

Ion Nozzle

Electrostatic Total Solution

SPN-12 / 12S



• SPN-12



• SPN-12S

Key Features

- Ion Balance $\pm 15V$ 이내 (300mm, 0.3MPa)
- Daisy Chain 기능으로 최대 5대까지 연결하여 사용이 가능
- 사용환경에 따라 다양한 Fitting Tube 장착이 가능 (Option)
- 적외선 센서 장착으로 근접 동작을 감지(SPN-12S만 가능)
- 작동 시간 및 센서 감도 설정이 가능(SPN-12S만 가능)

Specifications

Parameter	Description / Value		Remarks
	SPN-12	SPN-12S	
Input Power	DC 24V		
Adaptor	Input : AC 100~240V, 50/60Hz / Output : DC 24CV, 1A		
Power Consumption	1.2W	3.6W	
Current Consumption	50mA	150mA	
Ion-Generation Method	High Frequency AC		AC 220V
Air Purge Supply Pressure	0.1MPa ~ 0.6MPa		Piezo
Air Inlet	Ø6		CDA, N2
Ion Balance	Within ±15V		
Operation Circumstance	0°C~+130°C(32°F~266°F), 35%~85% RH		300mm
Ozone(O3) Concentration	≤0.05ppm		
Main Body Material	Non-Flammable ABS		50mm
Nozzle Material	Teflon		
Electrode Material	Tungsten / Titanium		
Mounting Method	Bolt Mounting with Bracket		
Weight	80g	130g	
Sensor	-	Photoelectric Sensor	
Alarm Function	H/V Abnormal		
Interface	Alarm(H/V Abnormal)		
Warranty	1 year		
Photoelectric Sensor(E3Z-D62)			
Detection System	Diffuse-scan		
Scanning Distance	1m		
Operation Mode	Light-ON / Dark-ON		
Emitter	Infrared LED(850nm)		
Ambient Light Immunity	Incandescent Lamp : Max. 3,000 lux / Sunlight : Max. 10,000 lux		

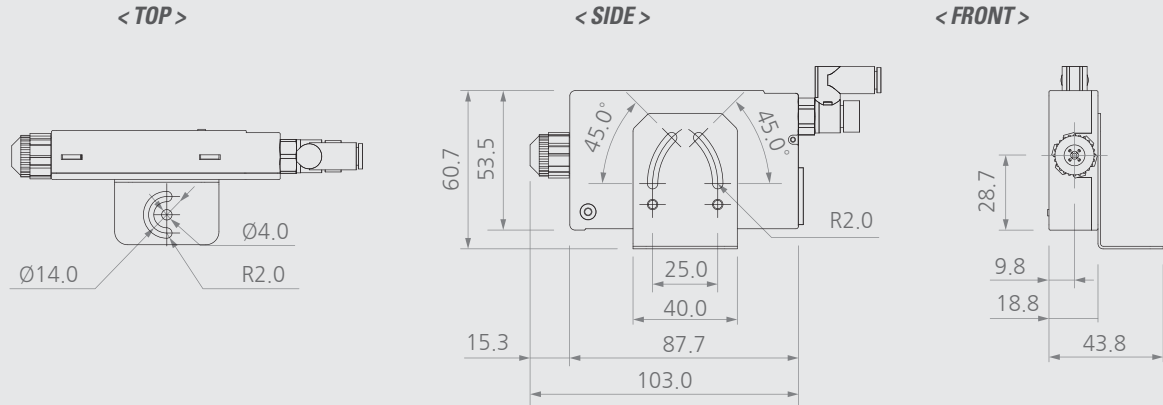
※ 디자인 및 제품 사양은 품질향상을 위해 예고 없이 변경될 수 있습니다.

Ion Nozzle

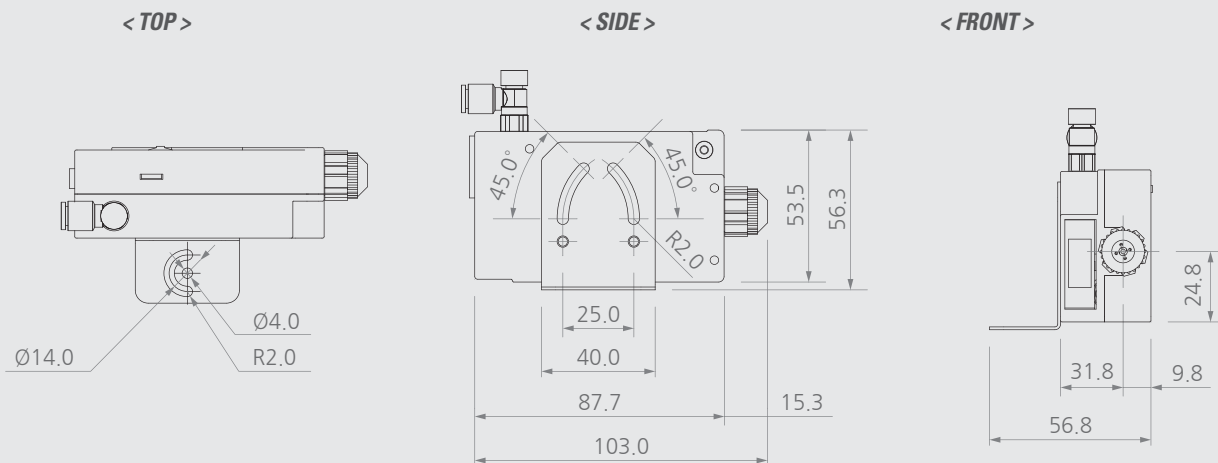
Electrostatic Total Solution

Dimensions

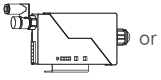
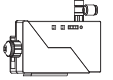
※ SPN-12



