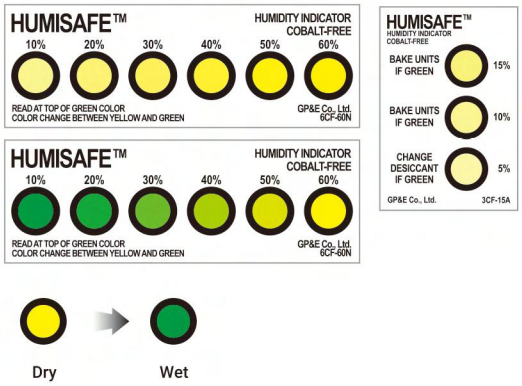
Cobalt Dichloride Free-HIC (CDF type)



Cobalt & Heavy Metal Free-HIC (MF type)

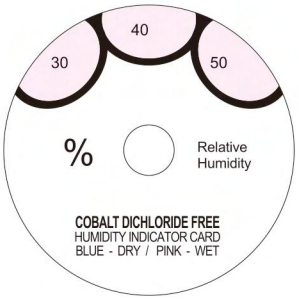


Cobalt & Heavy Metal Free-HIC (CF type)



	Color Change	Cobalt Dichloride Free (CDF)	Cobalt Free (CF)	Heavy Metal Free (HMF)	Size		Indications		Packing	
					3spots	6spots	3spots	6spots	3spots	6spots
Cobalt-HIC	Blue-Pink				50×75 mm 17×51 mm 33×59 mm	40×119 mm 40×116 mm 34×116 mm	5-10-15% 30-40-50% 5-10-60%	10 ~ 60%	125 pc/tin or AMBB, 40 tins or AMBBs / carton	200 pc/tin or AMBB, 20 tins or AMBBs / carton
CDF-HIC	Blue-Pink	0								
CB-HIC	Brown-Green	0	0							
CF-HIC	Yellow-Green	0	0	0						
MF-HIC	Green-Purple	0	0	0						

Round type



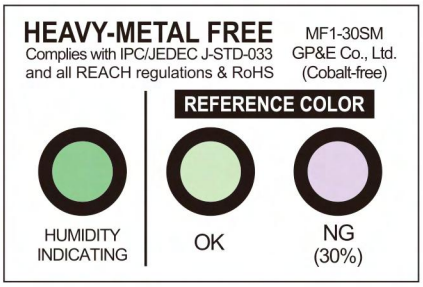








One spot type



Desiccant

Product	Ultra Dry-PAK	Silica-Gel
Item Code	M15P-100	M15P-001 (3 g)
Appearance		
Material	Bentonite (Clay)	Silica-gel
Packing	Non-woven + Paper	OPP, Paper, Tyvek, Non-woven
Unit	50 g	3, 5, 10, 20, 30, 50, 100 g



Cleanroom & ESD

Walls & Partitions

Polstar PVC Curtain Film

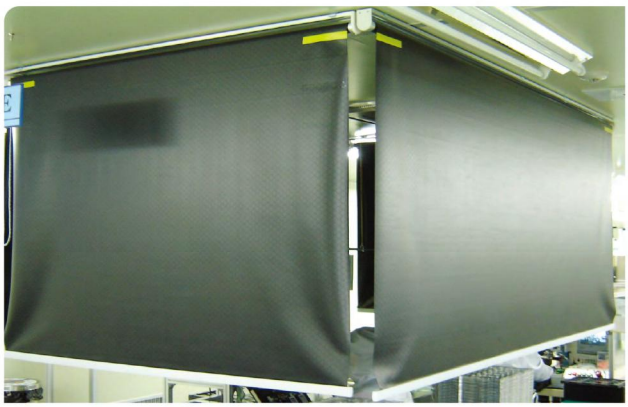
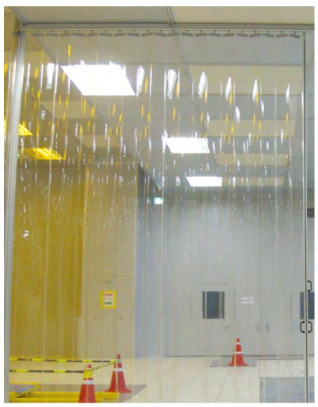
Polstar PVC Curtain Film is flexible PVC(Poly Vinyl Chloride) film with ESD control properties. This soft PVC film is easily jointed by high frequency welding. Its ESD properties, which generate much less friction electrostatic charge, last long until worn-out. Polstar PVC Curtain Film is widely used as flexible partitions, soft walls, door curtains, covers for equipment, portable windows, etc. in many areas, such as different grades of cleanrooms, laboratories, inspection, assembly, electronics, printing, painting, precision tooling, pharmaceutical, medical, food processing and many others.

Features

- Two designs of honeycomb patterns
- Antistatic, static dissipative or conductive
- Extremely low electrostatic generation
- Dust and particles are not accumulated on the surface
- Clear transparent for good visuality
- Conductive carbon printing is not removed easily
- Various thicknesses and sizes are available
- Individual carton packing in roll

Applications

- Door strip, soft wall, partition, curtain in Cleanroom
- Portable window and partition
- Precision equipment and machine cover
- Shielding and blocking partition
- Screen door or window
- Reinforcement of existing window or partition
- Reduction of harmful ultraviolet ray
- Other applications to control electrostatic problem

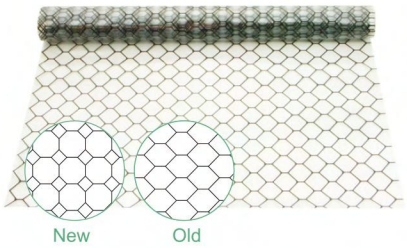







ESD Grid Curtain Film

Specially formulated conductive carbon grid printed on normal transparent PVC film. The surface resistance of the carbon printed side is 10e4~10e6 ohm.



Model	Item Code	Size
P-PGF	M05Y-004	0.3 mm(T)×1370 mm×30 m
	M05Y-013	0.3 mm(T)×1370 mm×50 m
	M05Y-009	0.5 mm(T)×1370 mm×20 m
	M05Y-011	1 mm(T)×1000 mm×20 m

ESD Clear Curtain Film

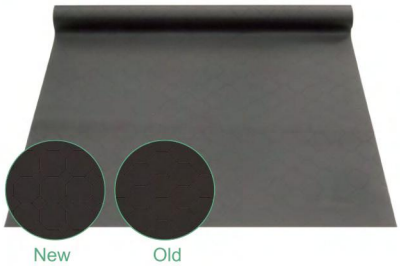
This is a homogeneous antistatic transparent PVC film made of antistatic compounded PVC, not antistatic coated material. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.



Model	Item Code	Size
P-PCH (Homogeneous Type)	M06Y-002	0.3 mm(T)×1370 mm×30 m
	M06Y-006	0.5 mm(T)×1370 mm×20 m
	M06Y-010	1 mm(T)×1200 mm×20 m
	M06Y-014	2 mm(T)×1200 mm×10 m

ESD Opaque Black Grid Curtain Film

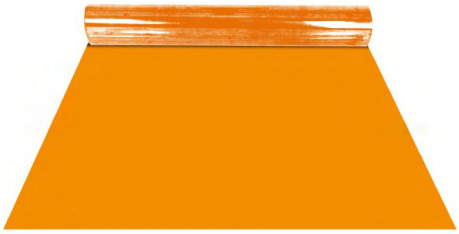
This is not a homogeneous constitution, but a specially formulated conductive carbon grid printed on opaque black PVC film. The surface resistance of the carbon printed side is 10e4~10e6 ohm. This film is good for shielding screen effect with conductive surface.



Model	Item Code	Size
P-PGB	M09Y-001	0.3 mm(T)×1370 mm×30 m
	M09Y-005	0.5 mm(T)×1370 mm×20 m

ESD UV Clear Curtain Film

Homogeneous yellow tinted antistatic PVC film for the protection of harmful ultraviolet ray. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.



Model	Item Code	Size
P-PUH (Homogeneous Type)	M07Y-001	0.3 mm(T)×1370 mm×30 m

ESD Opaque Black Curtain Film

This is a homogeneous antistatic opaque black PVC film made of antistatic compounded PVC, not antistatic coated material. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm.

Model	Item Code	Size
P-PBH (Homogeneous Type)	M10Y-001	0.3 mm(T)×1370 mm×30 m

ESD Opaque Black Grid Curtain Film , Both sides

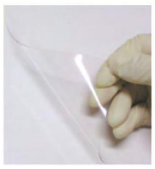
This is not a homogeneous constitution, but a specially formulated conductive carbon grid printed on opaque black PVC film on both sides. The surface resistance of the Both sides are 10e4 ~10e6 ohm.



Model	Item Code	Size
P-PGG	M09Y-002	0.3 mm(T)×1370 mm×30 m
	M09Y-003	0.5 mm(T)×1370 mm×20 m

ESD Clear Adhesive Curtain Film

This is a homogeneous antistatic transparent PVC film with adhesive one side. ESD properties remain permanent. The surface resistance is 10e8~10e10 ohm and the volume resistance is 10e7~10e9 ohm. This film can be applied to any insulated walls, windows, partitions and other insulative materials.



Model	Item Code	Size
P-PAH (Homogeneous Type)	M11Y-002	0.25 mm(T)×1200 mm×10 m

ESD Strip Door & Folding Door

ESD Strip Door Curtain Film

Polstar Strip Door Curtain Film is recommendable for the gates or entrances of factories that are frequently opened and closed. It saves energy by keeping the temperature of the factories. It also prevents wind, insects and any foreign materials from coming inside of the factories.
4 options, general purpose of strip door curtain film, cold resistant strip door curtain film, anti-insect strip door curtain film and antistatic strip door curtain film, are available.

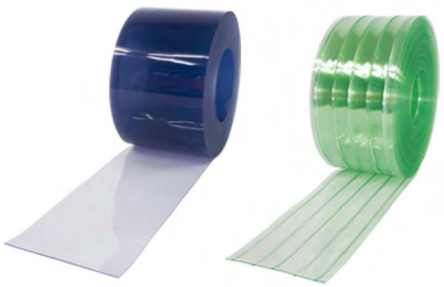
Flat type



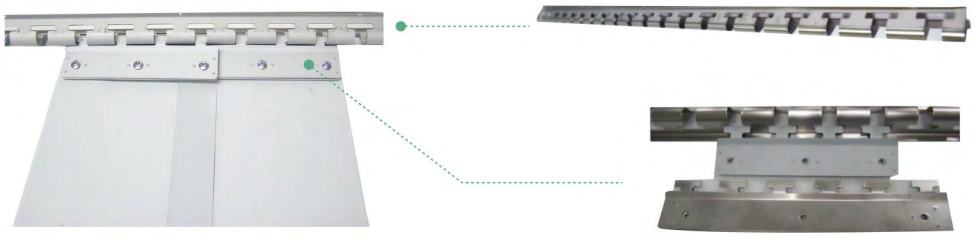
Protrusion Type



Item Code	M16Y-000
Model	P-PSF
Surface Resistance	10e8 ~ 10e10 ohm
Color	Bluish Tansparent / Greenish Transparent
Available Sizes	2 mm(T)×200 mm×30 m
	2 mm(T)×300 mm×30 m
	3 mm(T)×300 mm×30 m



Accessories for P-PSF



Strip Door Frame
M18Y-004

Strip Door Hanger
M18Y-005

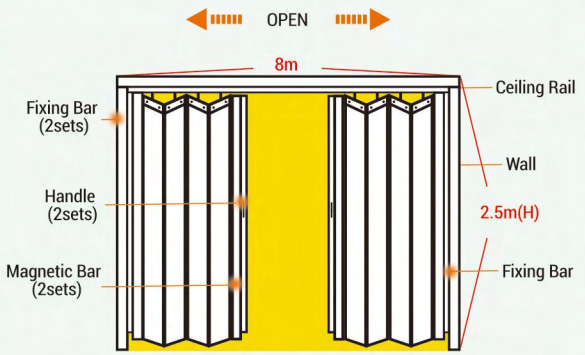
ESD Folding Door Film



Homogeneous antistatic foldable film is suitable to make clean booths, soft partitions, walls, doors, etc. The standard size is 1.35 mm(T)×1000 mm(W)×12 m(L) and there are 8 folding lines in 1000mm width all the way to the length diretion. Two colors, greenish clear and yellowish clear, are available.

Item Code	M21Y-000
Model	P-PFF
Surface Resistance	10e8 ~ 10e10 ohm
Color	Yellowish, Greenish Transparent
Available Sizes	1.35 mm(T)×1000 mm(W)×12 m(L)

The drawing of ESD folding door



*Other types and sizes are also available.

Accessories for P-PFF





Runner
M18Y-001



Hanger
M18Y-003



Rail
M18Y-002





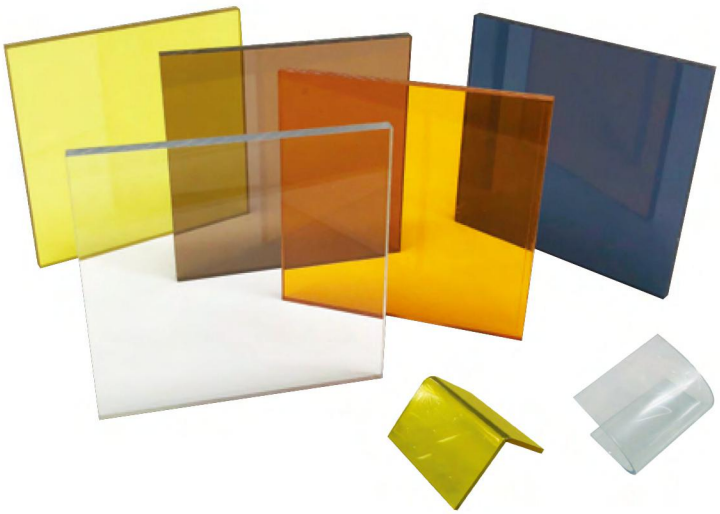


Specifications & Product Information

Electrical Properties								
Descriptions / Item		P-PCH P-PBH P-PAH P-PSF P-PFF	P-PUH	P-PGF	P-PGB	P-PGG	Unit	Test Method
Surface Resistance	Front	10^8~10^{10}	10^8~10^{10}	10^5~10^8	10^5~10^8	10^5~10^8	ohm	ASTM D-257
	Back	10^8~10^{10}	10^8~10^{10}	> 10^{11}	> 10^{11}	10^5~10^8		
Volume Resistance		10^7~10^9	10^7~10^9	> 10^{11}	> 10^{11}	> 10^{11}	ohm	ASTM D-257
Friction Electrocharge	Front	< 100	< 100	< 1000	< 1000	< 1000	voltage	Electro Static Field Meter (10times rubbing by cotton, 23°C×24%RH)
	Back	< 100	< 100	-	-	< 1000		
Decay time	5000V~500V	< 0.5					sec	MIL-B-81750C
Physical Properties								
Tensile Strength	MD	1.90	1.90	1.90	1.90	1.90	kg/㎟	ASTM D-882
	TD	1.90	1.90	1.90	1.90	1.90		
100% Modulus	MD	1.10	1.10	1.10	1.10	1.10		
	TD	1.80	1.80	1.80	1.80	1.80		
Elongation	MD	170	170	170	170	170	%	
	TD	210	210	210	210	210		
UV Transmissivity	UV-H	-	95.50	-	-	-	%	KS K 0850-1999
	UV-B	-	95.40	-	-	-		
	UV-A	-	9.5	-	-	-		
Heat Shrinkage		< 5					%	Internal Method (60°C ×30min in H2O)
Resistance to Chemicals								
Hydrochloric Acid (10%)		○						JIS K-7114 5 cm×5 cm Size of Specimen: Dipped for 168hrs
Sulfuric Acid (10%)		○						
Acetic Acid (5%)		○						
Sodium Hydroxide (10%)		○						
Aqueous Ammonia (10%)		○						
Ethyl Alcohol (50%)		△						
Acetone (95%)		△						
Benzene (95%)		×						
Formalin (95%)		○						
Available Sizes								
Thickness (mm)		0.1, 0.2, 0.25, 0.3, 0.5, 1.0, 2.0, 3.0						
Width (cm)		20, 30, 90, 100, 120, 137						
Length (m)		10, 20, 30, 50						

Static Dissipative Plates

Polstar Static Dissipative Plate (PSDP) features a special ESD hard-coating on both surfaces, providing a semi-permanent surface resistance of <10e9 ohms, effectively eliminating static electricity. PSDP is ideal for rapidly dissipating static charges without causing harmful arcing on the surface of vulnerable components. PSDP meets electrical and optical requirements while offering superior abrasion resistance, a non-scratchable surface, and chemical resistance. PSDP is available in Polycarbonate (for high-temperature performance, fire resistance, and outstanding impact resistance), PMMA (offering high pencil hardness and excellent clarity), PVC (with excellent chemical resistance), and Aluminum Composite Panels, catering to a wide range of applications across various industries. The newly designed PSDP series is also available for specialized bending and bonding applications (please note that Polycarbonate is not suitable for bonding) without developing surface cracks and without altering surface resistance after the bending process.













Specifications & Product Information

Properties	Testing Item	Unit	PC (Polycarbonate) M03Y-000	PMMA (Acrylic) M01Y-000	PVC (Polyvinyl Chloride) M02Y-000	AL (Aluminum) M04Y-000	Test Method
Physical Properties	Specific Gravity	g/cm^2	1.2	1.19	1.4	1.38	ASTM D-792
	Water Absorption	%	0.1	0.3	0.01	-	ASTM D-570
	Pencil Hardness	-	HB	3H~5H	3H	3H~5H	JIS K-5400
	Piece Close Adhesion Strength	-	100/100	100/100	100/100	100/100	JIS K-5400
Mechanical Properties	Tensile Strength	Mpa (kgf/cm^2)	58.8~68.6 600~700	560~670	650	8.5	ASTM D-638
	Elongation	%	90~140	2.0~7.0	20	27	ASTM D-638
	Flexural Strength	kgf/cm^2	920~980	840~1200	920	1344	ASTM D-790
	Flexural Modulus of Elasticity	kgf/cm^2	2500	2.6×10^4 ~ 3.2×10^4	2.6×10^4	3746	ASTM D-256
	Compressive Strength	Jkgf/cm^2	-	-	1142	-	ASTM D-256
	Izod Shock Strength	J/M (kgf cm/cm^2)	6	2	6	-	ASTM D-256
Thermal Properties	Burning Resistance	-	Incombustibility V-0 ~ V2	Incombustibility HB	Incombustibility V-0	Incombustibility V-0	UL-94
	Coefficient of Linear Thermal Expansion	X10-^{5}in/in°F	3.8	-	-	-	ASTM D-696
	Heat Deflection Temp.	°F/°C at 264psi	270/132	-	-	-	ASTM D-648
	Vicat Softening Temp.	°F/°C	310/154	-	-	-	ASTM D-3418
	Max Operation Temp.	°F/°C	170/77	-	-	-	-
	Thermal Conductivity	BTU-in/ft2-hr-°F X10-4 cal/in/cm-sec-°F	1.3 4.5	-	-	-	ASTM D-177
Electrical Properties	Surface Resistance	ohm	< 10e9	< 10e9	< 10e9	< 10e9	ASTM D-257
	Static Decay Time	Sec	Below 0.1	Below 0.1	Below 0.1	Below 0.1	MIL B-81705 B
Size	-	mm	1,000 × 2,000 / 1,200 × 2,400				
Thickness	-	mm	2.0 / 3.0 / 4.0 / 5.0 / 6.0 / 8.0 / 10.0				
Color	-	Clear transparent, Yellow, Orange, Blue, Brown, Smoke, Opaque in black or Ivory					
Remark	Other sizes, thicknesses and colors are also available on request.						

Maintenance, Handling, Caution

- Recommendable storage conditions: less than 30℃, RH 40 ~ 60%.
- To avoid scratches on the surface, remove the protective film after PSDP has been machined.
- It is recommendable to have trials with test specimen to determine optimum settings before cutting or modification.
- Static dissipative coating must be removed from the surface to be glued.
- Isopropyl Alcohol (IPA) or alcohol-based cleaning liquid is recommendable for cleaning.
- PSDP is not required to be cleaned with antistatic plastic cleaners.
- Loss of static dissipative performance will occur if excess scratching is concentrated in a particular area.
- If PSDP is treated with a polishing machine, the performance of static dissipative coating cannot be guaranteed.

Conductive Rope

The Conductive Rope is designed to serve as the grounding path of static charge accumulated on the human body, materials, transport equipment, etc. It provides a quick and easy way to discharge static electricity with a simple touch of the ropes.

There are two types of conductive ropes available in our range. The M14Y-002 is particularly suitable for high static charge environments as it offers very fast static charge dissipation due to its low resistance value of 10e3 ohm or lower.



M14Y-001



M14Y-002

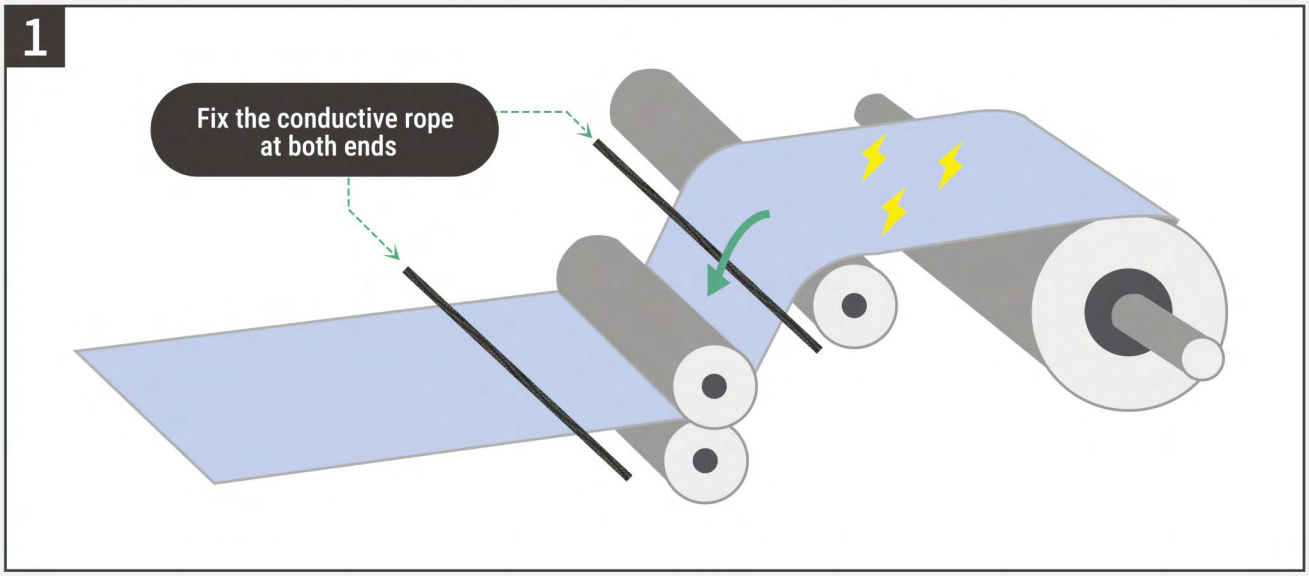
Item Code	M14Y-001	M14Y-002
Color	Black & White mixed	Dark Grey
Composition	Polypropylene 93% , Stainless steel fiber 7%	316 Stainless Steel Fiber
Weight	9 g/meter	19 g/meter
Dia	7 mm	4 mm
Surface Resistance	10e3 ~ 5 ohm	< 10e3 ohm
Packing	100 yards/hank	30 m/cone

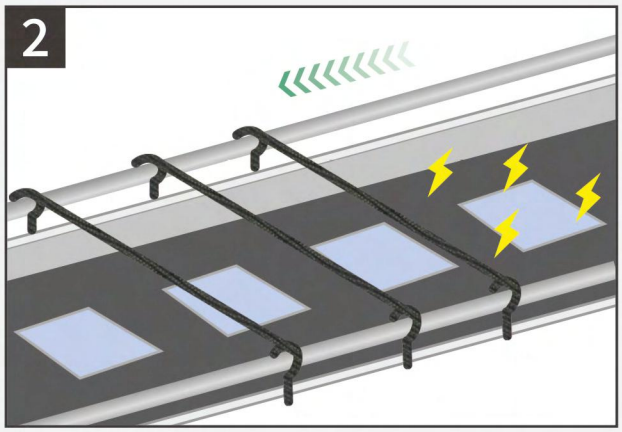
Features

- Efficiently discharges static electricity from various objects
- Flexible installation options
- Enhanced performance for high static charge environments (M14Y-002)
- Versatile applications for various environments requiring static charge removal with customizable configurations.
- Durability and Reliability

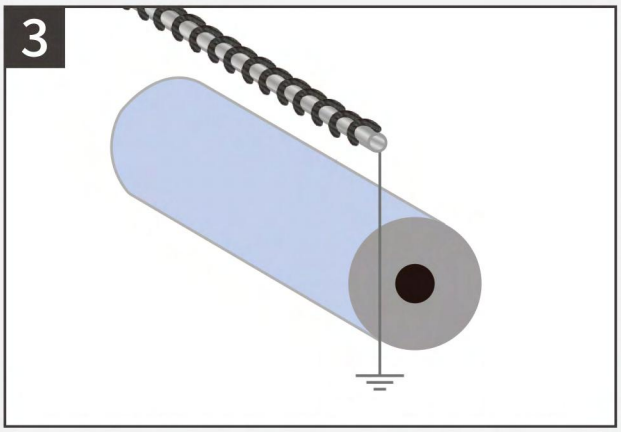
The examples of conductive rope installation and static charge removal

1

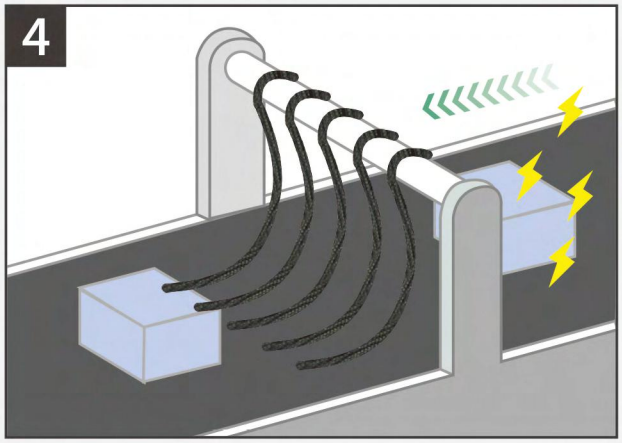




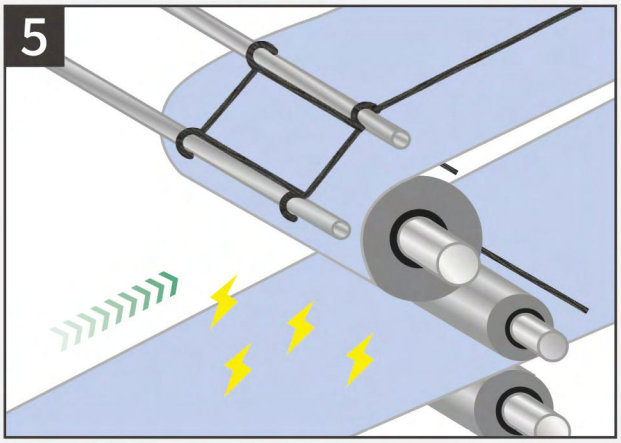
Install multiple conductive ropes so that the object requiring static charge removal passes through them. This will increase the static charge removal effect.



