e-FLATEK™

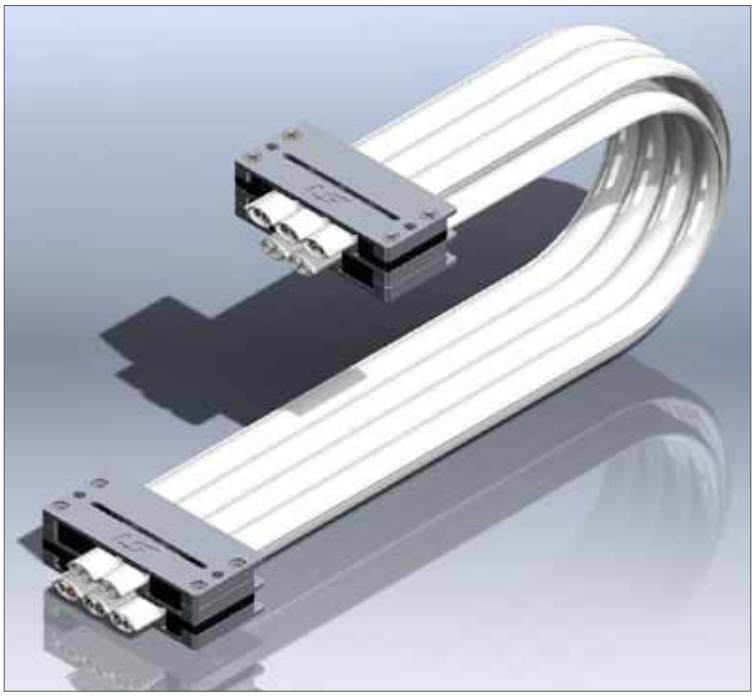
클린룸용 무빙 케이블 시스템

LS Cable & System

e-Flatek™

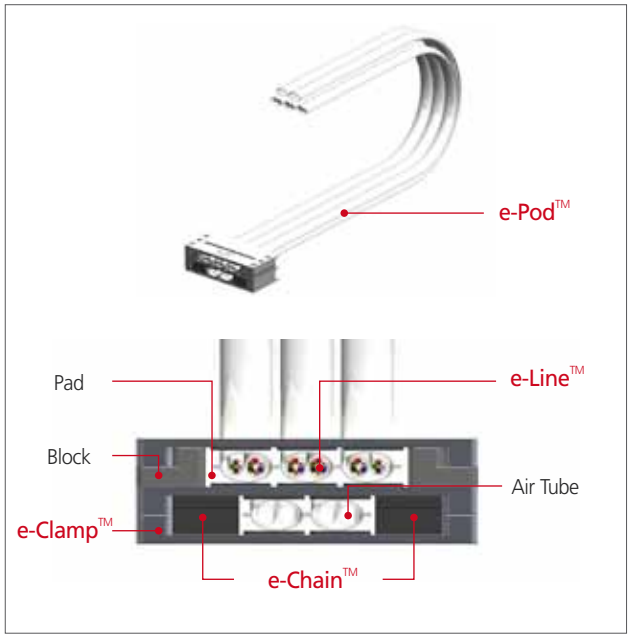
LS전선의 클린룸용 무빙 케이블 시스템 e-Flatek은 분진문제로부터 자유로운 청정 가동케이블 시스템입니다.
e-Flatek을 통해 분진문제를 해결할 수 있습니다.