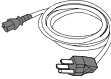
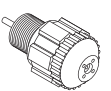
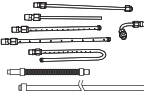
※ SPN-12S

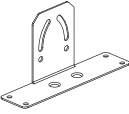
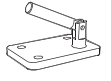


제품 구성

이미지		or	
품목구분	Ion Nozzle		
품목명	SPN-12	or	SPN-12S

추가 제품 구성 (Options)

이미지		or				
품목구분	Power Cable		Power Cable	Adapter(1.6m)	Needle Socket	Fitting Tubes
품목명	SPC-MT-1-001	or	SPC-MT-2-001	SAD-NG-3-001	SIE-NZ-1-001	BI 외 7종

						
Gender Cable	Compatible Bracket	Pipe Bracket	Flexible Stand	Flexible Stand Base	Angle Stand	Air Nipple
SGC-PN-1-001	SCB-PN-1-001	SPB-PN-S-101	SFB-PN-S-101	SFB-PN-S-102	SAB-PN-S-101	SAN-MT-1-001

SPN-11 / 11S



• SPN-11



• SPN-11S

Key Features

- Ion Balance $\pm 15V$ 이내 (300mm, 0.3MPa)
- Daisy Chain 기능으로 최대 5대까지 연결하여 사용이 가능
- 사용환경에 따라 다양한 Fitting Tube 장착이 가능 (Option)
- 적외선 센서 장착으로 근접 동작을 감지(SP-11S만 가능)
- 작동 시간 및 센서 감도 설정이 가능(SP-11S만 가능)

Specifications

Parameter	Description / Value		Remarks
	SPN-11	SPN-11S	
Input Power	DC 24V		
Adaptor	Input : AC 100~240V, 50/60Hz / Output : DC 24CV, 1A		
Power Consumption	9W	15W	
Current Consumption	40mA	68mA	
Ion-Generation Method	High Frequency AC		AC 220V
Air Purge Supply Pressure	0.1MPa ~ 0.5MPa		Piezo
Air Inlet	Ø6		CDA, N ₂
Ion Balance	Within $\pm 15V$		
Operation Circumstance	0°C~+130°C(32°F~266°F), 35%~85% RH		300mm
Ozone(O ₃) Concentration	≤0.05ppm		
Main Body Material	Non-Flammable ABS		50mm
Nozzle Material	Teflon		
Electrode Material	Tungsten / Titanium		
Mounting Method	Bolt Mounting with Bracket		
Weight	130g	250g	
Sensor	-	Photoelectric Sensor	
Alarm Function	H/V Abnormal		
Interface	Alarm(H/V Abnormal)		
Warranty	1 year		

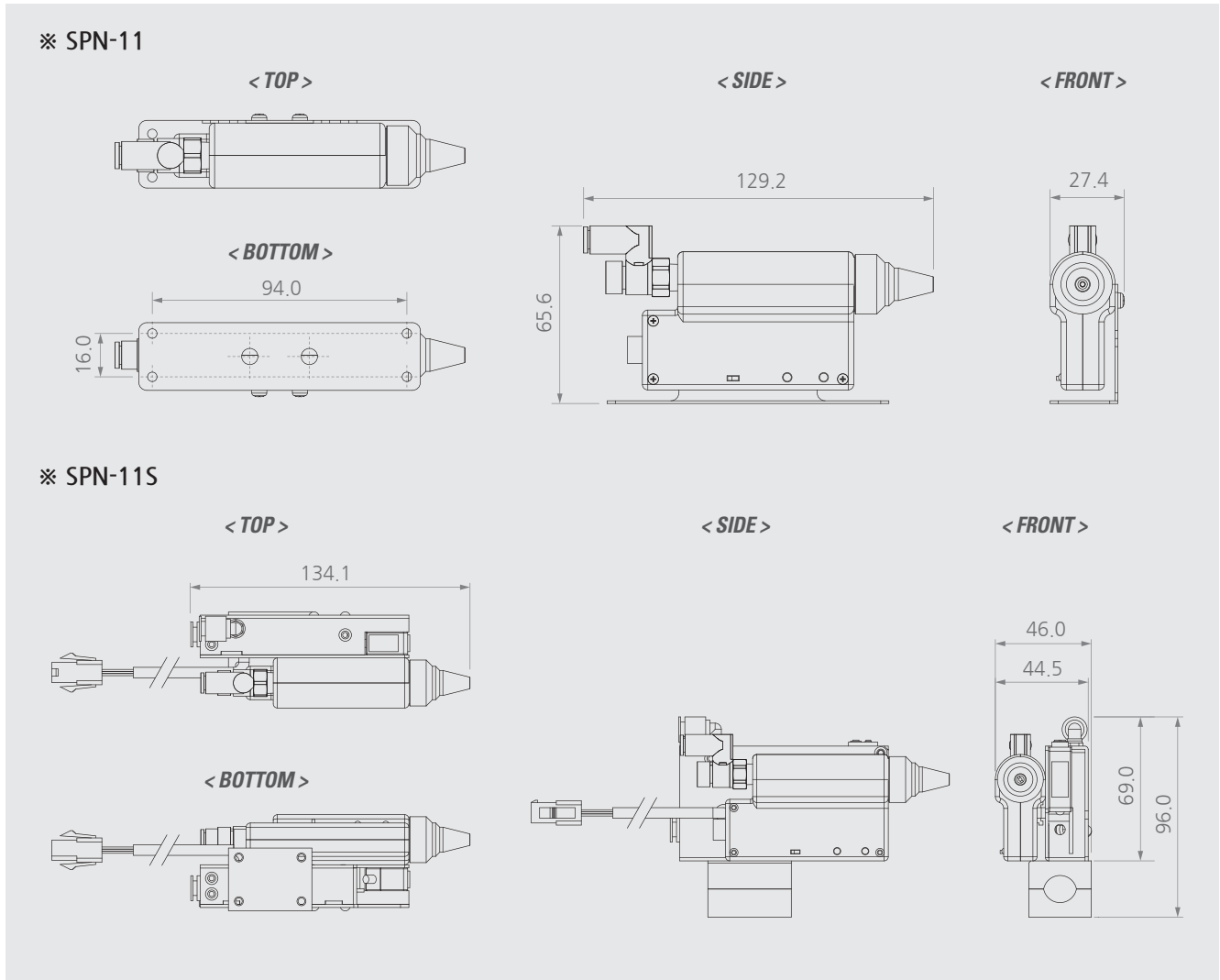
Photoelectric Sensor(E3Z-D62)		
Detection System	Diffuse-scan	
Scanning Distance	1m	
Operation Mode	Light-ON / Dark-ON	
Emitter	Infrared LED(850nm)	
Ambient Light Immunity	Incandescent Lamp : Max. 3,000 lux / Sunlight : Max. 10,000 lux	