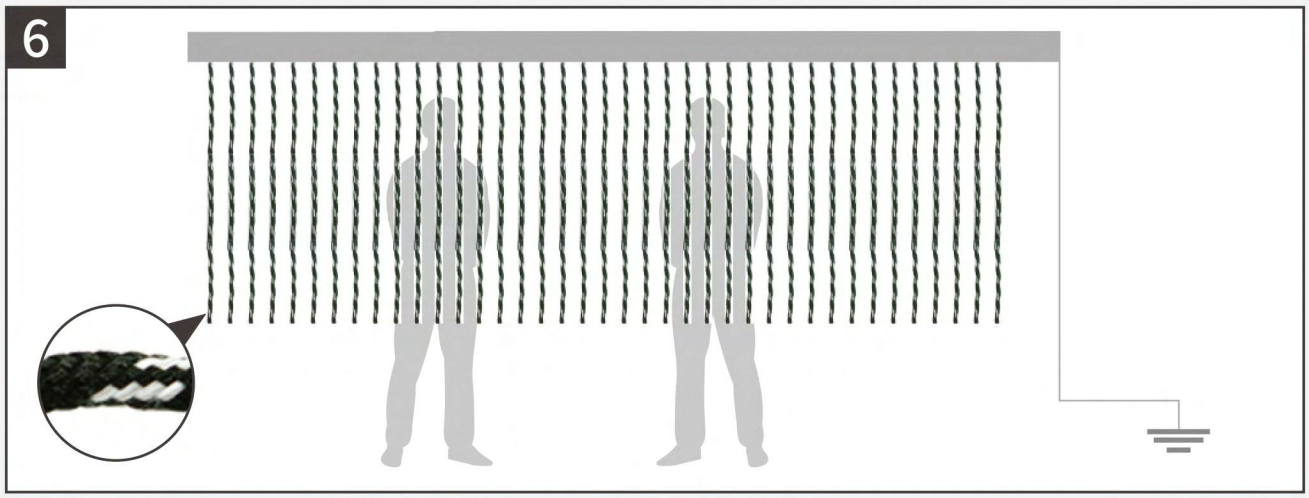
Wrap the conductive rope around a rod in a spiral pattern to expand the contact area with the object requiring static charge removal.



If it is safe for the conductive rope to come into direct contact with the object, cut the ropes to the same length and install them vertically to create multiple contact points. This will help dissipate static charge effectively and quickly.



Connect multiple conductive ropes in a three-dimensional arrangement to further extend the contact area with the object.





Cleanroom & ESD

Tapes

ESD Marking Tapes

ESD Marking Tapes have 3 options, which are ESD Marking Tape, ESD Marking Tape with Printings and ESD Floor Marking Tape. All of them have ESD properties on both adhesive and back sides. They barely generate particles by adopting a plastic core and lint free film.

Applications

- Indication of "ESD Protected Area", "ESD Controlled Area", "ESD Safe Area", etc.
- Color coding
- Safety Markings

ESD Marking Tape

PVC tape with antistatic treatment on both sides



Item Code	M03T-000
Model	PT-CMT
Color	Green, Yellow, Blue, Red, White
Surface Resistance	10e7 ~ 10e9 ohm
Thickness	140 μm
Size	1", 3/4", 2", 4"×33 m, 1000 mm×33 m (Jumbo roll)
Packing	60 rolls/ctn (25 mm×33 m) 30 rolls/ctn (50 mm×33 m)



- Antistatic treatment
- PVC (110 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (30 ㎛)

ESD Marking Tape with Printings

PET laminated PVC tape with printings and antistatic treatment on both sides



Item Code	M04T-000
Model	PT-CMP
Color	White, Blue, Yellow, Red, Green, Black&Yellow
Surface Resistance	10e7 ~ 10e9 ohm
Thickness	145 μm
Size	1/2", 1", 3/4", 2", 4"×33 m/roll, 1000 mm×33 m (Jumbo roll)
Packing	60 rolls/ctn (25 mm×33 m) 30 rolls/ctn (50 mm×33 m)



- Antistatic treatment
- PET (15 ㎛)
- ESD logo printed PVC (100 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (30 ㎛)

ESD Floor Marking Tape

PET laminated PVC tape with ESD Symbol and the letter "ESD Protected Area"

Features

- ESD properties on both surfaces
- Printings will not wear off easily thanks to PET laminating layer
- Resistant to floor cleaners
- Good abrasion resistance
- Heavy duty
- Plastic core for less particles



Item Code	M05T-000
Model	PT-EMT
Color	Black printing on yellow
Surface Resistance	10e7 ~ 10e9 ohm
Thickness	145 μm
Size	50 mm×33 m / roll
Packing	30 rolls/ctn

- Antistatic treatment
- PET Film (15 ㎛)
- Printed PVC Film (ESD symbol and "ESD Protected Area") (100 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (30 ㎛)

ESD Packing Tapes

ESD Packing Tapes have been developed to protect static sensitive products from static electricity generated by triboelectricity when they are unrolled or removed from the objects. ESD packing tapes generate very low static voltage while normal tapes yield about 1KV to 9.5KV to 14KV under the same conditions.

Applications

- Bundle of DIP IC Tubes
- Seal Static Shielding Bags
- Pack Conductive IC Trays
- Pack Wafer Carrier
- Attach a Note in Cleanroom
- EMI Shielding
- Covers for External Plugs

Antistatic Utility Tape (Standard)

Metallized PET film with antistatic acrylic adhesive.



Item Code	M01T-000
Model	NAT-801
Surface Resistance	10e7 ~ 10e9, Back: 10e11 ~ 10e12 ohm
Thickness	50 μm
Size	1/2", 1", 3/4", 2"×50 m/roll, 1200 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Metalized PET (25 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (25 ㎛)

Antistatic Utility Tape (Halogen Free + Standard)

Metallized PET film with antistatic acrylic adhesive.



Item Code	M38T-000
Model	NAT-801
Surface Resistance	10e7 ~ 10e9, Back: 10e11 ~ 10e12 ohm
Thickness	50 μm
Size	1/2", 1", 3/4", 2"×50 m/roll, 1200 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Metalized PET (25 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (25 ㎛)

ESD Control Tape

Cellulose based synthetic film with antistatic acrylic adhesive



Item Code	M02T-000
Model	NAT-803
Surface Resistance	10e8 ~ 10e9, Back: 10e10 ~ 10e11 ohm
Thickness	55 μm / 48 μm
Size	1", 2"×50 m/roll, 600 mm×50 m (Jumbo roll) 800 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Cellulose film (30 ㎛/40 ㎛)
- Antistatic acrylic adhesive (25 ㎛/8 ㎛)

ESD Control Tape with Printings

Cellulose based synthetic film with antistatic acrylic adhesive & ESD logo printings



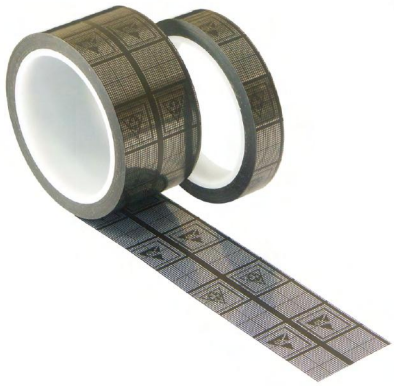
Item Code	M26T-000
Surface Resistance	10e8 ~ 10e9, Back: 10e10 ~ 10e11 ohm
Thickness	55 μm
Size	1", 2"×50 m/roll, 600 mm×50 m (Jumbo roll)
Packing	100 rolls (25 mm×50 m) 50 rolls (50 mm×50 m)



- Cellulose film (30 ㎛)
- Antistatic acrylic adhesive (25 ㎛)

Antistatic Grid Tape

Metallized PET film with ESD symbol and carbon grid printing



Item Code	M06T-000
Model	PT-CGT
Surface Resistance	10e7 ~ 10e9, Back: 10e8 ~ 10e9 ohm
Thickness	50 μm
Size	1/2", 1", 3/4", 2"×50 m/roll, 1000 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Carbon Printing
- Metalized PET (25 ㎛)
- Antistatic treatment
- Antistatic acrylic adhesive (25 ㎛)

Antistatic OPP Tape

Antistatic treated OPP film tape with rubber adhesive



Features

- Keep semi-permanent antistatic properties
- Strong adhesive power
- Environment friendly material

Item Code	M20T-000
Model	PT-CGT
Surface Resistance	10e11 ~ 10e12, Back: 10e7 ~ 10e10 ohm
Thickness	67±5 (Film: 40 μm)
Size	1", 2"×50 m/roll, 1000 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Antistatic treatment
- OPP (40 ㎛)
- Rubber adhesive (20 ㎛)

Antistatic OPP Tape with Printings

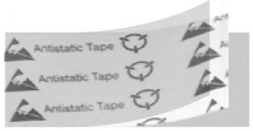
Antistatic treated ESD logo printed OPP tape with rubber adhesive



Features

- Keep semi-permanent antistatic properties
- Strong adhesive power
- Environment friendly material

Item Code	M21T-000
Surface Resistance	10e11~ 10e12, Back: 10e7 ~ 10e10 ohm
Thickness	67±5 (Film: 40 μm)
Size	1", 2"×50 m/roll, 1000 mm×50 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×50 m) 50 rolls/ctn (50 mm×50 m)



- Antistatic treatment
- ESD Logo printed OPP (40 ㎛)
- Rubber adhesive (27 ㎛)

Masking Tapes

HT PET Masking Tape

High temperature PET film masking tape with silicone adhesive



Item Code	M12T-010-OG	M12T-011-OG	M12T-100-OG
Size	1170 mm×50 m	50 mm×50 m	1000 mm×50 m
Color	Olive Green		Olive Green
Backing Material	PET		PET
Adhesive	Silicone		Silicone
Thickness	60 μm		70 μm

Crepe Masking Tape

Crepe paper masking tape for painting on general/automotive/ electric field



Item Code	M45T-001-YE	M45T-002-YE
Size	1250 mm×40 m	50 mm×40 m
Color	Yellow	
Backing Material	Crepe Paper	
Adhesive	Rubber	
Thickness	150 μm	

Polyimide Tape

Polymide film with thermal resistant silicone adhesive

Features

- Heat resistance: 250℃
- Excellent solvent and chemical resistance

Applications

- Masking PCB during a wave soldering or a solder dip process



Item Code	M17T-000
Model	PT-PIT
Thickness	65 μm
Size	10 mm, 20 mm, 25 mm, 50 mm×33 m/roll, 1000 mm×33 m (Jumbo roll)
Packing	100 rolls/ctn (25 mm×33 m) 50 rolls/ctn (50 mm×33 m)



- Polyimide film (25 ㎛)
- Silicone adhesive (40 ㎛)

Antistatic Polyimide Tape

Polymide film with thermal resistant silicone adhesive and antistatic properties

Features

- Heat resistance: 250℃ ·Flame retardant
- Excellent solvent and chemical resistance

Applications

- Masking PCB during a wave soldering or a solder dip process



Item Code	M13T-000
Model	PT-APT
Thickness	65 μm
Surface Resistance	10e5 ~ 10e8 ohm
Size	10 mm, 20 mm, 25 mm, 50 mm×33 m/roll, 1000 mm× 33 m (Jumbo roll)
Packing	60 rolls/ctn (25 mm×33 m) 30 rolls/ctn (50 mm×33 m)



- Antistatic treatment
- Polymide film (25 ㎛)
- Silicone adhesive (40 ㎛)

Fabric Tapes

ESD Fabric Tape

Conductive 5 mm grid fabric with acrylic adhesive

Features

- ESD properties on both sides
- Very low particle generation
- No residue
- Soft and flexible
- Homogenous structures

Applications

- Cover for the edges of the ESD microfiber mats, pad and other mats



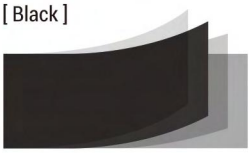
Item Code	M24T-001	M24T-100
Surface Resistance	10e6 ~ 10e8 ohm, Back: 10e5 ~ 10e7 ohm	
Adhesive Level (gf/25 mm)	900 (SUS), 1000 (PC)	
Thickness	200 μm	150 μm
Color	Dark Blue, Green, Yellow Green	Black
Size	40 mm×30 m	35 mm×30 m
Packing	50 rolls/carton	

[Dark Blue, Green, Yellow Green]



- PU Coated ESD Fabric (5 mm grid)
- Antistatic acrylic adhesive
- Releasing paper

[Black]



- Silicone layer
- Carbon PU coated fabric
- Antistatic acrylic adhesive
- Releasing paper

ESD Cleanroom Fabric Tape

Conductive 5 mm grid fabric with acrylic adhesive

Features

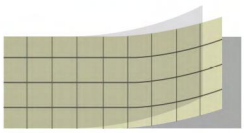
- ESD properties on both sides
- No particle generation
- No residue
- The thin fabric film makes it extremely flexible
- Easy to apply on any surface

Applications

- To cover work table for ESD safe and protection of the product
- To use it in controlled environment



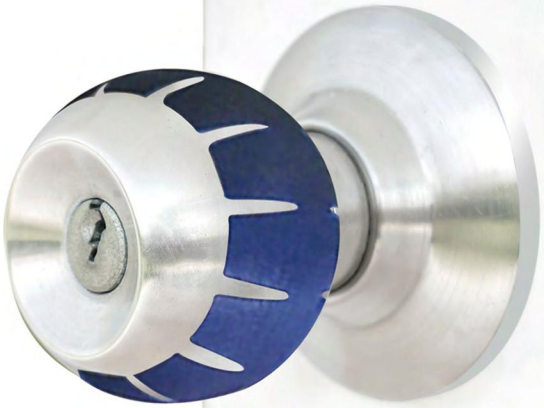
Item Code	M43T-000
Available Sizes	0.13 mm(T)×40 mm(W)×30 m(L)
	0.13 mm(T)×100 mm(W)×30 m(L)
Adhesive Strength	1000±100 gf / 25 mm
Material	PU coated ESD fabric with acrylic adhesive and PET release film
Surface Resistance	10e6 ~ 7 ohm, Back: 10e7 ~ 10e8 ohm
Packing	50 rolls/carton



- PU Coated ESD Fabric (5 mm grid)
- Antistatic acrylic adhesive
- Releasing film

Static Shock Prevention Sticker

The Antistatic Sticker has surface resistance of 10e6~10e7 ohm, which makes the static discharge slow enough to prevent the discomfort on contact to the grounded metal.



Item Code	M47T-001	M47T-002
Sticker Size	34×188 mm	
Color	Navy Blue	
Material	ESD Fabric, 5 mm check	
Releasing Paper Size	40×196 mm	
Surface Resistance	10e6~10e7 ohm	
Packing	10 pcs/pack	200 pcs/pack



Descriptions

- Prevents the uncomfortable tingling sensation caused by static electricity discharge when your hand touches grounded metal, especially in the dry Winter.
- If grounded surface resistance is over 10e9 ohm, static electricity accumulates in human body.
- If grounded surface resistance is under 10e4 ohm, rapid discharge occurs that causes the distinctive discomfort. It's notable that rapid static discharge may cause an explosion nearby flammable gas.
- The Antistatic Sticker has surface resistance of 10e6~10e7 ohm, which makes the static discharge slow enough to prevent the discomfort on contact to the grounded metal.
- Attach the Antistatic Sticker where you want static discharge to be slow.
- The shape makes it applicable to the curved surfaces.
- If you are sensitive to the static electricity, making it double-layered will help.

Applications

Door handles, Car handles, etc.





Industrial Tapes

Acrylic Foam Tape New

Acrylic Double-Coated Foam Tapes are widely used in industrial applications such as automobiles, home appliances, construction, and electronics due to their excellent properties in shock absorption, sound damping, and sealing. They are particularly effective in reducing vibrations, minimizing noise, and providing a strong, reliable bond.

Applications

- General: Bumper protection, decorative trim, and various other mounting and sealing applications.
- Automotive: Side molding, emblems, dash display mounting
- Electronics: Panel fixing, sealing components
- Construction: Window and door sealing, panel mounting



Item Code	Color (Binder - acrylic foam)	Color (Liner - PE, Paper)	Thickness (mm)	Adhesion (20min.,gf/in)	Adhesion (72hr.,gf/in)	Retention (23°C)	Retention (80°C)	Width (mm)	Length (m)
M48T-001-TP	Clear	PE, Red	0.5	2400	4000	1000	500	900	33
M48T-001-BK	Black	PE, Red	0.5	2800	4500	1000	500	900	33
M48T-001-GR	Grey	PE, Red	0.5	2800	4500	1000	500	900	33
M48T-001-WH	White	PE, Red	0.5	2800	4500	1000	500	900	33
M48T-002-WH	White	PE, Red	0.8	2800	4500	1000	500	900	33
M48T-003-GR	Grey	Paper, White	0.8	2800	4500	1000	500	800	33
M48T-004-TP	Clear	PE, Red	1	2800	4000	1000	500	900	33
M48T-004-BK	Black	PE, Red	1	2800	4500	1000	500	900	33
M48T-004-WH	White	PE, Red	1	2800	4500	1000	500	900	33
M48T-005-GR	Grey	PE, Red	1.2	2800	4500	1000	500	900	33
M48T-005-WH	White	PE, Red	1.2	2800	4500	1000	500	900	33
M48T-006-WH	White	PE, Red	1.5	2800	5000	1000	500	900	33
M48T-007-WH	White	Paper, White	1.5	2800	5000	1000	500	800	20

Double Side Non-woven Tape

Double Side Non-woven Tape for connecting/tying of paper/film,



Item Code	M15T-010-WH	M15T-011-WH
Size	1000 mm×50m	50 mm×50 m
Color	White	
Backing Material	Non-woven	
Adhesive	Acrylic	
Thickness	100 μm	

Double Side PET Tape

Double Side PET Tape for tying up regular objects/surfaces.



Item Code	M14T-010-WH	M14T-011-WH
Size	1250 mm×50 m	50 mm×50 m
Color	Clear	
Backing Material	PET	
Adhesive	Acrylic	
Thickness	90 μm	

Aluminium Tape

Aluminium Foil, one face coated with acrylic based adhesive



Item Code	M25T-000
Temperature Range	5 ~ 125 degree C
Thickness	60 μm (AL foil, adhesive) + 130 μm (releasing paper)
Size	25 mm×50 m, 50 mm×50 m 1080 mm×50 m (Jumbo roll)
Packing	40 rolls/ctn (25 mm×50 m) 20 rolls/ctn (50 mm×50 m)

* Applications: Radiation of heat for home appliances



Powerless ECO Ionizer
M39E-007

Cleanroom & ESD

Equipment & Tools

Powerless ECO Ionizer

Can you imagine to neutralize the charged insulator with an Ionizer without electric power supply?

ESD programs should include a proper grounding method. Even though all personnel, worktables and floors are properly grounded, there are still some insulators in the manufacturing sites. Charged insulators retain the charge for a long time as they cannot provide a good pathway for static discharge, which can lead to a major cause of failure in sensitive devices.

It is essential to neutralize insulators to maintain a low error rate because insulators become easily charged when they come into contact with other materials even if those materials are grounded.

Ionizers are one of the most common and effective equipment for eliminating charges on insulators.
All corona-type Ionizers require an electric power source to operate. Our innovative and unique Powerless ECO Ionizer is an exception. It does not require any electric power source, but it is operated by air pressure.

The operation is simple. Grip the Ionizer and pull the trigger on the handle and air will be distributed to the Ionizer, and then the special generator inside will automatically be activated by the high-pressure air, generating positive and negative ions.





Item Code	M39E-007
Ion Generating Mode	AC 10 Khz
Decay Time	0.2 sec. (± 1,000V to 100V)
Ion Balance	Less than ± 10V
Air Pressure	3 ~ 6 Bar
Air Injection Volume	80 ~120 L/m
Air Injection Angle	25 deg
Distance	10 cm ~ 50 cm
Life Time	5,000 ~ 10,000 hrs
Weight	230 g

Item Code	M39E-002
Ion Mode	AC 14 Khz
Decay Time	0.2 sec. (± 1,000V to 100V)
Ion Balance	± 10V
Air Pressure	3 ~ 6 Bar
Effective Distance	10 ~ 50 cm
Noise Level	70 ~ 80 dB (based on 4 bar air pressure)
Weight	200 g
Warranty	1 year

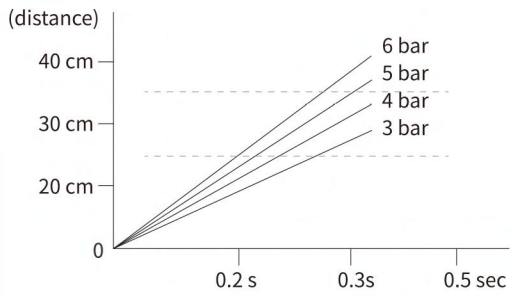
Features

- No need Electric Power Source
- No Battery
- Compact and Handy
- Stable Ion Balance & Quick Decay Time
- Easy Operation and Maintenance
- LED Indicator for high & Low Voltage
- Air Flow Control Knob
- ATEX and CE Certified

Applications

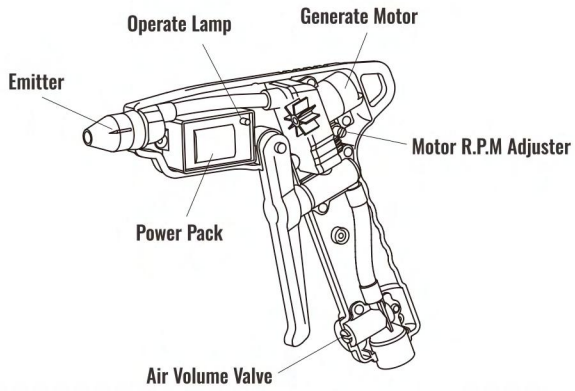
- Electronic Production Assembly
- Printing and Coating Processes
- Plastic Injection and Processing Processes
- Film and Packaging Process
- Painting Process in Automotive Industry

Decay Time (±1,000V±100V)

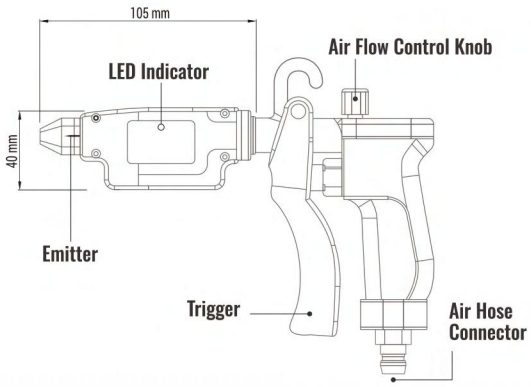




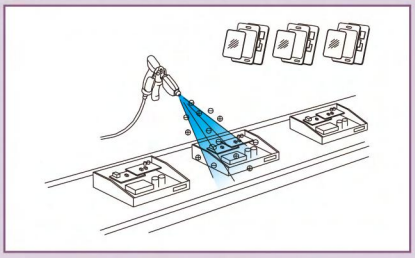
M39E-007



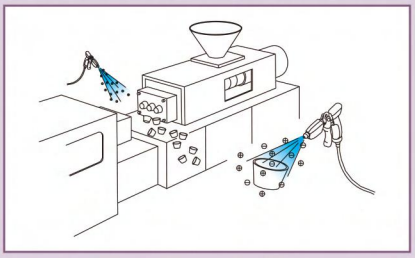
M39E-002



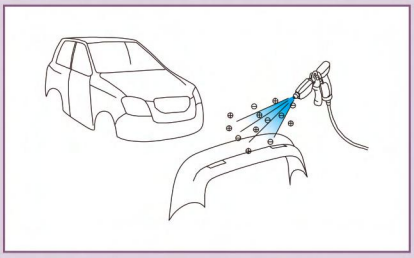
1 Electronic Component Assemble
- Remove EMI, ESD, dust



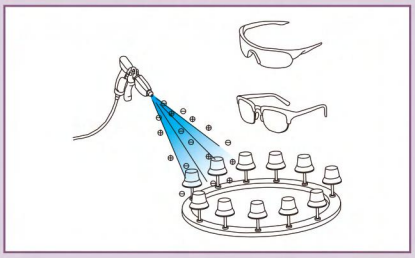
2 Plastic Injection
- Prevent static shock and remove dust



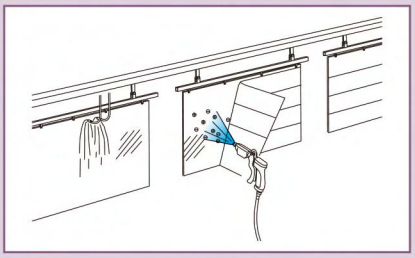
3 Car Painting
- Remove EMI, ESD before painting



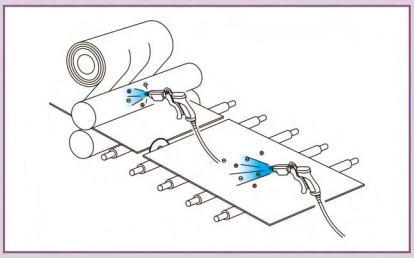
4 Optical Lens Coating
- Remove EMI, ESD, dust



5 Plastic Sheet Coating
- Prevent static shock and remove dust



6 Plastic Sheet Extrusion
- Remove dust on roller and sheet surface



Ionizing Air Gun

Features

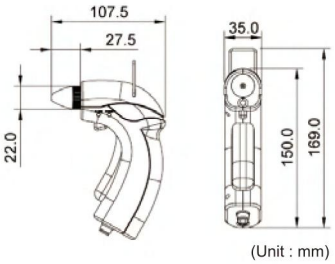
- Ergonomic design
- Particle tracing LED
- Small size & light weight
- Easy connection of tube-fitting (6 mm) to select different air settings
- Strongly built cable (150,000 cable bending test)