최대 스트로크 길이 [Max. Stroke Length]	3,000mm
굴곡 반경 [Bend Radius]	R20mm, R40mm, R70mm, R100mm, R130mm
최대 속도 [Max. Velocity]	2m/s
최대 가속도 [Max. Acceleration]	4G
최소 가동 수명 [Min. Moving Life]	1,000 만회
사용 온도 [Ambient Temperature]	-10°C~ +80°C
Pod당 삽입가능 외경 [Available Diameter]	10mm max. / 6mm 이하 2개 삽입
클린룸 인증 [Clean Room Class]	IPA Class 1 (Overall Result)
표준 Pod 구성 [Standard Pod]	1~6 Pod
최대 적층 [Max. Stacked]	6 Stacked

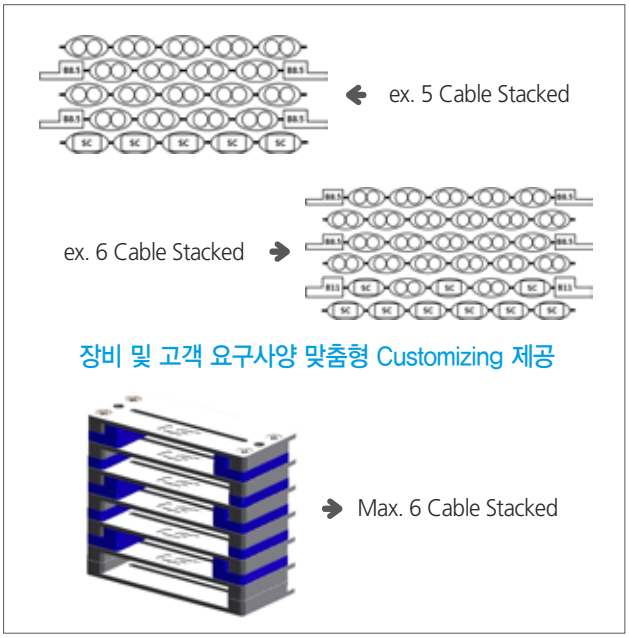


e-Flatek구성은 고객 요청에 따른 케이블 구성으로 적층되며, 각각의 액세서리 조합을 통해
다양한 구성의 제품을 설계, 제작할 수 있습니다.