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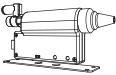
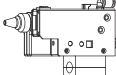
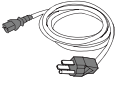
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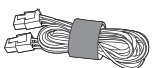
Dimensions



제품 구성

이미지	 or 	 or 			
품목구분	Ion Nozzle	Power Cable	Adapter(1.6m)	Ground Cable(1m)	Air Nipple
품목명	SPN-11 or SPN-11S	SPC-MT-1-001 or SPC-MT-2-001	SAD-NG-3-001	SGC-MT-3-001	SAN-MT-1-001

추가 제품 구성 (Options)

이미지					
	For SPN-11S	For SPN-11S	For SPN-11S		
품목구분	Flexible Stand	Flexible Stand Base	Angle Stand	Fitting Tubes	Extension Cable(5m or 6m)
품목명	SFB-PN-S-101	SFB-PN-S-102	SAB-PN-S-101	BI 외 7종	SEC-NG-1-001

Ion Nozzle

Electrostatic Total Solution

Fitting Tube

▶ Direct Injector-90° (DI-90)



▶ Bar Type Injector (BI)



▶ Direct Injector Ø4 (DI)



▶ Bar Type Injector-45° (BI-45)



▶ U Type Injector (UI)



▶ Elbow Coupler (EC)



▶ Tube Injector (TI)



▶ Flexible Injector (FI)

Key Features

- [SPN-11/11S, SPN-12/12S Option Items](#)
- 특수한 환경에서 Ion Nozzle의 성능 및 사용 편의성 최적화 (주문 제작 가능)

Specifications

	Model	Full-Length [mm]	Air Hole [EA]	Remarks
BI	BI-N100-P10	180.5	11	Pitch-10mm
	BI-N130-P10	210.5	14	Pitch-10mm
	BI-N150-P10	230.5	16	Pitch-10mm
	BI-N200-P10	280.5	21	Pitch-10mm
	BI-N300-P10	380.5	31	Pitch-10mm
	BI-N400-P10	480.5	41	Pitch-10mm
	BI-N500-P10	580.5	51	Pitch-10mm
	BI-N600-P10	680.5	61	Pitch-10mm
	BI-N150-P5	230.5	31	Pitch-5mm
BI-45	BI-N200-P5	280.5	41	Pitch-5mm
	BI-45-N150-P10	230.5	32	Pitch-10mm
	BI-45-N200-P10	280.5	42	Pitch-10mm
	BI-45-N200-P25	280.5	18	Pitch-25mm
	BI-45-N300-P37.5	380.5	18	Pitch-37.5mm
	BI-45-N400-P50	480.5	18	Pitch-50mm
DI	DI-N100	142	1(Direct)	-
	DI-N200	242	1(Direct)	-
	DI-N300	342	1(Direct)	-
	DI-N400	442	1(Direct)	-
	DI-N500	542	1(Direct)	-