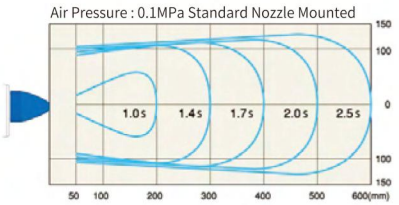


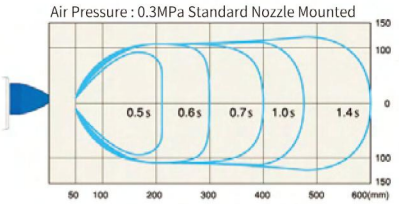
Specifications (Air Gun)

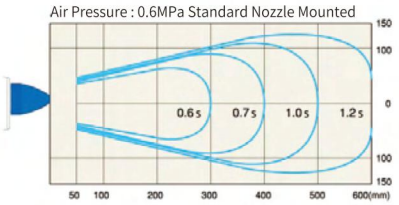
Item Code		M01E-009	Remark
Model		SIG-30	
Input Power		DC 24V	±5%
Power Consumptions		1.8W	Lighting LED
Current Consumption		75 mA	DC 24V
Ion-Generation Method		High Frequency AC	
Air Purge Supply Pressure		0.1 ~ 0.6 MPa (0.4 MPa Recommendation)	CDA (Clean Dry Air), N2
Operation Circumstance		5°C ~ +40°C (41°F ~ 104°F, 35% ~ 65%RH)	NO dewing
Ozone (O3) Concentration		≤ 0.05 ppm	50 mm
Operation Distance		50 mm ~ 600 mm	Non-hazardous locations
Decay Time		Please refer to Ionizer performance tables	
Ion Balance		± 10V	0.3MPa, 150 mm
Material (Body)		ABS	
Hook Material		Stainless Steel	
Electrode	Standard	Tungsten	
	Option	Titanium	
Size		107.5(W)×150(H)×35(D) mm	
Weight		198 g	
Alarm Function		H/V Abnormal	Red LED Alarm
Accessory		AC Adaptor	
Warranty		1 year	



(Unit : mm)







Specifications (Adaptor)

Category	Descriptions	Remark
Rated Input Voltage	AC 100V ~ 240V, 50/60Hz, 0.4A	±5%
Rated Output Voltage	DC 24V 0.75A	
Operation Circumstance	0°C ~ +40°C (32°F ~ 104°F), 5% ~ 95%RH	Where no condensation
Code Length	DC Input Cable: 2.5 m, AC Output Cable: 1.8 m	
Weight	170 g	

Basic Component

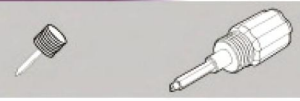


Body
SIG-30
1 ea

Adaptor
SAD-1G-1-001
AC 100~240V, 50/60Hz
DC 24V, 0.75A, 2.5 m/1 ea

Power Cable
SPC-BL-1-001 AC 110V, 50/60Hz, 1.8 m, 1 ea or
SPC-BL-2-001 AC 220V, 50/60Hz, 1.8 m, 1 ea

Additional Component



Discharging Needle
SIE-NZ-1-001

Screw Driver
SDR-NZ-1-001
1 ea

Ion Gun



Features

- High voltage alarm output.
- Easy cleaning and maintenance



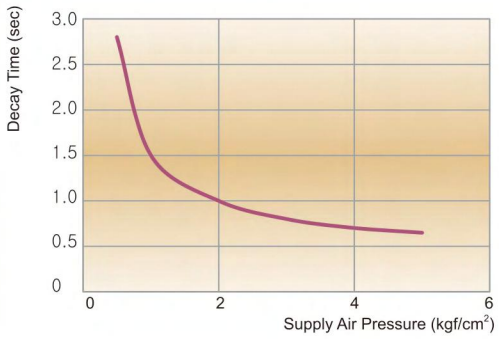


Specifications

Item Code		M01E-012
Model		AZM-G1G
Input Voltage		DC 24V ±10%
Input Current		200 mA
Power Consumption		Max. 5W
Emitter Voltage		± 4.0 kV
Output Frequency		50 kHz
Ion Generating Method		Corona Discharge
Voltage Application Method		High-Frequency AC
Material		Body: ABS / Emitter Pins: Tungsten
Emitter Replacement		Replaceable
Ion Balance		Under average ±15V
Air	Type	CDA(Clean dry air), N2
	Pressure	0 ~ 0.5 MPa
	Blow-off-Force	128 L/㎠ [0.3 MPa]
	Air Tube Diameter	Φ 6 (Outside)
Ozone Generation		Under 0.05 ppm
Ambient Temperature		0°C ~ +50°C (32 ~ 122°F)
Ambient Humidity		35 ~ 85% RH (No Condensation)

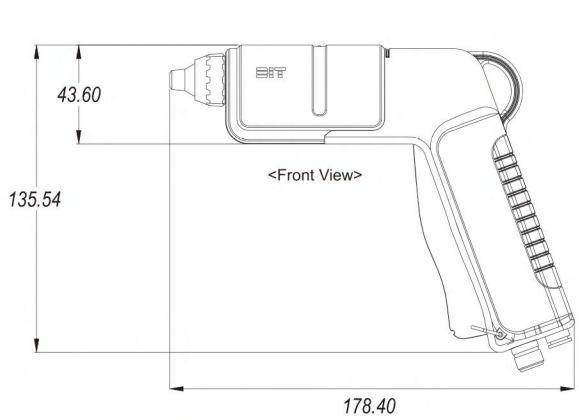
Decay Time

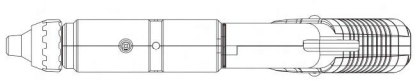
Relation between Supply Air Pressure and Decay Time



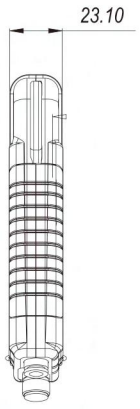
Air purge : 0.3MPa, Distance : 150mm, Measurement condition : 1kV → 0.1kV,
Charged plate dimensions : 150mm x 150mm, Capacity : 20pF
(This graph is based on our laboratory environment testing.)

(Unit : mm)





<Top View>



<Rear View>

Bench Top Ion Blower

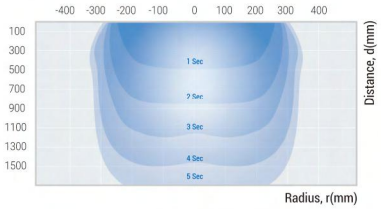
Item Code	M02E-008
Model	SBL-15S
Appearance	 Front Size Back Diagonal
Input Power	DC 24V, Adaptor (AC 110 ~ 220V, 50/60 Hz, DC 24V, 2.5A)
Power Consumption	35W
Current Consumption	159 mA (AC 220V)
Ion-Generation Method	Steady-State DC (Piezo)
Air Blow Volume	4.84 m^3/min
Noise Level	62 dB
Ion Balance	± 2V (600 mm, Maximum Air flow)
Ozone (O3) Concentration	≤ 0.005 ppm
Operation Circumstance	0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH
Weight	1.94 kg
Material (Body)	EGI (Electro Galvanized Iron)
Electrode	Tungsten (standard) / Titanium (option)
Mounting Method	Desk Top
Function	Tip Cleaning, 2 Steps Fan Speed
Alarm Function	Ion Unbalance Alarm
Interface	Remote On/Off, Run State, RS485, Alarm (Ion Unbalance), Tip Cleaning
Warranty	1 year

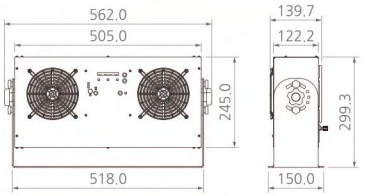
Item Code	M02E-021	M02E-026	M02E-020	M02E-027
Model	IPI-310A	IPI-310A (Brush)	IPI-310S	IPI-310B
Appearance				
Input Voltage	DC 24V (Adaptor Input voltage AC 75 ~ 275V)max., 6Watts			AC 75 ~ 230V max., 8Watts
Method of Ion Generation	Steady-State DC			
Ion Generation	adjustable	adjustable	Automatic control	Automatic control
Wind Velocity	High: 105 cfm, Low: 58 cfm		High: 48 cfm, Low: 30 cfm	High: 105 cfm, Low: 58 cfm
Ion Balance	± 5V (in 500 mm)	± 5V (in 500 mm)	± 5V (in 300 mm)	± 5V (in 500 mm)
Decay Time	5 sec. (in 600 mm)	3 sec. (in 300 mm)	3 sec. (in 300 mm)	3 sec. (in 300 mm)
Material (Body)	ABS	ABS	SUS	ABS
Electrode	Titanium	Titanium	Titanium	Titanium
Size (mm)	157(W)×54(D)×210(H)		157(W)×88(D)×210(H)	98(W)×45(D)×142(H)
Weight	1.05 kg	1.1 kg	1.5 kg	570 g
Warranty	18 months			

Bench Top Ion Blower

Features

- Ion balance: ± 2V (at 60 cm distance, max. air flow)
- EMI (Electro-Magnetic Interference) and EMS (Electro-Magnetic Susceptibility)
- Automatic tip cleaning function
- Various Interfaces with automated factories (PLC, Computer)
- Ion unbalance alarm
- RMS (Real Monitoring System)
- Remote control
- Ion bar graph
- Wide range and long distance





SBL-30W (Unit : mm)

Item Code	M02E-003	M02E-023
Model	SBL-20W	SBL-30W
Appearance		
Input Power	AC 100 ~ 240V, 50/60 Hz	AC 100 ~ 240V, 50/60 Hz
Power Consumption	37W (Fan Speed Max.)	50W (Fan Speed Max.)
Ion-Generation Method	Steady-State DC	Steady-State DC
Air Blow Volume	8.5 m^3/min (Fan Speed Max.)	12.4 m^3/min (Fan Speed Max.)
Noise Level	63 dB (1,000 mm, Fan Speed Max.)	68 dB (1,000 mm, Fan Speed Max.)
Ion Balance	± 2V (600 mm, Maximum Air flow)	± 2V (600 mm, Maximum Air flow)
Ozone (03) Concentration	≤ 0.005 ppm	≤ 0.05 ppm
Operation Circumstance	0°C~ 50°C (32°F ~ 122°F), 35%~85% RH	0°C~ 50°C (32°F ~ 122°F), 35%~85% RH
Weight	3.4 kg	6.2 kg
Material (Body)	Aluminium	Aluminium
Electrode	Tungsten / Titanium	Tungsten / Titanium
Mounting Method	Desk Top	Desk Top
Function	4 Step Fan Speed, Tip Cleaning	Remote Control, 4Step Fan Speed, Auto Tip Cleaning, Buzzer On/Off, Ion Balance Display
Alarm Function	Ion Unbalance Alarm, Fan Alarm	
Interface	Remote On/Off, Run State, Alarm, Tip Cleaning, RS485	
Option	RMS (Real Monitoring System)	
Warranty	1 year	

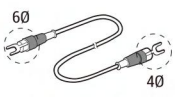
Basic Component



Body
SBL-30W
1 ea

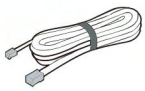


Power Cable
SPC-MT-1-001
AC 100~240V, 50/60Hz
1.8 m / 1 ea



Ground Cable
SGC-XN-1-001
1 m / 6Ø, 4Ø / 1ea

Additional Component



UTP Cable (Option)
SUC-MT-1-001
10 m / 1 ea



Remote Controller
SBL-RC2
1 ea

RMS Controller

Single Cable

Power Extention

Bench Top Ion Blower





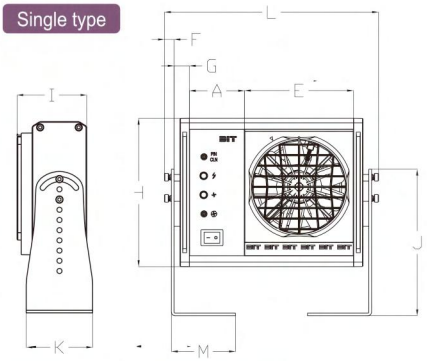
Features

- Auto pin cleaning function by one-touch button on controller
- Auto pin cleaning function can be operated on a daily basis by setting menu.
- Auto pin cleaning function is availalbe with PLC communication.
- Able to choose products by the types of input voltage systems (DC 24V or AC 100~240V)

Specifications

Item Code	M02E-032	M02E-033	M02E-034	M02E-035	M02E-036
Model	AMF-95 Series				
Fan	1 fan	2 fan	3 fan	4 fan	5 fan
Input Voltage	AC 100 ~ 240V~, 50/60Hz or DC 24V±10%				
AC Power Consumption	Max. 24W		Max. 80W		
DC Power Consumption	Max. 17W		Max. 55W		
Output Frequency	50 kHz				
Ion Generating Method	Corona Discharge				
Voltage Application Method	High-Frequency AC				
Material	Body: ABS / Emitter Pins: Titanium				
Emitter Replacement	Replaceable				
Emitter Cleaning	Clean Button				
Ion Balance	Under average ±10 V				
Coverage Distance	100 mm ~ 1200 mm				
Display	HV LED(G/R), FAN LED(G/R)				
Air Volume	Max. 1.7 m³ / min [per 1-fan]				
Ozone Generation	Under 0.05 ppm				
Ambient Temperature	0°C ~ +50°C (32 ~ 122°F)				
Ambient Humidity	35 ~ 65% RH (No Condensation)				

Single type



<Side View> <Front View>

Category	Code	Length[mm]
Control box	A	51.5
Fan module	E	103
Bracket Assy	F	11
Side cover	G	15.2
Height	H	141.9
Depth	I	69.5
Bracket Length	J	137.4
Bracket Depth	K	65
Bracket Width	M	60

	Length[mm]
B	103
C	51.5
D	103
E	103
F	11
G	15.2
H	141.9
I	69.5
J	137.4
K	65
M	60

Advantages

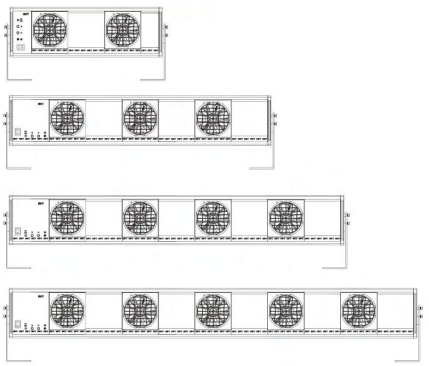


- Various assembly configurations of fan modules and spacing boxes are enabled



- Easy maintenance & Cleaning

Standard configurations



Bench Top Ion Blower (Mini)



Item Code	M02E-037	M02E-038
Model	ASF-AD/PD Series	
Model type	AD Type	PD Type
Ion Generating Method	Pulsed AC	High- Frequency
Output Frequency	10~50Hz (Adjustable)	29kHz
Input Voltage	AC 100~240V (50/60Hz) or DC 24V±10%	
Input Current	Max. 0.8A	
Emitter Pin	Titanium	
Ion Balance	< ±10V typical	
Decay Time	Better than 2.0 seconds at 600 mm [Fan speed max (Level 5)]	
Air Volume	Max. 4.6 m³/min per Fan	
Ozone Generation	Under 0.005 ppm	Under 0.05 ppm
Display	7 segment-Display, High Voltage Alarm LED(G/R), Fan Alarm LED(G/R) ※ Green: Normal, Red: Abnormal	
Functions	Fan Speed, Operating frequency, Ion-balance, Auto-cleaning, PLC Alarm Select, Address, Ionizer On/Off, Password	
Pin Cleaning	Option (Auto or manual)	
Weight	Max. 1.8 kg	
Ambient Temperature	0°C ~ +50°C (32~122°F)	
Ambient Humidity	35 ~ 65% RH (No condensation)	

Features

Maximized Convenience of Maintenance

- Easy to clean emitter pins with a pin brush (Option: Auto pin cleaning type or Manual pin cleaning type)
- Easy to clean a fan with a removable rear fan cover
- Stable performance for long period in spite of pollution, wear and tear on emitter pins by using auto-balance circuit

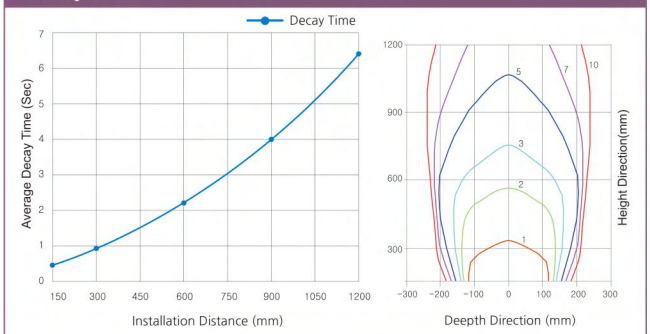


Optimized for User Environments with Various Options

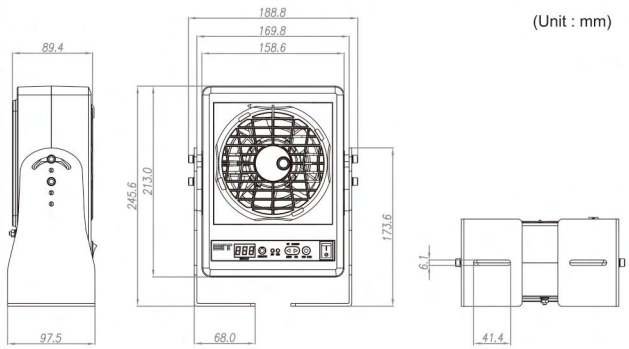
- Able to choose products by the types of ion generating methods (H/F AC or Pulsed AC)
- Able to choose products by the types of input voltage systems (DC 24V or AC 100~240V)
- Able to choose output signal methods (NPN or PNP)
- Air volume can be adjusted up to 4.6m³/min (per 1 fan) by using 120 mm Fan [5 levels]
- Remote control is available with PLC / RS485 communication



Decay Time



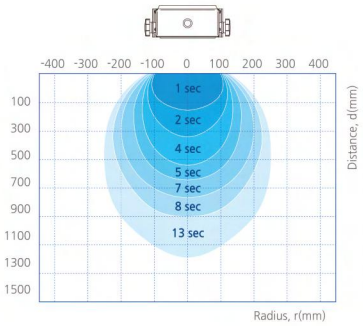
(Unit : mm)



Bench Top Ion Blower (Mini)

Features

- Ion balance: ± 10V (SBL-108), ± 30V (SBL-18) (at 60 cm distance)
- EMI (Electro-Magnetic Interference) and EMS (Electro-Magnetic Susceptibility)
- Various interfaces with automated factories (PLC, Computer)
- RMS (SBL-108, Option)
- Various input voltages (AC110/220, 50/60Hz, DC24V)
- One touch front fan cover off for tip cleaning



Item Code	M02E-004
Model	SBL-18
Appearance	 Front Back Diagonal
Input Power	AC 110/220V, 50/60Hz
Power Consumption	18W (Fan Speed Max.)
Current Consumption	81 mA
Ion-Generation Method	DC Type
Air Blow Volume	1.9 m³/min (Fan Speed Max.)
Noise Level	54 dB (1,000 mm, Fan Speed Max.)
Ion Balance	± 30V (600 mm, Maximum Air flow)
Operation Circumstance	0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH
Ozone (O3) Concentration	≤ 0.005 ppm
Mounting Method	Non-Flammable ABS
Material (Body)	Tungsten
Electrode	Desk Top
Weight	0.8 kg
Function	2 Steps Fan Seed
Warranty	1 year

SBL-18

Basic Component

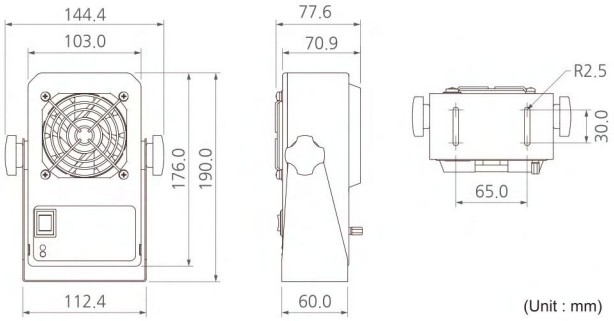


Additional Component



UTP Cable (Option)
SUC-MT-2-001
10 m / 1 ea

RMS Controller
Single Cable



(Unit : mm)

Bench Top Ion Blower (Mini)

Features

- By using of AC 50kHz high frequency corona discharge method, this Ionizer is especially effective in neutralizing static electricity at short-range and in maintaining steadfast balance of plus(+) and minus(-) ions.
- Miniature design allows you to install it in the confined space of equipment for LCD, semiconductor, etc., and this compact ionizer can neutralize static electricity from the objects effectively without using compressed air flow.
- A magnetic attached device enables you to install it at any metallic surfaces easily, and unique brackets allow you to bend the head part vertically, elevate up and down, and rotate the face in any desired directions.
- In case of excess high voltage and the abnormality of fan operating, LED light will be on as "RED"
- Easy maintenance thanks to a removable emitter pin unit.

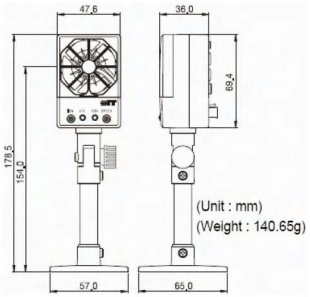


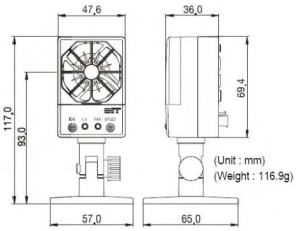
Basic Component

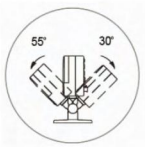
Main unit
Power cable
Ground cable
Instruction manual

Additional Component

AC Adaptor
Optional bracket















Item Code	M02E-025	Remark
Model	SF-40A	
Ion Balance	± 10V	
Ion-Generation Method	High frequency AC	
Electrode	Titanium	
Decay Time	1.5 sec.	150 mm
Input Current	DC 24V, 0.15A	
Air Flow	0.27 m/min (Max)	
Adjustable Controls	Fan speed, Ion Balance	
Size (mm)	46(W)×68.5(H)×36(D)	Head
Operation Circumstance	0°C ~ 50°C, 35% ~ 65%RH	
Ozone (O3) Concentration	≤ 0.05 ppm	

Overhead Ion Blower



Features

- Ion balance: ± 2V (at 60 cm distance, max fan speed)
- EMI/EMS protect
- Automatic Ion Balance System
- Ion unbalance alarm (Buzzer)
- Automatic tip cleaning function
- Various interfaces with automated factories (PLC, computer)
- RMS (Real Monitoring System) – Option
- Remote control (SBL-RC2)
- 2, 3, 4, 5 fans

Item Code	M03E-005	M03E-006	M03E-023	M03E-024	Remarks
Model	SOB-2S	SOB-3S	SOB-4S	SOB-5S	
Input Power	AC 100 ~ 240V, 50/60Hz				
Power Consumption	37W	47W	60W	75W	Fan Speed Max.
Current Consumption	168 mA	213 mA	272 mA	341 mA	AC 220V
Ion-Generation Method	Steady-State DC				
Air Flow Volume	8.5 m^3/min	12.75 m^3/min	17.00 m^3/min	21.25 m^3/min	Fan Speed Max.
Noise Level	63 dB	64 dB	65 dB	67 dB	1,000 mm, Fan Speed Max.
Ion Balance	± 2V (600 mm, Maximum Air flow)				
Operation Circumstance	0°C ~ 50°C (32°F ~ 122°F), 35% ~ 85% RH				
Ozone (O3) Concentration	≤ 0.005 ppm				
Material (Body)	Aluminium				
Electrode	Tungsten				
Function	4 Steps Fan Speed, Tip Cleaning, Auto Tip Cleaning				
Alarm Function	Ion Unblance Alarm, Fan Alarm				
Interface	Remote On/Off, Run State, Alarm, Tip Cleaning, RS485				
Option	RMS (Real Monitoring System)				
Weight	3.1 kg	4.1 kg	5.2 kg	6.2 kg	
Size (W×L×D) – mm	160×677×184	160×887×184	160×1187×184	160×1487×184	
Warranty	1 year				

Basic Component



Body
SOB-2S
1 ea



Bracket
SBR-OB-S-001
2 ea



Power Cable
SPC-MT-1-001
AC 100~240V, 50/60Hz
1.8 m / 1 ea



Ground Cable
SGC-XN-1-001
1 m / 6Ø, 4Ø / 1 ea

Additional Component



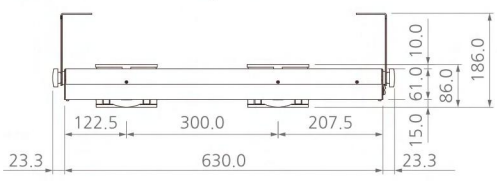
UTP Cable (Option)
SUC-MT-2-001
10 m / 1 ea

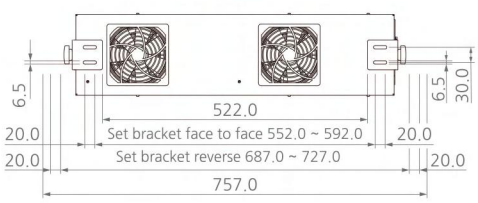


Remote Controller
SRC-OB-1-001
1 ea

RMS Controller
Single Cable

▶ SOB-2S





Ion Bar



Features

• Ion balance: ± 50V (at 30 cm distance) • Slim space and mini size • Easy maintenance • 5 mark certified (2006)

Item Code		M07E-025
Model		SIB1 Series
Ion-Generation Method		Corona Discharge Pulse AC
Air Purge Supply Pressure		≤ 0.5 MPa (CDA, N2)
Air Purge Connection Port		Pipe Thread 1/8”
Ion Balance		± 50V (1,000 mm)
Operating Distance		50 mm ~ 2,000 mm
Operation Circumstance		0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH
Ozone (O3) Concentration		≤ 0.05 ppm
Material (Body)		Non-Flammable ABS (Level V0), Stainless Steel
Electrode	Standard	Tungsten
	Option	Poly Silicon
Electrode Replacement		Cartridge type
Mounting Method		Bolt Mounting with Bracket
Ion Bar Length		134 mm ~ 2,614 mm
High Voltage Cable		Insulation Cable 4 m (UL3239_20kV - 1007AWG18)
Warranty		1 year

Basic Component Ion Bar, High Voltage Cable **Additional Component** Middle Bracket