e-Flatek™ 구성

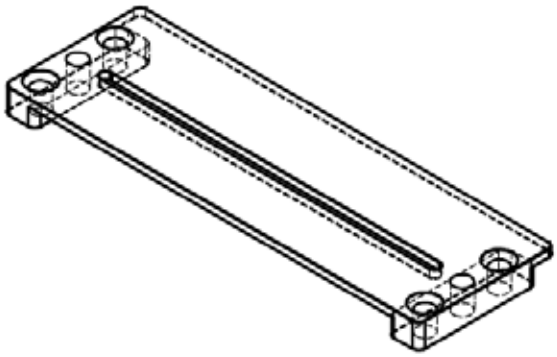


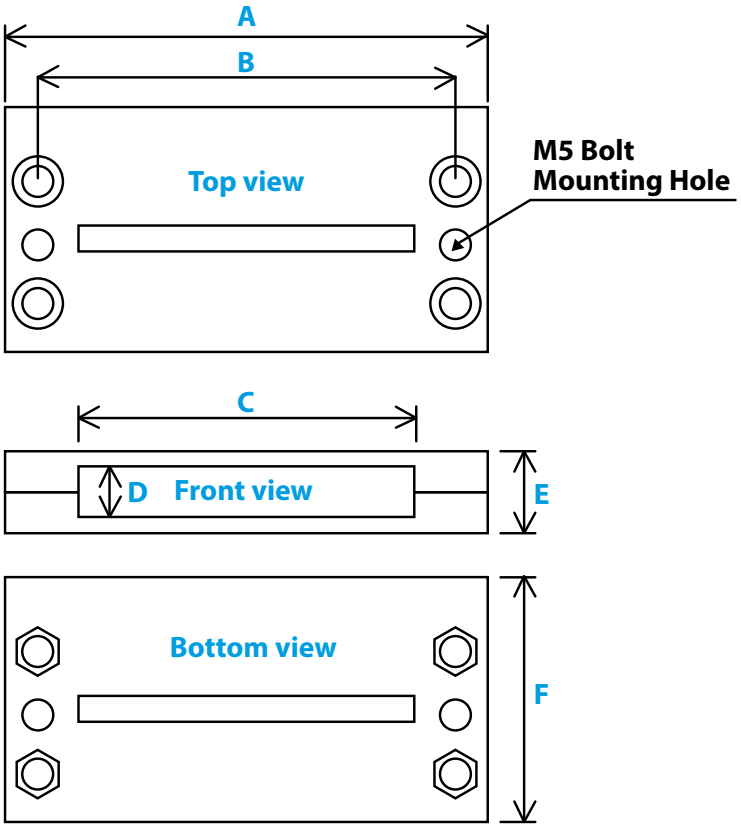
Configuration 및 Stack



e-Clamp™

e-Clamp는 2 Pod에서 6 Pod까지 5종의 표준 규격을 제공하고 있습니다.



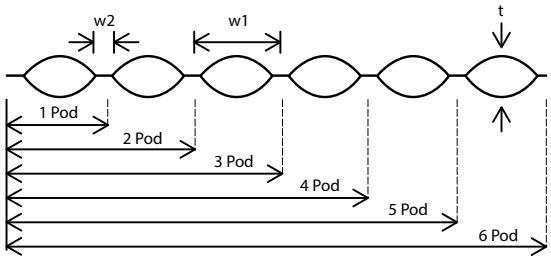


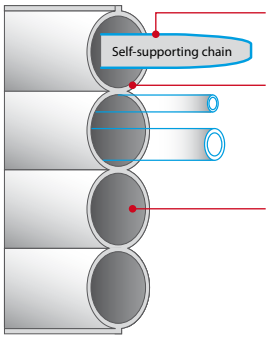
[Standard e-Clamp™]

Clamp	주요 치수(mm)					
	A	B	C	D	E	F
1 Pod Clamp	39.0	27.0	19.0	11.0	16.0	44.0
2 Pod Clamp	58.0	47.0	38.0	11.0	16.0	44.0
3 Pod Clamp	77.0	67.0	57.0	11.0	16.0	44.0
4 Pod Clamp	96.0	86.0	76.0	11.0	16.0	44.0
5 Pod Clamp	115.0	105.0	95.0	11.0	16.0	44.0
6 Pod Clamp	134.0	124.0	114.0	11.0	16.0	44.0

e-Pod™

e-Pod는 케이블 및 공압호스, 지지체인을 수용하며 Standard 규격 외 고객 요청에 따른
다양한 Special e-Pod를 제공할 수 있습니다.





지지체인은 시스템 가동시 자세안정화를 위한
부품이며 R20, R40, R70, R100, R130 5종이 표준

Pod의 표면과 내면은 IPA Class
1등급을 만족하는 e-PTFE를 적용

Pod 내부는 1개 또는 2개의 케이블 또는
공압호스를 수용하며 고객의 요청에 따라
다양한 내폭의 특수한 1 Pod를 제작할 수 있음

[Standard e-Pod™]