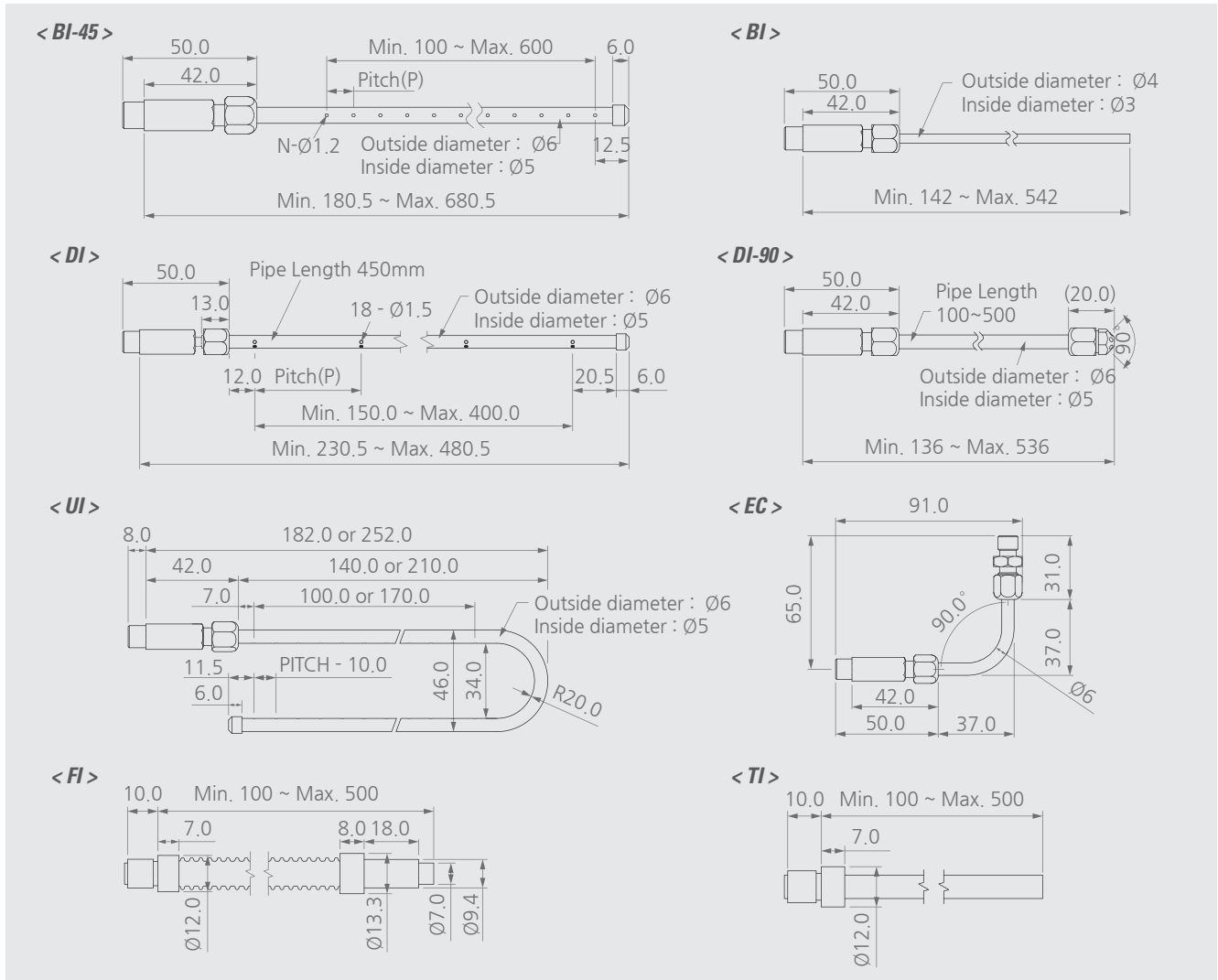
DI-90	DI-90-N100	136	7(Direct)	-
	DI-90-N200	236	7(Direct)	-
	DI-90-N300	336	7(Direct)	-
	DI-90-N400	436	7(Direct)	-
	DI-90-N500	536	7(Direct)	-
UI	UI-N160	182	22	Pitch-10mm
	UI-N230	252	36	Pitch-10mm
EC	EC-N50	58	-	-
FI	FI-100	100	1(Direct)	-
	FI-200	200	1(Direct)	-
	FI-300	300	1(Direct)	-
	FI-400	400	1(Direct)	-
	FI-500	500	1(Direct)	-
TI	TI-100	100	1(Direct)	-
	TI-200	200	1(Direct)	-
	TI-300	300	1(Direct)	-
	TI-400	400	1(Direct)	-
Warranty		1 year		

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Electrostatic Total Solution

Dimensions



제품 구성

이미지				
품목구분	Fitting Tube	Fitting Tube	Fitting Tube	Fitting Tube
품목명	DI-90	BI	DI	BI-45

Fitting Tube	Fitting Tube	Fitting Tube	Fitting Tube
UI	EC	TI	FI

Ion Nozzle

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SPN-21C



Key Features

- Pin Type 적용으로 협소한 공간에도 설치가 용이
- 다양한 Nozzle(Options) 적용으로 사용 환경에 맞게 사용이 가능
- 고주파 실험을 통한 안정적인 성능(낮은 Peak Voltage) 구현
- 장시간 사용에도 안정적인 Ion Balance

Specifications

Parameter		Description / Value
Input Power		DC 24V (±5%)
Power Consumption		Max. 4.8W
Current Consumption		Max. 200mA
High Voltage		Pulse AC 6.4 ~ 15kVpp
Ion-Generation Method		Corona Discharge
Connector		Power (DC24V) : DC Jack / RS-485 & Interface : Terminal Block 3.81mm Pitch
Operating Distance		50 ~ 1,000mm
Operation Circumstance		0℃ ~ +50℃(32°F ~ 122°F), 35% ~ 85% RH
Ozone(O3) Concentration		≤0.05ppm
Electrode Material		Standard : Tungsten / Option : Silicon
Electrode Replacement		Cartridge type
Function	Alarm	High Voltage Alarm, Tip Cleaning Timer Warning
	Interface	- Run/Stop State : Run-Closed / Stop-Open - High Voltage Alarm : Normal-Open / Alarm-Closed - Tip Cleaning Timer Warning : Normal-Open / Alarm-Closed - Remote Input
	RMS	Real Monitoring System (RS485)
Warranty		1 year

※ 디자인 및 제품 사양은 품질향상을 위해 예고 없이 변경될 수 있습니다.

※ N₂ 환경에서 사용 시 정상적인 Ion Balance를 보장할 수 없습니다.