Power Controller

Item Code		M08E-041	M08E-042	M08E-018
Model		SBP-2N	SBP-4N	SBP-06
Appearance				
Input Power		AC 100 ~ 240V, 50/60 Hz	AC 100 ~ 240V, 50/60 Hz	AC 100 ~ 240V, 50/60 Hz
Output Voltage		Pulse AC 13 kVp-p (Max.)	Pulse AC 13 kVp-p (Max.)	Pulse AC 12 kVp-p (Max.)
Power Consumption		30W	30W	16W
Current Consumption		-	-	72mA (AC 220V)
Weight		2.11 kg	2.81 kg	1.42 kg
Material (Body)		EGI	EGI	EGI
Output Port (H/V Connector)		-	-	1 Port (1P) , 2 Ports (2P)
Operation Circumstance		0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH		
Adjust Function	Frequency (Hz)	0.1, 0.3, 1, 3, 5, 8, 10, 20, 30, 50 (10Steps)		-
	Duty Ratio (%)	40~70 (0.5 unit)		
	High Voltage [Level]	H: 1~10 (1 unit)		
Interface		Remote On/Off, Run State, H/V Alarm State, RS485		
Warranty		1 year		

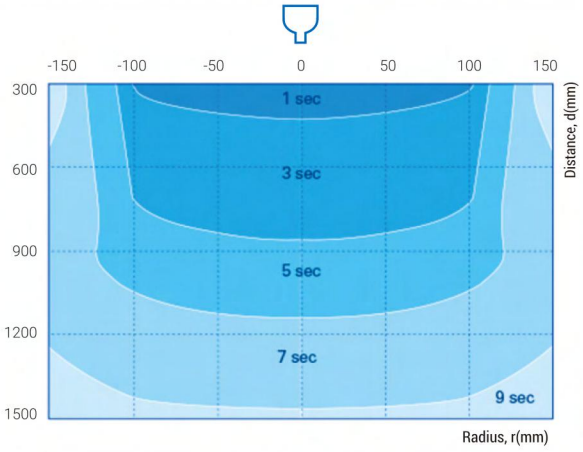
Ion Bar



Item Code		M07E-084	Remark
Model		SIB4 Series	
Input Power		DC 24V (±5%)	
Power Consumption		Max. 14.4W	
Current Consumption		Max. 500 mA	DC 24V
Ion-Generation Method		Corona Discharge Pulse AC	CDA (Clean Dry Air), N2
Air Purge Supply Pressure		0.1 ~ 0.5 MPa	
Air Purge Connection Port		Pipe Tap 1/8"	
Ion Balance		± 30V	1,000 mm
Operating Distance		50 mm ~ 2,000 mm	
Ozone (O3) Concentration		≤ 0.05 ppm	
Operation Circumstance		0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH	
Main Body Material		Non-Flammable ABS (Level V0)	
Electrode Material	Standard	Tungsten	
	Option	Poly Silicon, Titanium	
Emitter Replacement		Cartridge Type	
Mounting Method		Bolt Mounting with Bracket	
Adjust Function	Frequency (Hz)	0.1, 0.3, 1, 3, 5, 8, 10, 20, 30, 50	
	Duty Ratio (%)	40 ~ 70	
	Voltage Level	Positive 1 ~ 10, Negative 1 ~ 10	
	Auto Duty	Mode Set	Distance 50 ~ 1,000 mm
Alarm Function		H/V Abnormal Alarm, Tip Cleaning Alarm	
Interface		Run State, Remote, Interlock, RS485, Alarm (H/V Abnormal, Low Ion, Tip Cleaning)	
Warranty		1 Year	

Features

- Ion balance: ± 30V
- Depending on the polarity, ion generation amount is automatically controlled
- With its slim body, diverse installation is possible
- Tip Cleaning Alarm (internal timer installed → possible to set tip cleaning period)
- Output voltage control (8 ~ 12.5kVp-p)



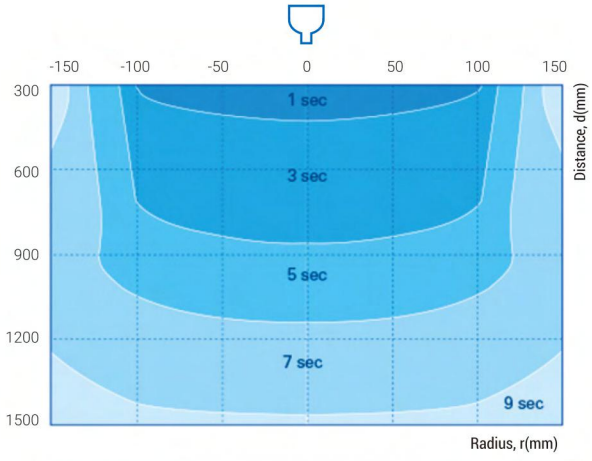
Ion Bar



Item Code		M07E-114	Remark
Model		SIB5S Series	
Input Power		DC 24V (±5%)	
Power Consumption		Max. 12W	
Current Consumption		Max. 500 mA	DC 24V
Ion Generation Method		Corona Discharge Pulse AC	
Air Purge Supply Pressure		0.1 ~ 0.5 Mpa	CDA, N2
Air Purge Connection Port		Pipe thread 1/8"	
Ion Balance		± 30V	1,000 mm
Ozone (O3) Concentration		≤ 0.05 ppm	
Operation Circumstance		0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH	Level V0
Material (Body)		Non-Flammable ABS	
Electrode	Standard	Tungsten	
	Option	Titanium, Poly Silicon	SIE-4
Electrode Replacement		Cartridge Type	
Mounting Method		Bolt Mounting with Bracket	
Function		Remote Control	
Adjust Function	Frequency (Hz)	1, 3 ,5, 8, 10, 20, 30 ~ 100	
	Voltage Level	1 ~ 10	
Alarm Function		H/V Abnormal Alarm, Tip Cleaning Alarm	
Interface		Run State, Remote, RS485, Alarm (H/V Abnormal, Tip Cleaning)	
Operating Distance		50 ~ 2,000 mm	
Option		RMS (real monitoring system), SBP-RD (DC power supply)	
Warranty		1 Year	

Features

- Stable ion balance during long term usage
- Stable performance from high frequency (100hz)
- Able to apply in various conditions with slim appearance and various length
- Increase ion generation by reducing corona discharge loss
- Tip cleaning alarm
  (You can set tip cleaning period with timer)



Ion Bar

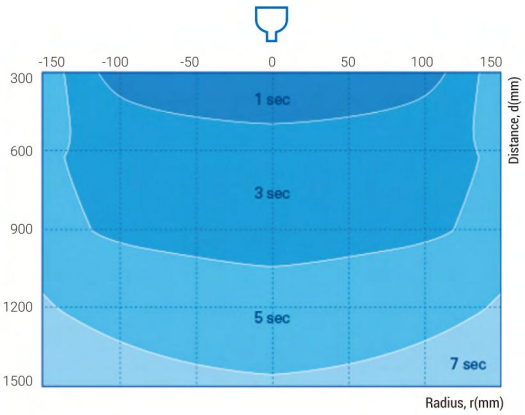
SIB7 Series is a all-in-one type mini size ion bar. Corona discharge loss is minimized through various specification and digital control system and this product provides high performance and low ion balance. Also, wide range of ionization is possible through an optimum ion generating design.



Item Code		M07E-085	Remark
Model		SIB7 Series	
Input Power		DC 24V (± 5%)	
Power Consumption		Max. 7.8W	
Current Consumption		Max. 325 mA	DC 24V
Ion-Generation Method		Corona Discharge Pulse AC	
Air Purge Supply Pressure		0.1MPa ~ 0.5 MPa	CDA (Clean Dry Air), N2
Air Purge Connection Port		Pipe Thread 1/8"	
Ion Balance		± 30V	1,000 mm
Operating Distance		50 mm ~ 2,000 mm	
Operation Circumstance		0°C ~ +50°C (32°F ~ 122°F), 35% ~ 85% RH	
Ozone (03) Concentration		≤ 0.05 ppm	
Material (Body)		Non-Flammable ABS	Level V0
Electrode	Standard	Tungsten	
	Option	Titanium, Poly Silicon	
Emitter Replacement		Cartridge type	
Mounting Method		Bolt Mounting with Bracket	
Ion Bar Length		422 mm ~ 962 mm	
Adjust Function	Frequency (Hz)	0.1, 0.3, 1, 3, 5, 8, 10, 20, 30, 50	
	Duty Ratio (%)	40 ~ 70	
	Voltage Level	1 ~ 10	
Alarm Function		High Voltage Abnormal Alarm	
Interface		Input: Remote / Output: Run State, Alarm State	
Warranty		1 year	

Features

- Ion balance: ± 30V (in 1,000 mm)
- All-in-one type mini size ion bar (eg. controller internally installed)
- Maximized the ion creation via reducing loss of corona discharging
- Power jumping function among ion bars (Max. 4 ion bar links)
- Aero dynamic design nozzle socket reduces tip contamination
- One-touch in/out socket application
- Design for minimum air consumption



Ion Bar



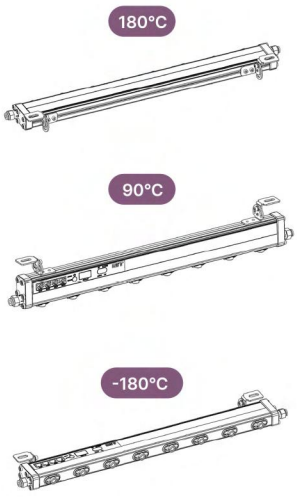
Features

- Cross-Sectional Area Reduced by 40% Comparing MB Series
  - Easy to install even in narrow space due to remarkably reduced size and weight.
  - New brackets, which is able to tilt 180 degree vertically, provide more freedom in installation.
- 180 Degree Rotation
- Low Maintenance
  - Special nozzle is designed to reduce air supply requirement and minimize pollutant production and accumulation on emitter pin
  - Special nozzle is designed using aerodynamics
  - Air supply requirement per emitter (0.3 MPa-Approx 5.1 ℓ/min / 0.1 MPa-Approx 2.0 ℓ/min)

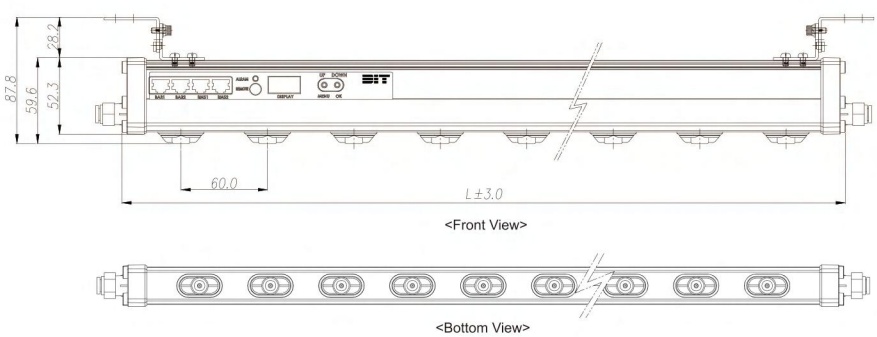
Item Code		M07E-501~514
Model		ASG-A Series
Input Voltage		DC 24V ±10%
Input Current		Max. 300 mA
Power Consumption		Max. 8W
Emitter Voltage		±4.75 kV ~ ±5.5 kV (4 level adjustable)
Output Frequency		0.1 Hz ~ 60 Hz (Adjustable)
Ion Generating Method		Corona Discharge
Voltage Application Method		Pulsed AC
Material		Body: ABS / Emitter pins: Tungsten
Emitter replacement		Replaceable
Ion Balance		Under average ±30V
Coverage distance		200 mm ~ 2000 mm
Air	Type	CDA (Clean dry air), N2
	Pressure	0.05 ~ 0.5 MPa (Usually under 0.3 MPa)
	Flor/per 1 Emitter	2 L/min (±10%) [Under 0.1 MPa]
	Air Tube Diameter	ø6 (Outside)
Ozone Generation		Under 0.005 ppm
Ambient Temperature		0 °C ~ +50°C (32~122°F)
Ambient Humidity		35 ~ 85% RH (No condensation)

Item Code	Length (mm)
M07E-501	502
M07E-502	622
M07E-503	682
M07E-504	802
M07E-505	922
M07E-506	982
M07E-507	1102
M07E-508	1282
M07E-509	1582
M07E-510	1882
M07E-511	2122
M07E-512	2302
M07E-513	2482
M07E-514	2962

※ Ait-fitting part is not included in the length above.

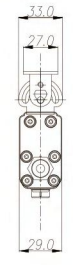


(Unit : mm)

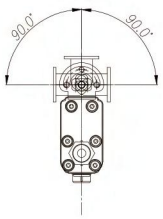


<Front View>

<Bottom View>



<Side View>



<Bracket Rotation>

Ion Bar



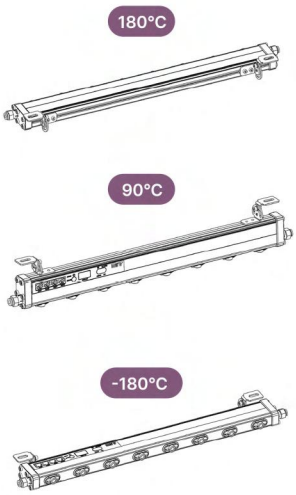
Features

- Cross-Sectional Area Reduced by 40% Comparing MB Series
  - Easy to install even in narrow space due to remarkably reduced size and weight.
  - New brackets, which is able to tilt 180 degree vertically, provide more freedom in installation.
- 180 Degree Rotation
- Low Maintenance
  - Special nozzle is designed to reduce air supply requirement and minimize pollutant production and accumulation on emitter pin
  - Special nozzle is designed using aerodynamics
  - Air supply requirement per emitter (0.3 MPa-Approx 5.1 ℓ/min / 0.1 MPa-Approx 2.0 ℓ/min)

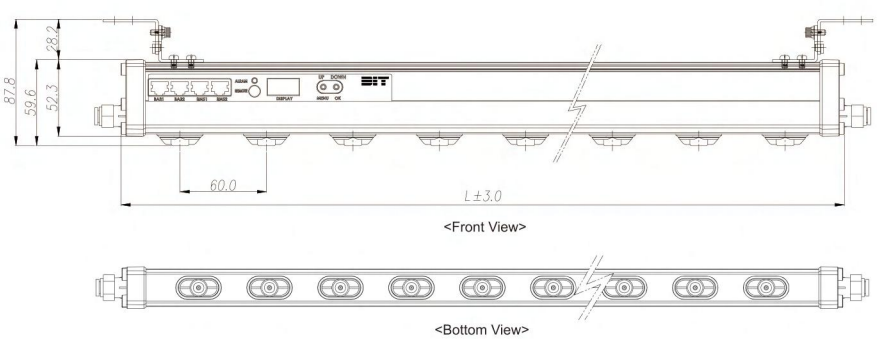
Item Code		M07E-515~530
Model		ASG-P Series
Input Voltage		DC 24V ±10%
Input Current		Max. 900 mA
Power Consumption		Max. 24W
Emitter Voltage		±4.75 kV(±5%)
Output Frequency		29 kHz
Ion Generating Method		Corona Discharge
Voltage Application Method		High-Frequence AC
Material		Body: ABS / Emitter pins: Tungsten
Emitter replacement		Replaceable
Ion Balance		Under average ±30V
Coverage distance		100 mm ~ 1000 mm
Air	Type	CDA (Clean dry air), N2
	Pressure	0.05~0.5 MPa (Usually under 0.3MPa)
	Flor/per 1 Emitter	2 L/min (±10%) [Under 0.1 MPa]
	Air Tube Diameter	ø6 (Outside)
Ozone Generation		Under 0.005 ppm
Ambient Temperature		0 °C ~ +50°C (32 ~122°F)
Ambient Humidity		35 ~ 85% RH (No condensation)

Item Code	Length (mm)
M07E-515	262
M07E-516	322
M07E-517	382
M07E-518	502
M07E-519	622
M07E-520	682
M07E-521	802
M07E-522	922
M07E-523	982
M07E-524	1102
M07E-525	1282
M07E-526	1582
M07E-527	1882
M07E-528	2122
M07E-529	2482
M07E-530	2962

※ Ait-fitting part is not included in the length above.

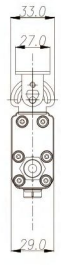


(Unit : mm)

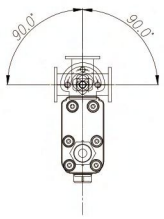


<Front View>

<Bottom View>



<Side View>



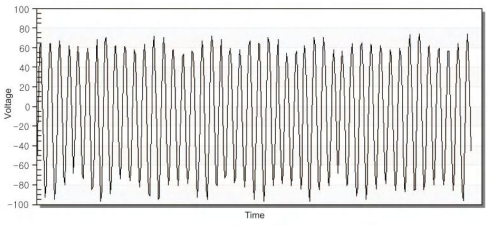
<Bracket Rotation>

Ion Bar

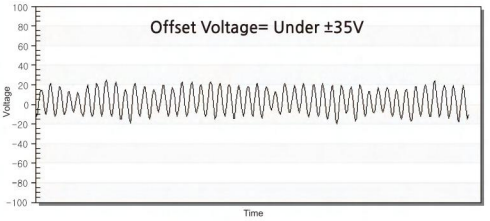


Features

- Stable Performance at a Very Close Distance
- Easy Maintenance
  - Mesh cover is able to tilt 120 degree for easy maintenance of emitter pins: Users can open the mesh cover, clean and excahge emitter pins.
- Maximizing Efficiency with Special Nozzle
  - Special nozzle is designed to reduce air supply requirement and minimize pollutant production and accumulation on emitter pin
  - Special nozzle is designed using aerodynamics
  - Air supply requirement per emitter
    (0.3 MPa-Approx 5.1 ℓ/min / 0.1 MPa-Approx 2.0 ℓ/min)



Pulsed AC
Common Pulsed AC Type



Pulsed AC(ASG-AFU)
Ultra Proximity Pulsed AC Type(ASG-AFU)

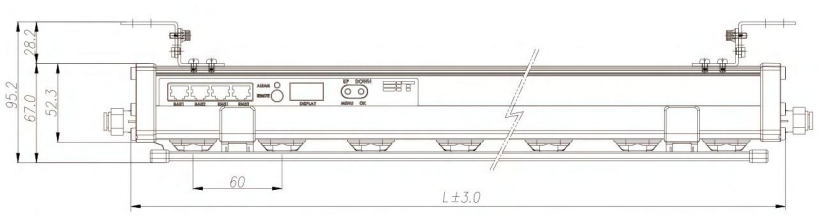
Test by CPM(Charged plate dimensions : 150mm x 150mm, Capacity : 20pF)
The above graph is for reference.

Item Code		M07E-531~544
Model		ASG-AFU Series
Input Voltage		DC 24V ±10%
Input Current		Max. 300 mA
Power Consumption		Max. 8W
Emitter Voltage		±4.75kV ~ ±5.5kV (4 level adjustable)
Output Frequency		0.5Hz ~ 100Hz (Adjustable)
Ion Generating Method		Corona Discharge
Voltage Application Method		Pulsed AC
Material		Body: ABS / Emitter pins: Tungsten
Emitter Replacement		Replaceable
Ion Balance		Under average ±35V (@Distance 50 mm)
Coverage Distance		10 mm ~ 300 mm
Air	Type	CDA (Clean dry air), N2
	Pressure	0.05~0.5 MPa (Usually under 0.3 MPa)
	Flor/per 1 Emitter	2 L/min (±10%) [Under 0.1 MPa]
	Air Tube Diameter	ø6 (Outside)
Ozone Generation		Under 0.005 ppm
Ambient Temperature		0 °C ~ +50°C (32~122°F)
Ambient Humidity		35 ~ 85% RH (No condensation)

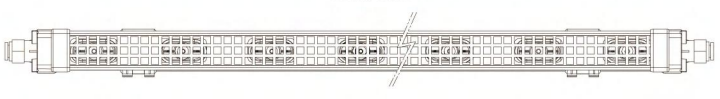
Item Code	Length (mm)
M07E-531	448
M07E-532	508
M07E-533	628
M07E-534	688
M07E-535	808
M07E-536	928
M07E-537	988
M07E-538	1108
M07E-539	1228
M07E-540	1288
M07E-541	1588
M07E-542	2128
M07E-543	2308
M07E-544	3028

※ Ait-fitting part is not included in the length above.

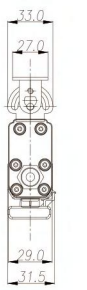
(Unit : mm)



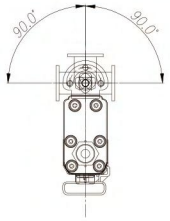
<Front View>



<Bottom View>



<Side View>



<Bracket Rotation>

Ion Bar



Features

- Used in manufacturing processes that require high-speed static elimination of films, fibers, and paper
- Prevents the risk of operator shock from static electricity
- Designed to be able to easy clean and replace an emitter pin



Item Code		M07E-545~568
Model		ASR-D Series
Input Voltage		DC 24V ±10%
Input Current		Max. 300 mA
Power Consumption		Max. 8W
Emitter Voltage		DC ±7.0kV(emitter pin pitch 35 mm), DC ±12kV(emitter pin pitch 60 mm)
Ion Generating Method		Corona Discharge
Voltage Application Method		DC
Material		Body: AL, ABS / Emitter pins: Tungsten
Emitter Replacement		Replaceable
Coverage Distance		50~200 mm (7kV), 150~500 mm (12kV)
Air	Type	CDA (Clean dry air), N2
	Pressure	0.05~0.5MPa (Usually under 0.3MPa)
	Air Tube Diameter	ø6 (Outside)
Ambient Temperature		-0 °C ~ +40°C (32~104°F)
Ambient Humidity		35 ~ 85% RH (No condensation)

Item Code	Length (mm)
M07E-545	380
M07E-546	500
M07E-547	620
M07E-548	740
M07E-549	860
M07E-550	980
M07E-551	1100
M07E-552	1220
M07E-553	1340
M07E-554	1460
M07E-555	1700
M07E-556	2060
M07E-557	2540
M07E-558	3020

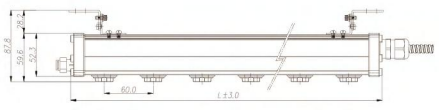
(P=60 mm)

Item Code	Length (mm)
M07E-559	250
M07E-560	320
M07E-561	390
M07E-562	530
M07E-563	600
M07E-564	740
M07E-565	880
M07E-566	1020
M07E-567	1300
M07E-568	1510

(P=35 mm)

※ Ait-fitting part is not included in the length above.

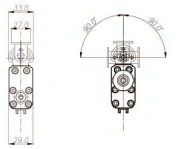
ASR-DxxxF Series



<Front View>

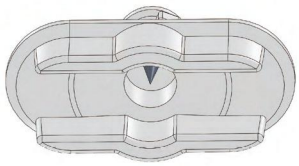


<Bottom View>

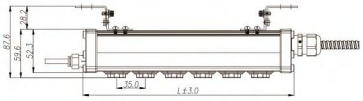


<Side View> <Bracket Rotation>

ASR-D Nozzle



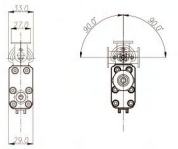
ASR-DxxxC Series



<Front View>



<Bottom View>

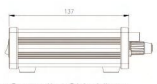


<Side View> <Bracket Rotation>

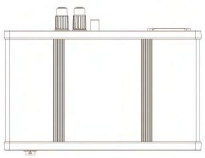
ASR-D Series Controller



<Controller Front View>

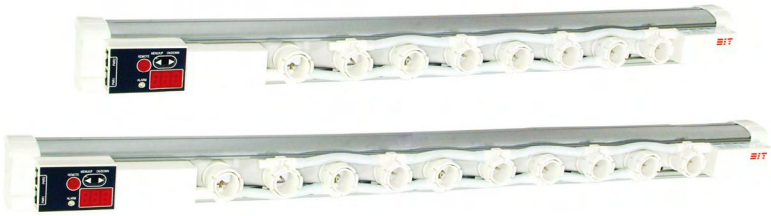


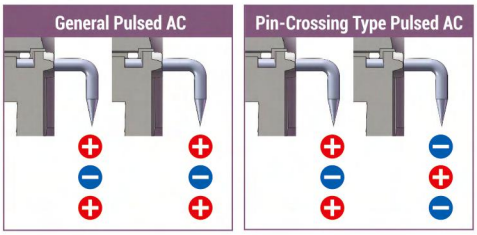
<Controller Side View>



(Unit : mm)

Ion Bar





Features

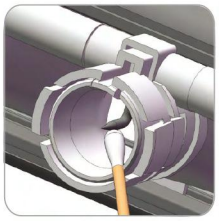
Pin-Crossing Type Pulsed AC Has Low Offset-Voltage Performance at a Short Distance.[Patented]

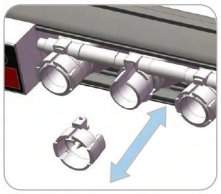
- AMB-LS Series is optimized for short distance because it has low offset-voltage performance by pin-crossing type pulsed AC method.
- Slim and light weight piezo-ceramic transformer built into the ion bar (No need for separate bulky transformer/control unit)
- Wireless remote control (Select individual Ion bar unit to communicate, check ion balance, change frequency, and check current setting, etc.)
- Easy maintenance & cleaning
- Convenient emitter pin for replacement
- Structured to minimize dusts or pollutants



Item Code	M07E-569~580
Model	AMB-LS Series
Input Voltage	DC 24V ±10%
Input Current	Max. 570 mA
Power Consumption	Max. 15W
Emitter Voltage	±6.5 kV
Output Frequency	0.5 Hz~10 Hz (Adjustable)
Ion Generating Method	Corona Discharge
Voltage Application Method	Pulsed AC
Material	Body: ABS / Emitter pins: Titanium
Emitter replacement	Replaceable
Ion Balance	Under average ±30V
Coverage distance	200 mm ~ 600 mm
Ozone Generation	Under 0.005 ppm
Ambient Temperature	0 °C ~ +50°C (32 ~122°F)
Ambient Humidity	35 ~ 85% RH (No condensation)

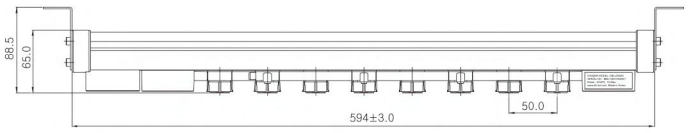
Item Code	Length (mm)
M07E-569	394
M07E-570	494
M07E-571	594
M07E-572	694
M07E-573	794
M07E-574	894
M07E-575	994
M07E-576	1094
M07E-577	1194
M07E-578	1294
M07E-579	1394
M07E-580	1494



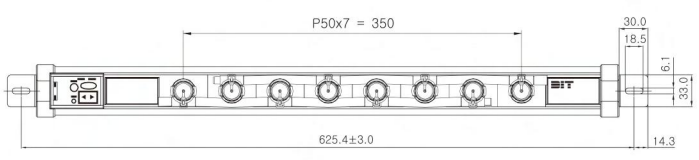




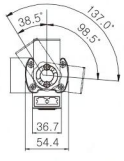
(Unit : mm)