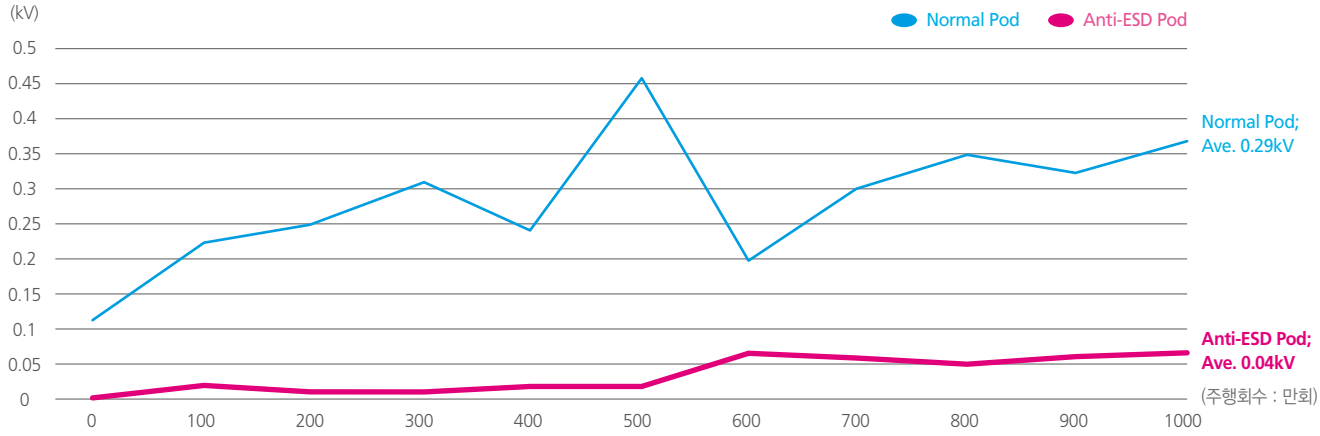
Pod 수 (n)	Pod 두께 (t)	Pod 내폭 (w1)	연결 폭 (w2)	전체 너비 (w3)
1 Pod	Approx. 1.0mm	Approx. 19mm	Approx. 2mm	Approx. 23mm
2 Pod				Approx. 44mm
3 Pod				Approx. 65mm
4 Pod				Approx. 86mm
5 Pod				Approx. 107mm
6 Pod				Approx. 128mm

[Special 1 e-Pod™] 고객 요청에 따른 다양한 Special 1 Pod 제작 가능(내폭 최대 126mm)

Pod 수 (n)	Pod 두께 (t)	Pod 내폭 (w1)	연결 폭 (w2)	전체 너비 (w3)
1 Pod	Approx. 1.0mm	Approx. 21mm	Approx. 2mm	Approx. 25mm
		Approx. 23mm		Approx. 27mm
		Approx. 30mm		Approx. 36mm
		Approx. 40mm		Approx. 46mm
		Approx. 62mm		Approx. 68mm
		Approx. 83mm		Approx. 89mm
		Approx. 105mm		Approx. 111mm
		Approx. 126mm		Approx. 132mm

Anti-ESD (Electro Static Discharge)

e-Flatek에 적용된 Anti-ESD Pod는 1,000만회 가동 후에도 100V 이하의 정전기량을 유지하여
설비 가동 중 발생할 수 있는 전기적인 문제를 방지할 수 있습니다.

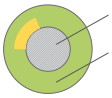
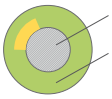
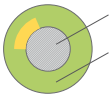
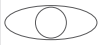
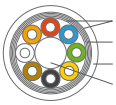


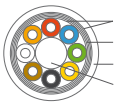
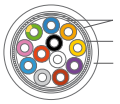
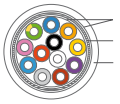
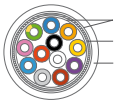
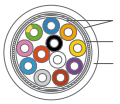
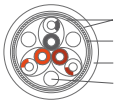
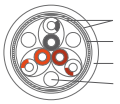
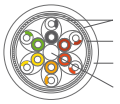
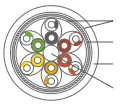
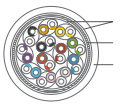
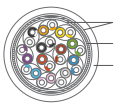
Normal Pod 측정된 정전기량의 평균은 Anti-ESD Pod 대비 7~8배 수준인 0.29kV이며 주행 회수 누적에 따라 지속적으로 증가하는 경향
Anti-ESD Pod 측정된 정전기량의 평균은 0.04kV이며 주행 회수 700만회 이상에서 상승곡선 둔화 및 Saturation 경향

*Normal Pod : 대전방지 기능이 처리되지 않은 제품

e-Line™

전용 삽입케이블은 아래의 표준규격 외 고객 요청에 따른 다양한 규격을 개발하여 제공할 수 있습니다.