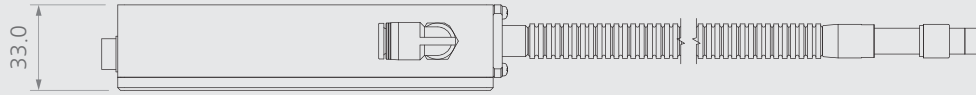
Ion Nozzle

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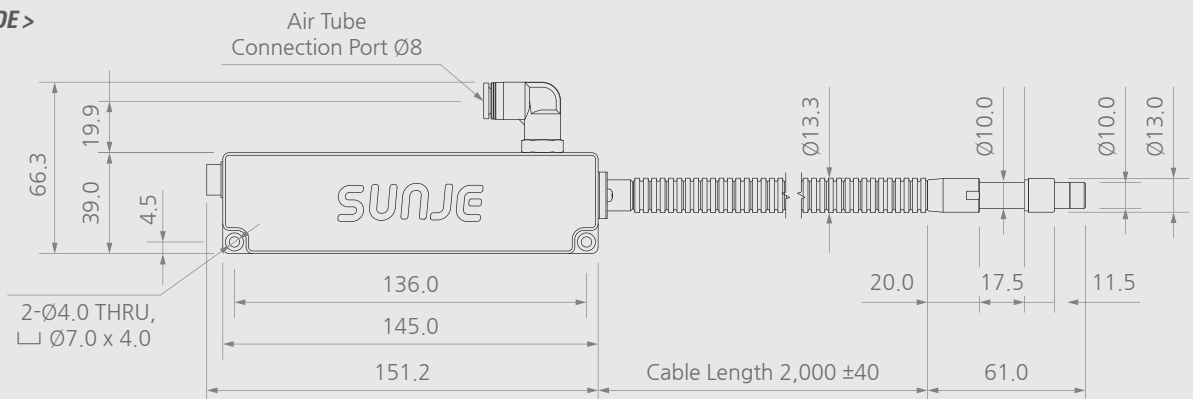
Dimensions

※ SPN-21C

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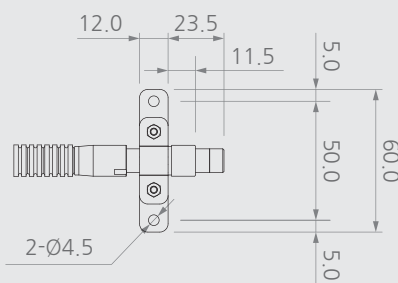


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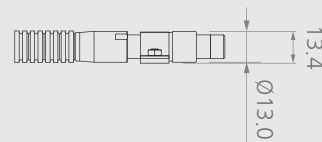


※ Bracket

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제품 구성

이미지		
품목구분	Ion Nozzle	Bracket
품목명	SPN-21C	SBR-PN-1-001

추가 제품 구성 (Options)

이미지				
품목구분	Wide Nozzle	Wide Nozzle	Flat Nozzle	Flat Nozzle
품목명	SPN-21C-SW	SPN-21C-EW	SPN-21C-SF	SPN-21C-EF

연결 가능 컨트롤러

					이미지	
1 Hole Fitting Nozzle	1 Hole Fitting Nozzle	2 Hole Fitting Nozzle	2 Hole Fitting Nozzle	Bracket	품목구분	Controller
SPN-21C-S1	SPN-21C-E1	SPN-21C-S2	SPN-21C-E2	SBR-PN-1-002	품목명	SNC-21

Dimensions of Options

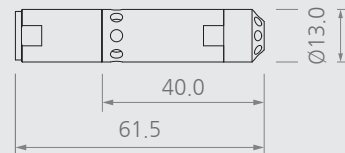
Electrostatic Total Solution

Dimensions

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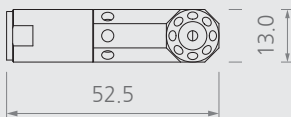


품목구분 Wide Nozzle

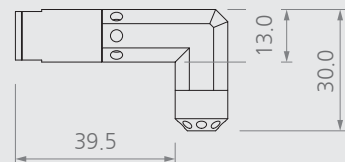
품목명 SPN-21C-SW

해당 제품 SPN-21C

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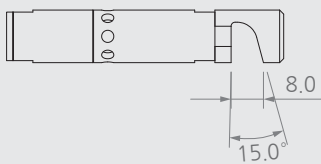


품목구분 Wide Nozzle

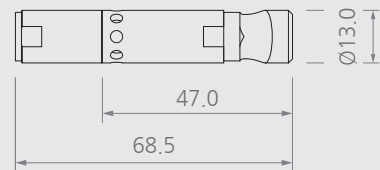
품목명 SPN-21C-EW

해당 제품 SPN-21C

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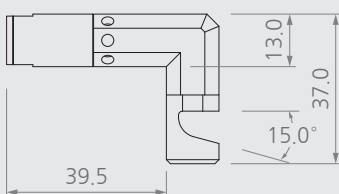