<Front View>



<Bottom View>



<Bracket Rotation>

Ion Bar (Knife type)

Features

- Possible to use in high temperature environment (130°C)
- Possible to apply to various working environment
- Small / Slim body → Easy to install in a narrow space
- Various length of ion bar for numerous installing environment
- Tip cleaning device (Option)



Item Code		M07E-000	Remark
Model		SSB1 Ion bar	
Ion-Generation Method		Corona Discharge	
Rated Voltage		Pulsed AC 10kVpp ±7% (Max.) / DC ±9kV ±7% (Max.)	AC: SBP-14J4/SBP-06 / DC: SBC-2PN
Structure		Direct-Coupled	
Ion Balance		± 50V at pulsed AC	100 mm
Operating Distance		10 mm ~ 250 mm	Non Air
Operation Circumstance		0°C ~ +130°C (32°F ~ 266°F), 35% ~ 85% RH	
Ozone (O3) Concentration		≤ 0.05 ppm	
Material	Main Body	Epoxy, MC Nylon	Level HB
	Cover	Aluminium	
	Electrode	Tungsten (Pitch: 30 mm)	
	Cable Insulator	Silicon	
Operation Circumstance		0°C ~ + 130°C (32°F ~ 266°F), 35% ~ 85% RH	Non air pressure
Tip Cleaning Cycle		1 Week	
Warranty		1 year	Electrode cleaning

Ion Nozzle

Subminiature Ion Nozzle can reduce contamination of tip by adopting high frequency mode (Piezo: 72kHz). Available for various working environment with different fitting tubes (Option) and angle adjustable bracket, and it brings quick ionization in narrow space. Also, contamination caused by air can be prevented by adjusting Airfilter. (Option)

Features

- Ion balance: ± 15V (300 mm / Air 0.3MPa)
- Mini size Ion Nozzle
- Infrared ray sensor Ion Nozzle (SPN-12S)
- Easy to set sensor sensitivity and operation time (SPN-12S)
- Ozone-proof material selected: Teflon Nozzle
- Tip cleaning cycle is extended by high frequency AC
- Possible to connect up to 5ea of SPN-12/12S by using Daisy Chain function (6 pole connector)
- Applying a bracket which can adjust angle
- Different Fitting tube is available (Option)



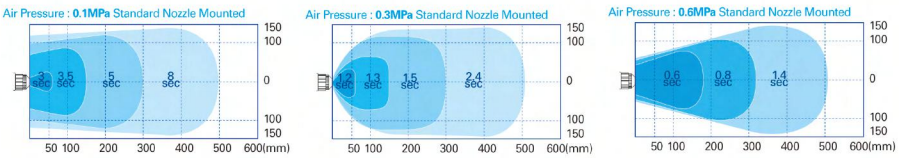
M06E-041 (SPN-12S)



M06E-040 (SPN-12)

Decay Time Characteristics

- Model: SPN-12/12S
- Decay Time: ±1,000V to ±1,000V
- Change Plate Capacitance: 20pF (150×150 mm)
- Temperature & Humidity: 24℃, 50%RH



Item Code		M06E-040	M06E-041	Remark
Model		SPN-12	SPN-12S	
Input Power		DC 24V		
Adaptor	Input	AC 100 ~ 240V, 50/60Hz, 1.7A		
	Output	DC 24CV, 2.5A, 60W		
Power Consumption		1.2W	3.6W	
Current Consumption		50 mA	150 mA	AC 220V
Ion-Generation Method		High Frequency AC		Piezo
Air Purge Supply Pressure		0.1MPa ~ 0.6MPa		CDA (Clean Dry Air), N2
Air Inlet		Ø6		
Ion Balance		± 15V		300 mm
Operation Circumstance		0°C ~ +130°C (32°F ~ 266°F), 35% ~ 85% RH		
Material (Body)		Non-Flammable ABS		
Material (Nozzle)		Teflon		
Electrode		Tungsten		
Mounting Method		Bolt Mounting with Bracket		
Weight		80 g	130 g	
Sensor		-	Photoelectric Sensor	
Alarm Function		High Voltage Abnormal Alarm		
Interface		Alarm (High Voltage Abnormal)		
Warranty		1 year		

Fitting Tubes (SPN-12 / SPN-12S)



Charged-Plate Monitor

Item Code		M80E-017
Model		ARC-P102ZB
Controller	Dimension	63 mm(H)×125 mm(W)×154 mm(D)
	Weight	< 1.2 Kg
Plate	Dimension	150 mm(H)×150 mm(W)×43 mm(D)
	Capacitance	20pF ± 2pF
	Weight	< 0.8 Kg
Sensor		Oscillating chopper type (DIT)
Input Voltage		12 Vdc ±10%
Input Current		1A
Battery Specification		NiMH 7.2V 6 pack
Battery Charging Time		3 hrs (Until full charge)
Battery Use Time		8 hrs (Full charge statement)
Float Mode	Range	0 to ±1100V DC or peack AC
	Bandwidth (-3dB)	DC to 80 Hz
	Stability	< 10% of initial Voltage with 5 minutes [40% RH at 25°C]
Decay-time Mode	Start/Stop Accuracy	2 L/min (±10%) [Under 0.1MPa]
	Time Resolution	0.1 sec (0.1~999.9 sec)
	Range	Start Voltage: ±1~±1000V / Available 1V intervers. Stop Voltage: 0~±999V / Available 1V intervers.
Material	Controller	SUS 1.2 T
	Plate	SUS 1.2 T
Function		(+) Decay-time, (-) Decay-time, Reset
Display		FND 2 set (Plate-voltage, Decay-time)
Communication		USB communication
Ambient Temperature		5°C ~ 35°C
Ambient Humidity		RH 80% under (No condensation)
Storage Temperature		0°C~ +50°C (32 ~ 122°F)
Storage Humidity		RH 80% under (No condensation)



Features

- Improving Portability, Minimizing Structure of Plate Handle and Controller

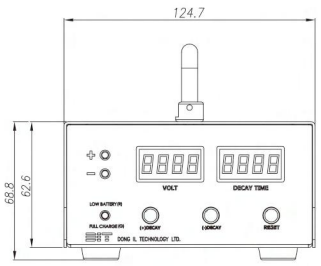


- Real Time Monitoring and Data Logging in Computer by Free Software

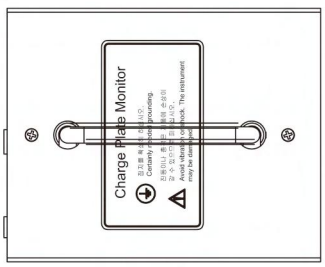


(Unit : mm)

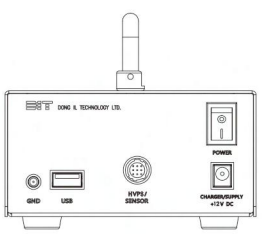
Controller



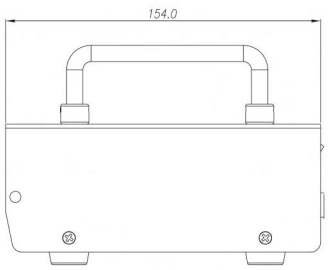
<Front View>



<Top View>

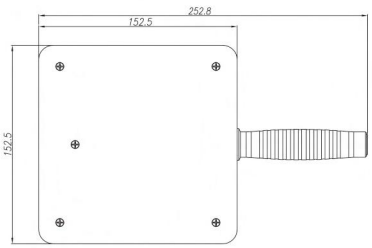


<Rear View>

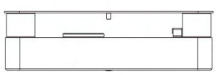


<Side View>

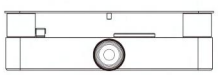
Charging Plate



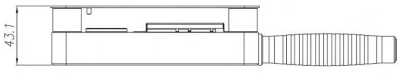
<Top View>



<Front View>



<Rear View>



<Side View>

Hand-Held Electrostatic Fieldmeter



Item Code	M48E-003	
Model	ARS-H002ZA	
Input Voltage	9V ±10% (Alkaline battery use)	
Sensor	Oscillating Chopper Type (DIT)	
Distance	25 mm (±0.5 mm)	
Range /Autochange	Precise Mode	±2kV (±10%)
	Expanded Mode	±20kV (±10%)
	Ion Balance Mode	±300V (±10%)
Resolution	Electrostatic Voltage Mode	10V (-1.99kV ~ +1.99kV)
		100V (<-20.0kV, >+20.0kV)
	Ion Balance Mode	1V
Response Time	1 sec	
Display	HTN-LCD	
Communication	USB communication	
Ambient Temperature	0°C ~ +50°C (32 ~ 122°F)	
Ambient Humidity	35 ~ 85%RH (No condensation)	

Features

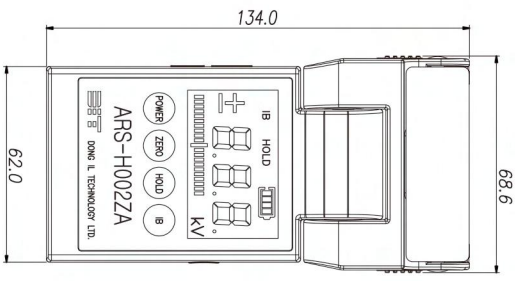
- Rotatable header makes measuring electrostatic more convenient in any place.



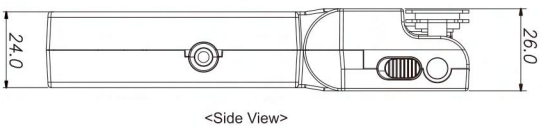
- Real time monitoring and data logging in computer through a USB port.



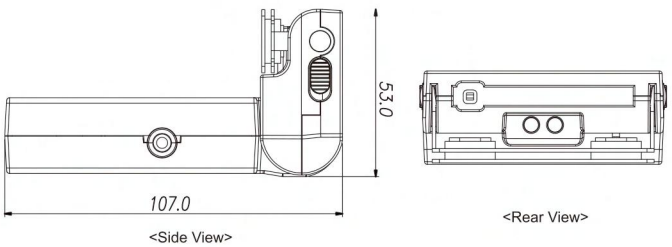
(Unit : mm)



<Top View>



<Side View>



<Side View>

<Rear View>

Electrostatic Fieldmeter



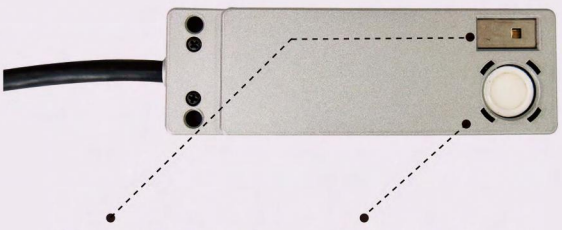
Item Code	M48E-004		
Model	ARM-S050 Series		
Descriptions	Electrostatic Fieldmeter		Ultrasonic Sensor
Input Voltage	+24VDC (±10%)		
Current Consumption	< 150 mA		
Sensor	Oscillating Chopper Type (DIT)		Reflex Type
Sensing Distance	Precise	25 mm (±0.5)	50~500 mm (Target: 100×100 plate)
	Expanded	50~500 mm (±0.5)	
Range	Precise	±2 kV (±5%)	
	Expanded	±20 kV (±10%)	
Resolution	Precise	1 V	0.5 mm
	Expanded	10 V	
Accuracy	Precise	±2 kV (±5%)	
	Expanded	50~300 mm: ±20 kV (±10%) 301~500 mm: ±20 kV (±20%)	
Linearity	±5% F.S		
Response Time	200 ms (Can be programmed)		
Analog Output	ARM-S050W1 (1 ~ 5V)		None
	ARM-S050U1 (0 ~ 5V)		
	ARM-S050C1 (4 ~ 20mA)		
Communication	RS-485 Wire (30 m) communication		
Display	4-DIGIT FND		
Case	ABS		Glass-Epoxy
Ambient Temperature	0°C ~ 50°C		
Ambient Humidity	35 ~ 85%RH (No condensation)		

Features

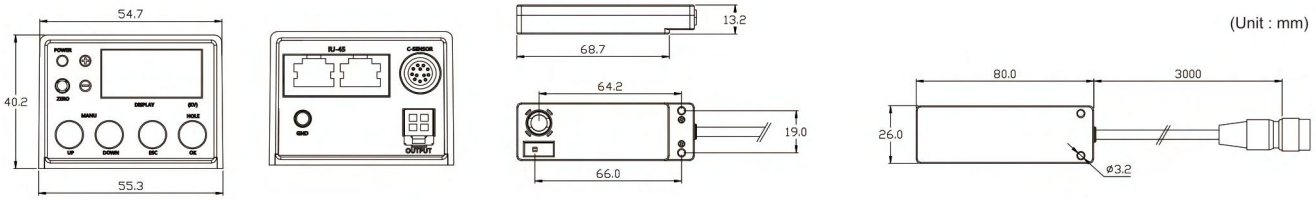
- Electrostatic measurement value is automatically revised depending on distance of target.
- Measuring electrostatic and distance simultaneously.
- User can monitor up to 30 ARM-S050 Series units in real-time with one computer. [Using RS485]
- Free monitoring program can be down-loaded on web-site (※ Customizing UI is not available)



Precise: 25 mm (±0.5)
Expanded: 50~500 mm (±0.5)
(1 mm interval)



Electrostatic Fieldmeter Ultrasonic Sensor



EOS Monitoring System New

The EOS Monitoring System is a precision, real-time monitoring solution that safeguards manufacturing lines from Electrical Overstress (EOS) events.By continuously measuring AC voltage, DC voltage, and insulation resistance at critical points, it identifies abnormal electrical conditions before they cause product defects or equipment failures.

Its modular architecture allows easy customization for different production environments, while the intuitive LCD interface and industrial-grade communication protocols enable seamless integration with PLCs, factory networks, and ESD control systems.
Designed for semiconductor, electronics, and precision manufacturing industries, the EOS Monitoring System ensures stable, ESD-safe operations and maximizes production reliability.



M80E-018

Applications

- Cleanroom and ESD-protected areas
- Precision electronics manufacturing
- Semiconductor wafer fabrication
- PCB assembly and testing

Features

Features	Description	Benefit
Modular Architecture	Three interchangeable modules (AC/ER, DC, IR)	Tailored monitoring for diverse applications
Real-Time Monitoring	Continuous measurement of AC voltage, DC voltage, and insulation resistance	Immediate detection of abnormal conditions
Precision Measurement	ACV: 0.1–4.0V (60Hz) / DCV: +0.1–30V / Insulation: 100KΩ–1GΩ	High accuracy for sensitive production lines
Multiple Communication Interfaces	CAN and RS-232 connections	Seamless integration with PLCs and factory networks
Visual & Audio Alerts	LED status indicators and LCD event logs	Quick identification of issues
Dedicated Floating Ground Busbar	Isolated grounding for EOS monitoring	Reduces noise and false alarms
User-Friendly Control Panel	LCD display with intuitive keypad	Easy setup and maintenance

Specifications

Parameter	Specification
Modules	AC/ER Module (AC Voltage & Low Resistance), DC Module, IR Module (Insulation Resistance)
Display	GLCD 128×64
Power Supply	DC 12V / 2A (Adapter: AC 220V, 60 Hz, 1.0 A)
Dimensions (per module)	208.8 × 108 × 46 mm
Weight	~1 kg (3 modules installed)
Operating Temperature	Standard industrial range
Communication	CAN Bus, RS-232
Measurement Ranges	AC: 0.1–4.0V / DC: +0.1–30V / Resistance: 1–9Ω / Insulation: 100KΩ–1GΩ
Safety Certification	HH1006-22040
Recommended Cable	2464 Shield Cable 3C 20AWG, AWM 1007 18AWG

Basic Component



EOS Monitoring
1 unit



Power Adapter
DC 12V 2A Power 1 unit



Cable
L1 cable (5 M) 1 unit
L4 cable (1.5 M) 1 unit

ESD Vacuum Cleaner (Backpack type)






Features

- Light weight and super easy to use.
- Padded shoulder and waist straps stabilize the vacuum on the operator's back and hips and permit long, uninterrupted cleaning.
- Snap on top is reversible to allow hose to be moved to either side for right or left handed operation.
- Four-stage filtration system with sealed-air HEPA filter provides superior clean air exhaust.
- Blower adaptor fits into front of unit, converts vacuum into a blower of inflator.
- With blowing function, has blowing accessories

Item Code	M66E-003
Voltage	220 ~ 240V
Power	1400W
Noise Level	≤ 75 dBA
Safety Standard	GS / CE / EMC / ROHS
Cord Length	5 m
Dust Capacity	4.0 L
Color	Black
Surface Resistance	10e5 ~ 10e6 ohm
NW/GW (kg)	4.7 / 6.2
Dimension	490×320×255 mm
Carton Size	560×325×290 mm

ESD Vacuum Cleaner



Item Code	M66E-004
Measurement (mm)	350×350×565
Capacity	35 L
Voltage	120V ~ 230V / 50Hz ~ 60Hz
Power	1250W
Power Cord	5 m
Hose Length	1.5 m
Plastic Inserting Tube Length	480 mm
Vacuum Level	18 Kpa
Noise Level	82 dBA
Surface Resistance	10e5 ~ 10e6 ohm

*HEPA Filter for Cleanroom

Accessories M66E-004



1. Handle
2. On/Off Switch
3. Top Section
4. Filter Basket
5. Safety Float Valve
6. Clasp
7. Container
8. Vacuum Hose Connection
9. Rollers
10. Flexible Vacuum Hose
11. Plastic Tube
12. Blow Connection
13. Wet Brush
14. Sponge Filter
15. Short Nozzle
16. Pedestal
17. Clasp Seat
18. Accessory Holder
19. Paper Dust Bag
20. Square Round Brush
21. Water Drain Screw
22. HEPA Filter

Cleanroom Vacuum Cleaner

VIDEO


M12E-001


M12E-002


M12E-003


M12E-004

Item Code / Descriptions	M12E-001 CR-5050N	M12E-002 CR-5050S	M12E-003 CR-5050SM	M12E-004 CR-5040SD
Electric Power	220V / 50 ~ 60Hz (110V is available on request)			
Vacuum Motor	1350W (Dry type motor)			2700W (1350W×2)
Recovery Tank (ℓ)	34	44	9	75
Filtering Capacity (%)	99.97 (0.3 μm)	99.99 (0.12 μm)	99.97 (0.3 μm)	95 (0.5 μm)
Bag Filter Capacity (ℓ)	10	10	6	20
Cleanroom Class	Class 100 ~ 1,000	Class 10 ~ 100	Class 100 ~ 1,000	Class 1,000 ~ 10,000
Inside Filter	**3 STEPS** Paper Polyester HEPA Filter	**5 STEPS** Paper Polyester IMPACT Filter HEPA Filter ULPA Filter	**3 STEPS** Paper Polyester HEPA Filter	**3 STEPS** Paper Polyester HEPA Filter
Dimension (cm)	52×54×87	52×54×87	35×35×65	73×65×123
Net Weight (kg)	14.25	16.55	9.2	35
Gross Weight (kg)	19	20	12	39









Accessories M12E-001 (CR-5050N) / M12E-003 (CR-5050SM)



① Intake
② Non-Woven Filter
③ Polyester Filter
④ Motor
⑤ H.E.P.A. Filter



❶ HEPA Filter
❷ Polyester Filter
❸ Non-Woven Filter
❹ Filter Basket
❺ Hose Connector
❻ Hose
❼ Curved Connector
❽ Adjustable Wand (S, A/L)
❾ Floor&Carpet Tool
❿ Crevice Tool
⓫ Round Brush

Accessories M12E-002 (CR-5050S)



① Intake
② Non-Woven Filter
③ Polyester Filter
④ Impact Filter
⑤ H.E.P.A. Filter
⑥ Motor
⑦ U.L.P.A. Filter



❶ ULPA Filter
❷ HEPA Filter
❸ IMPACT Filter
❹ Polyester Filter
❺ Non-Woven Filter
❻ Hose Connector
❼ Hose
❽ Curved Connector
❾ Adjustable Wand (S, A/L)
❿ Floor&Carpet Tool
⓫ Crevice Tool
⓬ Round Brush

Accessories M12E-004 (CR-5040SD)



❶ Filter holder
❷ Polyester Filter
❸ Paper Filter
❹ Suction Hose
❺ Curved Handle
❻ Hose Connector
❼ Wand
❽ Floor&Carpet Tool
❾ Crevice tool
❿ Round Brush
⓫ HEPA Filter

Item Code / Descriptions	M12E-001 CR-5050N	M12E-002 CR-5050S	M12E-003 CR-5050SM	M12E-004 CR-5040SD
ULPA Filter	×	○	×	×
HEPA Filter	○	○	○	○
IMPACT Filter	×	○	×	×
Polyester Filter	○	○	○	○
Paper Filter	○	○	○	○
Hose Connector	○	○	○	○
Hose	○	○	○	○
Curved Connector	○	○	○	○
Adjustable Wand	○	○	○	○
Floor&Carpet Tool	○	○	○	○
Crevice Tool	○	○	○	○
Round Brush	○	○	○	○

Nozzle type Vacuum Sealer

Desk top type

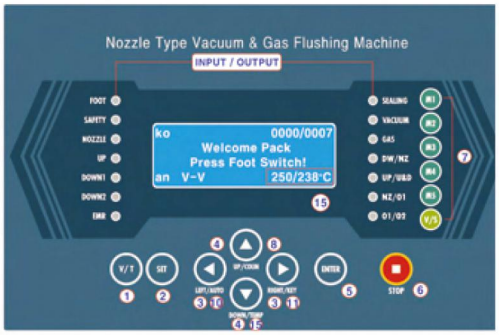


Stand type



Features

- Do not need air compressor for an electric type. You can use it after just connecting electric cord.
- Quiet sound in electric type. It is recommendable for a small office, a store, etc.
- Easy to control thanks to a simple digital controller.
- Good durability and strong for corrosion thanks to Stainless steel case.
- Support various mode such as vacuum, sealing, gas and gas flushing.
- Compact size for easy installation.



Features for Digital Controller

- Memory function
- Counting function
- Temperature indicator
- Auto nozzle function
- Key lock to prevent malfunction
- Vacuum and temperature sensor for reliable vacuum packing
- Self-diagnosis function.

Physical property

Descriptions / Item Code	Sealing Size (mm)		Power Consumption (KW)	Vacuum Pump	Air Consumption	Work Capacity (depend on the items)	Dimension (mm)	Net/Gross Weight (kg)
	Width	Length						
M41E-021	10	350	1.5	Electric Motor Pump	N/A	1~6 ea/min	520×500×515	26/38
M41E-022	10	450	1.7				630×530×515	27/40
M41E-036	10	600	2.2				780×530×515	29/43
M41E-023	10	450	1.7	Ejector pump (options: oiless pump, oil pump)	5~7 kg/㎠	1~10 ea/min	630×530×515	31/46
M41E-024	10	600	2.2				780×530×515	32/49
M41E-025	10	800	3.5				970×530×515	35/55

Chamber type Vacuum Sealer

Single chamber type



Features

- Table and stand models
- Transparent acrylic cover for packing process check-up (option: stainless steel cover)
- Easy operation thanks to a simple digital controller
- Good durability and strong for corrosion thanks to stainless steel case.