No.	Cross Section	Specifications (SAP Code)	기능 정의	Construction		Weight (g/m)	Out diameter	Pod내 삽입수량
1	 Conductor Insulation	e-Line 1C x 2.5SQ (1246748)	접지용	Conductor Insulation	Tinned Copper ETFE	31.1g	Approx. 3.2mm	
2	 Conductor Insulation	e-Line 1C x 3.5SQ (1252688)	접지용	Conductor Insulation	Tinned Copper ETFE	45.5g	Approx. 3.7mm	
3	 Conductor Insulation	e-Line 1C x 25SQ (1252686)	접지용	Conductor Insulation	Tinned Copper ETFE	275.6g	Approx. 8.9mm	
4	Binder Spiral shield PVC Jacket	e-Line 4C x 0.2SQ (1255662)	Servo Motor Power용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	23.1g	Approx. 3.6mm	
5	Binder Spiral shield PVC Jacket	e-Line 4C x 0.3SQ (1255666)	Servo Motor Power용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	28.9g	Approx. 3.9mm	
6	Binder Spiral shield PVC Jacket	e-Line 4C x 0.5SQ (1246751)	Servo Motor Power용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	42.5g	Approx. 4.7mm	
7	Binder Spiral shield PVC Jacket	e-Line 4C x 0.75SQ (1246747)	Servo Motor Power용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	58.0g	Approx. 5.7mm	
8	Binder Spiral shield PVC Jacket	e-Line 4C x 1.25SQ (1246753)	Servo Motor Power용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	89.5g	Approx. 6.4mm	
9	Binder Spiral shield PVC Jacket Filler	e-Line 8C x 0.2SQ (1255663)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	38.2g	Approx. 4.7mm	
10	 Binder Spiral shield PVC Jacket Filler	e-Line 8C x 0.3SQ (1254860)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	50.3g	Approx. 5.1mm	
11	Binder Spiral shield PVC Jacket	e-Line 8C x 0.5SQ (1246746)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	70.2g	Approx. 5.9mm	
12	Binder Spiral shield PVC Jacket	e-Line 8C x 0.75SQ (1255670)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	95.9g	Approx. 7.0mm	

No.	Cross Section	Specifications (SAP Code)	기능 정의	Construction		Weight (g/m)	Out diameter	Pod내 삽입수량
13	 Binder Spiral shield PVC Jacket Filler	e-Line 8C x 1.25SQ (1255672)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	167.1g	Approx. 8.9mm	
14	 Binder Spiral shield PVC Jacket	e-Line 12C x 0.2SQ (1255664)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	49.4g	Approx. 5.1mm	
15	 Binder Spiral shield PVC Jacket	e-Line 12C x 0.3SQ (1254863)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	65.1g	Approx. 5.7mm	
16	 Binder Spiral shield PVC Jacket	e-Line 12C x 0.5SQ (1255669)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	98.8g	Approx. 7.0mm	
17	 Binder Spiral shield PVC Jacket	e-Line 12C x 0.75SQ (1255671)	I/O용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	130.4g	Approx. 7.9mm	
18	 Binder Spiral shield PVC Jacket Filler	e-Line 3P x 0.2SQ (1252684)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	34.9g	Approx. 4.8mm	
19	 Binder Spiral shield PVC Jacket Filler	e-Line 3P x 0.3SQ (1254859)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	46.4g	Approx. 5.8mm	
20	 Binder Spiral shield PVC Jacket Filler	e-Line 6P x 0.2SQ (1252683)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	54.8g	Approx. 5.9mm	
21	 Binder Spiral shield PVC Jacket Filler	e-Line 6P x 0.3SQ (1255667)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	71.5g	Approx. 6.5mm	
22	 Binder Spiral shield PVC Jacket	e-Line 12P x 0.2SQ (1255665)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	90.5g	Approx. 7.5mm	
23	 Binder Spiral shield PVC Jacket	e-Line 12P x 0.3SQ (1255668)	Encoder용	Conductor Insulation Binder Sheath	Tinned Copper ETFE Paper or Nonwoven Clean PVC	120.3g	Approx. 8.4mm	

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LS e-Flatek™

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