품목구분 Flat Nozzle

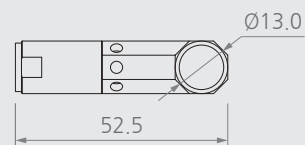
품목명 SPN-21C-SF

해당 제품 SPN-21C

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품목구분 Flat Nozzle

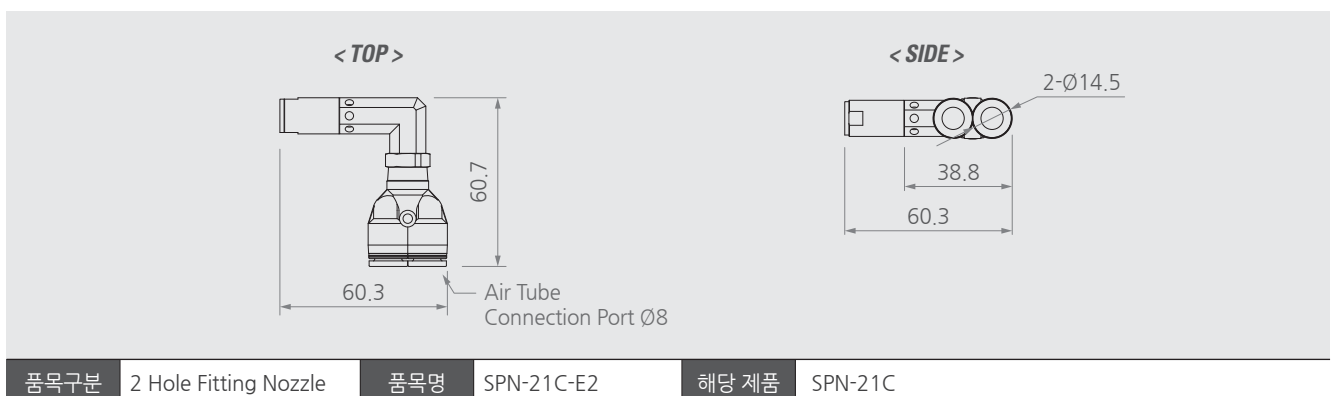
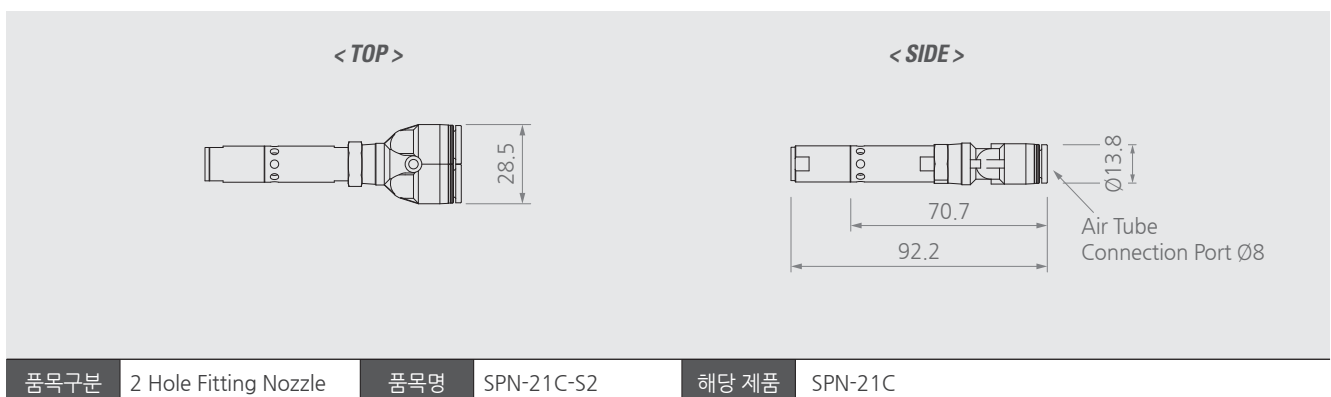
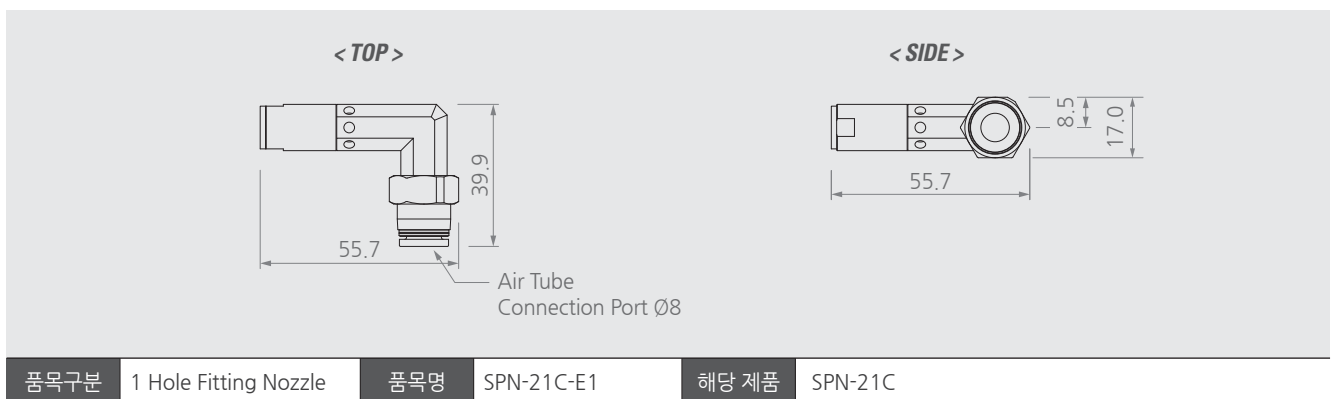
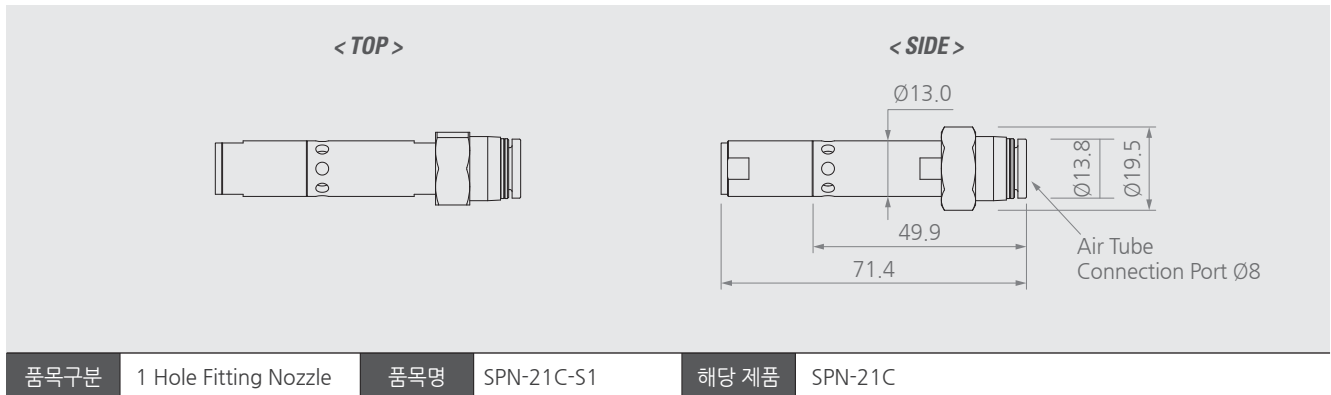
품목명 SPN-21C-EF