Double chamber type



Features

- Higher work capacity with double chambers
- Cover is made of aluminum (option: stainless steel cover)
- Easy operation thanks to a simple digital controller
- Good durability and strong for corrosion thanks to stainless steel case.
- Easy to clean

Item Code	Sealing Size (mm)		Chamber Inner Size (mm)	Chamber Outer Size (mm)	Work Capacity (depend on the items)	Vacuum Pump	Net Weight (kg)	Electricity
	Width	Length						
M41E-026	3.2	415	430×455×160	480×550×430	1~3 times/min	400 L	49	1hp, 220V/60hz (50hz available)
M41E-027	3.2	500	510×620×170	570×723×970		600 L	120	
M41E-028	3.2	600	620×600×170	680×703×970		600 L	130	
M41E-029	3.2	600	620×700×170	680×800×970		800 L	145	
M41E-030	10	910	940×450×155	1000×550×970		600 L	130	
M41E-031	10	750	810×690×170	1700×1000×1050	2~3 times/min	2000 L	330	3ph, 220V/380V 60hz (50hz available)
M41E-032	10	750	950×800×180	1700×1025×1325		3200 L	370	
M41E-033	10	850	950×800×200	1900×1025×1325		5000 L	450	

Automatic Label Dispenser

Item Code	M60E-001	M60E-002	M60E-003
Available Label Width	15 mm ~ 60 mm	15 mm ~ 120 mm	15 mm ~ 180 mm
Power Consumption	30 W	35 W	40 W
Power Requirement	AC 100 ~ 240V	AC 100 ~ 240V	AC 100 ~ 240V
Size (mm)	103(W)×216(L)×140(H)	163(W)×231(D)×152(H)	223(W)×241(D)×157(H)
Weight	2.1 kg	3.4 kg	4.6 kg



Features

- Auto detection sensor
- Memory function
- Working speed control
- Easy and simple label installation
- Compact size
- Easy and simple removing release paper

Automatic Tape Cutter

Item Code	M14E-007	M14E-005 M14E-008 M14E-006	M14E-010	M14E-009	M14E-011
Tape Width	3 ~ 25 mm	6 ~ 60 mm	6 ~ 60 mm	10 mm ~ 80 mm	50 mm ~ 150 mm
Cut Length	15 ~ 70 mm	5 ~ 999 mm	General: 5 ~ 999 mm Fold: 15 ~ 999 mm	10 mm ~ 999 mm	10 mm ~ 999 mm
Power	AC 110/220V, 50/60Hz, 40W	AC 110~230V, 50/60HZ, 25W	AC 110~230V, 50/60HZ, 25W	AC 220V, 50/60Hz	
Size	126(W)×258(D)×150(H)	115(W)×215(D)×130(H)	116(W)×221(D)× 148(H)	190(W)×230(L)× 140(H)	265(W)×230(L)× 150(H)
Weight	2.2 kg	2.5 kg	2.5 kg	3.5 kg	6.5 kg

Item Code	M14E-007
Model	RT-3700

Features

- Semiautomatic type (Press button after using all tapes put on disk)
- Only adhesive product can be used
- Long life time
- Automatic cutting and movable sensor



Item Code	M14E-005
Model	RT-7000

Features

- Fast tape feed and cutting speed.
- Quantity-count function
- Self-diagnosis display
- Emergency alarm
- Build-in Tweezers, Oil, and Separator
- One touch exchangeable knife set
- Automatically apply lubricant to the knife edge.
- Enable to use 2 Rolls at the same time
- Both non-adhesive and adhesive products can be used.
- Preset function (Max 6 different tape lengths)



Item Code	M14E-008
Model	RT-7700

Features

- The same function of RT-7000
- Easy to disassemble and maintain
- Programming function



Item Code	M14E-006
Model	RT-8000

Features

- The same function of RT-7000
- Preset function (Max 12 different tape lengths)
- Programming function



Item Code	M14E-010
Model	RT-9000

Features

- The same function of RT-7000
- Easy to tear off the tape as the tape end is folded automatically. (option)



Item Code	M14E-009

Features

- Easy to exchange the knife set
- Enable to use 2 rolls at the same time
- Enable to choose full automatic mode or semi-automatic mode
- Enable to use various adhesive and non-adhesive tapes
- The allowed width is up to 80 mm



Item Code	M14E-011

Features

- Easy to exchange the knife set
- Enable to use 2 rolls at the same time
- Enable to choose full automatic mode or semi-automatic mode
- Enable to use various adhesive and non-adhesive tapes
- The allowed width is up to 150 mm



Automatic Shoe Cover Dispenser



Item Code	M67E-001
Shoe Cover Capacity	PE: 200 pcs CPE: 160 pcs Non-woven: 100 pcs
Power Supply	AC220V 50Hz
Machine Size	63(L)×31(W)×101(H) cm
Packing Size	71(L)×37.5(W)×107.5(H) cm/ctn
Net Weight	20 kg/set
Gross Weight	22 kg/set/ctn



Item Code	M67E-002
Shoe Cover Capacity	PE: 100 pcs CPE: 80 pcs Non-woven: 50 pcs
Power Supply	AC220V 50Hz
Machine Size	63(L)×31(W)×75(H) cm
Packing Size	71(L)×37.5(W)×82(H) cm/ctn
Net Weight	20 kg/set
Gross Weight	22 kg/set/ctn



Item Code	M02D-003
Material	Non-woven
Net Weight	4 g/pc
Thickness	0.13 mm
Packing	100 pcs/box, 21 box/ctn, 2100 pcs/ctn
Packing Size	49×80×63 cm(H)/ctn
Gross Weight	15 kg/ctn



Item Code	M02D-004
Material	Non-woven
Net Weight	4 g/pc
Thickness	0.13 mm
Packing	50 pcs/box, 42 box/ctn, 2100 pcs/ctn
Packing Size	49×80×65 cm(H)/ctn
Gross Weight	15 kg/ctn

ESD LED Magnifier



Item Code	M81E-001
Lens Material	Glass
Lens Size	7.5”×6.2”
Diopter	3 Diopter / 5 Diopter
Voltage	100V/ 110 ~ 120V / 220 ~ 240V
Light Source	LED
Standard Mount	Table Clamp
Surface Resistance	10e5 ~ 10e6 ohm
Packing Details	· 4 pcs/carton · Carton Size: 59×52×30 cm · Gross (Net) Weight: 20(18) kg

Laminating Machine



M70E-001



M70E-002

Features

- Strong roller system: 6 heating rollers + 2 cooling rollers
- Strong motor system: Special DC motor for 5,000hours at maximum of long life
- Maximum 330 mm width and 350 um thickness is able to laminate
- Can laminate up to 4 m per minute
- Actual working time check function

Item Code	M70E-001	M70E-002
Model	SKY325 R6	SKY330 R8
Max. Laminating Width	330 mm (13")	
Max. Laminating Speed	1,400 mm/min	4,000 mm/min
Max. Pouch Thickness	350MIC (14 MIL)	
Max. Laminating Thickness	3 mm	
Heating System	Heating roller internal heater	
Q'ty of Roller	6	10
Carrier	Free	
Temperature Control	Yes	
Speed Control	Yes	
Reverse Switch	Yes	
Preheating Time	5 min.	6 min.
Power Supply	AC 100, 110, 120, 220, 230, 240V (50/60Hz)	
Power Consumption	1,050 watts	1,300 watts
Dimension	545×250×125 mm	653×350×146 mm
Weight	15 kg	29 kg
Operation Temperature	0 ~ 140	0 ~ 160

Descriptions



- **MEAS:** Measures actual roller temp
- **STOP:** Stop roller
- **REV:** Reserve action
- **HOT:** Initial setting to 100℃, speed 6
- **COLD:** Cold film lamination
- **MEMO:** Memory function
- **SPEED:** Variable speed from 1-9

Air Clean Mat / Water Clean Mat

VIDEO

Are you still using disposable sticky mats?

It is time to think about the environment and being cost-effective at the same time.
We have two types of reusable and eco-friendly Clean Mats that will draw your immediate attention. The first one is Air Clean Mat, which cleans the bottom of the sole by sucking dust through two step filters. The second one is Water Clean Mat, which washes the bottom of the sole directly with water and moving brushes on the mat. These Mats are one of the most effective ways to remove dust and contaminants from the sole of the shoes, leaving less wastes and particles. Adopting these remarkable mats will also be a cost saving solution in the long term, even if the initial cost can be higher than sticking to the traditional disposal sticky mat.

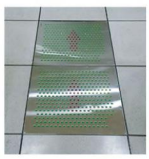
Air Clean Mat

Features

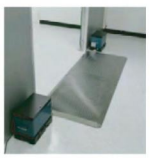
- Detecting sensor
- Air refreshing function
- Easy installation and maintenance
- 2 step filtration (antibacterial and HEPA filters)
- Access Floor type (M58E-008)
- Heavy traffic (trolley, carts, etc.) type is available
- Air shower room type (M58E-009)
- Customized sizes are available on request

Item Code	Outer Size (mm)	Mat Size (mm)
M58E-001	20T×600×1100	500×1000
M58E-002	20T×600×2100	500×2000
M58E-003	20T×700×800	600×700
M58E-004	20T×800×1100	700×1000
M58E-005	20T×800×2100	700×2000
M58E-006	20T×1100×1100	1000×1000
M58E-007	20T×1100×1500	1000×1400
M58E-008	50T×600×600	600×600




Access Floor


Entrance

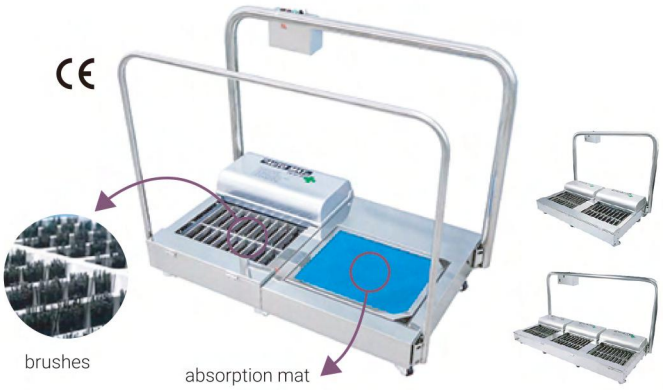

Entrance


Air Shower Room

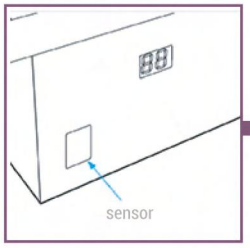
Water Clean Mat

Features

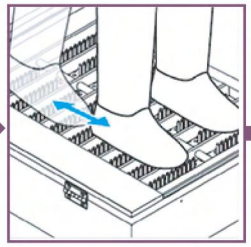
- Detecting sensor
- Clean with water
- Easy relocation with wheels
- Special cleaner (diluent) for heavy dirts, oil, etc. (option)



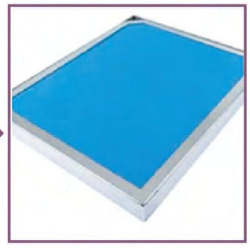
How it works



① Step on the mat, then the sensor on the control box will detect motions automatically and the brushes will start moving.



② Move your feet back and forth 3-4 times.



③ Step on the absorption mat to dry the water out of the soles.



Item Code		M57E-001	M57E-002	M57E-003	M57E-004	M57E-005	M57E-006
Size (W x L / mm)	Outer size	730×545	730×1150	780×1110	780×1750	780×1670	780×2270
	Absorption Mat		415×495		415×550		415×550
Height (mm)		970	970	970	970	970	970
Weight (kg)		35	70	70	105	98	140
Input Power		AC220V, 50/60HZ					
Power Consumption		40W	40W	80W	80W	120W	120W
Capacity – Washing Tank		10 L	10 L	20 L	20 L	30 L	30 L

Air Particle Counter



Item Code	M72E-001
Test Particle Size	0.3 μm, 2.5 μm, 10.0 μm
Light Source	Semiconductor lasers
Formaldehyde Range	0.5 mg/m^3
Accuracy	± 5% (HT-9601)
Temperature Range (±5%)	0 ~ 50°C / 32 ~ 122°F
Humidity Range (±2%)	0 ~ 100% RH
Display	320×240 mm 2.8in LCD display
Counting Efficiency	100 ±10%@0.5
Sampling	Custom (1s ~ 59 min. 59s)
Sampling Frequency	1 ~ 99 / Continuous
Alarm Levels	1 ~ 100,000 (FED209E Etandard)
	2 ~ 9 (ISO 14464-1 Standard)
Test Mode	Single/repeat/continuous/timer/Average
Data Storage	2000
Interface	USB
Operating Environment	5 ~ 45°C, < 90% RH
Storage Environment	-20 ~ 60°C, < 90% RH

Cleanroom & ESD Chair

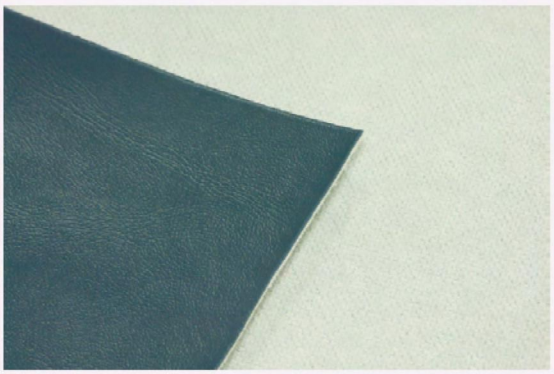
Item Code		M22E-001	M22E-002	M22E-003	M22E-018
Appearance					 New
Material	Seat	ESD PU leather	ESD PU leather	ESD PU leather	Antistaic & ESD PU leather
	Back	ESD PU leather	ESD PU leather	-	Antistaic & ESD PU leather
	Body	Aluminium + Metal with hard chrome coating			Chroming steel
	Caster	Metal	Metal	Metal	Conductive plastic
Color		Black	Body: Black Pad: Blue or Black	Blue or Black	Blue or Black
Surface Resistance (ohm)		10e5 ~ 10e8	10e5 ~ 10e8	10e5 ~ 10e8	10e3 ~ 10e6 (Conductive type) 10e6 ~ 10e9 (ESD type)
Resistance to Ground (ohm)		10e5 ~ 10e8	10e5 ~ 10e8	10e5 ~ 10e8	
Back Seat Size (W × H)		43 cm × 37 cm	44 cm × 50 cm	-	40 cm × 30 cm
Seat Size (W × D)		48 cm × 43 cm	45 cm × 40 cm	39 cm (dia)	43 cm × 40 cm
Height (Bottom to Seat) (Adjustable)		45 cm ~ 59 cm	41 cm ~ 56 cm	45 cm ~ 59 cm	44 cm ~ 58 cm
Filter System		Air Exhausted from sealed cushion is passed through HEPA filter	-	-	-
Cleanroom Class		1,000 ~ 10,000	1,000 ~ 10,000	1,000 ~ 10,000	-

Item Code		M22E-007	M22E-008	M22E-015	M22E-019
Appearance					 New
Material	Seat	ESD PU leather	ESD PU leather	ESD PU leather	ESD PU leather
	Back	ESD PU leather	ESD PU leather	ESD PU leather	ESD PU leather
	Body	Aluminium + Metal with hard chrome coating			Aluminium diecasting
	Caster	Chrome coating to aluminium diecasting			Conductive plastic castor
Color		Blue or Black	Blue or Black	Blue or Black	Blue
Surface Resistance (ohm)		10e5 ~ 10e8	10e5 ~ 10e8	10e5 ~ 10e9	10e4 ~ 10e6
Back Seat Size (W × H)		44 cm × 50 cm	44 cm × 50 cm	40 cm × 30 cm	39 cm × 29 cm
Seat Size (W × D)		45 cm × 40 cm	45 cm × 40 cm	48 cm × 43 cm	44 cm × 40 cm
Height (Bottom to Seat)		47 cm ~ 61 cm	41 cm ~ 56 cm	44 cm ~ 59 cm	49 cm ~ 69 cm
Filter System		-	-	Air Exhausted from sealed cushion is passed through HEPA filter	-
Cleanroom Class		1,000 ~ 10,000	1,000 ~ 10,000	1,000 ~ 10,000	-

ESD Chair

Item Code		M73E-001	M73E-002	M73E-003	M73E-005
Appearance					
Material	Seat	ESD Fabric	ESD Fabric	ESD Fabric	PU Foam
	Backrest	ESD Fabric	ESD Fabric	ESD Fabric	PU Foam
	Support (Backrest)	Chrome Plating metal	Metal with hard chrome coating	Metal with hard chrome coating	Metal with hard chrome coating
	Base	Chrome Plating metal (dia. 300 mm)	Chrome Plating metal (dia. 320 mm)	Aluminum (dia. 320 mm)	Chrome Plating metal
	Caster	Chrome Plating metal	Chrome Plating metal	Chrome Plating metal	Chrome Plating metal
Surface Resistance (ohm)		10e5 ~ 10e8	10e5 ~ 10e8	10e5 ~ 10e8	10e6 ~ 10e9
Seat Size (W × D)		46 cm × 41.5 cm	42 cm × 47 cm	42 cm × 47 cm	40 cm × 44 cm
Backrest (W × D)		38 cm × 33 cm	42 cm × 40 cm	48 cm × 46 cm	40 cm × 30 cm
Features		High quality gas spring Seat Height is adjustable Backrest support is adjustable	High quality gas spring Seat Height is adjustable Backrest support is adjustable	High quality gas spring Seat Height is adjustable Backrest support is adjustable	· No particle issue that occurs in synthetic leather, fabrics, etc. · Polyurethane foam offers great overall durability · Remarkably comfortable due to wider seat and backrest

ESD CR Chair Cover





Item Code	M23E-001	Color	Navy Blue, Black
Size	1.2 mm(T) × 1,370 mm × 40 m	Surface Resistance	< 10e10 ohm

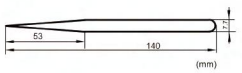
Tweezers

Stainless Steel Tweezers

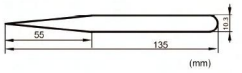
Features

- Swiss Style ST Precision Stainless Steel Tweezers
- Anti-Magnetic, Anti-Acid, Non-Corrosive
- Precision Crafted ST Pattern Style Tweezers, Among the Most Popular Choices
- Made from ST Stainless Steel with a Rockwell Hardness Rating of 40HRC
- Hand-finished precision tips may result in slight variations, which is an industry standard practice

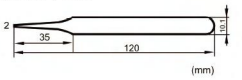
M15E-023



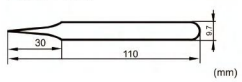
M15E-024



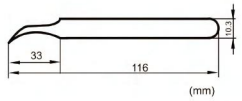
M15E-025



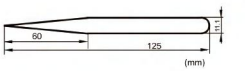
M15E-026



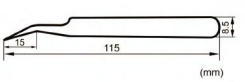
M15E-027



M15E-028



M15E-045



Epoxy Coated Tweezers

Features

- Anti-Magnetic, ESD-Safe, Static Dissipative Precision Point Tweezers
- Anti-Acid, Non-Corrosive, Non-Glare
- Made from Stainless Steel with a Rockwell Hardness of 40HRC

M18E-001



M18E-002



M18E-003



M18E-004



M18E-005



M18E-006



M18E-007



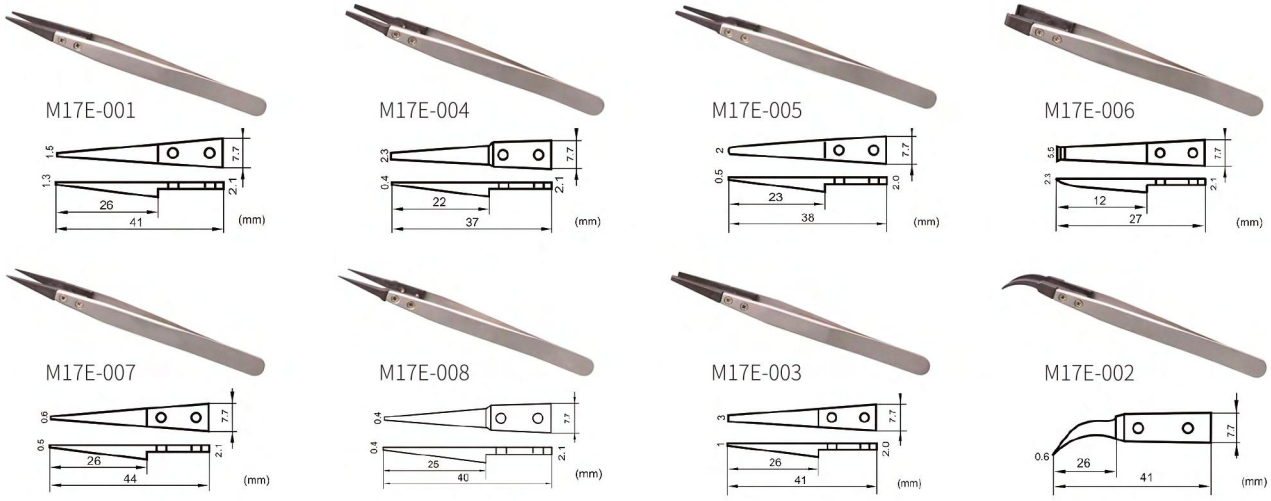
M18E-008



ESD-Tip Tweezers

Features

- Anti-Magnetic, ESD-Safe Precision Tweezers with Synthetic Fiber Tips
- Anti-Acid and Temperature Resistance up to 374°F (-40°C to 190°C)
- Superior Strength and Rigidity
- Non-Marring on most surfaces (ideal for scratch-sensitive delicate surfaces)
- Suitable for high purity cleanroom environments
- Resistant to UV Sterilization and Hydrolysis
- High chemical resistance to most chemical solutions, solvents, ketones, and halogens (Not suitable for NMP, N-Methyl-2-pyrrolidone)
- 302 Stainless Steel Body with Synthetic Fiber Exchangeable Plastic Tips
- Precision Tip ensures Longevity, Symmetry, Balance and Performance



ESD Plastic Tweezers

Features

- Smooth Resin Surface with high mechanical strength and durability
- Suitable for high purity cleanroom environments
- Anti-Magnetic, Non-Corrosive, Anti-Acid (resistant to most acids, solvents and halons)
- Heat Stabilized for temperatures up to 311°F (-40°C to 155°C)
- Synthetic carbon fiber reinforced with PVDF (Polyvinylidene Fluoride).



Wrist Strap Tester

Item Code	M10E-003
Test Voltage	Regulated 9 volts, DC
Operating Voltage	6.5 ~ 9 volts
Accuracy	± 5%
Weight	145 g
Dimensions	28 mm(T)×71 mm(W)×90 mm(L)



LED Display Indicator

- GOOD (Green): 800 KΩ~10MΩ
- HIGH (Yellow): 10 MΩ above
- LOW (Red): 800 KΩ below

Wrist Strap Monitor

Features

- Instant warning of wrist strap failure.
- Easy and convenient to operate
- Compact and handy
- Compatible with any wrist straps with banana plug in the market.

Item Code	M11E-001
Input	AC 220V / 50 ~ 60Hz (DC 6V)
Material	Polystyrene
Dimension	67 mm×60 mm×29 mm
Weight	60 g (not including power supply adaptor)



Solvent Dispenser

Item Code	M32E-001	M32E-002
Capacity	180 ml	
Surface Resistance	10e9 ~ 10e11 ohm	
Shape	Square and octagonal designs	
Material	HDPE (bottle) + Stainless Steel (Mechanical Pump)	



M32E-001



M32E-002

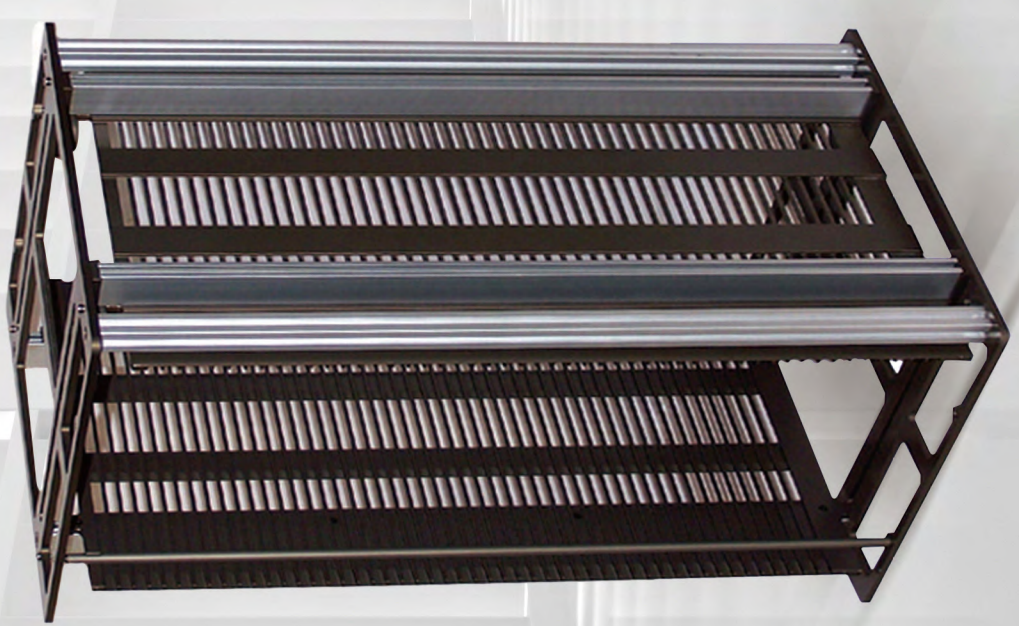
Antistatic Brush

Item Code	M36E-007
Fill Material	Horse Hair
Trim Length	7/16"
Rows	3 × 7
Handle Material	Plywood
Handle Length	7.75"
Handle Width	7/16"
Brush Face Length	1.375"
Brush Face Width	1/4"



Cleanroom & ESD

Handling & Storage



Metal Magazin Rack

M07H-027-BK

Conductive PCB Magazine Rack

Polstar Conductive Magazine Racks are available with several types and sizes to meet customer's needs, All types are compatible with standard SMT equipment. Basically, they will be classified with a high temperature type and a normal type by temperature to resist, and a plastic type and a metal type by their materials used.



M07H-002



M07H-027



M07H-012



M07H-024

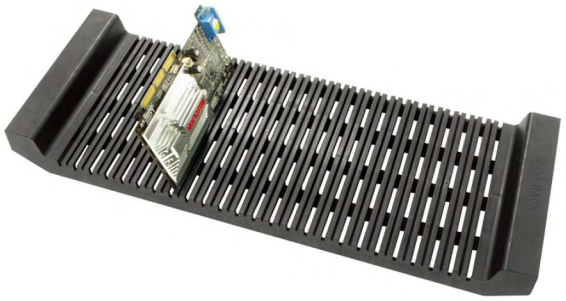
Item Code		M07H-001	M07H-002	M07H-027	M07H-006	M07H-007
Model		Polstar-70		Polstar-80M	Polstar-91	Polstar-92
Size (mm) (W×L×H)		317×358.7×570	317×358.7×580	316×354×575	318×355×580	318×360×570
PCB Measurement (mm) (W×L)	MAX.	263×355	263×355	250×330	258×330	258×330
	MIN.	50×355	50×355	50×330	50×330	50×330
Capacity (pcs) – (mm)		50	51	50	51	50
Pitch (mm)		10	10	10	10	10
Materials		Conductive Engineering Plastic		Magnesium	Conductive ABS	
Heat Resistance (℃)		90	90	400	90	90
Weight/unit (kg)		5.8	5.8	4.2	5.2	4.8

Item Code		M07H-009	M07H-010	M07H-011	M07H-012	M07H-024
Model		Polstar-94	Polstar-95	Polstar-96	Polstar-97	Polstar-100
Size (mm) (W×L×H)		370×352×570	380×480×570	400×460×575	318×355×570	530×535×575
PCB Measurement (mm) (W×L)	MAX.	308×330	318×450	334×430	258×330	460×535
	MIN.	98×330	74×450	65×430	50×330	150×535
Capacity (pcs) – (mm)		50	50	50	50	50
Pitch (mm)		10	10	10	10	10
Materials		Conductive ABS				Conductive ABS + Aluminum (top + bottom)
Heat Resistance (℃)		90	90	90	90	90
Weight/unit (kg)		4.8	7.0	7.0	6.0	9.5

Conductive PC Rack

Item Code	M05H-001
Size (mm/I.D.) (W×L×H)	179×390×25
Size of Pitch (mm)	16
Capacity (pitch)	25
Material	Conductive PS
Surface Resistance (ohm)	10e4 ~ 10e6
Weight (g)	500

*Size I.D.: Inner Dimension



Conductive PCB Angle Rack

Item Code	M06H-001
Size (mm/I.D.) (W×L×H)	325×205×93
Size of Pitch (mm)	9
Capacity (pitch)	31
Material	Conductive ABS
Surface Resistance (ohm)	10e4 ~ 10e6
Weight (g)	480



Conductive Parts Box







Item Code	M09H-001	M09H-002	M09H-003	M09H-004	M09H-007	M09H-008	M09H-009	M09H-012
Size (mm/I.D.) (W×L×H)	92×76(55) ×44	92×141(113) ×63	128×210(162) ×112	181×315(285) ×150	86×157(130) ×76	122×225(195) ×109	176×341(280) ×141	145×86×100
Weight (g)	48	112	342	708	142	292	732	100
Surface Resistance (ohm)	10e4 ~ 10e6							
Material	Conductive PP							

ESD Container



Item Code		M35H-001	M35H-002	M35H-003	M35H-004	M35H-005	M35H-006	M35H-007	M35H-008
Size (cm) (W×L×H)	I.D.	27×17×11.5	27×17×16.5	37×27×11.5	37×27×16.5	37×27×21.5	57×37×16.5	57×37×21.5	57×37×26.5
	O.D.	30×20×12	30×20×17	40×30×12	40×30×17	40×30×22	60×40×17	60×40×22	60×40×27
Capacity (Litter)		5.3	7.6	10	15	20	35	45	56
Weight (g)		520	660	1010	1210	1480	1840	2080	2440
Volume Resistance (ohm/cm)		10e3 < 10e10							
Material		ESD PP							

*Size I.D.: Inner Dimension / O.D.: Outer Dimension

Conductive Chip Box



Item Code		M15H-004	M15H-005	M15H-006	M15H-007	M15H-008	M15H-009
Size (mm) (W×L×H)	I.D.	14(Dia)×17(H)	13×13×17	29×13×16	29×41×16	61×41×16	61×41×34
	O.D.	18(Dia)×22(H)	16.8×28.8×23.5	32.6×28.8×23.5	32.6×56.5×23.5	64.5×56.5×23.5	64.5×56.5×41.5
Weight (g)		2	5	11	15	24	36
Surface Resistance (ohm)		10e4 ~ 10e6					
Material		Conductive PP					

Conductive Tray



Item Code		M10H-005	M10H-006	M10H-007	M10H-008	M10H-009
Size (mm) (W×L×H)	I.D.	335×465×40	235×335×40	195×260×35	130×180×35	510×360×45
	O.D.	355×485×45	255×355×45	215×280×40	150×200×40	545×405×50
Weight (g)		412	328	158	84	673
Surface Resistance (ohm)		10e4 ~ 10e6				
Material		Conductive PS				



M10H-010



M10H-011



M10H-012



M10H-014



M10H-013

Item Code		M10H-010	M10H-011	M10H-012	M10H-013	M10H-014
Size (mm) (W×L×H)	I.D.	445×292×35	295×210×25	240×180×26	184×140×24	510×350×33
	O.D.	480×328×42	338×255×30	283×223×28	217×174×26	530×365×43
Weight (g)		460	150	137	90	910
Surface Resistance (ohm)		10e4 ~ 10e9				
Material		Conductive PP				

Conductive Cabinet



M16H-002 M16H-003 M16H-004



M16H-006 M16H-005

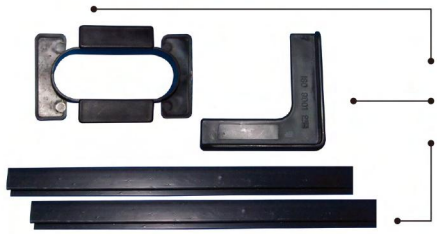


M16H-007

Item Code		M16H-002	M16H-003	M16H-004	M16H-005	M16H-006	M16H-007
Size (mm) (W×L×H)	Drawer	73×146×32	73×146×32	122×212×62	89×115×139	139×134×189	121×210×60
	O.D.	82×150×41	159×150×41	260×218×72	101×120×150	151×140×200	400×216×290
Drawer (pc)		1	2	2	1	1	12
Weight (g)		164	290	1030	450	860	3028
Surface Resistance (ohm)		10e4 ~ 10e6					
Material		Conductive PP					

Conductive Corrugated Box

Item Code	M12H-000
Material	Conductive PP
Surface Resistance (ohm)	10e4 ~ 10e6
Size	Custom sizes

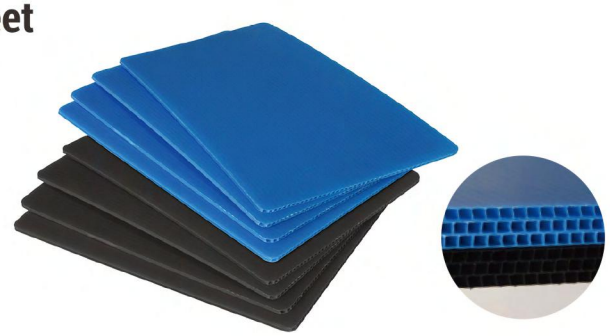


M14H-003 (Handle)
M14H-001 (Angle)
M14H-002 (Frame)



Conductive & Normal Corrugated Sheet

Item Code	M13H-000	M23H-000
Material	Conductive PP	Normal PP
Surface Resistance (ohm)	10e4 ~ 10e6	-
Color	Black	Blue, etc.
Thickness	3T, 4T, 5T, 10T	3T, 4T, 5T, 8T, 9T
Size (mm)	1100×1100, 1200×2400, 1220×2440	



ESD Rubber Band

Item Code	M28H-001
Surface Resistance (ohm)	10e5 ~ 10e8
Size	1.7 mm(T)×12 mm×120 mm (0.5"×4.75")
Color	Black
Packing	150 ~ 170 pcs/bag





ESD Strap

Black polypropylene hook and loop strap secures JEDEC trays using a D-Ring fastening system. The ESD version is designed with a metal D-Ring to insure a complete static loop. Unlike other "dipped" products that have a limited shelf life, our ESD strap has permanent ESD properties on both sides with ESD logo on the strap.

Item Code	M29H-001
Surface Resistance (ohm)	10e9
Size	25 mm×508 mm
Color	Black
Weight	22.7 g/pc
Packing	10 pc/bag
Constructions	Hook & Loop nylon strap with a metal D-Ring



ESD Tool Box



M30H-001





M30H-002

Item Code	M30H-001	M30H-002
Surface Resistance (ohm)	10e5 ~ 10e6	10e5 ~ 10e8
Size	255 mm×125 mm×100 mm(H)	400 mm×180 mm×180 mm(H)

ESD Squeeze Bottle

Item Code	M26H-001	M26H-002	M26H-003	M26H-004	M26H-005	M26H-006
Appearance						
Surface Resistance (ohm)	≤ 10e9					
Material	Polyethylene (PE)					
Capacity	60 ml	60 ml	60 ml	60 ml	60 ml	60 ml
Needle	16	20	26	16	20	26
Color	Yellow	Yellow	Yellow	Sky Blue	Sky Blue	Sky Blue

Item Code	M26H-007	M26H-008	M26H-009	M26H-010
Appearance				
Surface Resistance (ohm)	≤ 10e9			
Material	Polyethylene (PE)			
Capacity	250 ml	500 ml	250 ml	500 ml
Color	Yellow	Yellow	Sky Blue	Sky Blue

Item Code	M26H-011	M26H-012	M26H-013	M26H-014	M26H-015
Appearance					
Surface Resistance (ohm)	≤ 10e9				10e4 ~ 10e10
Material	Polyethylene (PE)				LDPE
Capacity	250 ml	500 ml	250 ml	500 ml	500 ml
Color	Yellow	Yellow	Sky Blue	Sky Blue	Yellow

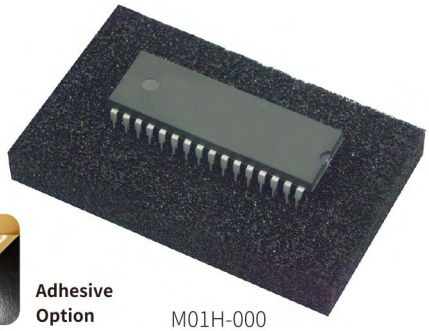
ESD Spray Bottle

Item Code	M27H-001	M27H-002	M27H-003	M27H-004
Appearance				
Surface Resistance (ohm)	10e4 ~ 10e10			
Material	LDPE			
Capacity	250 ml	500 ml	250 ml	500 ml
Color	Yellow	Yellow	Sky Blue	Sky Blue

Conductive Foam

The high quality of cross-linked conductive foams are created when carbon-compounded plastic resin is melted and expanded by the dispersion of gas in the liquid resin. The 4 types of Foams, PE, PU, EVA and AR, are available and they can be used in ESD packaging Industries to protect sensitive IC chips and finished devices from ESD damage and outer impact during transportation and storage. (The pre-adhesive treatment on the back side is optional.)

Item Code	M01H-000	M36H-000	M03H-000	M19H-000
Material	PE	PE +Adhesive	EVA	EVA +Adhesive
Density (g/cm³)	10e4 ~ 10e6			
Surface Resistance (ohm)	0.045	0.045	0.16	0.16
Thickness (mm)	2 ~ 40	2 ~ 40	2 ~ 25	2 ~ 25
Size (m)	1×1.8	1×1.8	1×1.5	1×1.5
Weight / (m³)	45 kg	45 kg	160 kg	160 kg





Adhesive Option

M01H-000

ESD Control PP Strap

Item Code	M04H-001
Size	0.7 mm(T)×12 mm(W)×1500 m(L)
Color	Black
Surface Resistance (ohm)	10e5 ~ 10e8
Packing	2 rolls/ctn, 18 kgs/ctn



Ground Cord
M05Z-002



Cleanroom & ESD

Groundings

Ground Cord

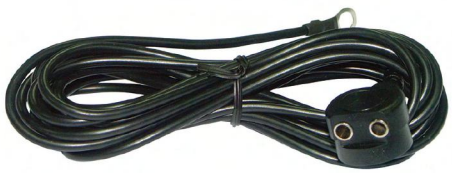
The Ground Cord is a bridge line between a tabletop or a floor mat and a grounding point. We have 3 different diameters (4 mm, 7 mm, 10 mm) of male and female snaps and several lengths and different Ends of Ground Cords to meet customer's various needs.

Item Code	M05Z-001	M05Z-002	M05Z-006	M05Z-015
Appearance				
Mold Material	Polyurethane (PU)			
Plastic Material	ABS + PC			
Cord Length + Snap Dia.	6ft (1.8 m) + 10 mm	0.5ft (15 cm) + 10 mm	6ft (1.8 m) + 10 mm	6ft (1.8 m) + 10 mm
Cap	Yellow cap on both sides		Yellow cap + Ring Terminal	Yellow cap + Alligator Clip
Color	Black			
Cable Break Load	120N			

* Snap Dia & Type & Length & Color can be adjustable.

Dual Ground Cord

Dual Common Ground Cord can connect 2 wrist straps to one grounding point.

Type	Square type	Round type
Item Code	M06Z-001	M06Z-002
Appearance		

Descriptions

- **Snap Dia.**: 10 mm
- **Cord Length**: 10ft
- **Cord Dia.**: 2.0 mm
- **Conductor**: 7 strand Tinsel Wire coated with durable 90A polyurethane
- **Color**: Black
- **Cable Break Load**: 120N
- **Mold Material**: Polyurethane (PU)
- **Plastic Materials**: ABS + PC

Wrist Strap

Worksurface and personnel should be grounded by the proper using of Wrist Straps, ESD Shoes, Heel Grounders, ESD Clothing, etc. Polstar Wrist Straps provide a reliable and economical pathway of ESD built up on human body to ground. Ground Cords and Coil Cords are also the major parts of a safe work station.

Product		Wrist Strap	Wrist Band	Dual Wrist Strap	Metal Wrist Strap
Item Code		M01Z-002	M03Z-000	M02Z-000	M01Z-009
Appearance		 10 mm+10ft (3 m) +Alligator clip			 10 mm+10ft(3 m) +Alligator clip, band size - 18 cm
Snap Dia.		4 mm, 7 mm, 10 mm	4 mm, 7 mm, 10 mm	4 mm, 7 mm, 10 mm	4 mm, 7 mm, 10 mm
Cord Length		6′, 8′, 10′, 12′	-	6′, 8′, 10′, 12′	6′, 8′, 10′, 12′
Material	Wrist Band	Elastic nylon with conductive carbon yarn			Stainless steel
	Back	Stainless steel	Plastic, Stainless steel	Stainless steel	Stainless steel
Color	Wrist Band	Blue, Dark Blue, Purple, etc.	Blue, Dark Blue, Purple, etc.	Blue	Black
	Coil Cord	Black, Blue		Black	Black
Resistor		1 Mohm			

Coil Cord



M07Z-004
4 mm+7ft(2 m)+Alligator Clip



M07Z-011
10 mm+10ft(3 m)+4 mm



M07Z-025-BK
10 mm+10ft(3 m)+7 mm



M07Z-021-BK
4 mm+8ft(2.4 m)+Banana plug

Item Code	M07Z-000
Snap Dia.	4 mm, 7 mm, 10 mm
Cord Length	6′, 8′, 10′, 12′
End Type	Banana plug, Alligator clip, Ring terminal, Snap on both sides

* Snap Dia & Type & Length & Color can be adjustable.

Wrist Strap Tester

Item Code	M10E-003
Test Voltage	Regulated 9 volts, DC
Operating Voltage	6.5 ~ 9 volts
Accuracy	± 5%
Weight	145 g
Dimensions	28 mm(T)×71 mm(W)×90 mm(L)



LED Display Indicator

- ● GOOD (Green): 800 KΩ~10MΩ
- ● HIGH (Yellow): 10 MΩ above
- ● LOW (Red): 800 KΩ below

Wrist Strap Monitor

Features

- Instant warning of wrist strap failure.
- Easy and convenient to operate
- Compact and handy
- Compatible with any wrist straps with banana plug in the market.



Item Code	M11E-001
Input	AC 220V / 50 ~ 60Hz (DC 6V)
Material	Polystyrene
Dimension	67 mm×60 mm×29 mm
Weight	60 g (not including power supply adaptor)

Dual Bench Mount

Features

- Cord length: 4.5 m
- Wrist strap grounding for 2 persons
- Connecting with plug or snap button



M11Z-001

Heel Strap

Foot Grounders are one of the best methods to remove static electricity charged on the human body. This will help to protect ESD susceptible products while you are handling them or moving around with them.

Features

- Per ANSI/ESD S20.20, use with ESD Floor "as a grounding alternative to the wrist strap system for standing operations"
- All Foot Grounders are suitable ESD footwear components in your Flooring-Footwear System as the primary grounding method (<3.5 x 10e7 ohms per ESD STM97.1)
- Integral current limiting resistor for enhanced operator safety
- 1 mega ohm resistor (1.5 & 2 mega ohm resistors are available on request)
- Exceptionally long-lasting premium rubber with tear resistant inner scrim and dual wear surface to double its life time

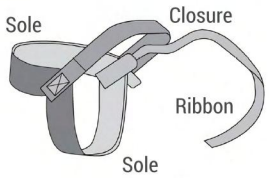
Product	Heel Grounder
Item Code	M13Z-000
Color	Black / White
Ribbon	18"/30" long nylon/polyester tab with 8 conductive strands
Resistor	1 Mohm

* Connecting with plug or snap button



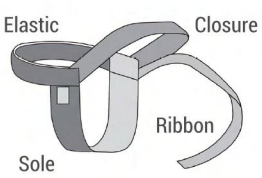
Type D

- Two soles for double life span



Type S

- One sole and an elastic back strap



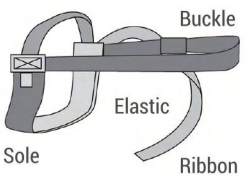


Product	Toe Grounder
Item Code	M14Z-000
Color	Black / White
Ribbon	12" long nylon/polyester grounding tab with 8 conductive strands
Resistor	1 Mohm

* Connecting with plug or snap button



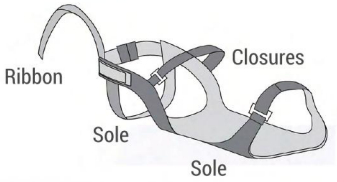
Toe grounder with a snap-lock fastening system is designed for using with the variety of shoes, including high heels, cowboy boots, flat shoes, loafers, safety shoes, etc.



Product	Sole Grounder
Item Code	M15Z-000
Color	Black / White
Ribbon	12" long nylon/polyester grounding tab with 8 conductive strands
Resistor	1 Mohm

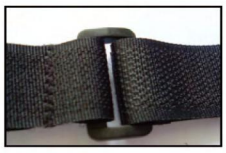
* Connecting with plug or snap button





Sole Grounders are equipped with an elastic D-ring fastening system, which provides the snug cinching of ankle strap and allows "flex" during walking. Having the features of Heel and Toe Grounders together, Sole Grounders are widely used with most types of shoes and boots.

Closure Styles

Hook & Loop (HL)	Hook & Elastic Loop (HE)	D-Ring (DR)	Quick Buckle (QB)
			
It provides a comfortable and secure fit	It is easy to be adjusted to fit a individual wearer	It allows "flex" during walking	It provides a quick release

Selection Guide (Heel, Toe and Sole Grounders)

	Item Code	Closure Styles	Velcro (W)	Elastic Velcro(W)	Elastic Strap(W)	Elastic Band(W)	Size	Ribbon (L)	Sole
Heel Grounder (Type D)	M13Z-001	HE		3/4"(BK)			Free size	18"	Double
	M13Z-002	HE		3/4"(BL)					
	M13Z-003	HE		3/4"(GR)					
	M13Z-004	HL	3/4"(BK)						
	M13Z-005	HL	3/4"(BL)						
	M13Z-006	DR	3/4"(BK)						
	M13Z-007	DR	3/4"(BL)						
	M13Z-008	QB				3/4"(BK)			
Heel Grounder (Type S)	M13Z-500	HE		3/4"(BK)	1"(BK)		Free size	18"	Single
	M13Z-501	HE		3/4"(BK)	1"(RE)				
	M13Z-502	HE		3/4"(BK)	1"(GR)				
	M13Z-503	HE		3/4"(GR)	1"(BK)				
	M13Z-504	HE		3/4"(GR)	1"(RE)				
	M13Z-505	HE		3/4"(GR)	1"(GR)				
	M13Z-506	HL	3/4"(BK)		1"(BK)				
	M13Z-507	HL	3/4"(BK)		1"(RE)				
	M13Z-508	DR	3/4"(BK)		1"(BK)				
	M13Z-509	DR	3/4"(BL)		1"(BK)				
	M13Z-510	QB			1"(BK)	3/4"(BK)			
Toe Grounder	M14Z-001	QB		3/4"(BK)	3/4"(BK)		Free size	12"	Single
Sole Grounder	M15Z-001	HE		3/4"(BK)	3/4"(BK)		S	12"	Single
	M15Z-002	HE		3/4"(BK)	3/4"(BK)		M	12"	Single
	M15Z-003	HE		3/4"(BK)	3/4"(BK)		X	12"	Single
	M15Z-004	HE		3/4"(BK)	3/4"(BK)		XL	12"	Single

* Colors: BK-Black, BL-Blue, GR-Green, RE-Red * Closure Styles: HE-Hook & Elastic Loop, HL-Hook & Loop, DR: D-Ring, QB-Quick Buckle



Cleanroom & ESD

Disposable

Cleanroom Face Mask

Features

- Adopting unique designs and materials
  - Using HDPE film in out layer
  - Using TPU earbands
  - Bigger size (9 cm x 23 cm)
  - Attaching earbands onto the front side of the Mask
- Using best fit materials required by each part to achieve comfortability, good air permeability and filtration
- All materials used have been passed in a skin trouble test with the mark of "Negligible"
- By using Polypropylene filter, which has a high efficient filtering performance with a good air permeability, as a middle layer, our Cleanroom Face Mask provides excellent comfortability to users.

Basic Information

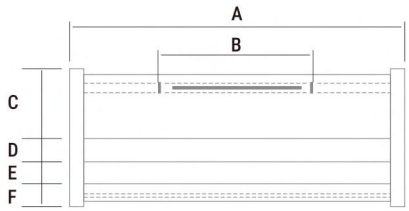
Item Code		M01D-009	M01D-010	M01D-011
Size		90×230 mm	90×210 mm	90×180 mm
Material	Out layer	HDPE Film (1st filtration)		
	Middle layer	Polypropylene Filter (2nd filtration)		
	In layer	PET/PP mixed non-woven		
	Ear Band	TPU		
Packing		50 pcs/bag, 30 bags/box		



Product Specifications

(90 mm×230 mm)

	A	B	C	D	E	F	Tolerance
Length (mm)	230	95	35	17	15	23	+/- 5%



	Measure	Standard	C
APC	ea/g, 0.1 μm, 1CFM	Max. 120	
Dimensional Stability	%	Max. 5	

TEST Data

Test Unit	Specifications	APC Test			
		20 - RPM	30 - RPM	40 - RPM	50 - RPM
Cleanliness (5 ea)	Less than 825.0	410.7	643.4	648.9	639.1
Cleanliness (1 ea)	Less than 165.0	82.1	128.7	129.8	127.8
Cleanliness (g)	Less than 50.0	24.6	40.9	31.9	34.1

Ion Test		
Test Unit	Results (mg/L)	Test Methods
Na	0	ICP Test
Ca	0	ICP Test
Ci	0	IC Test

Skin Trouble Test		
Test Unit	Results (mg/L)	Test Methods
Mask Body	Negligible	ISO 10993-10 Skin irritation test
TPU Band	Negligible	ISO 10993-10 Skin irritation test

Clean Face Mask

Features

- Bacteria Filtration Efficiency (BFE): Min. 99%
- Pressure Differential (Delta-P): Max. 1.6 mm/Aq.
- Particles (> 0.3 microns): Less than 50 ea (Dry Flex test)

* 3 ply non-woven meltblown PP filter

General Information

Item Code			M15D-001-WH	M15D-005-WH	M16D-001-WH	M16D-005-WH
Structure	Descriptions		2ply	3ply (ES)	2ply	3ply (SBPP)
Body	Material	Inner Layer	Ethylene Propylene 30 g	Ethylene Polypropylene 21 g	Spunbond Polypropylene 23 g	Spunbond Polypropylene 20 g
		Middle Layer	-	Melt Blown Polypropylene 19 g	-	Melt Blown Polypropylene 18 g
		Outer Layer	Ethylene Propylene 25 g	Ethylene Polypropylene 21 g	Spunbond Polypropylene 23 g	Spunbond Polypropylene 20 g
	Length		180 mm			
	Width		90 mm			
Ear Loop	Material		SOP			
	Length		175 mm			
Nose Clamp	Position		Fixed in Center of the Top			
	Material		Soft flexible steel			
	Length		105 mm			

Specifications

Tensile Strength (N/cm)	41.3
Longitudinal Tensile Strength (N/cm)	26.8
Earband Strength (N)	10

Packing	50 ea/bag, 40 bags/ctn

Cleanroom Active Carbon Face Mask

4 ply non-woven meltblown PP and active carbon filter for smell filtering.

Features

- Bacteria Filtration Efficiency (BFE): Min. 99%
- Pressure Differential (Delta-P): Max. 1.6 mm/Aq.
- Particles (> 0.3 microns): Less than 50 ea (Dry Flex test)



Item Code	M07D-000	Ear Loop	190 mm
Size	90 mm × 180 mm	Packing	50 pcs/bag

Disposable Shoe Cover



Item Code	M02D-011-BL
Material	Non-woven fabric
Size	40 cm×16 cm
Color	Blue
Weight	40 g
Packing	50 pairs/bag, 20 bags/ctn

ESD Disposable Shoe Cover



Item Code	M14D-003-BL
Size	40 cm×15 cm
Conductive Ribbon	60 cm×2 cm
Color (shoe cover)	Blue
Weight	35 g
Surface Resistance (Black Ribbon)	10e3 ~ 10e5 ohm

Non-woven hair cap

Item Code	M09D-012-WH	M09D-013-WH	M09D-014-WH	M09D-015-WH	M09D-016-xx
Material	Non-woven fabric				
Size	21”	23”	21”	23”	23”
Color	White	White	White	White	White (WH), Blue (BL)
Weight	10 g	10 g	20 g	20 g	30 g
Packing	100 pcs/bag, 10 bags/ctn				

* xx: color (WH, BL)

Features

- Lightweight and breathable material
- Comfortable and easy to wear
- Single use only
- Various options
  - 3 options by weight (10 g, 20 g, 30 g)
  - 2 options(30 g) by color (White, Blue)
  - 2 options by size (21”, 23”)







Finger Cots



Physical Properties	
Tensile Strength (MPa)	≥ 16
Elongation at Break (%)	≥ 500
Surface Resistance (ohm)	• 10e7 ~ 10e11 • 10e5 ~ 10e8
Material	• 100% Natural Rubber Latex • Nitrile
Color	White (WH), Yellow (YE), Pink (PK), Black (BK), Transparent (TP), etc.
Storage Conditions	• Cool and dry place • Avoid direct sunlight and copper material

Features

- RoHS1, RoHS2, REACH, CE Registration
- OEM Brand (Option)
- 4 different Packing Options
- Antistatic, Conductive
- Rolled, Cut, Plain, Textured
- Tight Fit and Heavy Duty Types are available
- Low Powdered, Powder Free (Chlorinated)
- Various Colors

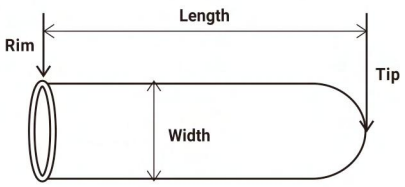
Type \ Descriptions	Item Code	Option	Appearance
Antistatic, Low Powdered	M08D-100-WH-xxx M08D-110-WH-xxx	Rolled, Plain	
	M08D-101-WH-xxx	Rolled, Textured	
	M08D-102-WH-xxx M08D-160-WH-xxx	Cut, Plain	
	M08D-103-WH-xxx	Cut, Textured	
Antistatic, Powder free * Color (IV, YE, PK)	M08D-200-xx-xxx M08D-210-xx-xxx	Rolled, Plain	
	M08D-201-xx-xxx M08D-240-xx-xxx	Rolled, Textured	
	M08D-202-xx-xxx M08D-260-xx-xxx	Cut, Plain	
	M08D-203-xx-xxx M08D-280-xx-xxx	Cut, Textured	
Antistatic, powder free (Polymer treated)	M08D-700-WH-xxx	Rolled, Plain	
	M08D-720-WH-xxx	Rolled, Textured	
	M08D-740-WH-xxx	Cut, Plain	
	M08D-760-WH-xxx	Cut, Textured	
Conductive, Powder free	M08D-300-BK-xxx	Rolled, Plain	
	M08D-301-BK-xxx	Rolled, Textured	
	M08D-302-BK-xxx	Cut, Plain	
	M08D-303-BK-xxx	Cut, Textured	
Antistatic, Powder free	M08D-400-BK-xxx	Rolled, Plain	
	M08D-401-BK-xxx	Rolled, Textured	
	M08D-402-BK-xxx	Cut, Plain	
	M08D-403-BK-xxx	Cut, Textured	
Heavy Duty	M08D-500-TP-xxx	Unrolled, Textured	
Antistatic, Low Powdered (Tight Fit)	M08D-600-TP-xxx	Rolled, Textured	
	M08D-601-TP-xxx	Cut, Textured	
Antistatic, Powder free Nitrile	M08D-900-WH-xxx	Rolled, Plain	
	M08D-901-WH-xxx	Rolled, Textured	
	M08D-902-WH-xxx	Cut, Plain	
	M08D-903-WH-xxx	Cut, Textured	

* M08D-100-xx-xxx [* xx: color (WH, IV, YE, PK, BK, TP) / * xxx: size (S, M, L, XL)]