해당 제품 SPN-21C

Dimensions of Options

Electrostatic Total Solution

Dimensions



Performance

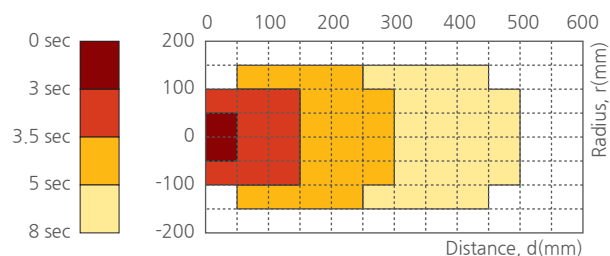
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Decay Time Characteristics

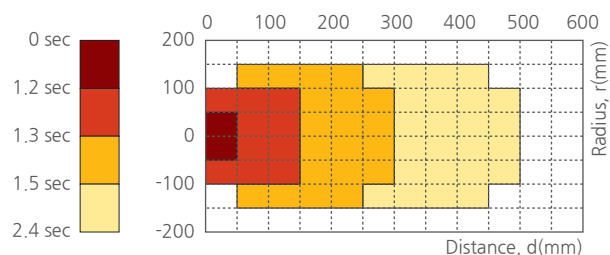
► SPN-12/12S

- Decay Time : $\pm 1,000V$ to $\pm 100V$
- Temperature & Humidity : 24°C, 50%RH
- Charge Plate Capacitance : 20pF (150 X 150mm)

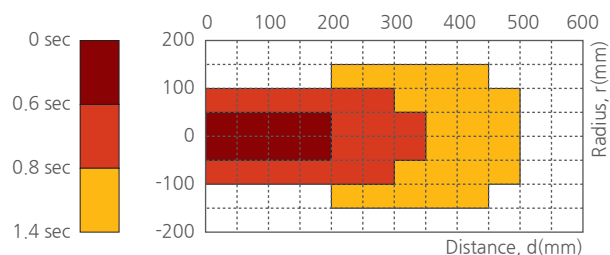
Air Pressure :
0.1MPa Standard Nozzle Mounted



Air Pressure :
0.3MPa Standard Nozzle Mounted



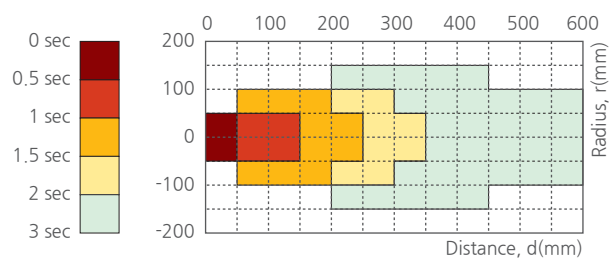
Air Pressure :
0.6MPa Standard Nozzle Mounted



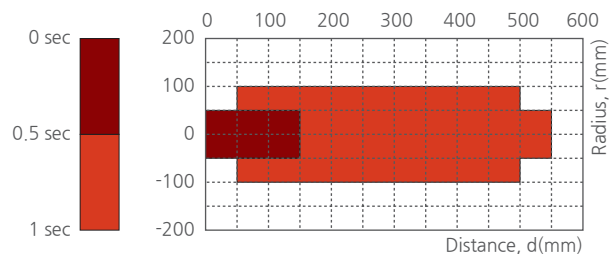
► SPN-21C _Standard

- Decay Time : $\pm 1,000V$ to $\pm 100V$
- Temperature & Humidity : 24°C, 50%RH
- Charge Plate Capacitance : 20pF (150 X 150mm)