Item Code \ Type	Rolled	Cut	Plain	Textured	Low Powdered	Powder Free	Antistatic	Conductive
M08D-100-xx-xxx M08D-110-xx-xxx	●		●		●		●	
M08D-101-xx-xxx	●			●	●		●	
M08D-102-xx-xxx M08D-160-xx-xxx		●	●		●		●	
M08D-103-xx-xxx		●		●	●		●	
M08D-200-xx-xxx M08D-210-xx-xxx	●		●			●	●	
M08D-201-xx-xxx M08D-240-xx-xxx	●			●		●	●	
M08D-202-xx-xxx M08D-260-xx-xxx		●	●			●	●	
M08D-203-xx-xxx M08D-280-xx-xxx		●		●		●	●	
M08D-700-xx-xxx	●		●			●	●	
M08D-720-xx-xxx	●			●		●	●	
M08D-740-xx-xxx		●	●			●	●	
M08D-760-xx-xxx		●		●		●	●	
M08D-300-BK-xxx	●		●			●		●
M08D-301-BK-xxx	●			●		●		●
M08D-302-BK-xxx		●	●			●		●
M08D-303-BK-xxx		●		●		●		●
M08D-400-BK-xxx	●		●			●	●	
M08D-401-BK-xxx	●			●		●	●	
M08D-402-BK-xxx		●	●			●	●	
M08D-403-BK-xxx		●		●		●	●	
M08D-500-TP-xxx	Unrolled			●				
M08D-600-TP-xxx	●			●	●		●	
M08D-601-TP-xxx		●		●	●		●	
M08D-900-WH-xxx	●		●			●	●	
M08D-901-WH-xxx	●			●		●	●	
M08D-902-WH-xxx		●	●			●	●	
M08D-903-WH-xxx		●		●		●	●	

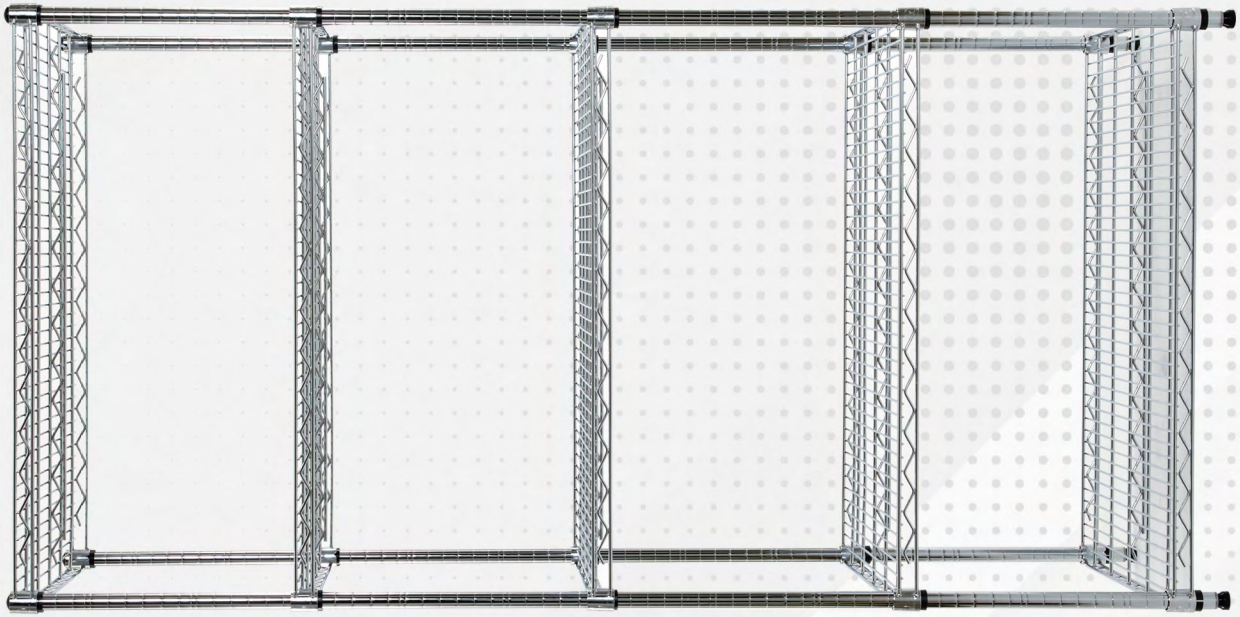
* M08D-100-xx-xxx [* xx: color (WH, IV, YE, PK, BK, TP) / * xxx: size (S, M, L, XL)]

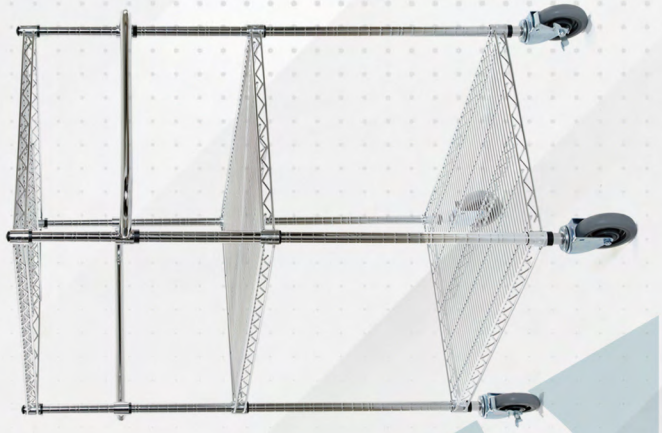
Dimension		Size S	Size M	Size L	Size XL
Average Weight/pc	g	0.42±0.02	0.46±0.02	0.50±0.02	0.56±0.02
Width	mm	23±1	26±1	29±1	32±1
Length-Rolled/Unrolled	mm	70±2	70±2	70±2	70±2
Rim Thickness	mm	1.2±0.1	1.2±0.1	1.2±0.1	1.2±0.1
Length-Cut	mm	60±3	60±3	60±3	60±3
Thickness (double wall)	mm	0.22±0.04	0.22±0.04	0.22±0.04	0.22±0.04
Thickness at Tip	mm	≥ 0.20	≥ 0.20	≥ 0.20	≥ 0.20



Packing Information			
1	10 gross (1,440 pcs)/bag, 20 bags/carton	3	100 pcs/zipper bag, 250 zipper bags/carton
2	1,000 pcs/bag, 30 bags/carton	4	100 pcs/zipper bag + paper case, 200 cases/carton
Carton	48 × 29 × 40 in cm (Rolled Type) / 48 × 29 × 35 in cm (Cut Type)		







Cleanroom & ESD

Wire Shelves & Utility Carts

Wire Shelves

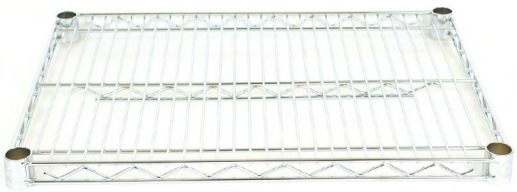
Pole



M01U-000

- Chrome plated steel pole
- 25.4 mm (Φ) × 1.2 mm (T)
- 9 different lengths (450 mm ~ 2200 mm)

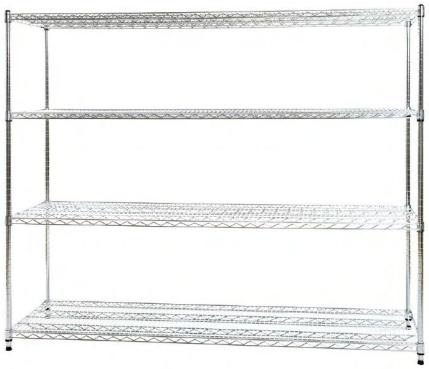
Wire Shelf



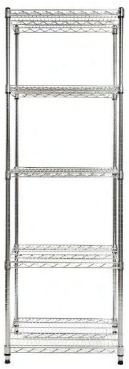
M02U-000

- Chrome plated steel wire
- Wire (Φ): 3.5 mm, 4.5 mm, 6 mm
- Load capacity: 250 kg/shelf

* Stainless steel (SUS 304) material is also available on request
* Various size and designs











*Wire shelf option (① ~ ㉓)
*Pole option (450 mm ~ 2200 mm)

(mm)

350	450	530	610	Shelf	Pole
	③	⑩	⑰	610	450
	④	⑪	⑱	760	600
	⑤	⑫	⑲	910	750
	⑥	⑬	⑳	1070	900
	⑦	⑭	㉑	1220	1200
①	⑧	⑮	㉒	1520	1500
②	⑨	⑯	㉓	1820	1800
Example) ① – 350×1520 mm Example) ㉓ – 610×1820 mm					1900
					2200

Utility Carts

Item Code M50U-000

Type A



- 3 shelves with U handle in 1 side
- Total height: 1050 mm
- Load capacity: 250 kg

(mm)

450	530	610	Shelf
①	⑧	⑮	610
②	⑨	⑯	760
③	⑩	⑰	910
④	⑪	⑱	1070
⑤	⑫	⑲	1220
⑥	⑬	⑳	1520
⑦	⑭	㉑	1820

Pole
750
900

*Wire shelf option
(① ~ ㉑)
*Pole option
(750 mm ~ 900 mm)

Type B



- 3 shelves with U handles in 2 sides
- Total height: 1050 mm
- Load capacity: 250 kg

(mm)

450	530	610	Shelf
①	⑧	⑮	610
②	⑨	⑯	760
③	⑩	⑰	910
④	⑪	⑱	1070
⑤	⑫	⑲	1220
⑥	⑬	⑳	1520
⑦	⑭	㉑	1820

Pole
750
900

*Wire shelf option
(① ~ ㉑)
*Pole option
(750 mm ~ 900 mm)

Type C



- 2 shelves with 1 side U handle
- Total height: 1050 mm
- Load capacity: 250 kg

(mm)

450	530	610	Shelf
①	⑧	⑮	610
②	⑨	⑯	760
③	⑩	⑰	910
④	⑪	⑱	1070
⑤	⑫	⑲	1220
⑥	⑬	⑳	1520
⑦	⑭	㉑	1820

Pole
750
900

*Wire shelf option
(① ~ ㉑)
*Pole option
(750 mm ~ 900 mm)

Wire Reel Shelves



M40U-000

Pole	Reel Wire Shelves
· Chrome plated steel pole · 25.4 mm (Φ) × 1.2 mm (T)	· Chrome plated Steel Wire · Wire (Φ): 3.5 mm, 4.5 mm, 6 mm

Capacity	Reel Shelves (mm)		Pitch size (mm)
	450 × 910	450 × 1220	
Small (double peaks)	80 pc	112 pc	20
Large (single peak)	13 pc	18 pc	60



Option: Castor

(mm)

450	Shelf	Pole
①	910	1800
②	1220	

Accessories

ESD Foot



M15U-001 M15U-002

Metal Chain



M16U-001

ESD Castor



M06U-000

Donut Bumper



M14U-001

Handle



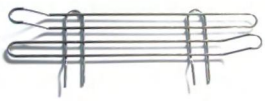
M08U-000

Supporting Bar



M07U-000

Guardrail



M09U-000

Divider



M10U-000

Plastic Split Joint / Chrome Split Joint



M12U-001



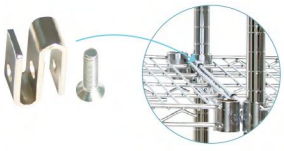
M12U-002

Clamp



M11U-001

N Hook



M13U-000

ESD Castor New

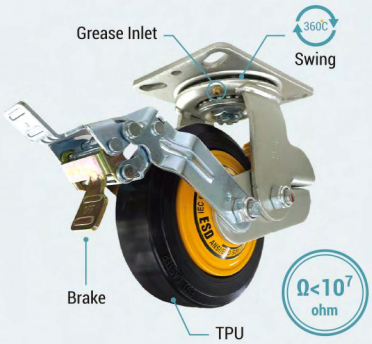
"How to make ESD castor endure heavy duty while keeping ESD sustainability?"



The answer is 'homogeneous (TPU) ESD castor.' Ordinary ESD castors are manufactured by applying antistatic coating to the wheels. The problem is that the more it is used, the more the coating film is damaged and the antistatic function decreases. However, this castor is the ESD homogeneous (TPU) that the antistatic performance does not decrease even when it is used in various environments for a long period. Also, even if it is ESD homogeneous, it can withstand up to 350 kg per castor. It features both durability and ESD sustainability.

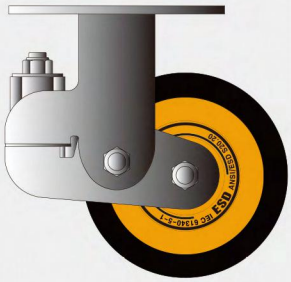
Features

- ESD properties (RTT/RTG): <10e7 ohm
- Homogeneous (TPU) ESD castor
- A utility registered model
- Easy-replacement of load springs to change the load capacity.
- Shock absorber protects the durability of the castor itself and the stability of the sensitive cargo.
- Heat treated double raceway ensures durability and smooth rotation of the wheel.
- Easy to lubricate with grease inlet



Types

Fixed



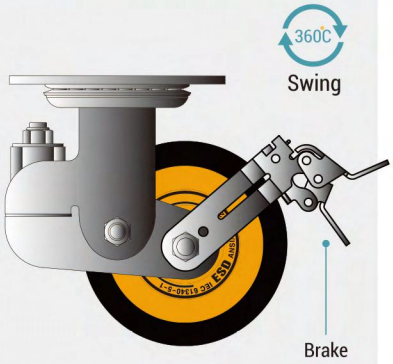
Item Code	Descriptions
M06U-012	6", 90 kg
M06U-013	6", 160 kg
M06U-014	6", 220 kg
M06U-015	6", 350 kg

Swivel



Item Code	Descriptions
M06U-016	6", 90 kg
M06U-017	6", 160 kg
M06U-018	6", 220 kg
M06U-019	6", 350 kg

Swivel with brake



Item Code	Descriptions
M06U-020	6", 90 kg
M06U-021	6", 160 kg
M06U-022	6", 220 kg
M06U-023	6", 350 kg

Max Load by Spring Specifications

Product Types	Light Duty 90 kg	Medium Duty 160 kg	Medium-heavy Duty 220 kg	Heavy Duty 350 kg
Spring Color	 Yellow	 Blue	 Red	 Green

- ANSI/ESD S20.20:2021 Requirement
- ANSI/ESD STM4.1-2017 Product Qualification
- ANSI/ESD11.13-2021

SMT Products

Cleanroom & ESD

Solder Paste

Product	Lead Free Paste				
Item Code	M020-003	M020-004	M020-006	M020-008	M020-007
Model	OL107F(A)	OM353	OM385SM	OM340-SL	OM234HF
Solder Alloy	SACX0307 (99 Sn/0.3 Ag/0.7 Cu)	SAC305 (96.5 Sn/3 Ag/0.5 Cu)			
Powder Size	Type 4 (20~38 μm)	Type 4 (20~38 μm)	Type 5 (15~25 μm)	Type 4 (20~38 μm)	Type 7 (2~11 μm)
Melting Point (°C)	227°C	217-220°C	217~220°C	217~220°C	217~220°C
Packing type	Jar	Jar	Jar	Jar	Syringe (10 cc & 5 cc)
Features	• Long stencil life • Excellent voiding performance		• High tack force life • Wide reflow profile		• Long stencil life • Excellent voiding performance • Long & High tack force life • Reduced random solder ball

* Halogen zero

Product	Lead Free & Low Temp Paste	
Item Code	M020-001	M020-005
Model	OM-520	OM-525
Solder Alloy	42 Sn/57.6 Bi/0.4 Ag	SBX02
Powder Size	Type 3 (25~45 μm)	Type 4 (20~38 μm)
Melting Point (°C)	138°C	140°C
Packing type	Jar	Jar
Features	• Reduce energy consumption • Reduce reflow process cycle time • Meet IPC 7095 (voiding performance) CLASS III • Use of less expensive PCB	• Reduce energy consumption • Reduce reflow process cycle time • Potential elimination of bar solder • Deliver 8 + hour stencil life



* Halogen zero

Solder Wire

Features

- For both manual and automated soldering jobs, and components attachment, rework operations, etc.
- Even core flux distribution
- Good solderability & strong joints
- Minimal non-corrosive flux residues for a high soldering efficiency



Item Code	M110-001	M110-002	M110-003	M110-004
Model	63Sn/37Pb	SCX07	SACX0307	SAC305
Solder Composition	63 Sn/37 Pb	99.3 Sn/0.7 Cu	99 Sn/0.3 Ag/0.7 Cu	96.5 Sn/3 Ag/0.5 Cu
Melting Point (°C)	183	227	227	217-220
Flux Amount	2.2%		3.3%	

* Available diameter : 0.6, 0.8, 1.0, 1.2, 1.6 mm

Solder Bar (Alloy)

Features

- High purity
- Vaculoy alloy conditioning process
- Excellent Solderability
- Low oxides, Low drossing
- Solder bar, chunks, anodes, preforms and solid wires





Item Code	M01O-002	M01O-003	M01O-001	M01O-004
Model	63Sn/37Pb	SCX07	SACX0307	SAC305
Solder Composition	63 Sn/37 Pb	99.3 Sn/0.7 Cu	99 Sn/0.3 Ag/0.7 Cu	96.5 Sn/3 Ag/0.5 Cu
Melting Point (°C)	183	227	227	217 ~ 220

ESD Spatula

VIDEO

ESD-safe Plastic Spatulas are multi-purpose tools for the electronic industry. They are commonly used for solder paste handlings, assembly operations, application of adhesives and the removal of welding masking agents, rubber latex and adhesive coatings, and many others.

Item Code	M13O-001	M13O-002	M13O-003
Appearance			
Material	PC 80% + carbon fiber 20%		
Surface Resistance	10e3 ~ 10e5 ohm		
Length (Knife+Handle)	245 mm (125 mm + 120 mm)	290 mm (185 mm + 105 mm)	290 mm (185 mm + 105 mm)
Width (Knife / Handle)	65 mm / 30 mm	45 mm / 26 mm	60 mm / 26 mm

Cleanroom & ESD

Compound & Sheet



Conductive Compound

Features

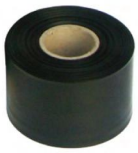
- Excellent physical properties
- Tailored to various customers' needs
- Wide ESD range (10e2 ~ 10e8 ohm)

PP Compound
PS Compound
PE Compound





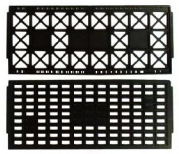
Item Code	M01V-000				M04V-000	M05V-000
Base Resin	PP				PS	PE
	①	②	③	④		
Melt Index (g/10min)	2 ~ 8	2 ~ 8	2 ~ 8	0.5 ~ 1.0	3 ~ 8	2 ~ 8
Specific Gravity (23℃, g/cc)	1.08 ~ 1.12	1.08 ~ 1.12	1.08 ~ 1.12	1.10 ~ 1.20	1.05 ~ 1.15	1.08 ~ 1.12
Conductivity (23℃/ohm)	10e4 ~ 10e5	10e5 ~ 10e6	10e6 ~ 10e7	10e2 ~ 10e4	10e5 ~ 10e6	10e4 ~ 10e5
Applications	· Corrugated sheet · PP sheet · injection molding				· PS Sheet · Plastic reel · Sheet · Injection molding · Carrier tape	· PE film · PE sheet

















Conductive Sheet

Features

- Excellent electrical conductivity
- Low shrinkage
- Excellent impact resistance
- Excellent physical and mechanical properties
- Excellent surface smoothness

Applications

- Injection molding
- Reel injection molding
- Extrusion for vacuum forming trays
- Extrusion for carrier tape sheet
- Making corrugated sheets, part boxes, trays, etc.



Product	Conductive PP Sheet	Conductive PS Sheet	Conductive PE Sheet
Item Code	M02V-000-BK	M04V-000-BK	M06V-000-BK
Material	PP, PS, PE, ABS		
Color	Black		
Surface Resistance	10e4 ~ 10e6 ohm		
Thickness	0.3 mm ~ 1.2 mm		
Width	450 mm ~ 1300 mm		

Conductive PET Sheet

Conductive PET sheet does not contain carbon, metal and any corrosive agents. It is very clean and can be used in Cleanroom and rewashed in either ultrasonic DI water or IPA without any degradation or contamination.

Features

- Not affected by humidity
- No particle generation
- Good durability without any degradation
- Recyclable

Applications

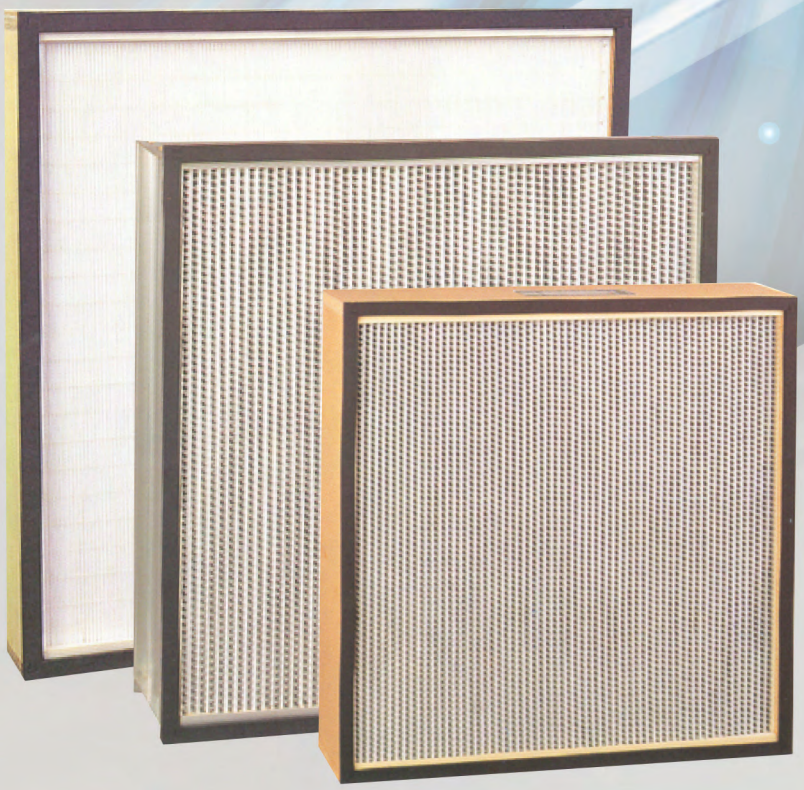
- Thermoforming trays
- Hard disk containers
- Medical device packaging



Item Code	M08V-000
Material	PET
Color	Clear
Surface Resistance	10e5 ~ 10e6 ohm
Thickness	0.5 mm, 0.65 mm, 0.9 mm, 1.2 mm
Width	610 mm, 640 mm, 720 mm, 1,300 mm

Filter

Cleanroom & ESD



Medium Filter (Box type)



Item Code	M23K-001
Media	Micro Glass Fiber
Frame	Particle Board
Separator	Aluminum
Sealant	PU Resin
Gasket	Neoprene Sponge

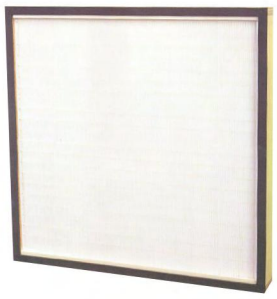
Medium Filter (Header type)



Item Code	M23K-200
Media	Micro Glass Fiber
Frame	Galvanized Steel
Separator	Aluminum
Sealant	PU Resin
Gasket	Neoprene Sponge

Box type Size (mm)			Head type Size (mm)			Pressure Drop (mmAq)		Air Volume (CMM)		Capture Efficiency
W	L	D	W	L	D	Initial	Final	General	Various	0.5㎛, %
610	305	150	594	287	150	17	30	14	21	95
610	610	150	594	594	150			28	42	
610	305	292	594	287	292			28	42	
610	610	292	594	594	292			56	84	
610	305	150	594	287	150	15	30	14	21	85
610	610	150	594	594	150			28	42	
610	305	292	594	287	292			28	42	
610	610	292	594	594	292			56	84	
610	305	150	594	287	150	13	30	14	21	65
610	610	150	594	594	150			28	42	
610	305	292	594	287	292			28	42	
610	610	292	594	594	292			56	84	

HEPA Filter (Mini Pleat type)



Item Code	M24K-002
Media	Micro Glass Fiber
Frame	Particle Board. Plywood. AL
Separator	-
Sealant	Polyurethane (PU) Resin
Gasket	Neoprene Sponge

Head type Size (mm)			Pressure Drop (mmAq)		Air Volume	Capture Efficiency
W	L	D	Initial	Final	CMM	0.3㎛, %
305	305	75	25	50	4	99.97
610	305	75			7	
610	610	75			17	
610	762	75			22	
610	915	75			26	
610	1220	75			32	

HEPA Filter (Standard)



Item Code	M24K-001
Media	Micro Glass Fiber
Frame	Particle Board. Plywood. AL
Separator	AL. Kraft Paper
Sealant	Polyurethane (PU) Resin
Gasket	Neoprene Sponge

Head type Size (mm)			Pressure Drop (mmAq)		Air Volume	Capture Efficiency
W	L	D	Initial	Final	CMM	0.3㎛, %
305	305	150	25	50	4	99.97
610	305	150			7	
610	610	150			17	
610	762	150			22	
610	915	150			26	
610	1220	150			32	
305	305	292			7	
610	305	292			17	
610	610	292			32	

ULPA Filter (Standard)



Item Code	M25K-001
Media	Micro Glass Fiber
Frame	Particle Board. Plywood. AL
Separator	AL. Kraft Paper
Sealant	Polyurethane (PU) Resin
Gasket	Neoprene Sponge

Head type Size (mm)			Pressure Drop (mmAq)		Air Volume	Capture Efficiency
W	L	D	Initial	Final	CMM	0.1~0.12㎛, %
610	610	75	25	50	11	99.999997
610	915	75			16	
610	1220	75			18	
610	610	150			11	
610	762	150			13	
610	915	150			16	
610	1220	150			22	
610	610	75			15	
610	915	75			21	
610	1220	75			24	
610	610	150			25	
610	762	150			32	
610	915	150			38	
610	1220	150			42	

Since
1996

Our Partner

Wolfgang Warmbier®

PIP

SAFETY JOGGER WORKS

polstar®

MEC Industries

Head Office

MEC B/D, 30-40 Dongnam-ro 8-gil, Songpa-Gu, Seoul 05803 Korea

Logistics Hub

63-29, Pokpo-Ro 17Beon-gil, Hwado-Eup, Namyangju-Si,
Gyeonggi-Do, Korea

Manufacturing Facility

20, Seongseodong-ro, Dalseo-gu, Daegu 42725 Korea

mecind.co.kr

T +82 2 419 5020 **F** +82 2 419 9077/2780 **E** mecind@mecind.co.kr

Copyright ⓒ MEC Industries