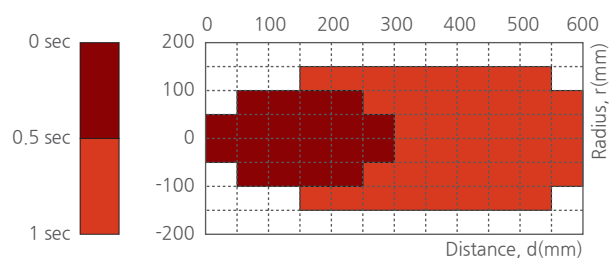
Air Pressure :
0.1MPa



Air Pressure :
0.3MPa



Air Pressure :
0.5MPa



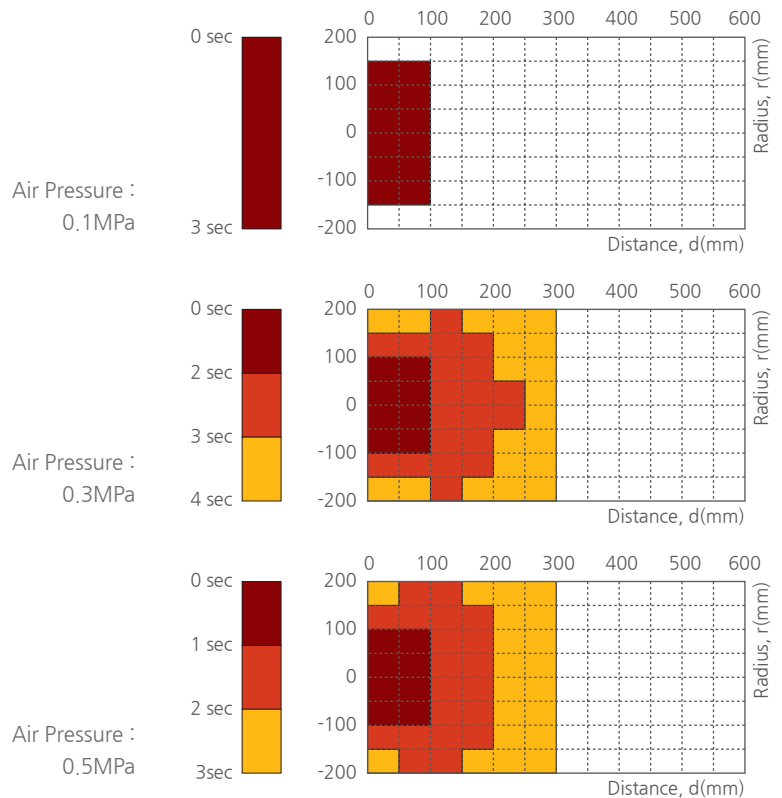
Performance

Electrostatic Total Solution

Decay Time Characteristics

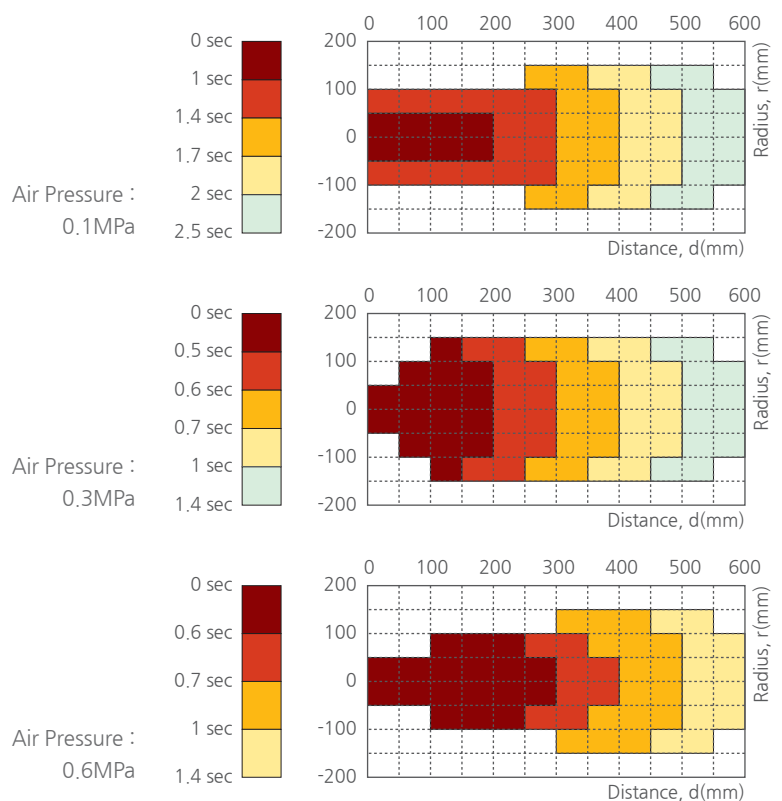
► SPN-21C _Option(Wide)

- Decay Time : $\pm 1,000V$ to $\pm 100V$
- Temperature & Humidity : 24°C, 50%RH
- Charge Plate Capacitance : 20pF (150 X 150mm)



► SIG-30

- Decay Time : $\pm 1,000V$ to $\pm 100V$
- Temperature & Humidity : 24°C, 50%RH
- Charge Plate Capacitance : 20pF (150 X 150mm)



Performance

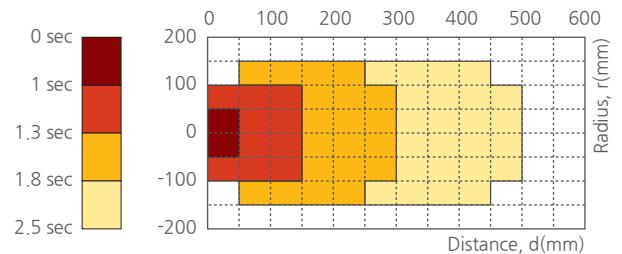
Electrostatic Total Solution

Decay Time Characteristics

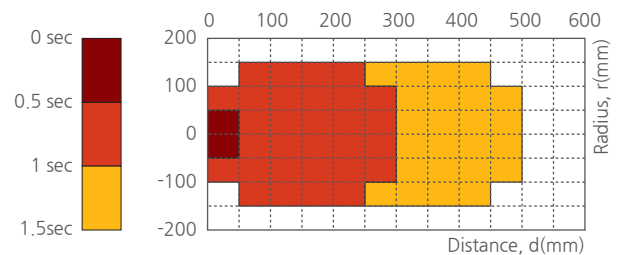
► SPN-11/11S

- Decay Time : $\pm 1,000\text{V}$ to $\pm 100\text{V}$
- Temperature & Humidity : 24°C , 50%RH
- Charge Plate Capacitance : 20pF (150 X 150mm)

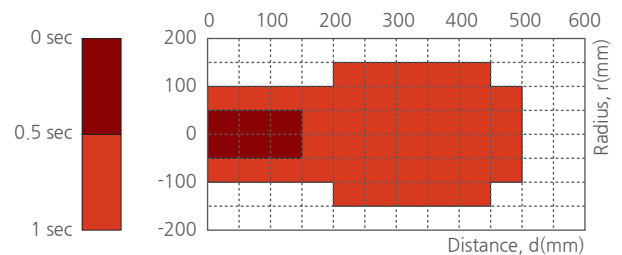
Air Pressure :
0.1MPa Standard Nozzle Mounted



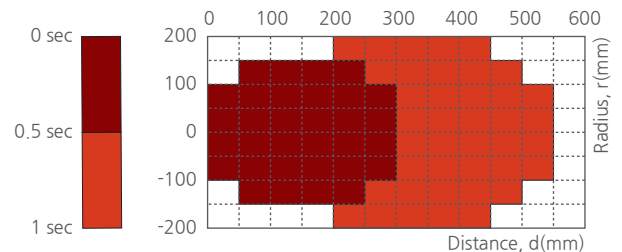
Air Pressure :
0.2MPa Standard Nozzle Mounted



Air Pressure :
0.3MPa Standard Nozzle Mounted



Air Pressure :
0.4MPa Standard Nozzle Mounted



Air Pressure :
0.5MPa Standard Nozzle Mounted

